CHALLENGES IN NURSING EDUCATION AND RESEARCH

PROCEEDINGS OF THE 2ND ACEH INTERNATIONAL NURSING CONFERENCE (AINC 2019), AUGUST 21 -22, 2019, BANDA ACEH, INDONESIA

Edited by

Teuku Tahlil, Hajjul Kamil, Asniar and Marthoenis

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Challenges in Nursing Education and Research

Proceeding of the Second Aceh International Nursing Conference 2019 (2nd AINC 2019), August 21–22, 2019, Banda Aceh, Indonesia

Edited by

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Foreword

It is an honour to welcome you to the 2nd Aceh International Nursing Conference (AINC), in Banda Aceh, Aceh, Indonesia. The Conference is hosted by the Faculty of Nursing, Universitas Syiah Kuala (abbreviated as UNSYIAH). Established in 1999, the Faculty of Nursing - Unsyiah continually strives to increase capacity in offering the best nursing education in Indonesia. Efforts to improve curriculum and resources are attempts undertaken to strengthen its strategic position as the largest and the oldest nursing education center in Aceh.

The upcoming conference is therefore conducted to manifest the Faculty of Nursing commitment to advance nursing research and education both for local and national context. It is initially was inspired by the Unsyiah's previous achievements in conducting several international conferences whereby the Faculty of Nursing contributed significantly in those events.

The theme offered for the conference is "**Overcoming Global Health Challenges through Nursing Education, Research and Technology**". Topics of interests cover all theoretical and practical aspects of nursing and health sciences in broad spectrum. It is expected that the AINC 2019 would be a great opportunity to disseminate and promote the latest research and innovations in nursing. This will provide an excellent forum for sharing knowledge and information across academicians, professionals, and government to optimize healthcare quality and safety around the globe. Topics of interest for submission include, but are not limited to:

1. Fundamental Nursing
2. Adult Nursing
3. Paediatric Nursing
4. Geriatric Nursing
5. Disaster Nursing
6. Management in Nursing
7. Family & Community Health
8. Maternity Nursing & Women Health
9. Psychiatry & Mental Health Nursing
10. Emergency Nursing
11. Critical Care Nursing
12. Social Health Science
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DEVELOPMENT OF ANTICIPATED PHYSIOLOGICAL FALLS PREVENTION INGENUITIES BUNDLES: A PRELIMINARY REPORT

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Abstract: Anticipated physiological patient fall is one of the classifications of falls which is on the rise despite all the fall preventive measures implemented. Many health institutions have developed fall initiatives for inpatient fall prevention. However, due to inadequacy of fall prevention measures and interventions taken could be one of the reasons of increase incidences of anticipated falls. The objective of the study is to identify and develop new ingenuities bundles towards the prevention of Anticipated Physiological Fall. A triangulation technique was used in the development of ingenuities bundles which consisted of three main approaches such as Focus Group Discussion, Expert Interview and Document Analysis. The samples were selected based on their experiences as witnesses to fall incidences at the hospital. The nursing task force dealing with fall incidences participated in the two sessions of Focus Group Discussion, for conceptualization and elements development. Twelve registered nurses from various clinical areas were recruited for structured expert interviews for conceptualization and development of items. Retrospective document analysis was conducted on fall incidences. A computer assisted qualitative content analysis was done with the aid of Atlas.ti. software. A total of five ingenuities bundles were developed. The bundles included reminder on 2-hourly rounds, specific assessment during nursing rounds, consultant checklist, bed side rail modification and patient – family education. From the findings, it is recommended that the developed bundles will be used on prevention of anticipated cases.

Keywords: Reminder, 2 hourly nursing rounds, specific assessment, consultant checklist

I. INTRODUCTION

The researched private hospital is an acute care facility in Kuala Lumpur, Malaysia. Falls continue to be one of the main concerns for this acute care hospital. The most recent fall data provided by the private facility from 2009 to 2014 indicates that fall

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rates are increasing yearly (Fall Incidences Report, 2015). Consequently, special focus was given on anticipated physiological patient falls that is on the rise as compared to accidental falls and unanticipated falls (Fall Incidences Report, 2015). This hospital also has a Patient Safety Goal committee to perform an audit on monthly basis to check on the fall prevention strategies compliance percentages. The important of this study is that anticipated physiological patient falls is on the rise at this hospital despite all the fall preventive strategies according to the fall policy implemented (Fall Incidences Report, 2015). Correspondingly, these new ingenuities bundles will drive out to be new initiatives that will be engaged with the current fall policy of the studied hospital in preventing anticipated physiological patient falls.

Patient falls is categorized as one of the most hazardous incidences that could happen to patients seeking treatment at the hospitals (Joint Commission. Root Causes, 2009B). Szumlas (2014) mentioned that fall is an unintended event resulting in a person being witnessed coming to rest on the ground, on the floor or other lower level, or is reported to have landed on the floor without witnessed. These falls are not due to any intentional movement or extrinsic force (Morse, Morse & Tyklo, 2011). Besides that, Morgan et al (2015) explained many of us believe that patient falls can be prevented. There are various measures that can be taken to prevent patient falls and injuries resulting from the falls should never occur. Moreover, Morse (2008) elaborated that prevention measures are mandated according to the hospital terms and conditions of fall policy and are made according to the types of falls.

Anticipated physiological falls occur in patients whose scores on the MFS [Morse Fall Scale] indicate that they are at risk of falling yet the necessary preventions have not been practiced. Anticipated physiological patient fall is one of the classifications of falls which is on the rise despite all the fall preventive measures implemented. Many health institutions have developed fall initiatives to prevent falling events among patients in the hospital. Overall, as from a health care provider's view, if anticipated fall can be prevented, how can the other types of falls be reduced or zeroed.

The greatest source of improvement reported was an increase in the "knowledge and professionalism of the bedside nurse". Nurses were more aware of the larger purpose to plan for the day and the hospitalization (Preece, Rogers & Sharp, 2012). Multi-factorial interventions address multiple risk factors for falls by using a combination of interventions within one comprehensive fall prevention program. The objective of the study is to identify and develop new ingenuities bundles towards the prevention of Anticipated Physiological Fall.

II. METHODS

This study used a triangulation technique which consists of document analysis, focus group discussion and expert interview to obtain the basic bundle development of the unique initiatives called new ingenuities for the addition of the existing initiatives in preventing or reducing the incidence of anticipated falls among patients.

III. DOCUMENT ANALYSIS

The first technique on the bundle's development was done through a literature search and document analysis. The questions raised were based on the following concepts adapted from the study conducted by Kohn, Corrigan and Donaldon (2011) on the causes of falls in inpatients, falls risk assessment, implementation a fall prevention strategy, identifying risk of falling, education and training as well as consultants' involvement. Several literatures were obtained and screened through the relevancy of this study. Below are the summaries of the literature review:

Table 1.1 Summary of Literature Review

Literature	*Review*
McCarthy & Blumenthal, 2012	Care bundle The focus of the bundle is on how to distribute the best care using a clear-cut process to provide the best possible consequence for the patient.
Hale, Delaney & Cable, 2013	Reminder to prevent fall Alerts and reminders have been exposed to have a positive effect on clinician performance and patient care.
Sorrell, 2011	Public Announcement as a reminder for nurses A study was originated to regulate, a timing device which reminds the nurses with green-yellow-red lights, to alert nurses in their rounds.
Whittington, Simmonds & Jacobsen, 2012	2 Hourly rounds The goal was to round hourly to prevent medical errors such as phlebitis patient falls and more.
Campbell, Cook & Shadish, 2012	Patient and Family Education on fall prevention Individual and family education was important in all patients who were at high risk for fall.
Geraci, 2014	Family Involvement Patient and family engagement education to fall anticipation component can help reduce fall rates in the acute care setting as family can become observers.
Reason, 2013	Leaflets and booklets as a guide of fall prevention Leaflets have been produced which they explained how patients and carers might help to recognize and reduce their own falls risks.
Kiely et al., 2011	Bed side rail modification Reported that the heights of occupied beds are a conceivable risk factor for falls. They also settled that the average height of patient beds on fall provision was significantly higher than of those not on fall safeguard.

IV. FOCUS GROUP DISCUSSION (FGD)

The second triangulation technique held was on the Focus Group Discussion (FGD) session. Semi-structured questions were constructed by the researcher. The questions constructed were also based on concepts adapted from Mills and Weeks (2014) on the causes of falls in inpatients, fall assessment implementation of fall prevention strategies, identifying risk of falling, education and awareness which had been translated into the context of the managers who were dealing with the root cause analysis each time a patient falls.

In the Focus Group Discussion (FGD), nine staff had participated which comprised of the chief and deputy nursing officer, the clinical survey officer, nursing quality officer and the unit managers who were the nursing task force dealing with fall incidences. They are also the staff who are responsible in carrying out the management of staff and patients at a higher level of nursing management of Falls Risk. These respondents were given one hour to discuss the topic at length. They were given the freedom to talk about the topic at random and without any particular order. The followings are some questions conducted and followed by the summary of their answers:

Question 1. Causes of Anticipated Physiological Falls

Anticipated physiological falls can be predicted using the scale and can be prevented from occurring for the first time but such falls constitute 78% of fall incidences, what happened?

Answers from Respondents

- *Yes, it is true that anticipated physiological falls can be prevented if we are properly following the Policy Scale provided by the hospital.*
- *I believe the occurrence of falls depends on the patient's and the family belief. Patient and family have their own views on the regulations provided for them.*
- *Patients who received treatment in private hospitals assumed whatever they want to do is their right because they pay to stay in the hospital. They are entitled to do what they feel they need to do.*
- *Some patients do not have to call a nurse if they want to go to the toilet, because he//she has the wife or husband with them who can hold them to the toilet without feeling shy or embarrassed.*
- *Some patients who have just returned from surgery, they think when they are conscious, they can walk to the toilet. They do not have knowledge about the effects of anesthesia.*
- *In most cases, it is unnoticed by the nurse entirely. However, we cannot solely blame the patient or the relatives. The failure is also from the nurses who did not provide comprehensive information to the patient and family members and is a major weakness on her part as the caregiver.*

Question 2. Falls Risk Assessment Implementation of Fall Prevention Strategy

How is the use of the Fall Assessment format implemented by nurses who received potential APF patients?

Answers from Respondents

- *The use of the Fall Assessment Format has been explained to patients with anticipated physiological falls category.*
- *Each nurse has its own view of monitoring potential APF patients. The workload in the ward causes monitoring cannot be carried out continuously. When the fall occurs then all staff panic and anxious.*
- *There are nurses who will pay attention to these anticipated physiological falls seriously. I mean the importance of carrying out the responsibility as a nurse depends on one's own sense of responsibility. They will monitor APF patients with their own initiative although no pathway is enforced.*
- *Most reassessments became a failure as nurses performed less reassessment. Besides that, APF patients need frequent monitoring. Most of the time, nurses did not have the time or did not remember to perform rounds to counter this type of patients.*

Question 3. Identifying Risk of Falling

What is specific assessment performed by a nurse when there is an APF patient in your ward, which requires time-to-time care and focus?

Answers from Respondents

- *There is currently no structured initiative to monitor the patients with potential APF, apart from the initial assessment done during admission and reassessment according to the criterion.*
- *There are times when these patients are accidentally 'forgotten' by the nurses, that they are among potential patients who will experience fall incidents, as there is no mandatory activity to be monitored by the nurses.*
- *The patient will be more 'neglected' from the monitoring when the patient is accompanied by their husbands, wives or family members.*

Question 4. Education and Awareness

What are the education and awareness given to patients currently, is that enough and made patients understand the risk of fall?

Answers from Respondents

- *Face-to-face discussion sessions with patients and relatives should be held for the APF category. This session is to provide awareness to patients and relatives about APF and complications. For the untrained friends and family members attempting to help their loved ones, they should be aware of, and continually be monitored by the nurses and support system.*

- *They should be taught on how to avoid falling incidents, if culture and religion are the reasons for choosing a way for themselves to provide care during hospitalization.*
- *A letter of agreement must be signed as proof. Handouts need to be given to patients and complete explanation needs to be done by nurses based on the handouts.*

V. EXPERT INTERVIEW

The third triangulation detained was Expert Interview, with those who have experienced anticipated physiological falls in their work environment and those who have taken care of the patients in the wards with the application of the current prevention tools on each patient (Wolter & Studenksi, 2009). They are none other than the nurses. They had witnessed the falls, perhaps with a wide experience of handling falls and they would contribute the notions on the gaps that needed to be bolted. The semi-structured questions asked were based on the context derived from FGD such as specific assessment, consistency of nursing rounds, post fall assessment and patient family education, consultants' involvement and bed modification (Kvale, 2014).

In this expert interview, twelve nurses from medical surgical ward, maternity, intensive care unit and pediatric unit nurses were the nurses involved. The respondents were told beforehand that they could withdraw from the interview session at any time if they wished to. The interview was held at one of the meeting rooms at the hospital. The respondents were given one hour to answer the interview questions. The followings are the questions conducted and followed by the summary of their answers:

Question 1. Specific Assessment

Anticipated physiological falls can be predicted using the scale and can be prevented from occurring for the first time but such falls constitute 78% of fall incidences.

Falls Risk Assessment available is not enough to prevent the incidence of falls. What need to be done to the existing tool?

Answers from Respondents

- *We need to think about how to improve the existing ones. Of course, we cannot modify the international standard tool that we have but we can make the items more practical for patients in this hospital.*
- *Pain can lead to fall, due to patient probably could not have the balance of ambulation, for that pain can be monitored at every round, pain score should be examined.*

- *Patient positioning needs attention, asking patient if patient needs to change position as while patient tries to change position patient can fall.*
- *Currently, many fall cases reported as patient fall occurs when patient tries to walk to the toilet. During rounds, nurses can identify patient's elimination needs.*
- *During rounds, nurses should concentrate on patient belongings, all need to be placed near patient as patient can reach them easily.*

Question 2. Consistency of Nursing Round

Nursing rounds is a vital nursing task force on providing patient focus care timely.

Consistency of nursing rounds are lacking, as nurses are not performing timely nursing rounds, how to improve?

Answers from the nurses
- *Current practice on rounds need revisit with reminder and standard script to be implemented.*
- *2-hourly will be good, however, nurses always cannot remember on hectic days.*
- *Reminder like alarm clock which can struck every 2 hours and reset by nurses.*
- *Team leader as a reminder, each ward leader for the shift to remind nurses to perform rounds.*
- *Improvise nursing documentation on 2-hourly round just vital assessment needs to be carried out.*

Question 3. Consultants' Roles

Consultant role will be a vital part on focusing patient clinical condition and medication of patients. In choice of giving consultants incorporation on fall prevention strategies, what are the engrossment consultants can made?

Answers from the nurses
- *Each time consultants perform rounds they should examine patients from certain aspects. This can be patient current condition and progress.*
- *Patient Gait and ability in mobilization need to be assessed by doctors as, they can order physio and patients can mobilize with proper ambulation gadgets.*
- *Moderate GCS score of patients can cause fall, consultants should assess patients' neurological status from time to time.*
- *Medication list of patients should be reviewed, at each point of consultant visits.*

Question 4. Post Fall Assessment

Anticipated falls will be precisely preventable with good post fall assessment, as same circumstances can be sidestepped based on lesson learned.

Post fall assessment will be conducted by the nurses, however, no guided document on post fall assessment, what are the elements that can be included in post fall assessment?

Answers from the nurses

- *A complete interview on patients will give an idea of how patients fall and can be a guide on how to plan strategies.*
- *Patient medication history can be revisited as patient might take any own medication without informing which caused neurological effects.*
- *A complete physical assessment, to check on any injury sustained.*
- *Assessment of patient environment could possible to reveal what had happened.*

Question 5. Patient and Family Education

Patients for patient cares are the important rules in fall prevention.

Health education that has been given to patients is inadequate and patients are unable to remember all the prevention steps, how can this be improved?

Answers from the nurses

- *Fall information board should be placed in patients' rooms, content of the board should be concisely emphasized on self-fall prevention methods.*
- *Simplified words brochure can be developed, to be given to patients during admission.*
- *More information.*

VI. ETHICAL CONSIDERATION

This study was conducted upon the approval from the university and hospital research committee as well as the Chief Executive Officer of the private hospital. Informed consent was obtained from all categories of participants who agreed to participate in the focus group discussion and nurses who agreed to be interviewed. Confidentiality was further ensured by storing the participants' demographic information and the transcribed focus group discussion and interviews separately.

VII. RESULTS

The data from the focus group discussion showed that causes of anticipated physiological falls are mainly on patient and family belief as well as attitude. Patient and family do not realize the degrading scenario that will happen if the patient falls. Patients always need their own family members to assist them with their daily activities. Moving forward to fall assessment and implementation of a fall prevention strategy, the MFS fall assessment has been widely used to identify high risk fall cases. Nevertheless, a suitable reassessment has not been conducted regularly. The lacking part is the continuous assessment which has not been concentrating on specific elements or changes in patients' conditions which might lead to patient falls. Additionally, other initiatives can be included in fall prevention ingenuities such as a reminder for the nurses on conducting continuous timely nursing rounds, a must 2-hourly round, leaflet

to patient on fall prevention and bed side rail modifications to make the gap in-between the rail smaller so that patients cannot slither down. As a team, FGD respondents suggested that a comprehensive education plan can be delivered to patient and family during admissions in preparing them to prevent their own falls.

Likewise, the structured expert interview gave an exclusive thought for the items that can be developed in attaining ingenuities bundles. An emphasis was given by nurses to have structured rounds focusing on high risk cases. Moreover, they felt that 2-hourly consistent round will be enough to prevent falls. In addition to the rounds, a specific assessment can be included as nurses felt that a checklist on patients' conditions and need is highly required. Still, nurses sensed that at the current ward busy condition, they were unable to remember their rounds. Therefore, some sort of a reminder needs to be placed to remind the nurses as they will have no chance to look at their watches during hectic ward situations.

In addition, the nurses mentioned that they wanted consultants' involvement in managing high risk fall patients. They further expressed that consultants should assess and examine the patients on gait status, neurovascular state and medications that patients could be on as all these conditions can lead to falls. These examinations by consultants should be done during their rounds to ensure time-to-time updates on the patients' conditions and this needs a proper documentation. Patient for patient care, is a term continuously used by the nurses. In this patient for patient care term, patient education plays a role.

Table 1.2 Summary from the Focus Group Discussion and Structured Interview

<table>
<tr><th>Items</th><th>Concepts development</th><th>Ingenuities bundles</th></tr>
<tr><td>Causes of Anticipated Physiological Falls (APF)</td><td>Patient and Family – values, believes and perceptions
Insufficient nurses' roles on APF</td><td rowspan="2">• PA system as reminder to nurses
• 2-hourly rounds with specific assessment
• Consultant Checklists</td></tr>
<tr><td>Fall assessment and implementation of a fall prevention strategy</td><td>Awareness from healthcare providers, patient and family specific reinforcement</td></tr>
<tr><td>Identifying risk of fall cases</td><td>Structured monitoring system to avoid negligence and forgotten</td><td rowspan="2">• Patient education & documentation
• Whistle for the patients
• Side rails modification
• Poster, Billboard
• Booklets, Leaflets
• Compliance policy</td></tr>
<tr><td>Education and Training for APF</td><td>Additional initiatives for fall prevention
Effective education strategies
Compliance policy</td></tr>
</table>

Table 2 above is the result of a combination from the triangulation techniques conducted on focus group discussion and expert interviews.

Furthermore, the researcher has ensured that in the findings, validation in reliability and validity in the data analysis was not considered as a separate stage of the investigation. Instead, it was an on-going principle throughout the entire research process. Ensuring reliability demands diligent efforts and commitment to consistency throughout the interviewing, transcribing and analyzing the findings of focus group discussion and expert interviews.

VIII. DISCUSSION

The results of this research are consistent with the objectives of the study. The author has found out that hospitals will be patient-centered healthcare by using the ingenuities bundles. The triangulation approach on the data collection gave maximum and relevant information on anticipated fall prevention initiation (Tylko, 2012). Although the studied hospital has been practicing fall prevention policy, fall is still unable to be prevented.

This study used a comparison method where one group was involved in the education pro group and the other group was treated without education. The result of the studies showed that the patients who had been educated were not at the risk of falling and fall prevention strategies were hospitalized with no fall incidents. On the other hand, the non-educated group had 2 fall incidences and several near-misses.

Reminder for the nurses on 2-hourly rounds is the highlight of the study. All this while, the nurses have been performing their rounds. Still, 2-hourly consistent rounds are very doubtful (Mathison, Rice & Clenimer, 2010). No appropriate research has been done on what kind of reminder that will match the healthcare setting. However, in this study, the researcher has decided to bring in PA system as a reminder as it will cover the entire hospital. Perhaps, rounds will become a famous nursing action in preventing falls. According to Scott (2007), when consistent nursing rounds were conducted in a busy medical-surgical unit there had been few fall cases and a significant decrease in the use of call lights. In the mentioned study, the proactive process was designed to assess for safety and need before the patient would ask, or accidentally fall. The process revealed a significant drop in falls at the studied hospital.

Patient and family education appear to be an important element as patient and family should understand the danger of falls and if they cooperate with the nurses, falls can be easily prevented. The author has designed a brochure with brief information on fall preventions and also a booklet with a thorough explanation on fall preventions in the hospital, at home and in the community. Patients who have fallen before having higher risks to fall again. If the safety practices are adhered by patients and family, the risks can be reduced. In addition, Versel (2013) implemented patient education program for patients who were at the highest risk of falling.

Next, consultant involvement in fall prevention strategies will be a case management approach as patients will be viewed from all angles holistically. The author has then decided to develop a consultant checklist. This checklist will consist of assessment that the consultants should perform during their rounds. The assessment will comprise assessment of patient gaits, patient ability of ambulation, neurological condition of patients and patient medication review. Doctors' involvement in assessing patients for risk of falls are considered as a part of the care plan (Preece, Rogers & Sharps, 2012). In the mentioned study, both nurses and consultant notes are integrated. Consultants and nurses are working on the same management approach in treating the patients. All high-risk patients will be reviewed by both doctors and nurses. This will significantly decrease the fall rate as high risk will be detected as early as possible and an effective action plan will be rendered.

In this study, there have been few limitations. Firstly, in terms of the secondary sources, most of related references are not too current. Therefore, the researcher must mainly depend on published references from five years back up to the most present. Secondly, in terms of the primary sources, this study was conducted at only one private hospital. Not much analysis can be compared to or cross-checked with other private hospitals. The reason being is that this private hospital is an acute care facility in Kuala Lumpur. Patient falls is one of the main concerns for this acute care hospital. This hospital also has a Patient Safety Goal committee to perform an audit on monthly basis to check on the fall prevention strategies compliance percentage. Therefore, this study only focuses on this private hospital.

As a recommendation, this study can give the direction for future empirical studies. Fall prevention has always been of great importance to any health care setting. Anticipated physiological falls is a type of fall which will easily be preventable. Through the initiative ingenuities bundles, this can be achieved.

IX. CONCLUSION

As a conclusion, this qualitative study has shown that anticipated physiological falls could involve several ingenuities bundles at the initiatives to prevent patient falls. Responses from the participants of focus group discussion and expert interviews have further assisted in the designing and implementing of new initiatives by the researcher to prevent falls among patients at the hospital.

Essentially, this study could be well referred to for future research if the same scenario and background are to be used but of different angles and views. Overall, regardless of the limitations that the researcher had to go through in completing this valuable research, this study confirms that the ingenuities bundles could be effective as initiatives in preventing anticipated physiological falls among patients at the studied private hospital.

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ENHANCEMENT OF CARING BEHAVIOR AND CARING COMPETENCY AMONG NURSING STUDENTS

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Abstract: Preliminary evidences indicated the need of educational program on caring knowledge to enhance the caring behavior and caring competency of the nursing students as they will be the future nursing workforce. The study aims to determine the effectiveness of a caring program implementation towards the study participants. Methods: We conducted a quasi-experimental with one group pre- and post-test design incorporated a structured educational intervention in a public nursing college (N=137). Caring behavior was measured using Caring Behavior Inventory (CBI-42 version) while caring competency inventory utilized the Caring Nurse-Patient Interaction Scale (CNPI). Results: This study found a satisfactory score for both caring behavior and caring competency during pre-intervention with a significant positive relationship between caring behavior and caring competency ($p = 0.00$). A significant increased mean score in both variables were found during post intervention with the evidence of a significant positive relationship between caring behavior and caring competency ($r = 0.631$, $p = 0.00$). Conclusion: The study findings indicates the effectiveness of a Caring Program in enhancing the caring behavior and caring competency thus similar educational strategies is recommended to produce future nurses with professional caring attitude.

Keywords: Caring Behavior, Caring Competency, Educational Intervention, Nursing Students

I. INTRODUCTION

The dynamic changes of healthcare population demand nurses to be highly skilled and competent to provide congruent nursing care. Past studies indicated that professional caring developed through nursing education and influenced by the innate caring (O'Brien, Mooney, & Glacken, 2008; Sokola, 2013; Joonbakhsh & Pashaee, 2014). Caring occurs in therapeutic relationships where patients appreciate the healthcare providers who constantly express care, and hardly forget the spontaneous acts of kindness and caring (Watson, 1979).

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As some theories denoted that caring can be learned, factors that motivate students to incorporate caring in practice and factors that contribute to adjustments in caring behaviors based on student-patient dynamics in the clinical area is to be identified (Neishabory et al. 2010; Papastavrou, Charalambous, & Efstathiou, 2011). The study aims to explore the effectiveness of caring program towards the enhancement of caring behavior and caring competency among nursing students in a public nursing college.

II. METHODS

This quasi-experimental design with one group pre-test – post-test design incorporated a structured educational intervention was conducted in a public nursing college in the north region of Malaysia.

Participants

This study recruited approximately 137 nursing students from Year 1 to Year 3 in a public nursing college. The purposive random sampling method was chosen as it is a useful technique when a sample of experts for the conducted study is catered (Polit & Beck, 2014). Brief information was given, and all participants were voluntarily involved and been kept anonymous.

Settings

The data was collected in a public nursing college in the north region of Malaysia. Approval for this study has been granted by College Director and written consent obtained from all participants prior to study.

Measures

Socio Demographic

A set of close ended section on demographic details which comprising gender, age, race, highest qualification level of education, marital status, years of training and duration of clinical exposure to retrieve sample characteristics.

Measurement of Caring Behavior

The tool used for measuring the caring behavior was Caring Behavior Inventory CBI-42 version) that an established tool developed by Wolf (1998) with the reliability coefficient 0.98. Each item requires self-identification of the use of the specified caring behavior in the participant's nursing practice on a 6-Likert scale.

Measurement of Caring Competency

The caring competency was measured utilizing the Caring Nurse-Patient Interaction Scale; 23-Item Nurse Version (CNPI) adopted from Cossette, Cote, Pepin, Ricard, &

D'Aoust (2006) with 5-Likert scale. The tool comprising the Clinical Care - 9 items (α=0.71), Relational Care - 7 items (α=0.78), Humanistic Care - 4 items (α=0.72), and Comforting Care - 3 items (α=0.80).

Educational Intervention

Caring Program is the intervention conducted twice a week with five educational session comprising; perception of caring and nursing (session 1), caring theories and values (session 2), holistic approach in nursing (session 3), communication and interpersonal relationship (session 4), assertiveness (session 5). Following the educational session, four weeks of supervision took place in the clinical area to provide support as they become engage to new nursing situations and implementation of new knowledge thus ensuring that existing gaps between theory and practice could be minimized. Post-test was then conducted after four weeks of intervention to allow the application of derived caring knowledge towards patients during their clinical placement.

III. DATA ANALYSIS

Data was analyzed using the Statistical Package of Social Science (SPSS) version 20 software. Descriptive analysis was used to determine the mean score of caring behavior and caring competency with the three-cut-off point referred as low, satisfactory and high level. One-Way Analysis of Variance (ANNOVA) was carried out to examine the significant difference between the measuring variables and Pearson correlational analysis was performed to identify the relationship between participants' caring behavior and caring competency. Paired T-test was then conducted to determine the effectiveness of intervention applied in this study.

IV. RESULTS

Demography Characteristics

The descriptive analysis is presented by meaning of frequency and percentage to describe the demographic characteristics (N=137). This study involved the total of 137 female respondents (100.00%) with the age ranging from 19 to more than 25 years of age. Malay presented as the majority respondent; N=131 (95.6%) and the highest educational level was SPM; N=98 (71.5%). Meanwhile, 133 (97.1%) were single and the highest proportion for training years is Year 2; N=60 (43.8%), followed by Year 3; N=54 (39.4%) and finally Year 1; N=23 (16.8%) (Table 1).

Level of Caring Behavior and Caring Competency

The level of caring behavior and caring competency was determined by analyzing the total mean score during pre and post intervention. During pre-intervention, the

overall mean score obtained for caring behavior was 4.28+0.34 and whilst for caring competency was 3.33+0.28. Moreover, mean difference across years of training was found to be significant ($p<0.05$) with Year 3 consistently scored the highest mean for both measures (Table 2).

Increased mean scores were observed during post intervention for both measures which the caring behavior was 4.99+0.52 and the caring competency was 3.98+0.43 and the finding was significant ($p=0.00$). This study also found that there is a significant relationship between caring behavior and caring competency among the study participants during pre and post intervention ($p=0.00$).

Table 2.1 Demographic Characteristics

Characteristics		*N*	*%*
Age (years)	19–21	71	51.8
	22–24	55	40.1
	>25	11	8.0
Race	Malay	131	95.6
	Chinese	1	0.7
	Indian	5	3.6
Educational Level	SPM/SPV	98	71.5
	Certificate	8	5.8
	Diploma	30	21.9
	Degree	1	0.7
Marital Status	Single	133	97.1
	Married	4	2.9
Years of Training	Year 1	23	16.8
	Year 2	60	43.8
	Year 3	54	39.4

V. DISCUSSION

This study intends to explore the effectiveness of a caring program towards the enhancement of the caring behavior and caring competency among nursing students in a public nursing college. In general, the results provided evidence of an acceptable caring behavior and caring competency score among nursing students. The understanding on pre-nursing students caring knowledge will establish a baseline of understanding of caring knowledge prior to beginning nursing education (Glasser, 2014). At the time of study, the respondents have been exposed to the fundamental of caring knowledge for their notional input through lectures, tutorials and practical sessions. The foundational exposure to professional caring may have provided the impetus for students to begin formulating their own ideas of competent caring and

to develop self-awareness about their caring interactions with others (Papastavrou, Charalambous, & Efstathiou, 2011).

Based on the findings, Year 3 students scored the highest score in caring behavior and caring competency inventory. Apparently, Year 3 students has been exposed from simple to more complex conditions in clinical settings as to comply with the curricular structure which able to prove that the more they learn and expose on caring element, the better behavior they will possess and the more competent they will be. The students gradually integrate behaviors that represent professional caring into their relationships with patients as the professional knowledge and experience develops throughout the educational process (Papastavrou, Charalambous, & Efstathiou, 2011, Codier et. al. (2011). Yet, it was noticed that Year 1 students scored higher compared to Year 2 in caring behavior. This might be due to the difference interpretation of caring thus the recent exposure in caring knowledge and the innate caring ability. This finding is analogous to the recent study by Grobbel & Rowe (2014) which the study revealed the effect of innate caring and its influence on caring knowledge.

Table 2.2 Caring Behavior and Caring Competency Score

Measure	*Pre Intervention*	*Post Intervention*
Overall Caring Behavior Score	4.28+0.34	4.99+0.52
Year 1	4.28+0.27	5.05+0.39
Year 2	4.17+0.38	4.78+0.57
Year 3	4.41+0.27	5.20+0.42
Overall Caring Competency Score	3.33+0.28	3.98+0.43
Year 1	3.14+0.32	3.68+0.50
Year 2	3.23+0.20	3.85+0.35
Year 3	3.53+0.24	4.26+0.33

In contrary, the finding triggers our curiosity when Year 2 nursing students yielded a lower score in caring behavior. As the nursing students progress throughout their years of study, the initial belief in delivering care might be tempered by the complexities of nurse-patient relationship with dynamic changes of patient condition. As compared to the findings by Sokola (2013) which has found the similar score in caring ability between first year and fourth year nursing students, the researcher suggested that the probable reasons are that the instrument utilized may not able to measure from a longitudinal perspective and therefore, the score might change with duration of times. The limited time spend for clinical experience will not be enough for significant change in caring ability (Papastavrou, Charalambous, & Efstathiou, 2011). Therefore, continuous effort should be made by the study setting in general and nurse educators to enhance the caring behavior through their years (Mlinar, 2010).

The evidence provided by Blum, Hickman, Andrew & Locsin (2010) has able to prove on the significant findings on the impact of educational intervention. The

study by Wilson & Gram (2013) has able to reveal the impact of Caring Groups as a teaching strategy to provide the opportunities for students to learn about caring through personal real-life experience, self-awareness and self-care, positive peer relationships and team building. Students grasp the knowledge information through observation, formal teaching input and role modelling. One of the strategies to improve educational outcomes requires efforts to assist students in regulating their learning using effective learning technique (Sokola, 2013).

Caring Program was implemented in our study with the aims to enhance the caring behavior and caring competency. As hypothesized, the group of respondents involved will gain beneficial impact for their practice with regards to caring behavior and caring competency. Moreover, this study also exposed the strong positive relationship between the pre and post intervention data. The finding is comparable to the study by Blum, Hickman, Andrew & Locsin (2010) which has found the increased caring behavior score post modelling and discussion of nurse caring within simulated human-patient scenarios. Similar finding revealed a higher frequency of caring behavior exhibited by the intervention group exhibited than the comparison group in a quasi-experimental utilizing an Online Caring Curriculum for the enhancement of nurses' caring behavior in Taiwan (Hsu et al. 2015). However, the caring behavior score in this study merely disclose the caring behavior score as perceived by the individual nursing students. Therefore, it is not able to match the finding by Chan, Chu, Hsiang Yen, & Chou (2015) which has exposed the effectiveness of a caring educational program towards nurses' caring behavior that has able to project greater patient satisfaction. Nevertheless, this study has able to prove the efficacy of educational program such as Caring Program in enhancing the caring behavior of nurses and nursing students as suggested by past studies.

As compared to the pre intervention findings, the descriptive findings on post intervention caring behavior and caring competency score further describe the significant different mean scores across years of training. This indicates that the Caring Program has leaved a great impact to nursing students' caring behavior regardless on their training years. Even though, it was proved in the pre intervention finding that caring behavior score was satisfactory, it is a crucial need to continuously enhance the caring behavior to meet the patients' satisfaction. This finding has able to prove that students could constantly grasp the opportunity to learn on caring various approaches e.g. sharing of experience, role modelling and supervision. As caring can be taught, effort should be made by the stakeholders to improve current educational programs to ensure continuing competency for nurses (Dunlosky et al, 2013; Wilson & Gram, 2013).

Hence, the study has able to prove the effectiveness of the implemented Caring Program towards the enhancement of caring behavior and caring competency. The input given during lecture sessions and supervision phase during clinical exposure for 4 weeks has apparently leaves a great impact on the caring competency. It is like the study by Blum et al. (2010) found to be increased on all 42 individuals caring behaviors which exhibited by mean increases from the beginning to the end of the

caring course. This finding is also parallel to the study by Wilson & Gram (2013) that evidenced the participation in Caring Groups offers the opportunity for students to experience and learn caring through sharing personal experiences, growing in self-awareness and self-care and building relationships. This finding also comparable to the finding by Hsu et al. (2015) which the study found higher frequency of caring behavior exhibited by the intervention group exhibited than the comparison group in a quasi-experimental design with the approach of online audio-visual technologies. Similarly, increased caring behavior by nurses was displayed post intervention of a caring workshop in a study which was conducted by Tsai et al. (2015). This study has been able to prove that caring can be taught. Competency does not develop in seconds but requires persistent efforts from both students and educators.

The quantitative design might limit the further exploration of caring behavior and caring competency among the study participants. Other limitation includes the time duration that limits the availability of more significant changes in pre and post intervention data. Qualitative or mixed-method design with longitudinal study is recommended to permit the discovery of various elements that facilitate the positive changes in caring practices. In addition, various approach or appropriate methodologies could be utilized in the educational intervention to generate interest of participants and to meet the learning needs of future nurse generations.

VI. CONCLUSIONS

The most essential need of the nursing profession within the nation healthcare delivery system is the production of a highly skilled and competent nurse graduates whom can incorporate the professional caring in practice to provide high quality and holistic care. We hope the study findings will be able to assist the current nursing educational system to enhance the caring practices among nursing students thus able to produce professional nurses' who are technically skilled, highly competence with outstanding caring attitudes.

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EVALUATION OF INTEGRATED NURSING PROGRESS NOTE INPATIENT WARD IN ACEH HOSPITALS, INDONESIA

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Abstract: Effective communication both verbally and documentation among the health care team will improve patient safety. Nurses in carrying out the documentation starting from assessment until evaluation that must be complete within the first 24 hours since patients admitted to the inpatient ward. After 24 hours of treatment, patient progress was recorded in an integrated documentation form known as the "Integrated Nursing Progress Note". This study aims to evaluate nursing documentation inpatient records according to the integrated nursing progress notes. It involved 141 nursing documentations systematically observed from 12 inpatient wards of Zainoel Abidin hospital was performed using a validated audit instrument. The instrument was used to assess the integrated nursing progress note of 6 steps: 4 steps focusing on the nursing documentation and two steps on time and the nurse's identity. The study shows that the majority of the integrated nursing progress note was a complete category (79.4%). The most correctly documented items were the time (100%), subjective data (100%), objective data (100%), planning (100%) and nurse's identity (100%), whereas the least documented items were analysis (85.3%). The researchers suggest that the hospital should conducted training of documentation regularly for the nurses to have a better understanding of integrated nursing progress note for an improvement of patient safety in the hospital ward.

Keywords: Observation, Integrated Nursing Progress Note.

I. INTRODUCTION

Nurses have an important role in providing quality and patient-centered nursing care (Hee, Kamaludiin, & Ping, 2016). Patient-centered services is implemented in the form of Integrated Patient Care which is horizontal and vertical integration. Nursing assessments is carried out in a structured manner and be completed within the first 24

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hours from the time the patient is admitted to the inpatient ward. Nursing Documentation is carried out in accordance with the steps of the nursing process including assessment, nursing problems/nursing diagnoses, planning, implementation and evaluation which is recorded on the sheet provided in the patient's medical record book. After 24 hours of treatment are carried out and evaluated, patient progress is recorded in an integrated manner on the same sheet known as the "progress note" or in the term Hospital Accreditation Commission called the Integrated Nursing Progress Note (SNARS, 2017). In fact, overall nurses spending most of their time with patients and documenting comprehensive nursing care (Masumehc, Alia, Kabiria, Nadimia, & Abri, 2014)

For nurses, documenting the Integrated Nursing Progress Note is mandatory according the mandate of the Law of the Republic of Indonesia Number 38 of 2014 concerning Nursing. The implementation of the Integrated Nursing Progress Note is not just an evidence of having carried out routine duties in providing care to patients, but that's more, nurses should be able to think critically in the implementation. The Critical thinking ability in carrying care promotes effective communication. Nurses in considering patient problems, it is important to apply critical thinking and critical reasoning skills to improve communication in the assessment and care of patients both verbally and in writing (Arnold & Boggs, 2011 quoted from Potter, Perry, Hall & Stockert, 2017).

However, the phenomenon that occurred in the United States between 210,000 and 400,000 thousand people experienced incidents when given health services in hospitals and one in six caused by documentation errors (Mercola, 2013). If this error continues, it will result in medication errors that have an impact threats on patient safety (Nurmayunita & Astuti, 2017).

The problem that nurses often experience in documenting in developing countries is caused by the lack of nursing resources and inadequate facilities (Nakate, Dahl, Petrucka, Drake, & Dunlap, 2015). Another problem at the Regional General Hospital in Indonesia is the lack of supervision, nurses' opinion that supervision is only done for the implementation of hospital accreditation. The difference in Diploma and Bachelor nursing competencies is also a factor influencing the documentation process. Another factor is the lack of confidence and motivation of nurses so that nurses tend to imitate the documentation done by nurses before and the difficulty in dividing time between documentation by providing nursing care to patients (Kamil, Rachmah, & Wardhani, 2018).

Furthermore, the Integrated Nursing Progress Note is filled out by various health care providers such as nurses, doctors, nutritionists, physiotherapists and pharmacists concerning the patient's condition. Integrated services are carried out by focusing to provide patients health services constantly, improving the quality of patient care and boosting efficiency in service delivery (SNARS, 2018).

Documentation is an indicator that will be assessed in hospital accreditation standards (SNARS, 2018). The Integrated Nursing Progress Note documented by the nurses must be relevant to the patient's condition. Nursing documentation

consists assessment data, problems, planning, actions and evaluations which were still incomplete even though the patient had been treated for more than 1 x 24 hours. Objective (O) and Subjective (S) data are unfocused/incompatible with the patient's condition/development, so the assessment of the problem (A) and planning (P) becomes inaccurate. Objective (O) and subjective (S) data are still not found from the results of the evaluation of previous plans that have been taken, so that the impression of care is not sustainable. Objective (O) and subjective (S) data often disappear, so the assessment of problems (A) and plans (P) also disappears (morning shift (+), evening shift (-), night shift (+) or vice versa. Now, documentation has become a mandatory competency that must be achieved to improve the quality of hospital services (Lindo et al., 2016) and is the accountability and responsibility of health care services professionals including nurses.

II. METHODS

This research is quantitative study; descriptive with cross sectional design study, determination of sample size using proportional sampling. Data were collected using an observation checklist sheet consisting of 29 statements and data analysis using the Chi-Square Test statistical test using a computer program. The instrument was used to assess the integrated nursing progress note of 6 steps: 4 steps focusing on the nursing documentation and two steps on time and the nurse's identity.

III. FINDINGS

Study Participants

The results came from 141 nurses that could be seen in the Table 1 as follows:

Table 3.1 Nurses Demographic Data (N=141)

Demographic Data	*f*	*%*
Age (year)		
Late-teens (17–25)	15	10.6%
Adult (26–35)	108	76.6%
Mature (36–45)	18	12.8%
Sex		
Male	26	18.4%
Female	115	81.6%
Marital Status		
Single	40	28.4%
Married	99	70.2%
Widow	2	1.4%

Educational Level		
Diploma	105	74.5%
Ners	36	25.5%
Employment Status		
Civil Servant	36	25.5%
Contract	105	74.5%
Tenure (year)		
<10	109	77.3%
≥10	32	22.7%
Additional Education		
Training	84	59.6%
Workshop	54	38.3%
Seminar	76	53.9%

Table 1 shows that highest proportion of the participants were identified as adult (76.6%), female (81.6%), married (70.2%), diploma (74.5%), contract (74.5%), worked less than 10 years (77.3%), and had additional education (59.6%).

Implementation of the Integrated Nursing Progress Note

Majority of the implementation of integrated nursing progress note were good (79.4%). The Implementation and application of the integrated nursing progress note are shown in Table 2 and figure 1 below.

Tabel 3.2 The Integrated Nursing Progress Note Distribution Frequencies (N=141)

Implementation of Integrated Nursing Progress Note	*f*	%
Not Good	29	20.6%
Good	112	79.4%

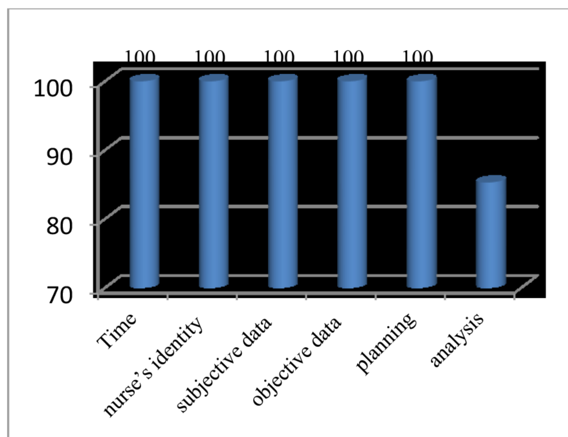

Figure 3.1 Aplication of Integrated Nursing Progres Note

IV. DISCUSSION

Based on the results of the study, 112 nurses (79.4%) wrote a well integrated patient development record. This is relevant to research conducted by Kebede, Endrisd and Zegeyea (2017) which states that the completeness of documentation is largely determined by the training that nurses received, the knowledge and attitudes of nurses towards documentation. Kebede, Endrisd and Zegeyea (2017) state that training received by nurses can improve nurses 'skills in documentation, as well as nurses' knowledge. Whereas nurses' attitudes are more related to the extent to which nurses consider that documentation as an important competency.

Taiye (2015) also mentions that nurses who frequently participate in training, workshops or seminars will be more likely to write good documentation because of the insights and give spirit and motivation of nurses to write good documentation. This is consistent with this study which shown that 59.6% of nurses have attended training, workshops (38.3%) and seminars (53.9%).

Marvitra and Halimuddin's (2018) states the depth and breadth of knowledge affect the ability of nurses in carrying out Integrated Nursing Progress Note documentation. Feng et all's (2010) states that age, years of work experience, and experiences in other hospitals are factors that are significantly related to the ability to fill in integrated documentation. Furthermore, Rahmah, Mustikasari and Gayatri (2015) stated that the higher the nurses' knowledge about how to document properly and appropriately, the better the documentation performed.

Furthermore, age is also one of the factors affecting the recording of integrated patient development records. the more dominant age in this study was adulthood (26–35 years) who reached 108 nurses (76.6%). This age is a productive age to carry out every action correctly and appropriately. Theoretically, adulthood is the stage where someone tries to do everything perfectly or commonly called the stage of self-stabilization (Pagala, Shaluhiyah, & Widjasena, 2017).

Lockwood (2017) explains that documentation is a legal aspect that is the duty of nurses to be carried out properly. so it seen from this study that 79.4% of nurses carry out the obligation to document properly. However, 20.6% of the documentation was not good. Various factors can be trigger documentation not done correctly by nurses. Husaini, Musnadi and Amri (2017) explained that nurses' performance is often not carried out optimally but due to the lack of knowledge and unclear communication lines become a constraining factor. In addition, research by Surahmat, Fitriah and Sari (2019) and Krishna and Khiyati (2015) also stated that explaining that factors could trigger documentation was not carried out correctly by nurses because of lack of supervision from the higher-up, lack of teamwork and high nurse workload.

In more detail, Krishna and Khiyati (2015) explained that errors that often occurred in the documentation were not recorded the care and treatment given (45.8%), delayed recording (53.1%), did not write the time and date of care provision (51 %) and there was no signature or identity of the care giver (57.1%). A concrete step is needed to improve the quality of documentation. Training needs to be carried out

regularly to improve the skills and professionalism of nurses. In addition supervision from the direct leadership aims to manage so that planning can be implemented well and measured (Dehghan, Dehghan, Sheikhrabori, Sadeghi, & Jalalian, 2013).

V. CONCLUSIONS

The researchers suggest that the hospital should carry out regular training of documentation for the nurses to have a better understanding of integrated nursing progress notes for an improvement of patient safety in the hospital ward. All nurses must also document Integrated Nursing Progress Note correctly and wisely in making decisions because the age and duration of work have the same responsibilities in documenting Integrated Nursing Progress Note.

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EFFECTS OF USING HIGH FIDELITY MANNEQUINS ON SKILL AND KNOWLEDGE OF NURSING STUDENTS WHEN PRACTICING NEBULIZER USE

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Abstract: The main challenges faced by nursing students are enhancing their existing skills and augmenting their medical knowledge in order to provide the best care for their patients. Problems that occured during laboratory skill practice as observed by an instructor. Nursing education emphasizes both academic and clinical skills in the learning process. Nurses develop their cognitive, affective and psychomotor skills in order to deliver a high quality of care and ensure patient safety. One hundred and ten second-year students who met the inclusion criteria were recruited from the Faculty of Nursing at Syiah Kuala University in Banda Aceh, Indonesia. The participants were randomly selected by a random number generator. The experimental group practiced using a nebulizer on the high fidelity mannequin Sim Man 3G. Participants were indirectly observed using CCTV cameras. The control group practiced using the nebulizer on a conventional mannequin. These participants were directly observed by an instructor. The study was conducted over two weeks. Before and after practicing using the nebulizer on the high fidelity mannequin, students were given a pre- and post-test regarding their performance on this skill and their knowledge of the instrument. Data analysis using comparison means paired t-test and the results showed that the knowledge of student pre-test score (M=4.55; SD=.85) was different than their post-test score (M=5.69; SD=.97) (P=.00). Similarly, students' pre-test score for this skill (M=64.39: SD=4.05) was different from their post-test score (M=66.76; SD=3.612) (P=.00). Students' knowledge was shown to be higher after practicing nebulizer therapy using high fidelity mannequins. Moreover, the study supports the hypothesis that there is a difference in the degree to which high fidelity simulators improve nursing students' knowledge and skill after practicing nebulizer therapy.

Keywords: High fidelity mannequin, nursing student, skill, knowledge

I. INTRODUCTION

Nursing education emphasizes both academic and clinical skills in the learning process. Nurses develop their cognitive, affective and psychomotor skills in order

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to toward deliver a high quality of care and ensure patient safety. (Ahlin, Dkk, 2017, Roh, Lee). The cognitive domain refers to such as students' use of critical thinking and their recollection of knowledge, while the affective domain refers to students' professional performance. The psychomotor domain refers to students' abilities to perform technical motor skills that require cognition and physical movements. (Roh, Lee, Chung, park, 2013, Tuzer, Dinc, elcin, 2016). Nurses' performance in these three domains can be improved by enhancing learning processes and increasing opportunities for them to practice their skills in order to accomplish clinical and academic learning outcomes. Educational objectives should be defined clearly and trainings must have a measurable outcomes. (Kameg, 2010).

Nursing student often report that they feel anxiety when they try to transform their knowledge into clinical practice in the laboratory (Roni, 2011,) Teachers have the ability to create a method and utilize techniques to enhances students' motivation to learn, allowing students to demonstrate their mastery of learning outcomes. However, students may feel anxiety during clinical practice due to a lack of familiarity with the environments in which complicated technological devices and tools are used (Ozturk and Dinc, 2014).

Use of information technology such as virtual learning and simulations can overcome the challenges faced by teachers in imparting quality education. This approach is increasingly being recognized globally as an effective way to enhance students' knowledge and skills (Austin and Balasubramanian, 2012; Moazamial, 2014 dalam Lahmangaihi, Fallavi 2018). The simulations help students prepare for the clinical placements where they encounter real patients in real clinical environments (Hall karen, 2017). Using high fidelity mannequin simulations, the lecturer can invent practical, true-to-life scenarios regarding cardiovascular and respiratory health problems. For instance, students can apply their knowledge of respiratory problems in a realistic setting as they care for a mannequin patient, checking his vitals, listening to his lungs, deliberating the appropriate medication that should be delivered, and administering nebulizer therapy (Kie, 2015).

Studies have shown that high fidelity mannequins improve the physical examination skills of students and provide the opportunity for them to learn in environments that more closely resemble realistic ones, mimicking clinical situations (Tiffen et al., 2011; Levett-Jones et al., 2011; Lucktar-Fludeet al., 2012) and allowing students to develop effective communication and improve their assessment abilities (Hall, 2017). However, students may feel stress during practice due to a lack of clinical experience, or a lack of familiarity with the advanced technological devices and tools that are used (Ozturk and Dinc,2014). In the present study, the researcher integrated the simulation and high fidelity mannequin (Sim Man 3G) in order to identify improvements in knowledge and skill of nursing students after practicing nebulizer therapy.

The study objective was to identify a difference in the degree to which high fidelity simulators improve nursing students' knowledge and skill after practicing nebulizer therapy.

II. METHODOLOGY

This quasi-experimental study used a pre- and post-test design. The target setting was the Faculty of Nursing at Syiah Kuala University in Banda Aceh, Indonesia. This faculty was purposely selected because it has access to high fidelity mannequins and wishes to integrate them in the nursing curriculum because the Objective Structural Clinical Examination (OSCE) will be held in 2019. This test uses a standard, high fidelity mannequin like those found at the Faculty of Nursing (Sim Man 3G).

There were all 110 second-year students who met the inclusion criteria included in this quasi- experimental study. The inclusion criteria including, the participants were second year studennt, aggree to participate in the study, and sign inform consent. The samples practiced nebulizer therapy using the high fidelity manequin Sim Man 3G during a two-week period. A pilot study was conducted to evaluate the feasibility of the protocol. The protocol consisted of guidelines of practice that were developed and modified by the researcher and peer group. In the pilot study, 15 students met the inclusion criteria and joined the practice. The form of Nebulizer Practice Scale consisted of 14 checklist procedures that assessed students' soft and hard skills. Each item was measured using criterias (0 = not doing anything, 1 = incomplete performance, 2 = correct performance). The Nebulizer Knowledge Questionnaire (NKQ) consisted of 17 statements which measured students' abilities using dichotomous criteria criteria (0 = incorrect, and 1 = correct). The pilot study ensured the steps and procedures in the follow-up study were strictly followed. Firstly, the students were shown the correct way to administer nebulizer therapy by a lecturer. The lecturer introduced Sim Man 3G functions and abilities. Moreover, the lecturer performed and showed students how to practice nebulizer therapy using this mannequin. After this skill demonstration, students were asked to practice nebulizer therapy using Sim Man 3G. Generally, the results and methods of this nebulizer therapy practice demonstration were applicable to the present study. Moreover, the study conducted within 2 weeks including preparation, teaching process, and study process.

Content validity was applied to test the instrument validity. The NPQ and NKQ were validated by three experts in adult nursing, administrative, and fundamental nursing from the Faculty of Nursing at Syiah Kuala University. All experts agreed on the validity of instruments after proposing corrections. Before implemented, the instruments were reviewed by ethical board from Faculty of Nursing Syiah Kuala University.

The demographic data were described using frequencies and percentages. All data were measured and treated as continuous variables for normality and homogeneity of variance when needed. The normality was determined by dividing the skewness and kurtosis by their respective standards of errorand results less than 3 were considered acceptable levels of normality. The Kolmogorov-Smirnov test was also used to assess normality. The homogeneity variance was determined using Levene's test.

III. DISCUSSION

The result of present study showed that the student. The average age of the students was 18 years of age (82.7%), and the female students were higher (90.9%) than male (9.1). The demographic characteristics did not differ significantly between the experimental group and the control group.

Table 4.1 Demographic Characteristics of the Experimental and Control groups (N=110)

	Characteristics	*Experimental group (N=110)*	
		N	*%*
1.	**Age (years)**		
	18 years old	91	82.7
	19 years old	19	17.3
2.	**Gender**		
	Male	10	9.1
	Female	100	90.9

The data analysis used paired sample t-test to identify there was a significant difference of practicing nebulizer therapy using high fidelity on knowledge of students before (M=4.55; SD=.85 and after intervention (M=5.69; SD=.97), t (-10.25), (P=.000). The results of this study support the hypotheses that practicing nebulizer therapy using high fidelity mannequin showed there was a significant difference in degree between pre-test and post-test scores of practicing nebulizer using high fidelity mannequins when measuring for knowledge. The study's findings also supported the second hypothesis that there would be a significant difference in the skill of students when practicing nebulizer therapy using high fidelity mannequins before (M=64.39; SD=4.05) and after intervention (M=66.76; SD=3.61), t (-4.20), P=.000)). The result of this study revealed that practicing nebulizer therapy using high fidelity mannequins was more effective at improving the skill of students as demonstrated by the higher pre-test and post-test scores. The present study also revealed that using high fidelity mannequin to improve the skill and knowledge of nursing students at administering nebulizer therapy is effective.

Table 4.2 The Effect of High Fidelity Toward Skill and Knowledge Before and After Practicing Nebulizer on Nursing Student (N=110)

	High Fidelity Mannequin (N=110)		*t*	*p*
	M	*SD*		
Pre-test knowledge	4.55	.85	-10.25	.000
Post-test Knowledge	5.69	.97		
Pre-test Skill	64.39	4.05	-4.20	.000
Post-test skill	66.76	3.62		

There were several positive outcomes of this study, such as allowing students to increase soft and hard skills while practicing with the high fidelity mannequin. Using high fidelity mannequins enables students to communicate interactively in terms of procedural explanation and when giving patient feedback. According to Leardal (2017), Sim Man 3G an interactive high fidelity simulator that might response during student practiced. The lecturer or instructor can respond and play a role as a patient without observing the student directly during practice in the clinical skill laboratory. The interactive communication with the Sim Man 3G will enable the student to develop their soft and hard skills, allowing them to practice their bedside manner and explaining the purpose of interventions. Sstudents take care to respect the ethics and values of nursing when performing interventions on the Sim Man 3G because of its human characteristics.

The present study combines virtual simulation and high technology mannequin (Sim Man 3G) that controlled by computer software and connect via wireless to the mannequin. Previous studies have revealed the positive outcomes of using simulations and high fidelity mannequins, such as building caretaker self efficacy (Shinnick et al., 2011), critical thinking, communication, confidence, and satisfaction (Hall, 2017). Virtual patient scenarios provide safer practice opportunities than treating real patients (Lin et al., 2012). Students trained with a high fidelity simulator performed better on knowledge-based assessments (Smithburger et al., 2012).

However, other studies showed that students perceived a lack of realism when using the high fidelity simulator (Lucktar-Fludeet al., 2012). Ozturk and Dinc (2014) revealed that students may feel stress and anxiety during practice due to a lack of familiarity with the advanced technological devices and tools are used. In this study, the instructor introduced and explained how to operate the Sim Man 3G, and simulated how to administer nebulizer therapy. Students were more efficient during practice when using Sim Man 3G because these mannequins have integrated vital sign monitors and respiratory and cardiovascular systems that can be clinically measure and are shown digitally. Nursing students were more effective during practice in laboratory when using these simulators (Leardal, 2017).

There were limitations of study. Firstly, the study was conducted only using one group session with a pre- and post-test design. Secondly, due to a limited number of of high fidelity mannequins available, data was collected over two weeks This represented a variation in time when data were collected per participant, requiring multiple sessions

IV. CONCLUSIONS

Students' knowledge was shown to be higher before and after practicing nebulizer therapy when using high fidelity mannequins. Moreover, the study supports the hypothesis that there is a difference in the degree to which high fidelity simulators improve nursing students' knowledge and skill before and after practicing nebulizer therapy..

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"TOEFL Score, is it as scary as you think?" A QUALITATIVE STUDY OF NURSING STUDENTS' OBSTACLES TO GAIN SUFFICIENT TOEFL SCORE

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Abstract: Learning English for nursing students as one of compulsory subjects in nursing faculty of Syiah Kuala university make students nurse to pass the whole English subjects. Having enrolled onto four main English subjects during their studies, majority of students still deal with issue to gain TOEFL score as 450 which is stated as the requirement before their graduation. The purpose of the study was to identify learning obstacle and the strategy of English on nursing students since English as their second language and to obtain sufficient score in TOEFL test. The sample was 34 nursing students in the 8th semester which had sat on TOEFL test before their final subject, i.e. mini thesis. To collect the data qualitatively, the students were interviewed with 13 structured questions. The data were transcribed and analyzed. The results showed that 50% of the students were able to pass the test in the fourth test. Although all of them realized that English is essential to support their career in the future, they confessed that TOEFL treatments and score-crosses are the reason they passed for the TOEFL. Additionally, 88% of the students believed that the available English facilities in the university are insufficient to increase their TOEFL score. From this study, it is recommended that the university increase teaching and learning process particularly TOEFL section and improve facilities such as intensive course and try out.

Keywords: Learning English, obstacle, nursing students, TOEFL score.

I. INTRODUCTION

Since TOEFL score up to 470 as the students' requirement to finish the study in Syiah Kuala University, it has been debated continuously. Though the university's

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regulation keeps being revised, students especially non-English students have lack of the language proficiency. For instance, Nursing Department which is not taught English intensively in classroom believes that the score is too high. In fact, the university has determined 7 credits as curriculum for them during their study for 8 semesters. Prior graduation, students need to fulfil the English requirement i.e. pass the TOEFL test. Theoretically, it has no matter to gain sufficient score before graduation. Therefore, the issue of most students is not able to achieve the determined score in once test was emerged.

To pursue the successful learning, students must design some strategies both on learning and testing. Each of sections on the test brings different experience. It means that student needs to recognize his/her ability for answering the questions. For example, on reading section, it was investigated some difficulties and strategies in by Samad, Jannah and Fitriani (2017). The findings of their study suggested that before taking the real test, each of students needs to know the reading difficulties thus they can improve their learning strategies.

In language testing, validating a test means a capability to establish a reasonable link between a test-taker's performance and his/her actual language ability. Although the absolute measure of validity has been claimed, several different kinds of evidence to support it may be applied. Five types of validity evidence are stated by Brown (2004, p. 22–27).

In the other place, Vu and Vu (2013) showed that 48% of their participants voiced TOEFL scores as an accurate and reliable test predicted for the university students. In their study, it was found no significant correlation between the students' TOEFL scores and GPA. In addition, Akbari (2016) stated that Iranian students think English as a subject that they have to learn, and it is a duty therefore students do not have pleasure in learning English. Lee (2016 cited by Hou in 2017) also found nursing students were recognize of the significance of English in their nursing practicum and even felt that their familiarity with English can give influence the process of their nursing duties.

II. METHODS

The study used semi-structured interview on 34 students who were in the fourth year in nursing school of Syiah Kuala university. Participants were collected randomly which had criteria: nursing students who were accomplishing the whole English subjects and studied on the 8th semester. Participants were interviewed with 10 opened-questions. The authors interviewed respondents according to the questionnaire. After collecting the questionnaire, authors checked the completeness of the answer then made transcription, analyzing and grouping data based on the similar answers. the first part of questionnaires consists of socio- demographic information; age and gender. After accomplishing data, the authors grouping result based on the similarity answers using excel program.

III. RESULTS

Respondents Characteristics

Demographic data showed that there were four male students and 30 female students with the average age was 22 years old (55.8%) while the least age of respondents was 23 years old (8%). The finding categorized into English favor including the students' problem during the TOEFL test and academic and facilities contenting the students' suggestion to the English program.

English Favor

Overall, student nurses like learning English. The highest answer showed 94% (N=32) like learning English. *I like to study English because I can pursue my higher education and easier to get a job.* The highest score of nursing students like learning English is 23% (N=8) showed with reason *want to pursue education and get a job.* Meanwhile, the next question was delivered about the score they got. Among the whole participants, 32% (N=11) got TOEFL score less than 450 and 23% (N=8) got TOEFL less than 400. The number of participants take TOEFL more than 4 times was 17 participants (50%). Conversely, there was 2 participants took and passed TOEFL test in once time.

Reasons participants passed and did not pass TOEFL test showed that 23% (N= 8) answered they did not know reason passing TOEFL test. Meanwhile, the same percentage (23%) gave answer that they could pass the test because of getting used to TOEFL questions. Participants were able to pass TOEFL test with learning strategy (73%) including often listening TOEFL practice, memorizing vocabulary, often reading, took TOEFL course and practicing online TOEFL test.

Academic Facilities

There were 26 participants (76%) told that the number credit for English subject was not sufficient to prepare themselves to pass TOEFL test one time in their last semester. In addition, 30 participants (88%) told that not enough facilities to support learning TOEFL during their study in university. However, only 3 participants said *listening practice for TOEFL seldom to be carried out* and 3 participants said *shortage meetings and explanation.* For the question "is TOEFL important for nursing students?", 100% answered yes with 47% (N= 16) to pursue higher education. Meanwhile, 26% (N=9) said that student nurse was the one responsible for their insufficient TOEFL score. Participants gave suggestion for institution to improve TOEFL lesson and learning process and teach learning strategy to prepare TOEFL test.

IV. DISCUSSION

In general, a test reflects the classroom activities. Since language testing has been issued in second language students particularly, some strategies keep developing and

improving to deduct the matter. TOEFL as a familiar English test in Indonesia has been threat for university students in their final year. In the nursing department of Aceh, the data found that all students (100%) believed TOEFL as an essential test. This appropriates with the students' answer of their enthusiast in learning English (94%). The students' confessions about the test and their joy of English acquisition process is interconnected though, 50% of them needs more than four times to achieve the sufficient scores. Assuredly, it indicated several problems during the process of language proficiency. In Makassar, Mahmud (2014) found the students' problems to answer the TOEFL test. Those are fewer English basic skills, less practice, less motivation and students' individual differences.

A test brings both positive and negative impact. In this study, although the students well-understood of English profit, they provoke the curriculum changing. The majority of students (76%) explained that the number credit for English subject in the Nursing Department was inadequate to support them to pass the test at one time. Munandar (2019) also supported that the test has to be appropriate with the students' need. If it is necessary, the school syllabus must be revised due to social importance. Furthermore, most of them (88%) revealed lack of learning facilities in the university was the problem to be successful in taking the test. To overcome the matters in this issue, each of department in the university need to review and reconstruct the English program particularly English teaching and learning activities. As Ismail, Moriyanti and Yusnida (2019) found that teaching technique should not be limited on certain technique. The teachers were suggested to develop their teaching styles to create students' higher thinking during the test. At last but not least, this study recommended that the students need to have not only more learning TOEFL intensively but also having the test before the real one such as prediction test.

V. CONCLUSION

Although undergraduate students in nursing faculty believed that English is essential for their education, the data finding showed 50% of them need about four times to pass the TOEFL test, and only 6% who passed TOEFL test in once time. The results of the test described teaching learning activities in the classroom. Moreover, the scores indicated the students' problems on achieving the sufficient score. The university need to increase teaching and learning process particularly TOEFL section and improve facilities such as intensive course and try out. Faculty should be able to determine through direct interactions with students, specific barriers related to each specific group of students.

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DEVELOPMENT OF DIABETES SELF CARE ASSESSMENT TOOL (D-SCAT): CONCEPTUALIZATION AND ASSESSMENT OF SELF-CARE IN A REAL LIFE SETTING

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Abstract: Background: Self-care is a critical component in the management of type-2 diabetes to prevent poor glycemic control and diabetes-related complications. In order to achieve an ideal state of characteristics of diabetic's patients that is; reflective, knowledgeable and sufficient in self-care, a person must be motivated, and anticipating in their daily choices. Supporting the patients to reflect in a structured and targeted education may increase patient's performance in self-care. It can be promoted through situation based discussion and regular assessment. However, there has been a lack of conceptual clarity regarding self-care in a psychosocial environment of population in this study, thus lack of adequate measurement to help them reflect and make a rationale decision for their daily self-care. Objectives: This study describe a process for conceptualizing and operationalizing the meaning of self-care in the existing environment and define the process used to develop a measure for assessing self-care and the psychometric properties of that measure. Methods: The Diabetes Self-Care Assessment Tool (D-SCAT) was developed for State Registered Nurse (SRN) to facilitate patient reflection on daily decisions of self-care behavior in the existing psychosocial settings. Such instrument helps patients to reflect on his/her personal daily choice and preference of self-care for future improvement. This study used convergence of findings from the views of multidisciplinary clinical experts and patient focus groups to define the concept and identify the domains of self-care to be included in the assessment instrument. These domains were operationalized by constructing a large item pool for each identified self-care domain. The developed items were pilot tested and initial psychometric analysis was performed using the factor analysis methods. A pilot study was used for feedback on item content and suggestions for refinement with a sample of 11 multidisciplinary healthcare professionals and 30 registered nurses from three continuous professional educational (CPD) programs. A total of 77 SRN completed a refined D-SCAT measure using face-to-face survey method. Internal consistency estimate was measured using Cronbach's alpha (0.86).

Keyword: Self-care, self-help, patient activation, self-management, self-care engagement

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I. BACKGROUND

The new standard of care guidelines for type 2 diabetes put patients as the key role in achieving the consistent self-care behavior and daily glycemic control. First, a care plan that is patient-centered in which, it should be developed based on patient's choice and preferences to maintain daily self-care and improve glycemic control. This approach assumes that patients will make a better decision in daily self-care and self-care choices when they are given the freedom to choose the type of self-care with continuous motivation along with access to quality information and guidance from the healthcare providers. This approach also assumes that a combination of ongoing motivation and relevant information will increase self-reflection on their self-care behavior (Ferrante et al. 2010). Second, the Chronic Illness Care Model (Bodenheimer et al. 2010) highlights the importance of patient-centered care, with the involvement of family members as part of the care team for patient with chronic illness. A critical component in the model is activated patients; with the skills, knowledge and appropriate motivation that is essential for them to participate as effective members of the care team (Van Gemert-Pijnen et al. 2013). This situation raises the question of *what would be required for patients to become an effective 'self-manager' of their diabetes illness*? *What skills, knowledge, and motivations the patient needs to 'self-reflect' on their daily self-care*?

These are vital questions considered in developing strategies to improve the care delivery process, clinical outcomes and daily wellbeing for people with type-2 diabetes. This is because patients need the continuous and ongoing care in maintaining their own functioning and take priority of their self-care behavior in everyday life. However, although self-care and self-management is a central concept in various standard of care for type-2 diabetes and the chronic care model (CCM), the concept remains conceptually and empirically underdeveloped. There is still a lack of clarity on self-care concept in a population of many countries especially Malaysia, and thus, a lack of adequate measurement.

Method of assessing self-care behavior varied. These include Summary of Diabetes Self-Care Activities (SDSCA) (Toobert et al. 2000); Diabetes Self-Management Questionnaires (DSMQ) (Schmitt et al. 2013) and Patient Activation Measure (PAM) (Hibbard et al. 2004). However, these measures are quite lengthy and time consuming to be completed by patients especially for the elderly. Moreover, there is limited number of the existing measure that taking into account the busy workload of the primary care healthcare provider which limiting them to assess patient's self-care as part of their routine assessment.

In this paper, the author describes the development of Diabetes Self-Care Assessment Tool (D-SCAT), a rapid measure of self-care that is grounded in conceptualization and appropriate psychometric methods.

Theory of Planned Behavior to Promote Self-Care Behavior

Theory of Planned Behavior (TBP) was established by Icek Ajzen which included perceived behavior control on theory of reasoned action proposed by Martin

Fishbein and Icek Ajzen (1980). Perceived behavior control was originated from Self-Efficacy Theory (SET) proposed by Bandura (1977) and came from his Social Cognitive Theory (SCT). According to Bandura, individual's expectations such as motivation, performance and frustration feelings due to repeated failures determine behavior reactions of a person. Expectation has two types; self-efficacy and outcome expectancy. Self-efficacy was defined as the conviction that a person can successfully execute the required behavior to produce the outcomes. Meanwhile, the outcome expectancy refers to a person's estimation that a given behavior will lead to certain outcome. Bandura further stated that self-efficacy is the most important precondition for behavioral change, since it determines the initiation of coping behavior. However, regardless of the theory used, majority of research conducted to date focusing more on a single, individual behavior. Whilst in reality, patients are routinely instructed to make multiple lifestyles behavior change simultaneously in order to attain successful outcomes.

II. METHODS

Study Setting

This study was conducted in Negeri Sembilan that is located in the central region of Malaysia. Its population is made up over one million of multiracial population with majority are Malays 61.5 percent, 22.9 percent Chinese, and 15.1 percent Indians, while other ethnic groups make up 0.5 percent. Among the states in Malaysia, Negeri Sembilan is well-known for its unique culture and traditions which is stems from the Law of *Perpatih* (*Adat Perpatih*) that brought over from Minangkabau, Sumatera Indonesia in the eighteenth century and passed down through generations. The Law of *Perpatih* is also modeled the monarchy system of state government. In Malay culture, *Adat Perpatih* is interpreted as a symbol of unity and protection for its subject. According to them', '*culture bring out the good and eliminates the bad'* and these serves as a systematic rule based on community harmony. Culture is not just about marriage, eating, and coronations, but it is a way of life that should be nurtured and protected until today. These cultural beliefs have strongly influence their perception of health and quality of life.

Negeri Sembilan are among the states in the Peninsular Malaysia recorded the highest rates of diabetes prevalence (15.3%) (Minhat et al., 2014). Survey conducted on adult Malay living in the rural community of Negeri Sembilan revealed of poor understanding related to diabetes among the study population. Poor knowledge and understanding was likely related to the small involvement of patients in diabetes education and intervention program; and the fact that diabetic education in the health centres only conducted for those attended the hospital and clinic visits. Ideally, a more comprehensive approach should be conducted targeted especially those with high risk such as family members as part of the primary prevention program.

The D-SCAT was Developed in Five Stages:

Stage-1: Conceptualization Phase: defining self-care which involved reviewing literature, focus groups with people with type 2 diabetes and healthcare professionals; and consulting with multidisciplinary experts using consensus method.

Stage-2: Item-development: preliminary scale development began with building on the domain identified in the stage-1 and operationalizing them with survey items within each domain. The process including; generating, refining and testing a large item pool from patients focus group interview and review of the previous instruments.

Stage-3: Determine the Scaling Method of Assessment Instrument: scaling method was determined based on the purpose and the used of the assessment instrument through a review of the previous similar instruments. Thurstone scale – the unidimensional scale was used in this study for the purpose of keeping tract the patient's self-care behavior. The draft of self-care assessment instrument was then prepared for a pilot testing. This study used factor analysis psychometric methods to develop the scale and test the preliminary instruments psychometric.

Stage-4: Pretesting of the Draft of Self-Care Assessment Instrument: pretesting of draft instrument was conducted in two steps; step one, perception of the Registered Nurses (RNs) on the importance of item-construct to measure self-care behavior in patients with type-2 diabetes were obtained during the continuous professional development (CPD) workshops at three different contact time. The importance of each item was determined through a percentage of respondent's response for each item. This is followed by pretesting of the complete drafts of self-care assessment instrument to a selected group of RNs at one private hospital. Instrument revision was done following feedback from the respondents.

Stage-5: Pilot Study and Psychometric Analysis: the draft of Diabetes Self-Care Assessment Tool instrument was implemented to a group of the Registered Nurses (RNs) and their patients with type-2 diabetes who were admitted during the time period of data collection at one of the private hospital in Seremban, Negeri Sembilan. The reliability of the developed instrument was tested using test-retest reliability method and Cronbach's alpha for internal consistency method.
This paper describes the conceptualization phase of the development process.

Conceptualization of Self-Care Concept

This study employed hybrid concept analysis method to define a concept of self-care in type 2 diabetes which considers the inclusion of patient's perspectives that allowed for generation of a more patient-centered definition of the concept. The method consists of three phases of data collection; theory, fieldwork and analysis (Hibbard et al. 2004). The fieldwork process in this study involved patients and Diabetes Nurse Educators through focus group interview. The in-depth interview was conducted with the multidisciplinary experts using the expert consensus.

The data from literature review and focus group were analyzed using the Domain Analysis Method. This method help researcher develops the concept emerged from literature, focus group and in-depth interview into taxonomy according to a specific domain. The raw statement emerged from both literature and focus group was presented using a theme table. The domain identified at this stage informed the preliminary development of instrument in stage two. Finally, the list of self-care concepts and its dimension emerged from this process were later presented to the Panel Expert and reached agreement on the domain and constructs to be included in the self-care assessment instrument.

Step-1: Literature Review

Methods: Literature selected for this review involved local and international publications from the disciplines of nursing, psychology and medicines; established diabetes guidelines and nursing theories. The main purpose of literature review was to explore self-care attributes from published literature and established diabetes organization that can assist patients with type-2 diabetes achieved their glycemic control. Two independent searches were performed to identify relevant articles using the open access database PubMed, Ovid Medline, CINAHL and Google Scholar, and limited to the years 2008 to 2014. Keywords were ‘self-care’ AND ‘self-management’ AND ‘type-2 diabetes’ AND ‘self-help’ AND ‘adherence’ AND ‘compliance’ AND ‘engagement’ and ‘intervention’. Articles were limited to ‘adults only’. Of the 201 papers that met inclusion criteria, 110 papers included a specific theoretical perspective that guided or influenced the approach to the self-care assessment in this study.

The most frequent used theoretical frameworks includes; Self-Efficacy Theory (Bandura, 1977), Chronic Care Model (CCM) (Wagner et al. 2001), Patient Activation (Hibbard et al. 2004), Orem Self-Care Theory (Orem et al. 2011) and Middle-Range Theory of Self-Care (Riegel et al. 2011). Since this study is focusing on self-care concepts from the nursing perspectives, Orem’s Self-Care Theory and Middle Range Theory was considered to guide the understanding about self-care in people with type-2 diabetes and provide guidance in the development of self-care assessment instrument in this study.

Findings: The review of literature indicates that patients who are success in their self-care are most likely to have a better glycemic controlled and health outcome (Funnel et al. 2007). This can be determined through their psychosocial, personal and physical attributes (Bandura et al. 2011). In Social Cognitive Theory (SCT) (Bandura, 1989), Bandura suggested that if we want to know about one behavior, it can be done through four factors; goal, outcome expectancies (OE), self-efficacy and socio-structurally variables (Bahn, 2001). This theory helps the researcher to stay focus within a topic under research. OE has three dimensions; physical, social and self-evaluative. In this study, the discussion of self-care concepts and its measures is referring to these three dimensions as suggested by Bandura (2011).

The main principle underlying self-care include, decision making, reflection and support from the healthcare professionals. However, patients rarely use such methods to make a rational decision and rarely generate and compare options in a systematic way. Reflection is related to the acquisition of knowledge and both are important in self-care. Persons with little or no knowledge of the rationale for personal care may be insufficient (Luszcynska et al. 2005). Unfortunately, there are many people who do self-care activities without knowing the reasons behind it.

To summarize the review of literature, successful self-care must be; 1) reflective and have a high level of internal and external motivations, 2) participate in daily decision of self-care, 3) knowledge and skills in managing the daily fluctuates of blood sugar, 4) engage with daily self-care activities that maintain physical functioning, 5) coping with daily social influence on self-care activities, 6) knowing what and how to make reporting about self-care to healthcare professional (Bandura et al. 2011). These concept dimensions become the basis on the analysis of focus group interview with type-2 diabetes patients.

Step-2: Focus Group Interview

Focus group interview were conducted separately with both; type-2 diabetes patients and followed by healthcare professionals. The purpose of focus group with diabetes patients was to seek a real picture of daily self-care practiced by diabetes patients in their existing environment. While focus group with the Diabetes Nurse Educators (DNE) was undertaken during the development process for refining and verifying the items content that to be included in the draft of self-care assessment tool.

Self-care concepts extracted from the literature was revised and reworded in a layman's term before used as the basis for patients focus group. Interview protocol was developed based on the key components of self-care that determine for better control of diabetes. Meanwhile, the discussion with Diabetes Nurse Educator, was guided by the interview questions that were prepared based on the themes emerged from patients focus group. The focus was on their challenges in delivery diabetes counseling to patients with type-2 diabetes and their reasons for not adhering to the recommended diabetes regimen. List of the specific question used in focus group interview are listed in Appendix 1.

Characteristic of Respondent Involved in Focus Group

There were ten (N=10) participants involved with patients focus group interviews. The focus group was arranged and organized in collaboration with the local community leader. Respondent were invited to attend the focus group interview at the end of one community program. Twenty of them attended the health talk program and ten stayed back for the interview. Average age of participants was 55.0 years; range of 40–70years old with ten males (33.3%) and the rest are female (66.7%). As for the healthcare professional, it involved six diabetes nurse educator at Diabetes Counseling Unit of one tertiary teaching hospital during the attachment of researcher at this unit for two weeks. Characteristic of patients involved in focus group are illustrated on Table 1.

Table 6.1 Characteristic Patients with Type-2 Diabetes Involved in Focus Group

Demographic	*Men (N=4)*	*Women (N=6)*	*Total (N=10)*
Marital status (no. of participants)			
Single/never married	0	0	0
Married	4	4	8
Separated/Divorced	0	0	0
Widowed	0	2	2
Unreported	0	0	0
Education (no. of participants)			
Less than primary education	0	0	0
Lower secondary school	1	2	3
Higher secondary school	1	4	5
Completed college or university college	2	0	2
Unreported	0	0	0
Employment (no. of participants)			
Part time/Self-employment	1	0	1
Unemployed/fulltime housewife	0	3	3
Retired	1	1	2
Fulltime working	2	2	4
Unreported	0	0	0
Length of diabetes (no. of participants)			
Below one year (newly diagnosed)	1	1	2
1yr – 3yrs	1	1	2
3yrs - 5yrs	1	1	2
5yrs – 7yrs	0	2	2
7yrs – 10 years	1	1	2
10 years and above	0	0	0
Unreported	0	0	0
Type of current treatments (no. of participants)			
Oral hypoglycaemic agent	3	3	6
Insulin injection	0	0	0
Combination of both (oral & insulin injection)	1	3	4
Unreported	0	0	0

Focus Group with Type-2 Diabetes Patients

Method: Patients focus group was conducted for further verification on the self-care practice of patients with type-2 diabetes in the existing environment. As for that purpose, the potential domain explored from literature review were re worded in layman's terms and used as the basis for a discussion on the two components of 1) reflective and have a high level of internal and external motivations, 2) participate in

daily decision of self-care, 3) knowledge and skills in managing the daily fluctuates of blood sugar, 4) engage with daily self-care activities that maintain physical functioning, 5) coping with daily social influence on self-care activities, 6) knowing what and how to make reporting about self-care to healthcare professional.

Findings: Results of focus group interview has two parts; results of patient's focus group, results of focus group with healthcare professionals and finally in-depth interview with multidisciplinary experts. There four self-care concepts emerged from this interview informed the development of self-care assessment instruments in the next stage of study; 1) self-care social obligation, culture and personal value; 2) self-care on daily function and reducing risks behavior; 3) self-care on managing the daily fluctuates of blood sugar; 4) self-care reporting to healthcare professionals. The examples of personal, psychosocial and physical attributes of self-care from the perspective of patients with type-2 diabetes are summarized on Table 2.

Table 6.2 Personal, Psychosocial, and Physical Attributes of Self-Care from the Perspective of Patients with Type-2 Diabetes in the Existing Environment

Patient's Statement	*Sub-themes*	*Themes*	*Domain*
Nagging from families cause distress and low motivation	Intra personal psychosocial factor	Psychosocial attributes (PS1)	Self-Care of Psychosocial obligations, culture and values (PS)
Nagging from family members reminding on diet causes emotional distress and feeling low motivation	Environment psychosocial factor	Type of psychosocial attributes of diabetes self-care	
Highly respect on social culture often cause dilemma. i.e. rejecting food served consider disrespect of a host.			
Desperately exercise when about to attend hospital visits to avoid being 'punished' by doctor	Psychosocial Barriers to self-care	Characteristic of psychosocial attributes on diabetes self-care	
Having difficulties to prioritize diabetes over daily social activities; work, family and personal commitment	High social obligation	Level of Psychosocial influence on self-care	
Preferred to have own choice of food or diet '*cheating*' in social gathering	Low social obligation		

Able to link activities with blood glucose variations only on a short term	Positivity	Coping with daily function	Self-Care on Maintaining Daily Functioning and Prevent Risk Behavior
No problems to avoid certain foods that may cause blood sugar high			
Not sure of the benefits blood sugar checks at home	Uncertainty personal experience	Knowledge on risks to daily function	
Taking risk without feeling guilty			
Having doubt in managing daily illness-related symptoms	Doubt of benefit	Benefit of self-care to daily function	
Having difficulties to identify the cause for the fluctuates of blood sugar	Information on blood sugar	Knowledge in self-monitoring	Self-Care on Managing Daily fluctuates of blood sugar level
Unable to appropriately experimenting with diet, exercise	Skills in managing self-care	Skills in self-monitoring	
Unable to appropriately reported of experienced hypoglycaemic episodes	Managing unpredictable event	Decision making in self-monitoring	
Tend to get information about disease from closest family members, friends and neighbours	Acknowledge of support from social network	Benefits of support	Self-Care on Reporting to healthcare professional
Social networks can enhance learning through real life experience as a role model**.**	Personal learning from social support		
Benefits from professional advices and other social networks	Respects of professional support	Respect of support	

Theme-1: Self-care of social obligation, culture and values

Social obligation is the first factor being highlighted by participants of the focus groups. Participants in this study have been shown to have elevated level of anxiety, depressions and other emotional reactions. The disease progress and challenges that the person embraces every day with unsuccessful efforts of self-care altered their self-esteem and self-confidence (Rivera-Hernandez, 2014). The adjustment to self-care

was influenced by other variables such as individual personality, availability of various types of support and their understanding and appraisal of their experience. Promotion of self-management skills could be useful to maximize the person's functional level and quality of life.

Theme-2: Self-care daily functioning and reducing risk behavior

Changing and making adjustment on a lifelong habit and choices in daily life are difficult process. Despite the knowledge and skills, confident level of a person is very important to success. This is because a person's capacity to maintain a complicated regimen of diabetes care has an effect on their self-management behavior.

Theme-3: Self-care managing daily fluctuates of blood sugar

Coping with unpredictability was a challenge and often come along with 'up' and 'down' of the journey which make a planning in everyday lives is more difficult. Additionally, with uncertainty, participants reported of their awareness about a known future of being diabetes (status and progress of the disease) but the situation/condition of that future is unknown because it is heavily dependent on individual factors and progression of the illness. Uncertainty and unpredictability is very much related with the stages of adaptation for self-care responsibilities. They would increase and decrease when the new stages were reached and managed as they moved through the fear of the unknown (Palinkas et al. 2011). The early stage of diagnosis expressed as being the most difficult in trying to validate the transitions from fluctuating conditions of illness to the phase of wellness and hoping for the symptoms would just go away whilst blood sugar is well controlled. These experiences presented the challenge of learning to accept, adjust and cope with the illness (Rucket et al. 2012).

Theme-4: Self-care reporting to healthcare professionals

Participants often talk about having difficulties in getting to understand the professional advice in such a limited time during the hospital visits. The way out is sharing their problem with friends, or family members who is having a similar disease condition. The role of family members in influencing self-care is undeniable. Respondents in this study reported on giving the priority to the wellbeing and stability of the family member rather than their own needs in self-managing their illness. This practice is undeniable because it is part of their culture, however it will somehow indirectly affect the self-management behavior of a person. This problem needs further exploration, how the family contextual issues make the care of type 2 diabetes unique and challenging.

Point of Departure: Focus group with type 2 diabetes patients was undertaken to explore further on their life journey after being diagnosed as diabetes in the light of personal, psychosocial and physical attributes of self-care. Participants in this study raised concern about being challenged in daily life such as neglected partners and taking back seats, not knowing them or their condition.

Due to these complexity of self-care, where patients need to adapt and make changes in their daily lifestyles, continuous learning is required. Learning to learn is therefore a crucial skill alongside accepting responsibility for self-care and quality of life. Reflection is therefore, is part of this progression process, and the development of reflective skills will help patients with the learning and acceptance of self-care responsibilities (Dye, 2011). Reflecting on self-care achievements can empower patients to make intelligent decisions about how to move forward with the needs of their self-care skills. However, the success requires continuous assessment, revision, and improvement in self-care performance. Bandura (1989) recommended for assessment of individual's capability should be measured across various domains of activity with different degrees of task difficulty and under different situational circumstances. He described self-care behavior as a results of cognitive processes that a person employ when acquiring knowledge. The development of personal plan for people with diabetes will enable them to interact more significantly with health professionals and set goals to success in self-care.

This can establish their independence, self-esteem, and strategy. It is observed that most support strategies in this country were developed based on a professional's care plan and pathway which were written by professionals with limited are shared with the patients. This study proposes for real consideration should be given to a self-care plan that mostly promotes patient's participation with professional inputs to enhance nurse-patient's relationships. This plan would also be useful to families in setting out the boundaries and support that they can provide to the person with diabetes.

Four self-care domain emerged from this interview; 1) self-care social obligation, culture and personal value; 2) self-care on daily function and reducing risks behavior; 3) self-care on managing the daily fluctuates of blood sugar; 4) self-care reporting to healthcare professionals. The descriptions of each domain is described on Table 4.4. These 4-domains of self-care informed the development of behavior items for each domain that needed by the patients to perform on everyday basis. Therefore, interview with the healthcare professionals was about; *what self-care behavior are needed by the patients to better manage their illness?*

Focus Group Interview with Diabetes Nurse Educators

Method: Focus group discussion with Diabetes Nurse Educators was undertaken at Diabetes Counseling Unit at one tertiary teaching hospital. It was to explore further from the nursing professional's point of view on the 4-themes emerged from the patient's focus group. Example of question asked: What usually the reason given by patients for not keeping up with the recommended self-care?

Findings: Patient's reasons for not keeping up with the recommended self-care can be divided into 3-parts; 1) reasons for having difficulties in performing a role as self-manager; 2) reasons for having a gap in communication with healthcare professionals; 3) reasons for the needs of support in the process of accepting and adapting their self-manager's role.

Theme-1: Reasons for patients having difficulties in performing their role as self-manager

There are a few reasons that affect patient's adaptation with their self-manager's role as reported by the Diabetes Nurse Educators (DNE). Patients do not aware of their own role as 'self-manager' and the reason of what, why and how they must self-manage their diabetes themselves. Some of them mentioned on preparation of them in taking the responsibility as self-manager as they are not confident of themselves doing so many changes in their lives at the same time while at the same time managing their emotional and psychological disturbances of having diagnosed with the disease; lack of self-efficacy and self-esteem. As a result, they showed lack of commitment and initiative in learning the new skills and strategies for continues improvement such as seeks support from others and resources.

Most of the time, they were feeling left out and feel lonely in going through the journey. Feeling less empowered with the new role in life lead them with low self-control in coping with daily challenges, taking appropriate decisions on self-management and thereby placing less value on their role as self-manager. This is because of the huge communication gap between the patients and healthcare professionals because they only see each other in 3–9 months with 10–20mins in durations during their scheduled appointment.

Theme-2: Reason for patients-professional's communication gap

Despites of having a log gap of hospital appointment, patients are also having problem in using the opportunity during their meeting with professional on the appointment day. Feelings annoyed to receive different advice and recommendations from different people every time of visit. Over time they become passive and keeping just silent. Keeping silent probably due to two factors; showing respect towards health professionals for their status and knowledge or feeling low self-esteem as being a person whom do not have knowledge, and afraid of making mistakes. The participants also noted on the lack of communication skills among the patients as they are not active in discussion and played a passive role with various reasons given e.g. unsure of how to express their problems. The hospital environments played an important role as some patients feeling uncomfortable to express their problem in an open room; noisy, staff are not focus in a rushing situation, no privacy etc. Providing privacy to the patient during counseling is one of the limitations faced by the participants in this study. It is inadequate as to compare the number of patients they see every day with the room condition for them to provide the counseling.

Theme-3: Reasons for the support needs in acceptance and adaptation of a role as 'self-manager'

Patient plays the most important role in diabetes self-management. They must participate actively in their own care. In doing so, they must agree to a certain condition; they must be able to accept the responsibility to self-managing their disease and adhering to care plan /treatment goals, they must have high commitment in getting

to know and understands about their own illness, care plan and their own role for making it success, they also must have a sense of willingness and self-motivation to learn continuously, on new skills and strategy to change own behavior, have a sense of self-control over the care and actively participates in decision making and planning; control over emotions, inner resources and abilities to manage imposes (inner driving forces) and strong communication skills and a sense of assertiveness to be able to inform the healthcare professionals when difficulties arises, any circumstances that interferes with the treatment planned, or even when the goal for glycemic control is not met (Wilkinson et al. 2014).

Summary and Recommendation

This finding provides the basis of understanding for the concept of self-care practiced by type 2 diabetes patients in the existing psychosocial context. This explorative study suggests that living with diabetes is an ongoing process and the experience may change over time as the disease progress and causes unpredictable daily life. These findings provide a few recommendations;

The Needs for Continuous Education, Coaching and Guidance

Continuous education and guidance will empower the patients to confidently play their role as self-manager. Therefore, continuous interaction with healthcare professionals is critical. However, patients' empowerment was often influenced by environmental factors such as the emotional status, spiritual efficacy, social, and cognitive life with diabetes alone. Many diabetes educators often ignored these part of care delivery aspects to type-2 diabetes patients. Findings of this study support the development of assessment instrument in this study by incorporating social support to help individuals develop skills and self-awareness in stress management, address problems, social support, goal setting, problem solving and motivation. Likewise, people with diabetes are also informed on how to use healthcare systems and other community resources that can help them with their diabetes self-care management. Successful 'self-manager', require not only a strategy to overcome problems but also personal skills such as self-leadership and good interaction with healthcare professionals. This view serves as the primary basis for researchers to understand the interaction of people with diabetes and their psychosocial environment (Wilkinson et al., 2014).

The Need for Professionals Support

Majority of participants expressed concern about their doubts on information they received from healthcare professionals which they described as too technical to understand. Their expectations for a relationship with a healthcare professional to be more as sharing and reciprocal information, and support in decision- making (Ambrosio et al., 2015). As a matter of fact, healthcare professionals can also be social networks where the people involved will feel attached as they are part of the process,

however, need to be cautious on professionalism role as a healthcare professional. With regard to professionalism, participants highlighted for reasons they did not ask for more during their diabetic visit because they were afraid to interfere with professional work and fear misunderstandings in their intentions. At the same time, they also raise concerns about the differences in expectations of care negotiations that cause some conflicts sometimes. Therefore, they decide to seek help from others like friends, family members or neighbors. This may put them at risk for decisions or suggestions that may be taken on insufficient information and that the value of support from others is justified.

Step-3: In-depth Interview with Healthcare Professional for Expert Consensus

Methods: The semi-structured interview was conducted individually and separately due to distance and time constraints. Healthcare professional were selected purposively based on their area of expertise; dietician, physiotherapist, pharmacists, diabetic educator and diabetic nurse educator. Questions asked were related to knowledge and skills needed by patients with type-2 diabetes to success in their daily self-care. Characteristic of healthcare professionals participated in in-depth interview are listed on Table 3.

Table 6.3 Characteristic of the Panel Experts

Professional Background	*Characteristic*
Physician Consultant at Tertiary Public Hospital (*N*=2)	Demonstrate national prominence in his area of expertise. Established researcher in the same topic of research
Clinical Psychologist at Tertiary Medical Centre (*N*=1)	Established researcher in a similar area of research
Dietician at Private Hospital (*N*=2)	National prominence in her area of expertise and active diabetes educator with National Diabetes Institute (NADI). Established researcher in community research for obesity and diabetes
Pharmacist (*N*=2)	Broad experience in working with diabetes patients, industrial pharmaceutical company and community. Master Student doing research in a similar topic.
Physiotherapist (*N*=1)	Academic staff with broad experience providing home rehabilitation for people with chronic illness including diabetes. He is also a Master Student doing research in a similar topic
Diabetic Educator (*N*=4)	Involved in diabetes education and counseling in a various setting; in-patient, primary care setting and community

Themes

The 4-themes emerged from patient's focus group became the basis of the discussion with multidisciplinary healthcare professionals in a respective area; general skills, managing daily medication, physical activity; and meal and nutrition. The summary of basic knowledge, skills and behavior needed by patients to manage self-care in type-2 diabetes were listed on Table 4.

Table 6.4 The Basic Knowledge, Skills and Behavior Needed by Diabetes Patients for Self-Care from the Perspective of Multidisciplinary Healthcare Professional

Category	*Knowledge, Skill and Behavior of Self-Care*
General	- Reporting to healthcare professional – routinely assessed, strengthen and diagnosed understanding and increase motivation - Managing diet and routine activities of life: prepare a healthy meal as routines, activities to manage weights if the individual is overweight and regular physical activities - Maximizing glucose control and manage daily fluctuates of blood sugar, minimizing side effects of treatment, for example, hypoglycemia - Reduce risk of behavior to prevent complications, such as early recognition and management of hypertension. Early treatment is required to control lipid levels and consider of antiplatelet therapy as well.
Medication	- Managing medication intake. - Drugs are customized prescribed, thus must learn only from healthcare experts that qualified and well equipped. - Knowing to consider the load of medication and reduce polypharmacy - Understanding on the drugs dosage, why doctors start with low dose and gradually increase the measurement overtime, including the effect to kidney and liver. - Taking medication time must match with meals times if patients are taking insulin or sulfonylureas to avoid hypoglycemia
Meal & Nutrition	- Plan of meals to match with own food preference, routine eating schedules, religion and culture belief; and physical and intellectual status. - Incorporate daily meal plan with a variety of foods to ensure sufficient amount of essential vitamins, mineral, protein and carbo with the correct food portion of each - Enhance nutritional and functional status in fragile adult with diabetes by prioritizes food with high protein in daily meals - Principle in meals planning is, the amount, type and timely.

Physical activity	- Doing proper exercise plan, match with drug regimen taken to avoid hypoglycemia. - Make exercise as something fun, enjoy as this component of self-care that mostly neglected - Learn and begins with some home-based workout program which is low-force to enhance physical execution - Seeks partner for exercise. The most effective and secure support for exercise is from partner or family members - The principle in activity planning is, the type of activity, the intensity, length and regularity.

Summary and Recommendation

Although it has been recommended in the literature for the important of patients with type-2 diabetes practice the 7-self-care behavior, in a real practice, it is too complex for the patients. It is evidenced that, if the patients can consistently practice the 3-core behavior of self-care; medication plan, exercise plan and meal plan, on a daily basis, there potentially achieve their blood sugar controlled (Ambrosio et al. 2015; Cukor et al. 2007; Whittemore et al. 2008).

In-depth interview with healthcare experts in diabetes management were conducted as information on managing self-care in the existing psychosocial environment is underdeveloped. There are three areas of self-care focused in the interview with physician, dietician, physiotherapist and pharmacist; healthy diet, physical activity and taking medication in type-2 diabetes. All patients were mainly given the information about this 3-area of self-care practical when they are newly diagnosed and subsequently during the hospital visits on a referral basis by the physicians. Indeed, ideally there seven self-care behaviors reported in the established guidelines and literatures, but in their experience working with diabetic population living in the existing psychosocial environment, getting them consistent with one behavior is also difficult.

Various factors cause this phenomenon. Family commitment, social obligations, personal values, culture and lack of professional supports are among the barriers to successful self-care practices.

Expert Consensus

Findings: The results of the first round with 3-experts from the discipline of nutrition and diet, physiotherapist, and pharmacists were consulted for the 3-core self-care domains; Meal and Nutrition, Physical Activity and Taking Medication. On the basis of this expert feedback, the original items were altered slightly to follow the principles of the Plate Model which considered simple and easy to follow; such as with the physical activity and taking medication, to follow the basic principles of “being active” and Medication adherence.

Clinical Psychologist were then approached to review on the behavior items, paraphrasing and modify whenever necessary. This includes the items within specified domains of self-care. The experts rated and ranked ordered the importance of each domain, sub-domain and items within each domain. The summary of expert consensus was identified in Figure 1.

Patients Skill to Self-Manage Social Obligation, Culture and Values
Sub-domains
1. Choose healthy food when eating outside
2. Prepares balanced diet when entertaining visitors
3. Choose type of activity that convenience
4. Perform physical activity during a busy day
5. Perform physical activity even without support from family or friend.

Figure 6.1 The Example of Sub-domains, Within the Self-Care Social Obligation, Culture and Values Determined by the Experts

In the second round of expert consensus, the modified set of sub-domains that more clearly defined were given to the expert respondents.

The experts ranked ordered the importance of each domain before determined the sub-domains. The domain and sub-domains that were determined through expert consensus are summarized in Table 2.

Findings: Experts were in agreement in most of the domains emerged from patients' focus group and the sub-domains recommended were in line with the knowledge, skills and behavior needed by patients for successful self-care.

Based on the results from in-depth interview with healthcare professionals, patients' focus group and the expert consensus, thereby derived the conceptual definition of self-care in type-2 diabetes in the existing environment as; those patients who are reflective, often have better skills in making daily self-care decision. They always seek help for better high quality of care, with/without the presence of healthcare professionals and maintain their daily functioning as much as their can. This definition was used as the basis for developing the measure.

To operationalize these domain and sub-domains item pool was constructed which were then categorized under the domain they were intended to measure. Pretesting was conducted with the Registered Nurse (RNs) at one of the private specialist hospital with their type-2 diabetes patients.

Diabetes Self-Care Assessment Tool (D-SCAT)

The Diabetes Self-Care Assessment Tool (D-SCAT) is a form of rapid assessment tool for direct assessment and suitable for the implementation in the busy clinical setting for the purpose of a quick diagnosis and monitoring the self-care practice.

The patient's information is collected through directly personal interview. The tool consists of a standardized and structured statements designed to elicit information from a client about their self-care practice for the past seven days or one week. It is standard and thus, it does not change overtime or from one situation to another. The same statements will be presented the same way each time a D-SCAT is administered.

Thurston Scale

Thurston scale was developed by Robert Thurston in the late 1998's to approximate measurement in equal-appearing interval levels (Meyer et al. 2006). It was built based on the fundamentals of Likert scale initially but taking consideration the neutral value of each item.

In D-SCAT, every item is given median scale value between the highest and lowest value as set by the panel of experts. The questionnaire was then consisting of three parts; socio demographic data, clinical status data and the 4-domain of self-care activities; daily meal plan, daily activity plan, daily medication plan and monitoring plan. Data was collected by direct patient interview using structured and standardized questionnaires by the Registered Nurses (RNs). All self-care practices were divided into three categories based on the following; the rank below 0.5= poor, 0.5–0.75=moderate and 0.75–1=optimal except for medication taking practice 0–0.75=poor and 0.75–1=optimal. The formula to calculate the means score of self-care behavior practiced was adopted from (Sorato et al. 2016).

Study Sample

The pilot study was conducted with a purposive random sample of 77 SRN from two private hospitals and their patients diagnosed with type-2 diabetes who admitted to the ward during October 2018 to December 2018 and April 2019 to May 2019. Respondents ranged in age from 19 to 75 years old reported a wide range of diabetes-related comorbidities. The assessment tool was administered by the SRN assigned to the particular patients through direct interview and included the 4-self-care domains with total of 20-items pool and a limited set of demographic and health status questions.

Reliability Analysis

Internal consistency estimate was measured using Cronbach alpha (0.86). Exploratory factor analysis showed that exercise and self-monitoring id the least component of self-care that participants engaging in.

III. CONCLUSION

A Diabetes Self Care Assessment Tool (D-SCAT) instrument was developed through 5-stages of the development of instrument process and this paper describes the first stage of the process, conceptualization which involved defining the construct of self-

care and variables to be measured in the existing environment. D-SCAT was tested to measure self-care behavior in patient with type-2 diabetes admitted to two private hospitals in Negeri Sembilan.

Internal construct validity of D-SCAT was established with the confirmation of the 4-scales with acceptable reliability coefficient (α value) above .80, Daily Meal Plan (6 items) α=0.911, Daily Activity Plan (6 items) α=0.914, Daily Medication Plan (4 items) α=0.954 and Daily Monitoring Plan (4 items) α=0.945. Statistically, these findings describing the psychometric properties demonstrate that the D-SCAT instrument is a valid and reliable assessment instrument that can be used for measuring self-care behavior of patients with type-2 diabetes.

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APPENDIX 1: Focus Group Interview Guide

Area	*Sample Question*
Living with Diabetes	1. Let starts with sharing your experience being diagnosed as diabetes? How was it started? How did you cope with your illness consequences? 2. How did you manage your self-care activities? Where do you normally get the information to cope with that?
The main turning points of the disease	3. What are the most memorable events (if exist) that features during your illness journey?
Perceived positive and negative aspect in coping with diabetes self-care	4. In general, how well do you feel and think you are able to manage your diabetes? 5. What were your difficulties in managing diabetes for the past years?
Challenges in daily self-care	6. How do you manage your diet/exercise/medication and self-monitoring blood sugar? 7. What do you do to manage your symptoms of hypoglycaemia or hyperglycaemia (if any)? 8. Describe your overall experience living with and managing your diabetes?
Patient’s support for unmet care needs	9. What kind of support and resources would be most helpful to you in managing your diabetes? 10. How would you expect the healthcare services to be dedicated to diabetes care?

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THE EFFECTIVENESS OF THEORY-BASED LOW-SODIUM DIET EDUCATION ON LOW-SODIUM DIET ADHERENCE AMONG ELDERLY WITH HYPERTENSION

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Abstract: Low sodium diet plays an important role in lowering blood pressure in hypertensive clients. However, to gain the most benefit of the diet, adherence to the diet is needed to be improved. A theory-based low-sodium diet education might improve the adherence of low sodium diet among hypertensive elderlies. This study aims to examine the effectiveness of theory-based low-sodium diet education on a low-sodium diet adherence in the elderly with hypertension. The study employed a quasi-experiment with design one group pre-test post-test design. A sample of 88 respondents who were recruited using purposive sampling participated in the study. The pre-test and post-test data were collected by Dietary Sodium Restriction Questionnaire (DRSQ). The data were analysed with paired t-test. The findings show that significant difference on mean of attitude, subjective norm and perceived behavioural between before and after the intervention (p-value 0.000 < 0.05). The study indicated that determinant of adherence, namely positive attitude, subjective norms and perceived control behaviour were increased significantly after receiving theory-based low-sodium diet education. Therefore, the findings contributed as an evidence of effectiveness and feasibility of theory-based low-sodium diet education to be performed among hypertensive elderlies in Indonesia.

Keywords: Hypertension, Theory-Based Low-sodium Diet Education, Adherence, Elderly

I. INTRODUCTION

Hypertension is a global health problem faced by many countries in the world, especially in the elderly. the prevalence of hypertension occurs diferences causes throughout the regions. The prevalence of hypertension as much as 27% in Africa

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and the prevalence of hypertension in American as much as 18% (WHO, 2016). The number of patients with hypertension in Korea as many as 8.9 million people in the year 2016 (Kim & Cho, 2018). Indonesia is one of the developing countries the number of elderly patients with hypertension in the age 55 – 64 years upto 55.2%, then at the age of 65–74 years total of 63.2% and at the age of ≥75 years total 69.8% (Indonesian Ministry of Health, 2018). The prevalence of hypertension in Indonesia by 25.8% 2013. Then, in the year 2016, it showed an increased prevalence of hypertension amounted to 32.4% of (Ministry of Health, 2013; 2016).

Most of the hypertension suffered by the elderly is systolic hypertension and isolated systolic hypertension (WHO, 2012). Because the effect of stiffness in the aorta as well as omition of the elasticity of the arteries that occurs with increasing age, the stiffness of the arteries lead to increased systolic blood pressure and further reduction of blood pressure diastolic so that the pulse pressure increases and finally produces isolated systolic hypertension (Avci et al., 2016; Benjamin et al., 2017) If hypertension is not controlled it can lead to increased risk of stroke, ischemic heart disease, heart failure, kidney disease (Rodriguez, 2017; Guwatudde, 2015)

Based on an epidemiological point of view, a person suffering from hypertension is estimated because there are some factors that influence it, one of them is consuming salt intake excess (Indonesia Ministry of Health, 2013). Management of hypertension in the elderly can be performed with the therapeutic action of non-pharmacological in the form of lifestyle modifications with a set pattern of foods by limiting the intake of salt (Black & Hawks, 2014). This is inline with a study that conducted by who mentioned that reduction of salt is 5–6 g/day would contribute a big effect on blood pressure reducing, less than 5.39 mmHg for systolic blood pressure and -2.82 mmHg for diastolic blood pressure (Feng, et al., 2013). In addition, Yang, et al. (2018) also found that salt reduction can lower hypertension significantly by 10.18 mmHg. Furthermor, Yulistina et al (2017) found that there was a significant relationship between hypertension with the intake of salt is characterized by the value of significance $p = 0.000 < 0.05$ It showed that the higher the intake of salt consumed, the higher the risk of hypertension.

Compliance of low-sodium diet is the result that was formed through attitudes, subjective norms and control perceived behaviour (Ajzen, 1991). Alberta, et al. (2016) explicated that the compliance of low-sodium diet among elderly with hypertension was formed by attitude toward the behaviour, subjective norms, and control of perceived. Akhondzadeh, et al. (2017) also mentioned that compliance of low-sodium diet is influenced by attitude ($P < 0.001$), subjective norms to dietary sodium is limited ($P < 0.001$), and the control of perceived behaviour ($P < 0.001$).

The most important strategy to increase active participation and improve adherence to the patient in the process of the management of the disease can be done with health education (Vasan, et al., 2001). One of the strategies that were proven to improve compliance with low-sodium diet is Theory-based Low Sodium Diet Education (Welsh et al., 2010). Akhondzadeh, et al. (2017) mentioned that there is significant differences between the intervention group and the control group in terms

of sodium intake 6 weeks after the intervention (p=0.0023) and 12 weeks after the education program there is a significant difference between the intervention and control groups, respectively (p=0.036). Welsh et al (2013) obtain results that sodium intake of food is lower in the intervention group (F=7.3, df=1.29, p=0.01) and conclude that educational programs are designed carefully has the potential to produce compliance with a diet low in sodium.

Strategy Theory-based Low Sodium Diet Education can be implemented using the approach Health Promotion Model, where Kamran, et al. (2015) mentions that the components of the Health Promotion Model can affect the low-sodium diet compliance. In addition, research conducted by Fatmi, et al. (2017) also showed the result that there is a significant relationship of Health Promotion Model compliance and hypertension diet.

North Sumatra the number of suffering from hypertension reported as much as 50%, prevalence hypertension most suffered by the elderly with the amount of 22% (Provincial Health Office of North Sumatera, 2015). Furthermore, Public Health Centre of Bandar Khalipah, Percut Sei Tuan sub-district documented that, in 2017, the number of elderly suffering from hypertension as much as 845 people. Considering the prevalence, an education program to improve compliance with low-sodium diet in elderly people with hypertension is essentially needed. Therefore, this study is aimed to examine the effectiveness of theory-based low sodium diet education in the elderly with hypertension, particularly in Percut Sei Tuan sub-district.

II. OBJECTIVES

The purpose of this study is to examine the effectiveness of theory-based low-sodium diet education towards increasing the determinant of a low-sodium diet compliance in the elderly with hypertension in sub-district of Percut Sei Tuan.

III. METHODS

This study is a quasi-experimental one group pre-test-post-test design. The sample in this study of 88 elderly people above 60 years of age in sub-district of Percut Sei Tuan, recruited with purposive sampling technique. Data was collected using Dietary Sodium Restriction Questionnaire (DSRQ) developed by Wicaksana and Wang (2018). Instrument DSRQ there are 14 question items with 3 components in it namely the control of behaviour is based, attitude and subjective norm. with 5 alternative answers using the Likert scale, data collection on the intervention group started with pre-test, which gives the instrument Dietary Sodium Restriction Questionnaire to be filled. Then plan educational activities low-sodium diet in elderly hypertensive patients will be done by scheduling an appointment for a home visit and arrange time frames as agreed, the next post-test will be done at the time 1 day after the whole meeting on the activities of the health education done by giving back the instrument the determinant

of a low-sodium diet compliance to be filled. Data analysis was done by using SPSS program, include descriptive analysis, the statistical test used is the test kolmogrov Smirnov, Wilcoxon and paired sample t test.

IV. RESULTS AND DISCUSSION

Demographic Characteristics

Demographic of characteristics can be seen from table below. The table below is a description of the characteristic differences based on age, gender, ethnicity, religion, education, occupation, income, marital status, number of children, duration of hypertension and a history of taking the drug.

Table 7.1 Demographic Data of Study Respondents.

Demographic Characteristics	*F*	*%*
Age		
60 Years – 74 Years	62	70.5
75 Years – 90 Years	25	28.4
Above 90 Years	1	1.1
Gender		
Men	36	40.9
Women	52	59.1
Rates		
Melayu	12	13.6
Karo	4	4.5
Simalungun	4	4.5
Pakpak	3	3.4
Mandailing	28	31.8
Jawa	32	36.4
Toba	3	3.4
Nias	2	2.3
Religion		
Islam	57	64.8
Christian protestant	23	26.1
Catholic	8	9.1
Education		
No School	1	1.1
SD	2	2.3
JUNIOR	3	3.4
High school	61	69.3
Academy	9	10.2
College	12	13.6

Job		
Work	45	51.1
Does Not Work	43	48.9
Income		
Above Rs. 2.000.000, -	37	42.0
Under Rs. 2.000.000, -	51	58.0
Marriage		
Mating	49	55.7
No Married/Widow/Widower	39	44.3
The Number of Children		
> 2 Children	58	65.9
< 2 Children	26	29.5
Do Not Have Children	4	4.5
Old Suffer from Hypertension		
≤ (Below) 1 Year	16	18.2
> (More than) 1 Year	72	81.8
History Drinking Drug		
≤ (Below) 1 Year	14	15.9
> (Greater than) 1 Year	74	84.1

Illustrates the age of the elderly patients with hypertension in the working Area Puskesmas Bandar Khalipah sub-district of Percut Sei Tuan as many as 62 people (70.5%) aged 60 to 67 years and most of the sex female that is 52 people (59.1%) and 32 elderly (36.4%) of monosyllabic java and as many as 57 of the elderly (64.8 percent) adheres to the religion of Islam by level of education seniors that graduated from high school as many as 61 people (by 69.3%). Most of the elderly that 45 people (51.1% of) still work. Then, as many as 51 people (58%) have an income of < Rp. 2,000,000. as many as 53 people (of 60.2%) of the elderly are married and 58 people (to 65.9%) have children more than 2 people. as many as 72 people (81.8%) suffer from hypertension more than 1 year with a history of drink drugs 74 people (84.1%) more than 1 year.

The Influence of the Intervention Theory-Based Low-Sodium Diet Education Attitude, Subjective Norm and Behavioural Control Perceived in Elderly with Hypertension

The results of the distribution of attitudes, subjective norms and behavioural control perceived before and after intervention Theory-based Low Sodium Diet Education for one week have obtained results in the test then use paired t test and Kolmogorov - Smirnov to see the difference in the value pre-test and post-test in elderly people with hypertension, data the pre-test and post-test the normal distribution against the determinants of compliance low-sodium diet elderly will be outlined in table form

below. The results obtained from the answers of the elderly on the instrument Dietary Sodium Restriction Questionnaire.

The results of the test paired t-test the obtained value of sig. (2-tailed) which indicates that there is a significant increase between the value of the mean attitude, Norma subjective and behavioural control perceived before and after the intervention Theory-based Low-sodium Diet Education in elderly hypertensive patients by 0.000 < 0.05.

Table 7.2 The Value of the Pre- and Post-Test Attitude, Subjective Norm And Behavioural Control Perceived

Variable (N = 88)	*Pre-test*		*Post-Test*		*P Value*
	Mean	*SD*	*Mean*	*SD*	
Attitude	18.41	1.945	27.20	1.306	0.000
Norm Subjective	9.03	2.437	12.65	2.107	0.000
Behavior Perceived Control	17.57	1.993	27.15	1.255	0.000

The results of the research show that the influence of Theory-based Low-sodium Diet Education towards the improvement of the attitude of the elderly in carrying out low-sodium diet compliance in the elderly with hypertension. After the intervention Theory-based Low-sodium Diet Education the value of the attitude of the elderly patients with hypertension increased. The improvement can be achieved with how to build good attitudes to low-sodium diet with interventions that are regular for 1 week where researchers and patients interact as much as 3 times. The elderly gain confidence that he can and is able to change the daily eating habits with a diet low in salt.

The results of this study in line with research on the education of low-sodium diet based on the theory against the 104 respondents in Chāh Bahār, Iran which revealed that education based on the theory is very effective in improving the attitude of positive compliance low-sodium diet (Rahimdel et al., 2019), a meta-analysis of intervention education low-sodium diet compliance-based theory gives a positive impact to the attitudes in increasing compliance with low-sodium diet (Redrigues et al., 2017). Another study about the improvement of the behaviour of the low-sodium diet theory-based on 32 elderly patients with hypertension in Surabaya shows that the influence between the attitude towards the improvement of compliance carry out low-sodium diet in elderly hypertensive patients (Alberta et al., 2016).

Intervention Theory-based Low-sodium Diet Education using the approach Health Promotion Model in this study proven to increase the attitude constructed by the benefits perceived of an action and the barriers that are perceived to act to carry out low-sodium diet compliance. Theory-based Low-sodium Diet Education presentation that the elderly has confidence in the compliance of low-sodium diet is something that must be implemented to maintain their health (Benefit perceived), and belief with obedient in carrying out the low-sodium diet can guarantee to keep his blood pressure

remains normal (Barriers perceived). This is supported by a study in Iran reported that someone who have belief that positive of the benefits of follow a diet low in salt it will generate a positive attitude towards compliance (Welsh et al., 2010). So, any recommendations of health successfully, it is necessary to overcome the barriers to change diet in order to produce a positive attitude on the compliance of the diet (William et al., 2012).

Statistically intervention Theory-based Low-sodium Diet Education shown to affect subjective norms in the elderly with hypertension, visible differences increase significant value in the elderly with hypertension before and after the intervention for 1 week. Intervention Theory-based Low-sodium Diet Education proven to cause a good perception on social pressure or several people that are considered important in advocating to implement a low-sodium diet. Improvement can be achieved by the interaction of as much as 3 times with elderly family for 1 week.

The results of this study correspond with the results of research on the education of low-sodium diet based on the theory which asserts that education which is designed based on the theory of effective in the improvement of subjective norms positively to the low-sodium diet compliance (Rahimdel et al., 2019). Another study about the increase of low-sodium diet compliance-based theory show the influence of subjective norms to the intention to carry out a low-sodium diet in elderly hypertensive patients, subjective norms are assumed as a function of beliefs that specific a person agrees or does not agree to display a behaviour (Alberta et al, 2014). A meta-analysis of intervention education low-sodium diet compliance-based theory gives a significant positive effect on subjective norms in the improvement of low-sodium diet compliance in the short-term and long-term (Rodrigues et al, 2017).

Intervention Theory-based Low-sodium Diet Education based on by the approach Health promotion Model in this study can improve the subjective norm which is built by interpersonal influence and the influence of situational, intervention Theory-based Low-sodium Diet Education explained to the elderly and to the family that the people around (family) plays a role as a giver of feedback, motivation, support, or even become supervisors in order to ensure the compliance of the elderly in carrying out low-sodium diet (interpersonal influence), while the elderly themselves should also have the motivation to believe that what was done by the family solely for the sake of the healing of the elderly itself, in other words the sufferer have to have the confidence to trust and comply with what is recommended by the family (the influence of situational). It is the same with the results of a study conducted in Nepal with 180 hypertensive patients who show that family support as well as social can improve compliance with low-sodium diet to encourage optimism, self-belief and motivation that influence health behaviour change are negative (Ghimire et al., 2018).

The results of this study shows that the intervention Theory-based Low-sodium Diet Education has a significant effect in improving the control behaviour perceived elderly people with hypertension, the intervention Theory-based Low-sodium Diet Education help elderly people with hypertension in the raises the positive perception

about easy or not to implement a low-sodium diet. The increase in the value of significant is to look after the meeting as much as 3 times for 1 week.

This research is supported by the study of the educational low-sodium diet based on the theory which asserts that the educational low-sodium diet has a positive effect in improving the control behaviour perceived compliance low-sodium diet (Rahimdel et al., 2019). The results of another study conducted in Iran with 215 hypertensive patients a positive impact in improving the control behaviour perceived compliance implement a diet low in salt (Hatefnia et al., 2018).

Intervention Theory-based Low-sodium Diet Education that is done by using the approach Health Promotion Model in this study increase the value of the control behaviour which is perceived in the elderly with hypertension, which is formed from the affect that affect the activity and the perception of the self- ability. Theory-based low-sodium diet education presentation that the belief in the higher. The confidence of the elderly regarding the factors supporting the control of behaviours that are perceived will lead to a more positive (affect that affect activity). In addition, the elderly also has confidence in organizing and perform a behaviour, where self-belief was able to throw out the perception of factors that hinder the to display an expected behaviour, (perception of ability). This is in accordance with studies low-sodium diet compliance in Brazil with 108 respondents who indicated that someone with the perception of their ability is high usually consider the difficulty as a problem that must be experienced and not as obstacles that must be avoided. On the other hand, someone who is in doubt about their own capacity, consider difficult tasks as an obstacle. Thus, the greater a person's confidence in their ability to follow a low-sodium diet, the more likely they are to follow these recommendations (Cornelio et al, 2009). Another study of the same is made in Nepal with 180 patients with hypertension showed the results that self - esteem, social acceptance, the reminder to act, family support is a significant determinant of overcoming obstacles in a low-sodium diet compliance among hypertensive patients (Ghimire et al., 2018).

V. LIMITATION

This study experienced several limitation, such as difficulties in finding records of cases in Public Health Centre which documented the degree of hypertension, as well as the comorbid diseases. Therefore, it was difficult to control the degree of hypertension and comorbid disease among the study sample. However, in selecting the sample, the respondent who reported that they were suffered from one or more comorbid diseases were excluded.

VI. CONCLUSIONS

In this study, the effectiveness of theory-based low sodium diet education shows a significant effectiveness in increasing the value of positive attitude, subjective norms

and control behaviour compliance low-sodium diet in elderly people with hypertension in sub-district of Percut Sei Tuan. The community health nurse working in public health centres may implement theory-based low sodium diet education in improving adherence of low-sodium diet among elderly with hypertension. Community health nurses need to integrate the results of this study through more innovative method of diet education which tailor the needs of the elderly, and involve their families and community in planning and implementing the low-sodium diet education.

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THE DEVELOPMENT OF INTERVENTION MEMORY-EXECUTIVE FUNCTION EXERCISE FOR BREAST CANCER SURVIVORS WITH CHEMOBRAIN

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Abstract: The objective of this study was to develop a memory-executive function exercise (MEFE) intervention package to help survivors of post-chemotherapy breast cancer with cognitive decline. This publication is the development of an MEFE intervention package and module as a tool for implementing the intervention package. This module consists of modules for nurses and survivors. Reference in the preparation of interventions and modules is the development stage according to Borg & Gall. There are seven stages adopted from the theory. In general, the stages used are: 1). Design of intervention packages and modules, 2). Validation of design intervention and modules, 3). Revision of intervention design and modules, 4). Trial of intervention package and modules, 5). Revision of intervention package and modules, 6). Trial of the intervention package and modules, and 7) Final revision of the intervention package and modules. After a revision based on expert consultation, the MEFE final intervention package consisted of four sessions; 1). Education and deep breathing relaxation exercises, 2). Stress inoculation training and guided imagery exercise, 3). Educate healthy sleep habits and self-talk, and 4). Educate safety sport and self-talk. In addition, there is a cognitive exercise games that was done every day, such as puzzles, crosswords, and sudoku. In conclusion, the MEFE intervention package and its two modules are valid and reliable, so it is worth trying out in a larger population. The researcher recommends that the development of subsequent interventions use a comprehensive method.

Keywords: Chemobrain, chemotherapy, executive, exercise, memory.

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I. INTRODUCTION

Development of management technology for breast cancer that causes life expectancy increases. On the other hand, the number of survivors also increased. Important points in the delivery of health services are the long-term side effects of the chemotherapy regimen on daily activities, participation, functioning (Selamat, Loh, Mackenzie, & Vardy, 2014), and the quality of life and the participation of survivors in their communities (Asher & Myers, 2015). One thing that is a problem in survivors of breast cancer is cognitive dysfunction, which is popularly known as chemobrain (Selamat et al., 2014).

Nearly 75% of cancer survivors experience cognitive impairment at the time of treatment, and 15% -35% of cancer survivors experience cognitive problems within months to years after treatment (Ahles, Root, & Ryan, 2012; Janelsins et al., 2011). About 16%-75% of breast cancer survivors experience cognitive impairment during treatment compared with 4% -11% in healthy controls (Janelsins et al., 2011). Research by Syarif et al. (2019) stated that 25.6% of post-chemotherapy survivors of breast cancer experienced impaired verbal learning and memory functions as measured using the Indonesian version of the Hopkins verbal learning test (HVLT) questionnaire. In another study, Syarif et al. (2019) also stated that 86.6% of post-chemotherapy survivors of breast cancer experienced executive dysfunction as measured using the Part B Trail Making Test (TMT) questionnaire.

Chemobrain has an effect on various dimensions of survivors' lives. The complaints that were complained about; 75% reduced work performance, 58% had to use a compensation strategy, 50% were frustrated, and 33% experienced disruption of relationships in the family (Lai et al., 2009). Cognitive problems also sometimes dramatically affect functioning, quality of life, and community integration (Argyriou et al., 2011; Janelsins, Kesler, Ahles, & Morrow, 2014; Vardy, Wefel, Ahles, Tannock, & Schagen, 2007).

In Indonesia, it is estimated that there are a large number of survivors, seen from the large number of hospitals that provide chemotherapy services. However, data and research related to cognitive function in survivors is very abundant. A detailed and structured nursing intervention to help post-chemotherapy survivors with chemobrain has also not been found, so it needs to be developed. The aim of this study was to develop an memory-executive function exercise (MEFE) intervention package to help survivors of post-chemotherapy breast cancer with cognitive decline.

II. METHOD

This publication describe the development of an intervention package in the form of exercise in memory-executive functions and modules as a tool for assistance. Modules consist of nurses and survivors' modules. The reference for the development of intervention package and modules is the development step according to Borg &

Gall (1983) as described in table 1. This The researchers used this development step to achieve the objective of this research.

The theory adopted has 7 (seven) steps. Steps of potential problems and data collection were skipped because they were done in the previous step. The mass production stage has not yet been undertaken because mass testing has not yet been carried out. In general, the steps used were step 3 to 9.

The MEFE intervention package and its modules were developed based on the analysis of literature reviews and previous research, including on the function of verbal learning and memory as well as the executive function of breast cancer survivors in Indonesia by Syarif et al. (2019). Next, an expert consultation will be conducted. Components developed include the form of intervention, standard operational procedures for intervention, learning materials summarized in modules, workbooks, checklists and documentation formats.

The validity test of the MEFE intervention package and its modules was carried out by expert consultation. This validity test consists of content and construct validity tests. The content validity and construct of the MEFE intervention package and its modules have been prepared using the scientific perspectives of experts whose scientific fields are relevant to this topic. Expert consultation is carried out with experts who are experienced in the area of structured intervention package and survivors of breast cancer. There are five experts who contributed to this research. The selected expert has an understanding and experience in treating cancer patients. The experts also played a role in the validation of the intervention guide modules, both the nurse module and the survivor module.

Table 8.1 Development Step of Intervention Package

Step	*Description*
1	Identification of potential problems
2	Data collection
3	Design of intervention package and modules
4	Validation of design intervention and modules
5	Revision of intervention design and modules
6	Trial of intervention package and modules
7	Revision of intervention package and modules
8	Trial of the intervention package and modules
9	Final revision of the intervention package and modules.
10	The mass production

The process of developing the MEFE intervention package and its modules applies the ethical principles of research in humans. All processes were carried out after passing the medical research ethics test from the Research Ethics Commission of Faculty of Nursing Universitas Indonesia and the Health Research Ethics Commission from Dharmais National Cancer Hospital (DNCH), Jakarta. All parties involved have

obtained research explanations, stated their agreement, and signed informed consent before engaging in this process.

III. RESULTS

Design of Intervention Packages and Modules

This stage begins by examining the theory of unpleasant symptoms and conceptual models of chemotherapy-related changes in cognitive function (CRCCF) to develop interventions. Both theories explain that chemobrain is a multiple symptom and is influenced by various factors. The scope of intervention must also include management to deal with the various symptoms that arise. Based on the analysis of research Syarif et al. (2019) concerning the function of verbal learning and memory as well as executive functions in survivors of breast cancer in Indonesia, the structured package of interventions emphasizes modifiable conditions, including stress management and improving sleep quality.

Literature studies are also conducted on material related to nursing interventions to improve cognitive abilities in survivors of breast cancer with chemobrain. Some of the interventions carried out in chemobrain are compiling a detailed daily list, carrying out activities that challenge the brain, exercise, socialize, and improve sleep quality. So the components included in the intervention package are optimization of adaptation strategies, brain stimulation, and sports optimization. At this stage, the components of the MEFE intervention package are; 1). Stress management, 2). Improving sleep quality, 3). Optimization of adaptation strategies, 4). Brain stimulation, and 5). Sports optimization. The form of intervention formulated is then distributed in the structure of the intervention package in the form of meeting sessions. The structure of the intervention package consists of eight (8) sessions, with each session lasting for 45–60 minutes, and without any daily assignments.

Validation of Design Interventions and Modules

Validation of the intervention package and modules was carried out through expert consultation. Before the expert consultation is carried out, the modules are first reviewed by a mental health specialist nurse. Experts who assessed the intervention package and module consisted of five experts in the fields of oncology nursing and mental health nursing. All experts have completed doctoral education and have long experience in the area. In the final stages of expert consultation, the experts stated their agreement to implement the intervention package that had been prepared.

The experts provided input for the perfection and suitability of the intervention package as written in the expert consultation report, including: focusing the intervention package on more relevant factors, changing the number of sessions to four sessions, using simple and easy to understand language, using pictures original that is appropriate and interesting, and utilizing cognitive stimulation exercises, such

as puzzles, sudoku, and crosswords as daily tasks, and conducts training for nurses with appropriate criteria.

Revised Design of Intervention Packages and Modules

Revisions were made according to the input and direction of the experts at the time of the consultation. After making revisions based on expert consultation, the executive function exercise intervention package consists of four sessions; 1). Education and deep breathing relaxation exercises, 2). Exercise for guided stress inoculation and imagination, 3). Educate healthy sleep habits and self-talk, and 4). Educate safety sports and self-talk. In addition, the intervention is accompanied by several kinds of cognitive exercise games which are performed one item per day, such as puzzles, crosswords, and sudoku.

Trial the Intervention Package

Trials at this stage are carried out by two methods, including trials in nurses in the laboratory and readability test for breast cancer survivors. The modules that have been prepared are also read by populations in accordance with research respondents, namely breast cancer patients with chemotherapy. Readability test was conducted on 10 breast cancer patients who received chemotherapy at Dharmais Hospital, Jakarta. Respondents gave an assessment of the contents of the intervention module provided in accordance with their understanding and physical condition. In addition, respondents also gave their assessment of the difficulty of crossword puzzles, sudoku difficulties, understanding of language, pictures, font sizes, and the ease of the module to carry. Broadly speaking, the difficulty level of the crossword is 4.1 (range 1–10; point 10 indicates the most difficult); the difficulty level of sudoku is 5.6 (1–10; point 10 indicates the most difficult); 100% answered that the language used could be understood; 100% respond that the font size can be read clearly, and 80% answer the module is easy to carry.

Trials in the laboratory setting were carried out by three assessors from medical surgery nursing specialist students, specialty oncology nursing. The assessor provides suggestions on the modules compiled which includes; the attractiveness of the module, the pictures, the clarity of the message conveyed, the suitability of the material with the target population, the language used, the validity of the references, the power of persuasion, and the ease of intervening.

Revised Intervention Packages and Modules

The revised package of interventions and modules is based on input from nurses and survivors of breast cancer. Based on the rating of the survivors, the crossword and sudoku are changed to an easier level. Based on the judgment of the nurse, the layout of the drawing is improved and the survivors used in the module.

Trial of Intervention Packages and Modules

Trials at this stage were carried out on the appropriate respondents, namely breast cancer survivors. This trial was conducted simultaneously during training for nurses of Dharmais hospital. Some nurses demonstrated educational techniques and guided survivors in the intervention packages they had prepared. Survivors who conducted the trial stated that they were very happy with the package of interventions they had prepared, especially in carrying out guided imagery and playing puzzles.

Revised Intervention Packages and Modules

Revision at this stage is done based on input from nurses. So the final version of the intervention package consists of four sessions, one session per week, and is accompanied by daily tasks in the form of crosswords, puzzles, and sudoku.

IV. DISCUSSION

The development phase of intervention includes various processes that are initiated from the synthesis of concepts to trials in the relevant population. Memory-executive function exercise intervention (MEFE) package is a combination intervention package consisting of education, stress inoculation training, self-talk, guided imagery, and cognitive exercise; puzzle, sudoku, and crossword. This intervention package aims to help survivors of post-chemotherapy breast cancer to have a positive adaptation to the chemobrain experienced, including minimal stress, improved memory and executive functions, and increased participation in activities in the community. The selection of these types of interventions was based on literature review, previous research, and the results of the research stage of problem identification.

One of many things a research must fulfill is the element of novelty or findings from a study. Research can be said to be true if researchers find elements of new findings so that they can contribute both to science and to life. According to Sukardi (2006), the novelty of research consists of three types, namely invention, improvement, and refutation. The novelty of this research is to develop a method or a package of interventions for memory and executive function exercises, which are arranged through a scientific method and have been tested for validity. The scientific method used in the preparation of this intervention package is a synthesis of the results of literature studies and previous research. Then, test the validity and reliability. Validity test consists of content and construct validity. The content and construct validity test was developed from the scientific perspective of the experts. At the end of the expert consultation phase, the experts stated that the package of interventions and modules compiled was feasible to be applied.

Other specificities of this intervention package are shown in different components, products, and country contexts. Previous research has never used stress management, which consists of stress inoculation exercises and guided imagination as a major component in their research. Stress inoculation exercise is a type of cognitive

behavior therapy. The product in the form of modules for nurses and patients in this study explains that chemobrain management is also the first product in Indonesia. Then, the intervention package as it has been arranged has never been done before by researchers in Indonesia.

The main characteristic of this intervention package lies in its component of intervention. One selection of intervention components is based on factors that influence cognitive function. This principle is consistent with the contents of the TOUS theory which explained that nursing interventions that are arranged for survivors of breast cancer with chemobrain must consider its influencing factors (Smith & Liehr, 2014). Based on the research of Syarif et al. (2019), factors that influence memory function after logistic regression analysis are sleep quality and stress. Also according to a logistic regression analysis, it is found that factors that influence executive function include age, duration of education, respondent categories, menopausal status, hemoglobin levels, and stress. The intervention package provides a focus on modifiable factors that can be changed through nursing intervention. Stress affects memory and executive functions. Hence, a large portion of this intervention package revolves around stress management.

The selection of components in this intervention package is different from previous studies. A research done by Ferguson et al. (2007) focused on memory exercise. Interventions given to respondents include giving instructions about recognizing memory disorders in themselves, progressive muscle relaxation, scheduling activities, and learning many compensation strategies. Meanwhile Kesler et al. (2013) focused on improving executive functioning. The intervention consisted of various games, including switching games, mental rotation games, n-back memory games, spatial sequencing memory games, word stem completion games, route planning, and rule-based puzzle solving. All of these exercises included visual stimuli that required motor responses.

A research about psychology training program by Weis, Poppelreuter & Bartsch (2011) consisted of two types of interventions that focused on improving function of attention and memory. The first group of respondents acquired interventions that were more focused on real life situations and compensation strategies they used directly in daily life. The second group underwent computer-based intervention and was supervised by a therapist. Schuurs & Green (2013) conducted a study which was a cognitive rehabilitation of various types of cancer and various treatment modalities that were carried out on a group basis. The intervention consisted of psychoeducation, training to strengthen memory and attention, compensation strategies, emotional adjustment, and self-care. The team explained that the novelty of their study lies in its group-based research characteristic that was involving survivors of various types of cancer diagnoses and their treatment modalities. Cherrier et al. (2013) also carried out cognitive rehabilitation in various types of cancer. The content of the intervention consisted of assistance for memory, meditation, and practice skills for memory. However, the team did not provide a clear picture of the details of the interventions provided.

One theory that underlies the selection of this intervention package is the theory of unpleasant symptoms (TOUS). The selection of this theory is based on its suitability with the conditions of the population being studied. The application of this theory has been widely studied, especially in cancer survivors and patients who are still receiving treatment. This population is the most studied population (Smith & Liehr, 2014). Specifically, Myers (2009) has made an explanation related to cognitive disorders experienced by cancer patients who received chemotherapy using TOUS.

TOUS helps highlight the important aspects of symptoms experienced and potential strategies for symptom management that are not conveyed by other specific symptom models (Smith & Liehr, 2014) which aim to increase understanding and assist nursing research and practice (Lenz, 2018). For example, the TOUS emphasizes the importance of multivariable assessments of the symptoms experienced and possible factors that influence them, as well as providing a rational and framework for applying a biopsychosocial approach. TOUS suggests that multiple management strategies are needed to be applied simultaneously, carried out in the form of factors that influence symptoms (Smith & Liehr, 2014). This principle has been applied by the compilers of the intervention packages and modules, where one of the considerations for the preparation of the intervention packages is the factors that influence chemobrain, which are obtained at the problem identification stage.

TOUS is very valuable, because TOUS is intended to integrate information about the complexity and interactive nature of the symptoms experienced (Cooley, 2000). The symptoms experienced are the heart of nursing services, so that whatever is done for the patient and with the patient must be based on the symptoms experienced (Lenz, 2018). Some experts encourage nurses to design interventions by including multiple dimensions of symptoms and the interactive nature of symptoms, influencing factors, and consequences, which make clients more specific (Smith & Liehr, 2014). The treatment plan must include the experience of short-term and long-term symptoms and ways of monitoring, and should include instructions to encourage patient doing self-monitoring and self-care (Lenz, 2018).

Education provided to respondents about chemobrain management, healthy sleep behavior, stress management, and exercise aims to increase the knowledge of breast cancer survivors, so that the expected behavioral changes in adapting to chemobrain are more easily achieved. In accordance with the statement of Notoatmodjo (2014), that health education is the right approach in increasing knowledge and attitudes towards health. Furthermore, good knowledge will help promote better behavior.

Stress inoculation training is a type of cognitive therapy that is designed to help a person adapt well to stress. This exercise aims to increase one's resistance to stress and prepare it to provide a more effective response when experiencing stress (Lehrer, Woolfolk, & Sime, 2007). In the implementation of this intervention package, the stress inoculation exercise consists of the education and application phases. Nurses explore respondents' concept of thinking about stress, then teach various skills to deal with stressful situations in the future (Robson & Manacapilli, 2014). In implementation phase, self-talk is the chosen strategy to practice adaptability towards stress. It is also in

accordance with the emphasis given by Meichenbaum on the modification of cognitive behavior that is concentrated on how to modify self-talk (Lehrer, Woolfolk, & Sime, 2007). In addition, stress inoculation training and self-talk can help conceptualization and reframing stress that can support clients to develop new perspectives in order to cope with stress.

In the cognitive stimulation exercise component, the module maker chooses puzzles, sudoku, and crosswords. The choice of this type of game certainly has several theoretic and practical reasons. The types of interventions chosen have been adjusted to review the literature and the results of the problem identification phase of the research, where most of the respondents in the research phase were breast cancer survivors. According to Brown, Edwards & Buckley (2015), puzzles and crosswords are a type of intervention performed on survivors of breast cancer with chemobrain to reduce cognitive complaints or maintain their function.

The selection of the type of game is considered superior because it has been adapted to the needs and conditions of postchemotherapy breast cancer survivors in Indonesia. Puzzle games, sudoku, and crosswords are simple and easy to find games, but are very useful for exercising or maintaining cognitive functions.The module makers hope that survivors can still do these exercises with easier access to the types of games, after the research has been completed. Some research that has been done on respondents with chemobrain generally uses digital games, for example through smartphones. In this intervention package, the module maker uses paper. The consideration used was the respondent's statement at the time of the intervention trial which said that they felt more comfortable using paper than a smartphone for several reasons, one of which was not causing headaches. Module makers also choose puzzles with motifs that are preferred by women, such as dolls, cinderella, and dream girl. This was chosen to increase the interest of the survivors in participating in the intervention package. This game has also been facilitated in the module, so that survivors can do it easily at home.

Another advantage of this intervention package lies in the modules used. The MEFE intervention package module consists of two modules, the nurse module and the survivor module. Survivors' modules are arranged based on the needs of survivors, use language that is easy to understand, illustrated with original and interesting pictures, and consists of information and worksheets. An interesting picture will increase the interest of the survivors to read and follow the modules that have been made. The nurse module is arranged according to the nurse's needs to guide the survivors in implementing the intervention package. The nurse module has easy-to-understand language, interesting pictures, a schedule of survivors' activities, and a wider narrative than those of the survivors.

The module is made in two colors for the cover and its contents. The first type is cream colored (light brown) on the cover and contents. While the second module has a pink cover, and white on the inside. Brown is one of the colors that contain elements of the earth. This color dominance will give the impression of warm, comfortable and safe. Psychologically, the color brown will give a strong and reliable impression.

This color symbolizes a foundation and life force. The color pink represents feminism and is liked by many women, its strong aura gives the feel of gentleness, caring, and romance. Therefore, pink is also often used on symbols about caring for breast cancer, for example the pink ribbon.

Guided imagery is carried out by survivors with the help of guidelines that have been recorded by researchers. This recording consists of three versions of the atmosphere, including parks, mountains, and beach atmosphere. Survivors can choose a guide with the atmosphere they prefer. The survivors are equipped with headsets to facilitate easier interventions, and increase motivation. Researchers chose the pink headset with the consideration that pink is a color that is often used by the breast cancer community. In addition, this color symbolizes femininity.

The MEFE intervention package consists of four face-to-face meeting sessions, one session per week. The number of sessions is determined based on consideration of the patient's condition, including physical conditions such as fatigue and various residual side effects of chemotherapy, economic conditions, family support, and time spent by survivors. The authors of the intervention package have not found the ideal number of cognitive rehabilitation sessions for survivors of breast cancer. As comparative information, according to Oemarjoedi (2003) and Putranto (2016), stated that in general, cognitive behavioral therapy is carried out with an average of 12 sessions. However, the number of 12 sessions is very difficult to implement in Indonesia, because; too long, too expensive, too complicated, boring, and decreases the patient's confidence in the therapist's abilities. So that the counseling process does not require a long time, it is hoped that the counselor can continuously help and train the counselee to do self-help. Interventions that are too complicated and boring will result in a decrease in the interest of survivors to attend the training program.

Research Limitations

In the process of developing MEFE intervention packages and modules, validity and reliability tests with experts only use qualitative data based on the perspectives of these experts, without using statistical analysis.

Nursing Implications

Cognitive disorders in survivors of post-chemotherapy breast cancer are real conditions that actually occur. Nurses need to provide comprehensive nursing care with creative interventions that are appropriate to the needs of the survivors. An intervention package similar to LFME is extremely needed by survivors.

V. CONCLUSION

A MEFE intervention package has been developed for survivors of post-chemotherapy breast cancer that is valid and reliable, but has not yet been mass tested. The development of subsequent interventions that use comprehensive methods is recommended.

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FAMILY EMPOWERMENT OF PATIENTS WITH HYPERTENSION IN PREVENTING STROKE

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Abstract: Stroke is a disease that occurs suddenly without being accompanied by initial symptoms. Aceh is the highest morbidity and mortality rate of 16.6 percent. The Acehnese have family members with a paternalistic and fatalistic influence on decision making to prevent strokes. The purpose of this study was to empower family members of hypertensive patients to prevent stroke and produce a family health empowerment model of hypertensive patients to prevent stroke in accordance with the local culture of Aceh. Participants in this study were family members of hypertensive patients, totaling 32 participants, located in the coverage area of the Banda Aceh. The research was conducted from February to October 2017. The research method was qualitative, the type of research using Participatory Action Research (PAR). The results showed that participants were empowered in recognizing family health problems, Conclusion: Family members of hypertensive patients are empowered in preventing strokes in the Banda Aceh. Recommendation: Empowering the family health of hypertensive patients to prevent stroke is very important to reduce morbidity and mortality due to stroke.

Keywords: Family Health Empowerment, Stroke, Prevention

I. INTRODUCTION

Health is a form of physical, mental, social well-being and not just free from disease or weakness (WHO, 2015). The goal of health development in Indonesia Healthy 2025 is to increase awareness, willingness and ability to live a healthy life for everyone so as to realize an optimal degree of public health through the creation of a healthy society, nation and State of Indonesia, marked by its inhabitants living in the environment and with healthy living behaviors and having the ability to reach out to quality services and

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health facilities in a fair and equitable manner throughout the territory of the Republic of Indonesia and be able to realize an independent and prosperous nation. Realizing the goals of health development towards a Healthy Indonesia in 2025, a health development strategy is needed that is directed at the mission of health development, driving national development with health insight, encouraging the independence of the community to live healthy, maintaining and improving health services that are fair and affordable, maintaining and improving individual, family and community health services and their environment to prevent diseases, especially non-communicable diseases (DepKes RI, 2009).

Non-communicable disease is a disease caused by epidemiological transition that starts from a complex change in health patterns and patterns of major diseases causing death where there is a decrease in the prevalence of infectious diseases (infectious diseases), while non-infectious diseases (non-communicable diseases) increase. This happens along with changing lifestyles, socio-economics and increasing life expectancy which also means increasing risk patterns for the emergence of degenerative diseases such as stroke, coronary heart disease, diabetes mellitus, which is the highest mortality rate of 63%, which causes deaths throughout the world by killing 36 million people per year (WHO, 2011). In Indonesia, non-communicable diseases are still an important health problem because morbidity and mortality are increasing. This is a burden on health services, as well as challenges that must be faced in the development of the health sector in Indonesia.

Non-communicable disease increase has a negative impact on the nation's economy and productivity. On-communicable disease treatment often takes a long time and requires large costs. Some types of PTM are chronic diseases that can disrupt the economy of sufferers and their families. One of PTM diseases is stroke which can cause disability including permanent disability (Kemenkes RI. 2014).

Risk factors greatly contribute to the incidence of stroke around 90%, usually caused by: hypertension, unhealthy diet, lack of physical activity, excessive alcohol intake, psychosocial stress, heart disease, smoking, high cholesterol and diabetes, thus much knowledge and knowledge is needed early management of health in patients with hypertension to prevent stroke (Noorkhairina, et, al. 2013) If the patient has had the first stroke then it is at risk for a second, third and ongoing stroke. About 5% of patients treated with a stroke experience a second stroke in the first 30 days (Tjokronegoro, 2011)

Stroke is an event that occurs in a short time, but it has long-term effects for sufferers and families, with varying severity, stroke often causes decreased body function and cognitive and communication disorders. Long-term symptoms of a stroke cause the sufferer to really need treatment from his family both in the hospital and post hospitalization. Families also must face a variety of emotional conditions and reality that is very unexpected. Stressful life events such as this greatly affect families and have an impact on the function of their roles (Friedman, 2010).

Research Suzanna et al (2010) says individuals with good economic status are very at risk of obesity and ultimately cause atherosclerosis. Results of research

Hiroshi et al (2010) also said that obese individuals have a lot of fat and tend to have hypertension which is very risky for stroke. Furthermore, Guerra et al (2009) and Saccoet et al (2006) said that irregular exercise and uncontrolled blood pressure can cause complications in blood vessels such as stroke. Nazifah et al (2012) research results reiterate that it is very important to manage hypertension early to prevent stroke.

Judging from the risk factors for stroke, many factors influence, one of which is a family factor, if the family does not support the management of the disease properly, it can cause complications, family involvement is very important in disease management, this has a positive influence on individual health. Research conducted by Sholichah (2015) Efforts to empower families of pulmonary TB sufferers affect the ability to carry out family health tasks, both in recognizing health problems, making decisions, providing care to sick families, maintaining the physical environment of the home that supports health and the ability to use health facilities in efforts to care, treat TB and prevent transmission of TB to other family members with the results of statistical tests showing the empowerment of families of pulmonary TB patients can improve the ability of families to carry out family health tasks that is ($p = 0.001$).

Considering the lifestyle of the Acehnese people with culture or habits such birthday which is commemorated for three months in a row, kenduriblang (rice fields) annual festivity with a very specific eating culture (Koentjaraningrat, 2007). Eating patterns such as those mentioned above are very susceptible to non-communicable diseases/non-communicable diseases such as strokes which are caused by many styles and eating patterns that are not well maintained (Black, 2011).

According to the Indonesian Ministry of Health (2011) families and sufferers need to be empowered through providing adequate information about health and the importance of disease prevention efforts. Family empowerment by increasing the provision of information about care, treatment and prevention of disease, is expected to change family behavior which includes growing aspects of knowledge, understanding, changing attitudes and actions, health awareness of family members in the care, treatment and prevention of disease. This is in line with what stated by Baum and Smith (2006) with Participatory Action Research (PAR) research can improve knowledge, behavior towards better health change. Empowering family health through increasing the role and task of family health in caring for family members with hypertension, where family health tasks consist of recognizing family health problems, deciding appropriate actions, caring for family members who experience health problems, modifying the environment that supports health and being able to utilize facilities health. Health problems experienced by families can be overcome if the family could carry out the five family health tasks (Friedman, 2010). The aim of the study was to obtain a method for preventing stroke based on Aceh's local culture.

II. METHODS

The research method uses Participatory Action Research with a total of 32 participants. The study began from February 2017 to October 2017 in Banda Aceh. Participants are sufferers of hypertension. Etical clearence from Medical Faculty universitas Syiah Kuala Banda Aceh Indonesia.

III. RESULTS

The results of the participatory action research were obtained by reconnaissance, planning, action, observation, evaluation and reflection and comparing the values of body mass index and blood pressure before and after the study.

Table 9.1 Distribution of Participants by Age, Gender, Marital Status, Education and Employment (N = 32)

Data	*N*	*Percentage*
Age Participant		
Early adult	1	3.1
Late Adult	5	15.6
Early Elderly	13	40.6
Final Elderly	12	37.5
Seniors	1	3.1
Gender		
Woman	29	90.6
Man	3	9.4
Marital status		
Merried	27	84.4
Widow	5	16.6
Education		
Basic	4	12.5
Medium	19	59.4
High	9	28.1
Work Status		
Goverment employees	6	18.8
Private	12	37.5
Housewife	14	43.8

Based on the above table the most age is late adulthood which is 13 participants (40.6%), the lowest is early adulthood 1 partition (3.1%) and elderly 1 participant (3.1%). the most participating gender was female, 29 participants (90.6%) more than men (3 (9.4%) participants). In addition, it is also known that an average of 27 participants (84.4%) had married more than the widows of 5 participants (16.6%). The result of participant education is secondary education which is the most, 19 participants

(59.4%), the lowest is basic education, 4 participants (12.5%) and the results of this analysis also show that the work of the participants is the most housewives with 14 participants (43.8 %) compared to 6 participants (18.8)

Stages of the implementation of Participatory Action Research: (1) Reconstruction is looking for existing problems. The activity carried out was to explore the experiences and problems of hypertension in the group of participants involved in the research, while the activities carried out at this stage were the initial data collection in the form of Puskesmas (Community Health Center) data which was very supportive of the research, permission from the puskesmas head then continued with; (2) Planning is to directly review families with hypertension and ask problems experienced by family members so that there are no stroke complications in hypertensive family members, a packer who comes suddenly, sometimes you can suddenly, remember. We do not know this sudden illness, sometimes we think of being affected by why sudden loss of consciousness can. "Action is establishing a trusting relationship between researchers and participants and families of hypertension sufferers so that they are willing to work together to solve the problem of hypertension and other issues. things that are less understood about stroke by conducting health education if there are not clear then it can be made FGD (Focus group Discussion) to complete the management of hypertension to avoid stroke. Evaluation is to monitor or assess what has been achieved and if it has not yet reached the family understands how to prevent stroke and can understand the condition of symptoms that appear before the patient is referred to the nearest hospital or health care unit. Reflection is to produce a design description in accordance with the objectives of finding a stroke prevention theory model in hypertensive family members in Aceh: consisting of: finding the characteristics of hypertension patients in the Ulee Kareng Health Center in Banda Aceh in 2017 as described in the table. 1. Participants know the role of the family in preventing stroke, which is knowing. Understanding of stroke, causes, clinical symptoms, ways to prevent and management if stroke symptoms appear in the community.

IV. DISCUSSION

In this study that the most age is late adulthood which is 13 participants (40.6%), this happens because at that age cell regeneration begins at the age range of 36–45 years (Depkes RI, 2009). the lowest age of participants was early adulthood 1 participant (3.1%) and elderly 1 participant (3.1%), the elderly age in the Ulee Kareng Community Health Center environment many individuals who had complications with other diseases such as diabetes mellitus, heart and even had a stroke. the sex of the most participants were women, 29 participants (90.6%) more than men as many as 3 (9.4%) participants, generally women who had hypertension did not work or even worked as private, mostly women spent more time at home where in the

participant's house there is little physical activity, with work that does not vary. In addition, it is also known that an average of 27 participants (84.4%) had married more than the widows of 5 participants (16.6%). the result of participant education is the highest secondary education, 19 participants (59.4%), the lowest is basic education, 4 participants (12.5%).

Examination of body mass index is very important so that patients can understand between body weight and height must be appropriate so that obesity which is very risky can be prevented early on. this can be seen from the results of research from the public do not understand the causes of stroke until they understand how to prevent stroke and the average body mass index before the study 24.8 after the study declined to an average of 23.9 which can be concluded there is an influence of this stroke prevention model on decreased body mass index of hypertension sufferers. The results of this study are in line with research by Scholarus and Sanchez (2013) explaining that a high body mass index is at risk of stroke and other disease complications.

Blood pressure checks on all participants were carried out before being done and after the completion of this study to obtain information about participants' knowledge about hypertension and stroke complications. teach participants how to check the blood pressure of family members who have problems with blood pressure or pressure and how to read the results of blood pressure checks and provide a blood pressure control card that is easily understood by the people of Aceh. the results of this study indicate that the average blood pressure value before the study was 154.84/92.34 mmhg after conducting research starting February to October 2017 then the average blood pressure value of the participants became 136.56/84.84 mmHg it can be concluded that what effect the intervention gave to the participants for lower blood pressure. Cholesterol before PAR 224,06 mg/dl and after PAR 202,03 mg/dl.

The results showed that patients can understand how to prevent stroke and can be proven by weight loss and blood pressure reduction which is the level of knowledge and compliance of patients with the prevention of disease, which can greatly reduce the morbidity and mortality due to stroke in Banda Aceh.

V. CONCLUSIONS

Find ways to prevent stroke in the form of basic concept knowledge about stroke and participants can check their health by measuring their own blood pressure if symptoms of hypertension appear. There are differences in blood pressure before and after the study and there are differences in cholesterol before and after the study.

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FACTORS AFFECTING LOW BIRTH WEIGHT BABIES IN A HOSPITAL

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Abstract: Low Birth Weight (LBW) Babies remain a problem in the world causing illness and mortality of new-born. LBW's causing factor often disregarded and ignored which contributing high LBW index. The purpose of this research is to identify mother and environmental factors that causing LBW. The research is descriptive correlative with the retrospective design. Research was conducted from May 14 to 29, 2018. Population in this research are mothers with LBW babies that admitted alive in NICU for the period of January 2017 until March 2018 in Banda Aceh and Aceh Besar district. Sampling technique is using total sampling with a total of 63 respondents. The data collection tool is questionnaire developed by a researcher in dichotomy scale consists of 9 items; questionnaire has passed validity and reliability testing with a value of 0,958. Data analysis result is using Chi-square that shows there is a correlation between pregnancy gap (p-value=0.001), mother as a passive smoker (p-value = 0.043) with LBW in NICU of Banda Aceh Hospital. The result suggests that healthcare worker in Banda Aceh Hospital should conduct an education class for factors that affecting Low Birth Weight in order to improve the knowledge of pregnant mothers and reduce LBW risk.

Keywords: Low birth weight, Mother factor, Environmental factor.

I. INTRODUCTION

Babies with Low Birth Weight (LBW) are still a problem in the world, because of the causes of disease and death in new-borns (Maryunani & Nurhayati, 2009, p. 21). This is evidenced by the number of cases that are still quite high, 15 % of the 20 million babies worldwide are born with LBW each year (WHO, 2014). In the United States 65% of infants die from LBW and preterm birth. While in Africa and Asia as many as 30% of LBW babies, the lowest incidence is in Norway and Northern Europe, which is as much as 3% (Keram & Aljohani, 2016, p. 1–2).

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Body weight is one indicator of health in new-borns. The condition of babies with LBW needs to be a concern because generally low-weight babies can cause health complications such as respiratory, digestive, central nervous system, cardiovascular, haematological and immunological disorders (Maternal and Child Health Profile, 2015). Most babies with LBW are born in developing countries including Indonesia.

The number of LBW babies in Indonesia is still quite high. WHO records Indonesia is ranked ninth in the world with a percentage of LBW more than 15.5% of births every year. LBW can not only occur in premature babies, but also in term infants who experience growth barriers during pregnancy. According to the results of the Basic Health Research (Riskesdas) in Indonesia in 2013, the percentage of children under five (0–59 months) with LBW was 10.2%. The highest percentage of LBW was found in Central Sulawesi Province (16.8%) and the lowest in North Sumatra (7.2%) (Ministry of Health Indonesia, 2015). The results of monitoring over 3 years, there were 19 babies in 2014 in Banda Aceh, 24 babies in 2015 and 23 babies in 2016 who were born with LBW cases (Health Profile of Banda Aceh, 2016).

Baby weight with 2500 gram or less at birth is a LBW baby (Bobak, 2004). Babies born with LBW do not look at pregnancy, and weighed in 1 hour after birth (Ambarwati, 2011). LBW is one of the main factors that influence death perinatal and neonatal. LBW is divided into 2 categories, namely LBW because of premature or LBW because of intrauterine growth retardation (IUGR), which is a baby born aterm but less weight (Health Profile of Banda Aceh, 2016).

LBW can be caused by several factors, namely maternal factors, foetal factors, placental factors and environmental factors. Regarding maternal factors, LBW can be caused by pregnant women under the age of 20 years and over 35 years (Proverawati, 2010). Because the age under 20 years, the female reproductive organs cannot function properly. Whereas more than 35 years old, female reproductive organs begin to experience a decline in health caused by degenerative processes (Prawirohardjo, 2014). Other risk factors are the environment, including living areas in the highlands, radiation exposure, and exposure to toxic substances such as contained in cigarette smoke. Whereas according to Keram (2016) there are 4 factors that cause the incidence of LBW, namely anemia, never do Antenatal Care (ANC), mothers with chronic disease and smoking. Research by Joshi et al., 2014 states that there is relationship significant for LBW infants is maternal education ($p < 0.005$), occupation ($p < 0.02$), income per capita family per month ($p < 0.001$). In addition, birth intervals were significantly associated with LBW infants, of 177 births, birth intervals of less than 3 years were found to be 74.01% of mothers, maternal age ($p < 0.01$) and parity ($p < 0.01$).

The head of the Aceh Health Office said that Aceh was included in the top three categories of active smokers in Indonesia (Alyakobi, 2015). According to the results of the 2013 Basic Health Research (Riskesdas), the smoking behaviour of the population still had not decreased from 2007–2013, tending to increase from 34.2

percent in 2007 to 36.3 percent in 2013. The average number of cigarettes smoked was around 12, 3 sticks per day. According to Data and Information of Health Profile in Indonesia (2016), Aceh is one of the cities that still has a smoking-free regulation with a percentage of 12.5%. The high number of active smokers and the low smoke-free area can lead to higher exposure to cigarette smoke. This shows that the higher a pregnant woman is exposed to cigarette smoke, the greater the likelihood that the mother will give birth to a baby with a low birth weight (Ramadan, 2012, p. 32).

A study states that the variable that causes LBW is (exposure to cigarette smoke, pregnancy nutritional status and pregnancy stress with significance levels respectively: ($p < 0.05$) proven giving risk to LBW births. Of the three variables stated that exposure to cigarette smoke is the biggest risk factor that results in LBW (Rasyid, 2012). Research by (Baheiraei, Shamsi, Mohsenifar, Kazemnejad, & Hatmi, 2015) on the effects of cigarette smoke exposure on the growth of infants carried out in the 2 groups of women exposed and not exposed to cigarette smoke during pregnancy it was concluded that the group exposed to second-hand smoke had lower body weight than the group not exposed at two months ($p = 0.001$) and four months after birth ($p = 0.001$) In addition, groups that were not exposed significantly had a greater weight gain from 3–5 days to age two and four months ($p = 0.001$).

In addition to the problem of the still high number of smokers and the lack of non-smoking areas, the problem of young marriage is also still high in Aceh. Based on the results of the 2010 Banda Aceh Census, 689 people under the age of 20 were married. The Head of the National Planning Coordinating Board (BKKBN) said that cases of early childhood marriage in Aceh reached 25 pairs of 100 couples (Seurungkeng, 2015). Based on the data collection at the Dr. Zainoel Abidin Hospital in 2017, mothers who gave birth under the age of 20 were as many as 20 people and over 35 years as many as 105 people from 307.

Research by (Yadav & Shrestha, 2011), about risk factors associated with low birth weight shows that LBW babies are mostly born to mothers aged <19 and ≥30 years, as many as 31% and 17% are born to mothers aged 20–29 years. Research by Mubasyiroh (2016) shows that maternal age <20 years at risk the incidence of LBW. Another study by Salawati (2012) about the relationship of age, parity, and occupation of pregnant women with LBW showed that pregnant women who are not at risk tend not to give birth to LBW babies. Conversely, pregnant women at risk tend to give birth to LBW babies. The results of the statistical test using Chi Square on 95% CI; $p = 0.005$ (<0.05).

Zainoel Abidin Hospital Banda Aceh (RSUDZA) is one hospital with full accreditation in Aceh and a hospital which is the main referral service in the Aceh region. Based on the initial data collection at RSUDZA during the period of January 2017 to January 2018 there were 201 LBW babies who had been treated in the NICU Room. Identifying the relationship between maternal and environmental factors with the incidence of LBW in Neonatal Intensive Care Unit (NICU) at a hospital in Banda Aceh.

II. METHODS

This study used a descriptive design with a retrospective approach. The population in this study were all mothers with LBW babies who had been treated and were still living in NICU for the period January 2017 to March 2018 who lived around Banda Aceh and Aceh Besar totalling 63 respondents. The sampling is total sampling.

Data collection tools using questionnaires developed by researchers in the form of dichotomy scale consists of 9 items, the questionnaire has passed the validity and reliability test with a value of 0.958.

The procedure stage of data collection is done through the administrative process, the researcher found the respondent, giving an explanation of the research process. Data processing methods include editing, coding, transferring and tabulating. After the data is processed, then the data that has been entered into the table is analysed by univariate with mean score and bivariate using the chi square test.

III. RESULTS

Demographic Data of Respondents

The following table is the demographic data we collected from our respondents.

Table 10.1 Frequency Distribution of Respondent's Identity in NICU at Hospital Banda Aceh (N=63).

Respondent's Identity	*Frequency*	*%*
Level of Education		
Low	10	15.9
Intermediate	23	36.5
High	30	47.6
Job		
Get Job	21	33.3
No Job	42	66.7
Type of Pregnancy		
Single	56	88.9
Multiple	7	11.1
Mother's Illness		
Get Illness	15	23.8
No Illness	48	76.2

Based on table 1, it can be concluded that majority of mother who gave birth to the BBLR with high education was 30 respondents (47,6%), In no job was 42 respondents (66,7%), in single pregnancy was 56 respondents (88,9%), and in mother's no illness 48 respondents (76,2%).

Relationship Between Pregnancy Gap and LBW in NICU

The results of the study on the relationship between birth rates and LBW events in NICU at hospital in Banda Aceh can be seen in table 2 below:

Table 10.2 Relationship between Pregnancy Gap and LBW in NICU at Hospital of Banda Aceh (N=63).

Pregnancy Gap	*1500–2500 gram (LBW)*	*1499–1000 gram (Very LBW)*	*Total*	*α*	*P-value*
Good (≥2 years)	23 (95,8%)	1 (4,2 %)	24 (100%)	0.05	0.001
Not good (<2 years)	21 (53,8%)	18 (46,2 %)	39 (100%)		
Total	44 (69,8%)	19 (30,2 %)	63 (100%)		

Based on table 2, it can be concluded that from 24 respondents, the pregnancy gap in good category was 23 people who gave birth to LBW (95.8%) and 1 person who gave birth to LBW (4.2%). The results of the Chi-Square statistical test at α=0.05 obtained a P-value of 0.001 <0.05. It can be said that the null hypothesis (Ho) is rejected, which means that there is a relationship between pregnancy gap and the incidence of LBW in NICU at hospital in Banda Aceh.

Relationship Between Exposed to Smoking During Pregnancy with LBW Babies

The results of the study on the relationship of mothers exposed to smoking during pregnancy with the incidence of LBW in NICU at Hospital in Banda Aceh can be seen in table 3 below:

Table 10.3 Relationship Between Exposed to Smoking During Pregnancy with LBW Babies in the NICU at Hospital Banda Aceh (N=63).

Exposed to Smoking	*1500–2500 gram (LBW)*	*1499–1000 gram (Very LBW)*	*Total*	*α*	*P-value*
High	21(58.3%)	15 (41.7 %)	36(100%)	0.05	0.043
Low	23(85.2%)	4 (14.8 %)	27(100%)		
Total	44(69.8%)	19 (30.2 %)	63(100%)		

Based on table 3, it can be concluded that out of 36 respondents, mothers who were exposed to smoking during pregnancy with a high category contained 21 people giving birth to LBW (58.3%) and 15 giving birth to LBW (41.7%). Chi-Square test results at α=0.05 obtained P-value 0.043 <0.05. It can be said that the null hypothesis (Ho) is rejected which means there is a relationship between mothers exposed to smoking during pregnancy with the incidence of LBW in NICU at Hospital in Banda Aceh.

IV. DISCUSSIONS

In this section we will discuss the result of our research based on each objectives of the study. The results of the Chi-Square statistical test at α=0.05 obtained a P-value of 0.001 <0.05. It can be said that the null hypothesis (Ho) is rejected, which means that there is a relationship between pregnancy gap and the incidence of LBW in NICU at hospital in Banda Aceh.

The results of this study are in line with the results of research conducted by Marlenywati et al. (2015) that there is a significant relationship between the pregnancy gap and LBW (p-value=0.032). Another supportive study was Nur, Arifuddin, & Novilia (2016) who stated that the distance between pregnancies was a risk of occurrence of low birth weight. However, this study is not in line with the research conducted by Setiati & Rahayu (2017) which shows that birth distance does not affect the incidence of LBW with a value (p-value=0.680). Another study by Jayanti, Dharmawan, & Aruben (2017) states that there is no relationship between the pregnancy gap and the incidence of LBW in Bangetayu Health Centre.

Newly born mothers need 2 to 3 years to get pregnant again to recover physiologically from pregnancy and childbirth. This is very important to prepare yourself for the next pregnancy. The smaller the distance between the two births, the greater the risk for giving birth to LBW (Indrasari, 2012).

Based on the description above it can be concluded that the pregnancy gap that are too close can result in insufficient time during the recovery period of the body postpartum. Pregnant women with this condition are the cause of maternal and neonatal deaths and the risk of reproductive disorders. The disrupted reproductive system will inhibit fetal growth and development.

Chi-Square test results at α=0.05 obtained P-value 0.043> 0.05 can be said that the null hypothesis (Ho) is rejected which means there is a relationship between mothers exposed to exposed to smoking during pregnancy with the incidence of LBW in NICU at hospital in Banda Aceh.

The results of this study are supported by research conducted by Wahyuningsih, Trisnowati, & Fitriani (2016) showing that there is a relationship between exposure to cigarette smoke in the home and the weight of the baby born (p-value=0.007). Another study by Hanum & Wibowo (2016) stated that the longer pregnant women with active smokers in the house with the average mother exposed to cigarette smoke> 7 hours per day, the higher the risk of giving birth to babies with low birth weight.

Cigarette smoke can cause obstruction of fetal growth, so the baby's birth weight will be less or abnormal. Pregnancy and fetal problems occur because of the influence of chemicals in cigarette smoke such as CO gas, cyanide, thiocyanate, nicotine and carbonic anhydrase, which in addition to disrupting the health of the mother can also penetrate the placenta and disrupt the health of the fetus in the womb. Cigarettes contain 4000 chemicals, some of which include nicotine, tar, carbon monoxide and hydrogen cyanide (Wahyuningsih et al., 2016).

Based on the description above, researchers assume that pregnant women exposed to cigarette smoke during pregnancy greatly affect the incidence of LBW. We can see that the majority of mothers who give birth to LBW are exposed to cigarette smoke with a high category of 36 people (annex 20). Carbon Monoxide (CO) contained in cigarette smoke tends to bind to Hb so that oxygen levels in the mother's blood will decrease. As we know, oxygen is needed in the body's metabolic processes. The presence of CO gas in the blood will inhibit metabolism resulting in the formation of energy is not optimal. This condition can cause disruption of fetal development in the womb and risk of giving birth to LBW babies.

V. CONCLUSION

There was a relationship between pregnancy gap (p=0.001) and mother as passive smoker/exposed to smoking during pregnancy (p=0.043) with the incidence of LBW in NICU at hospital in Banda Aceh. From the results of the study it is recommended that health workers at hospital conduct education classes on factors that influence LBW so that it increases the knowledge of pregnant women and reduces the risk of LBW birth.

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BEING TACTFUL: COMMUNICATION SKILL TRAINING IN MANAGING CHALLENGING SITUATIONS FOR NOVICE PEDIATRIC NURSES

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Abstract: There may be numerous situations that challenge the communication skill competency of newly graduated nurses in the Pediatric unit. Newly qualified nurses employed in a specialized unit like Pediatrics need effective communication skill training because of the complexity of dealing with both a desperate, dedicated parent and a child with medical needs. The purpose of the study was to develop and evaluate a communication skill training program for new graduate nurses in dealing with clinical communication challenges in the General Pediatric units. Purposive sampling was used for the recruitment of the participants. A two-day communication skill workshop was conducted using (1) brief presentations; (2) video on effective communication skills; (3) small group experiential learning using role play simulation based on real clinical experiences of participants; and (4) debriefing. Participants completed questionnaire after the workshop. Thirty-two participants completed the two-day workshop. The questionnaire response shows that the training was useful, would be helpful for their daily pediatric nursing practice and would recommend the training to Pediatric staff. Qualitative feedback was greatly positive. Overall the communication skill workshop is highly valued by the participants in improving confidence in communication skills.

Keywords: Pediatric nursing; challenging communication; strategies; children's nurses.

I. INTRODUCTION

Developing effective communication is essential in the training of Pediatric nurses. There are numerous areas in the clinical settings which need nurses to be highly accomplished in communication skills (VandeKieft, 2001). The main barrier to effective communication skills during a challenging encounter is the lack of confidence of nurses. The novice nurses fear parents' reactions and uncertain about dealing with intense emotions. Thus, the education of nurses in this area is critically important in developing therapeutic communication in complicated healthcare settings. Effective communication process requires both knowledge and

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skill development. In case a child becomes sick, the feeling of parents differs from those experiences should the parents themselves become patients. Parents whose children have problems tend to be fearful of being judged and criticized. They may express fear of rejection, anger over neglect, unreasonable expectations, ignorance, and poor childbearing practices concerning child health. Anger or expressions of guilt may be used as a defense to mask their inadequacies and problems. They may also use blame as an escape from the problems. Some parents can be overtly rejecting parents, and some parents like to express their guilt, concerns, and issues and ask for suggestions as obedient parents. Whatever feelings they project, there may be underlying feelings of guilt and inadequacies which need attention. The way parents express feelings may have roots to their own internalized experiences with their parents during their childhood. The disappointment they communicate with the care of a child may be an expression of frustration to themselves. Parents who seek advice and follow instructions are considered non-resistant and cooperative. Resistant parents may not be willing to follow instructions and may be regarded as uncooperative. Cooperative parents indicate they feel free to themselves and thus can express their attitudes and feelings freely and are devoid of negative emotions. Gough, Johnson, Waldron, Tyler and Donath, (2009) stated that communication skill affects people's experience of hospitalization, as well as the nurse's role in communicating clear plans. Effective communication helps to reduce the anxiety of the parents and families; parents of hospitalized children experience stress due to the quest for information related to the uncertainty of the child's condition. Communication breakdown can result in emotions like fear, helplessness, and anger. Vigilant care and clear communication are expected for both parents and healthcare providers. Clear communication involves sharing of knowledge and perspectives, creating a synergistic effect that facilitates optimal care through strong parent-provider relationships and partnerships (Fisher, Broome, Friesth, Magee & Frankel, 2014). Vigilant care and communication involve negotiation; addressing issues; acknowledging parent's needs and attempts to meet parent's needs; a collaboration between parents and providers; consideration of parent's perspectives; parent's participation in care; interpersonal relationships and genuinely listening to parents. On the other hand, poor nurse-parents communication can result in poor patient management, low patient satisfaction, and more adverse outcomes. We tend to stop listening to people we find challenging; interrupt conversation; our body language can become hostile, and we may be defensive, or even become argumentative. The result is that the patient (parent) becomes even more hostile and make an already challenging situation much worse. Nurse-parent communication during stressful hospitalization needs skilled nurse communicators (Fisher et al., 2014). It is essential we as healthcare providers align our beliefs with those of parents to avoid resistance and win their cooperation in childcare. When parents feel that they are respected and accepted even though they are not perfect parents, they will cooperate in childcare better. Good communication also can assist in lowering malpractice claims.

Effective communication process requires both knowledge and skill development (Kodjebacheva, Sabo & Xiong, 2016). Effective communication requires skills more than words. According to Lieberman (1979), communication is the most essential of treatment when dealing with parents and children. The attitude of the healthcare providers will be reflected in the choice of words, the language of choice, and facial expressions. Parents may share their concerns and frustrations. However, the professionals need to actively listen and read between the lines to understand the message. Active listening skill is an essential element for healthcare providers in listening to parents' concern enabling parents to talk. Talking with parents often needs to be supplemented by actions or services to allow parents to build trust. It is the responsibility of the professionals to communicate well and ensure all their needs are met. Parents also will be happy to get the undivided attention of a healthcare provider and become more corporative. The contemporary Pediatric health care settings need a family-centered approach with a partnership among health care professionals, parents, and children. Children's nurses are instrumental members of the multidisciplinary team caring for the children and their families and vital to the communication process. There is not adequate literature available on the nurse's role in dealing with challenging communication (Fisher et al., 2014). Communication training is the most basic of nursing training. However, the method of preparation and outcomes vary among institutions. Stressful and emotional nurse-parent communication requires novice nurses to build on their fundamental communication skills obtained through their education and orientation to practice (Gough et al., 2009). Optimal training requires demonstration and opportunities for training and feedback. The literature shows the scarcity of communication skill training in the nursing profession. In the nursing profession, few studies have been conducted in the Palliative and Oncology units. Communication is the heart of correct assessment and rendering the best care and the vital element in the quality of everything we nurse do. In the nursing curriculum, communication skill is not reinforced as an essential clinical competency throughout the curriculum and not assessed as a core competency by itself. The working environment nurtures the communication skills of novice nurses. The new graduate's role model colleagues or preceptors to acquire communication skills. However, there is no tool available to measure the communication skill of nurses in challenging communication situations. From the personal clinical experience of the researcher, circumstances contributing to the challenging conversation in the Paediatric ward during the encounter with parents could be as shown in Figure 1.

II. MATERIALS AND METHODS

The researcher used a mixed method to develop the curriculum and evaluate the impact of the communication workshop. The study was approved by the Ethical committee of the University College.

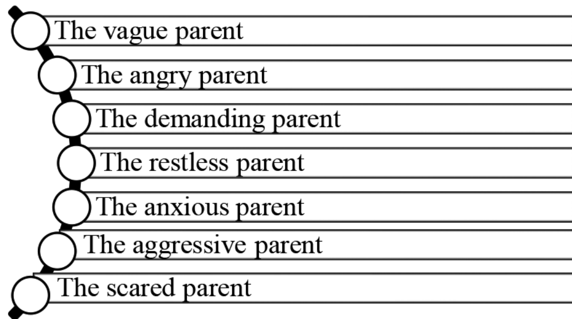

Figure 11.1 Challenging Communication Situations in Paediatric Unit

Challenging encounters can be de-escalated by employing communications strategies training for novice nurses.

Preliminary Phase

The research initiated from the general comments received from the Pediatric teams regarding competency gaps of new graduates in the general Pediatric units. In this study, during the preliminary qualitative stage, data triangulation using semi-structured interviews and focused group discussions were conducted to identify the most needed competency of novice nurses. A total of 36 informants included Pediatricians, Unit mangers of Pediatric unit, Pediatric specialist nurses, and novice nurses. Communication skill was the most highlighted competency gap identified among the new graduates. The qualitative findings showed that novice nurses are unable to convince parents when posed with questions or complaints. They tend to label parents as "fussy parents" and try to avoid them. On the contrary, expectations of the patients in the private care facility are very high in terms of quality of care. The informants' felt that there was a compulsive need for formal communication training for novice nurses in dealing with difficult situations or demanding parents.

The Development of the Workshop Training Materials

A 14 items guideline for clinical communication in challenging communication situation was self-developed by the researcher from literature review; Focused group discussion of Pediatric specialist nurses; and corporate communication trainers of the University College. The items were validated by experts in the Pediatric specialty and communication skill trainers. The adjusted I-CVI for the scale was 0.971 and the S-CVI/Ave for the scale was 0.971.The Cronbach's of internal consistency was 0.986 (Yaghmale, 2003).The 14 items were used as a guideline during training .The guideline is shown in Table 1.

The communication workshop content for presentations and clinical cases were developed by the Pediatric team including academician from the Pediatric nursing

specialty; Pediatric unit managers; and Local Preceptors of the Pediatric unit. Role play using scenarios developed based on the trainer's real-life experiences.

Table 11.1 Guideline for the Communication Skill Training

Never blame customers
1. Listen attentively to the parent/caregiver. 2. Project calm, relaxed and respectful facial expression. 3. Acknowledge their issues, problems and frustrations by nodding. 4. Summarize on what they say to show that you are actively listening.
Conflict resolution
1. Identify key messages; issues or frustrations. 2. Ask clarifying questions if needed. 3. Say or use the word "you seem to be upset: I am sorry for the misunderstanding;" 4. Be non-defensive: even though it is not our fault 5. Offer privacy to the parents/caregiver to sit down and discuss. 6. Offer assistance to resolve the problem.
Closing the communication gap
1. Discuss the options or alternatives to solve the problem. 2. Ask the patient and parent -"anything else you want to say" before you leave the room. 3. Treat the patient and parent in a non-judgmental attitude after an incident. 4. Uphold professional dignity at all times.

Table. 1 Guide for tactful communication in challenging situations

The communication workshop content for presentations and clinical cases were developed by the Pediatric team including academician from the Pediatric nursing specialty; Pediatric unit managers; and Local Preceptors of the Pediatric unit.

Role play using scenarios developed based on the trainer's real-life experiences.

Some of the clinical scenarios used were as follows.

- Non availability of single room.
- Continuing to have fever despite antibiotic treatment.
- Medication refusal by parents.
- Delay in pediatrician rounds.
- Child vomits after administering medication.
- Last minute cancellation from Operation theatre list.
- Bill amount beyond expectation of parents

Recruitment of the Participants

Recruitment of an adequately large sample which met the inclusion criteria was challenging. A purposive sampling technique was used for recruitment of participants. The researcher contacted the Chief Nursing officers through emails and

telephone calls. The Chief Nursing officers, with the assistance of Unit managers of the Pediatric unit, identified the new graduates with less than one-year experience and enrolled them in the study. A total of 32 participants were recruited from nine hospitals.

Communication Skill Workshop

A two-day workshop on communication skill was conducted for the Pediatric nurses with less than one-year clinical experience. The main theme chosen for the development of the workshop was handling parents and caregivers during challenging communication situations. The workshop was organized with the conjoined effort of corporate communication training expert, Pediatric Unit managers and Local Preceptors of the Pediatric units. Strategies mainly included brief presentations; communication skill games; role-play and videos; and debriefing. Throughout the workshop the 14-item guideline were reinforced. The 2 days content outline is shown below in Table 2.

Table 11.2 Content Outline for the 2 days' Workshop

Session	*Activities*
Session 1	Effective communicator in the corporate world: Building customer's confidence.
Session 2	Develop your communication skills - active listening & acknowledgement of Personal barriers.
Session 3	Video–Effective communication skills.
Session 4	Create engaging conversation and maintain good body language.
Session 5	Things that should be avoided in communication.
Session 6	Communication games Confronting and difficult situations in the Pediatric unit: sharing of experiences. Managing difficult and confronting clinical communication situations.
Session 7	Role play simulation–Difficult communication situations. Debriefing

Training Evaluation

Participant's feedback form was used for the training evaluation. The Likert scale had 5 points from strongly agree to strongly disagree. Also had few free text questions in the participant feedback form.

Data Analysis

Descriptive statistics was used for data analysis. The qualitative data was analyzed using manual content analysis.

III. RESULTS

Thirty –two participants completed the training, and all participated in the evaluation. Demographic characteristics of participants are shown in Table 3.

Participants Characteristics

The Participants characteristics is as shown in Table 3.

Table 11.3 Participant's Profile (N=32)

Characteristic	*n=41*
Age(Years)	
20–25	26
>25 years	6
Gender	
Male	0
Female	32
Duration of experience in Pediatric ward	
<3months	23
3–6moths	6
7–12 months	3
Is pediatric your preferred choice	24
Yes	8
No	

All the participants were from Diploma in nursing program. There were 24 participants who chose pediatric ward as their preferred discipline to work as a Registered Nurse.

Participant's Feedback

Satisfaction with and impact of the course was assessed immediately following the course using a 5- Point Liker scale (5=excellent to 1=poor). All the 14 items had a mean score of >4.5 /5. The Patient feedback had 14 items had been divided into three sections. They are the organization of the training, program content and instructional strategies used in the implementation of the communication skill training program. In the program organization section, the highest mean score was for item 3 (M=4.81) which stated that the "aims and objectives of the communication skill training program were very clear and evident in the program." All the items in the communication skill training content section had a score above 4.55/5 in the participant's feedback form. The third section was regarding the instructional strategies used in the implementation of the communication skill training. All the items had a mean score of > 4.5.

Table 11.4 Overall Ratings of the Questionnaire upon Completion of the Workshop (N=32)

Items	*Excellent (N)*	*Good (N)*	*Satisfactory (N)*	*Fair (N)*	*Poor (N)*	*Mean score (N)*
I found the communication skill Training course interesting.	22	10	0	0	0	4.69
Aims & objectives of the course were clearly evident in the program.	26	6	0	0	0	4.81
The teaching methods used in the program were helpful and effective.	21	11	0	0	0	4.66
The complexity of the training was manageable.	16	16	0	0	0	4.5
Found the various parts of the course well organized.	16	15	1	0	0	4.47
The program helped me to improve my competencies.	22	10	0	0	0	4.69
The training helped to improve my self-confidence in the Pediatric clinical practice.	24	8	0	0	0	4.75
Role paly Simulation training was relevant to the clinical practice.	19	13	0	0	0	4.59
The training sessions provided me with a variety of learning activities to promote my learning the Pediatric nursing module.	19	13	1	0	0	4.59
I enjoyed how my facilitators conduct the teaching sessions.	23	9	0	0	0	4.72
The way the facilitators conducted the training sessions was suitable to the way I learn.	21	11	0	0	0	4.66

My training facilitators ‘used helpful resources and examples to conduct the sessions.	21	10	1	0	0	4.63
The debriefing sessions provided me the opportunities to reflect on my experience in the ward and the meaning of my actions.	20	11	1	0	0	4.59

The highest score was for the item “I enjoyed how my facilitators conduct the teaching sessions” with a mean score of 4.72/5 (SD=0.46).

In the free text section, the participants’ highlighted that the communication skill training program facilitated them to gain better soft skills. A participant exclaimed the training have taught how to tackle ‘hard’ situations. The participants also highlighted that they learned something new from every scenario. The participants felt that the skills are useful for their daily practice in the Pediatric ward.

One of the participants emphasized that the program gave them much experience to handle Pediatric patients and their parents. They also commented that the program was such an excellent platform for new nurses and such a fantastic experience with friends in the same discipline. The participants also wished to have more programs like this to improve their clinical skills. The participants mentioned as follows. “Try to practice whatever we have learned in the daily routine in the ward.” The second participant reported as follows. “I have gained more confidence in attending to Pediatric patients. “One of the participants also stated that the facilitators shared their expertise very well and used soft skills well in dealing with the participants. The participants’ reiterated that the program provided useful information for daily clinical practice and wished to get more opportunity for similar training in the future.

IV. DISCUSSIONS

General Pediatric department admit children with diverse medical surgical and specialty problems. The purpose of the study was to develop a communication skill training program for novice Pediatric nurses to manage challenging communication situations. The program was tailored to meet the specific needs of the new Diploma in nursing graduates employed in the Pediatric ward. Developing and implementing training on communication skill was one of the Continuous Program Development (CPD) activities to improve the professional resilience of Pediatric nurses. The approach of communication skill training was used to modify the communication skill behaviors of the new graduates in the Pediatric ward. The participant’s feedback and

qualitative findings suggested that the program was useful in improving the soft skill of new graduates.

Levetown (2008) mentioned that healthcare communication is the most important but generally neglected part of Pediatric practice. “Communication is the most common procedure in medicine” (Levetown, 2008, p.1441). According to Levetown, healthcare communication is different from standard social disclosure because healthcare communication may involve the sharing of hopes, fears, developmental concerns, or other painful concerns. Communication is the foundation of any therapeutic relationship. Effective communication is the essence of everything nurses do in the clinical practice related to patient care. Poor communication can prompt lifelong anger, regret, and even medico-legal consequences for the practitioner. Taking time to establish rapport and understand child and family helps to build trust and will patient outcome and satisfaction. However, healthcare communication is currently learned through trial and error (Levetown, 2008). Most importantly, in this study the participant feedback shows that the training helped them to be more confident in dealing with difficult encounters in the future.

There are many guidelines to effective communication mainly developed for medical student’s communication skill training. Nevertheless, not all of them are culturally suited to our population. The modified 14 item guideline for managing challenging clinical communication situations was designed and validated by the researcher to guide the participants in dealing with parents or care givers of Pediatric patients.

There is a lack of similar local studies to compare the effect of similar interventions used in this study. Mullan and Kothe (2010) highlighted that one of the critical elements in quality and safe nursing care is skillful communication. However, nurses often lack the art of effective communication skill to communicate with patients, cares, and other health care professionals. The researcher used self-rating of the participants’ self-satisfaction with a communication skill training course.

Luff et al. (2016) used a program to enhance relationship and communication skills (PERCS). The participants included physicians, nurses, social workers, psychologists, and chaplain’s (N=110). The program was conducted in a “retreat” style to provide a relaxed environment for the participants. The training session had sharing experience of challenging communication; a didactic session on critical points and two challenging conversation scenarios. The participants had improved abilities in the five aspects of the PERCS scale. The aspects were preparation; ability to engage in challenging conversation; relationship; confidence and in reducing anxiety.

A study by Fisher et al., (2014) used brief emotion-based training based on simulation strategies to train communication skill of new graduates had similar findings. The study used validated four habits model of communication training to improve communication skills. In this study, the control group watched a video on effective communication. The researchers collected both qualitative and quantitative data on the effectiveness of the training. The study findings revealed that when

compared to the control group, the experimental group scored better in four of the five areas. The area showed significant improvement includes preparation; communication skills; relationship and confidence. The aspect which needed more significance is an experience. The study findings are similar to the findings of this study.

Communication training approaches vary significantly concerning their length and intensity, participant characteristics, teaching methods, the role of faculty, and choice of outcome measure. Most of the communication skill training in Pediatric had been conducted in high-intensity settings such as Intensive care; Emergency or Oncology departments (Meyer et al., 2009). The literature search suggests that the communication training focused on the initial encounter of parent and health care provider, and more intensive training focused on communication and relationship issues throughout the disease trajectory.

Communication skill training has an immeasurable impact on the quality of care. The findings of the study revealed that communication skill programs could help to assess, monitor, and improve new graduate nurse's competency in delivering high-quality nursing care. Ensuring competency builds up confidence and courage among the new graduates and ultimately, job satisfaction. The findings of the study could be used for transition programs to include professional communication skills as part of orientation programs, preceptorship programs, or continuous professional development programs.

There were some limitations to the study. The primary limitation of the study was the small sample size. Other limitation included lack of objective assessment of participant's communication skills. The study also did not assess impact of training on patient outcomes. . Also, it is not known to what extent the training has benefited the participants in real clinical practice.

The study can be conducted on a larger sample to improve the generalization of the findings. The study can have a descriptive time series design to study the effectiveness as a time-series design. The participants also recommended the inclusion of stress management and conflict management as part of the training in the future. In the future, we hope to continue the communication skill training workshop to all the staff nurses in the General Pediatric units of the 26 hospitals within the organization to improve parents over all experience in the General Paediatric units.

V. CONCLUSION

In any healthcare organization doctors and nurses communication skills are the most critical drivers of overall patient satisfaction. Communication skill training enhances Professional Resilience development. Such training will benefit the customers; employee, and organization equally. Continued emphasis on educating nurses on skilled clinical communication is one of the essential initiatives in improving patient's satisfaction and quality of care.

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EFFECTIVENESS OF AUDIO MUROTTAL INTERVENTIONS FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

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Abstract: Autism Spectrum Disorder (ASD) is a developmental disorder that affects communication and behavior. Children with ASD have difficulties with social communication and interaction, restricted interests, and repetitive behaviors. These behavior disorders can inhibit the development of ASD children. Behavioral disorders in ASD children need intervention to reduce the symptoms and improve the behavior of autistic children. The study aimed to assess the effectiveness of Audio Murottal Intervention (AMI) to improve behavior in children with Autism Syndrome Disorder (ASD). A quasi-experimental with pretest posttest control group design was used in this study. Findings show that there was a significant difference between the behavior of children with autism before and after murottal audio intervention (p=0.006). Murottal audio interventions improve the level of behavior of school-aged children with autism.

Keywords: Audio Interventions, Children, Autism Spectrum Disorder.

I. INTRODUCTION

Autism Spectrum Disease (ASD) is defined in the Diagnostic and Statistics of Mental Disorders V (DSM V) as a group of developmental disorders which have a basic cause of brain developmental disorders (neurodevelopmental). ASD children have deficiencies in social and emotional communication skills, limited behavior, repetitive behavior patterns and have abnormal and hyperactive interest in sensory input and interest in sensory aspects of the environment (American Psychiatric Association, 2013).

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ASD children have different abilities and characteristics from each other, so it determines how they interact with themselves and the environment and makes ASD children as unique individuals. Someone said to suffer from ASD when experiencing one or more of the characteristics such as difficulty in socially interacting qualitatively, communicating qualitatively, showing repetitive behavior, difficulty in expressing feelings or emotions, talking monotonous and rigid, repetitive movements, hyperactivity in preschool children and abnormal in play. In reality the case of ASD is very important to anticipate because it can only be handled through therapy or intensive treatment (Mangunsong, 2009). According to WHO in 2017, about 1 in 160 children worldwide has ASD. While the Centers of Disease Control (CDC) data for the past 12 years, the prevalence of ASD increased by 289.5%. Based on data reported from 11 communities across the United States in 2018, the prevalence of ASD is 16.8 per 1,000 (1: 59) children aged 8 years, this figure tends to increase compared to the prevalence of ASD in 2014 (1: 68). The cases of ASD in the surveillance period during 2000–2018, increased from 6.7 to 16.8 per 1,000 children aged 8 years (Centers of Disease Control and Prevention, 2018).

In Indonesia, no accurate data has been found regarding the actual number of ASD children. Ten years ago, the number of ASD children was estimated at one per 5000 children, while in 2015 there were estimated to be approximately 134,000 children with ASD in Indonesia (Cahya, 2016). In Aceh Province the number of children with ASD increases each year starting from 32.3% of children in 2010 to 41.5% in 2017 (Aceh Autism Service Center, 2017).

Autistic behavior is classified into two types namely excessive behavior (excessive) and deficit behavior (deficient) which includes extensive behavior is hyperactivity and tantrum (raging) in the form of screaming, biting, clawing, hitting and so on. And sometimes children also often hurt themselves (self-abused). While deficit behavior can be characterized by speech disorders, social behavior is less appropriate, sensory deficits so that they are deaf, play improper and inappropriate emotions, for example laughing without cause, crying without cause, and daydreaming (Azwandi, 2015). This behavior disorder can inhibit the development of ASD children and can inhibit the giving and implementation of interventions against ASD children.

Behavioral disorders in ASD children need intervention to reduce the symptoms exhibited and improve the behavior of children with autism (Mayrani & Hartati, 2013). Nurses have an important role in overcoming problems in ASD children by providing innovation in nursing interventions. The role of nurses providing comprehensive nursing care through nursing interventions can support positive development in ASD children. The interventions given aim to reduce the symptoms of behavioral disorders in ASD children (Veskariyanti, 2012).

Audio therapy is one of the effective therapies in improving the development of ASD children. Giving audio therapy to ASD children can increase attention, and develop body awareness, self-concept, verbal and non-verbal communication,

improve and change behavior, and reduce anxiety, anger levels, and hyperactivity (Djohan, 2009). Audio can have a therapeutic effect on the mind and body and influence the physiology of the body in the activation of the sensory cortex with secondary activation in the neocortex, and in turn into the limbic system, hypothalamus, and autonomic nervous system. This therapy is also cheap and does not cause side effects (Djohan, 2009). Therapy with the strains of reading the Qur'an or called murottal Al-Qur'an can be used as an alternative therapy. The stimulant of the Qur'an can cause delta waves of 63.11% (Abdurrachman, Perdana & Andhika, 2008). The current study was intended to assess the effectiveness of Audio Murottal Intervention (AMI) as a sound therapy for children with Autism Syndrome Disorder (ASD).

II. METHODS

Study Design and Participants

This quasi experiment used a pretest and posttest without control group design. The study involved autistic children aged between 6 and 12 years and their mothers. The participants were selected using purposive sampling, consisted of 11 participants with the inclusion criteria as follows: (a) Muslim students aged 6 to 12 years; (b) Normal hearing; (c) Children with mild to moderate autism, and; (d) Children who get permission from their mothers. The exclusion criteria were (a) autistic children with severe degrees of autism; (b) under 6 years of age or over 12 years; (c) non-Muslims; (d) deaf, and; (e) not permitted by their mothers.

Program Intervention

The Audio Murrotal Interventions (AMI) consisted of 6 sessions and provided to participants in the intervention group for 2 weeks with the duration of 11 minutes 19 seconds per session. Participants received the AMI in the morning at 08.00 WIB from laptop equipped with sound speakers sung by Muhammad Taha Al Junayd, with music pressure of 60 dB (measured by Sound Level Meter). AMI was given in slow rhythm with a pitch of 440 Hz and a tempo of 79.8 beats per minute (bpm).

Measurements

Emotional levels of ASD children were measured using the Autism Treatment Evaluation Checklist (ATEC) from the Autism Research Institute. The ATEC is designed to be filled in by mothers, teachers or caregivers. The ATEC is a simple but effective tool for assessing the severity, symptoms and development of ASD. The ATEC contains 77 items, covering four main areas of ASD disorders including communication (0–28), sociability (0–40), sensory-cognitive awareness (0–36), and physical-behavioral health (0–75 items).

The ATEC questionnaire was tested for face validity, which is a simple form of validity by applying shallow and subjective assessments of research instruments in measuring what should be measured (Stephanie, 2015). Face validity in this study was conducted on 10 parents of ASD children. Translation process goes through the back-translation process.

For Sections 1–3 (Communication, outreach, and sensory-cognitive awareness), parents are asked to read the statement in each item and indicate whether it is "N (not true/descriptive)", "S (somewhat true/ descriptive)", or "V (very true/descriptive)" of their child. Part 4 asks parents to indicate whether the statement describes something that "N (Not a problem)", "MI (Minor problem)", "MO (Moderate problem)", or "S (serious problem)" for their child.

The total score in the ATEC range is from 0–180 and is calculated by summing the scores of each subscale. In general, higher scores indicate smaller levels of symptoms. Responses to each question are given a numerical value and then added together. Furthermore, it is categorized as: a) Low: 20–49; b) Medium: 50–79; and c) High: ≥80 (Mahapatra et al., 2018).

Procedures

At pretest, the mothers of ASD children were asked to fill in ATEC questionnaires. All autistic children at the study site were also assessed for their degree of autism using the ATEC questionnaire. Children were included in the study if their ATEC scores between 20–49 (mild level) and 50–79 (moderate level). Children with scores over 79 (severe category) were not included in the study. The AMI was provided to the selected children. At posttest, parents of ASD children were asked again to fill out the ATEC questionnaire.

Parental consent, inform of written consent, was required for this study. Ethical approval was provided by the Ethical Committee of Nursing Faculty, Universitas Syiah Kuala.

Data Analysis

Differences in ASD children's behavior between pretest and posttest were assessed by t-test.

III. RESULTS

Characteristic of Respondents

Characteristic of respondents are shown in Table 1. Table 1 showed that the majority of parents aged between 30–35 years (63.6%), identified as male (72.7%), had less than three children (63.7%), high school level (63.6%), worked as housewives (81.8%), monthly income less than IDR 1.000.000 (55.4%).

Table 12.1 Demographic Characteristic of Participants

Demographic Characteristics	*f(%)*
Aged of Parents	
30–35	7(63.6)
36–41	4(36.4)
Gender	
Male	8(72.7)
Female	3(27.3)
Number of children	
One	2(18.2)
Two	5(45.5)
Three	2(18.2)
Four	2(18.2)
Education level	
High school	7(63.6)
College	4(36.4)
Occupation	
Housewife	9(81.8)
Government employees	2(18.2)
Private employees	0
Monthly income (IDR)	
> 2.000.000	3(27.3)
1.000.000–2.000.000	3(27.3)
< 1.000.000	5(45.5)

Effects of Audio Murottal Intervention (AMI) on ASD Children behavior

Effects of the Audio Murrotal Intervention (AMI) on children behaviors are described in Table 2 as follows:

Table 12.2 Mean Differences in the ATEC Scores at Pretest and Posttest (N=11)

	N	*Min*	*Max*	*Mean*	*SD*	*p value*
Pretest	11	42	76	63,54	14,08	0,006
Posttest	11	39	75	57,72	13,52	

Table 2 shows that there was a significant difference in the mean of ATEC scores of children with autism before and after the Audio Murottal Intervention completion (p=0.006).

IV. DISCUSSION

The study was intended to assess the effectiveness of Audio Murottal Intervention (AMI) on children with Autism Syndrome Disorder (ASD). The findings indicate that there was a significant effect of the intervention on children. This finding is in line with the results of research conducted by Abdullah & Omar (2011), which shows that the reciting of the Al-Qur'an can increase the alpha electroencephalogram wave (EEG), even though respondents cannot read or understand the Koran. This means that the Al-Qur'an is not only useful as a guide and the main source of Islamic sharia but its miracles can also be experienced by listening to the readings. A research by Astuti, et al (2017) shows that murottal Al-Qur'an audio therapy (Surah Ar-Rahman), which is given every morning for 2 weeks in 6 treatments, is effective for developing the behavior of children with autism at the age of five (1–5 years). Mayrani and Hartati (2013) found a decrease in behavior disorders of school-aged children with autism (6–12 years) in aspects of social interaction, behavior, and emotions after getting audio therapy with murottal surah Ar-Rahman.

Wahyudi (2012, as cited by Pratiwi, Hasneli, & Ernawaty, 2015) stated that the Qur'an as a healer has been done and proven, people who read the Qur'an or listen will provide changes in electrical current in the muscles, changes in circulation blood, changes in heart rate and changes in blood levels on the skin. Alkahel (2011) suggests that reading or listening to the Qur'an provides a relaxing effect, so that the arteries and heart rate decrease. Al-Qur'an reading therapy when played on a person or patient will carry sound waves and encourage the brain to produce chemicals called neuropeptides. This molecule will affect the receptors in the body so that the body feels comfortable. Sound can have a therapeutic effect on the mind and body and influence the physiology of the body in the activation of the sensory cortex with secondary activation in the neocortex, and in turn into the limbic system, hypothalamus, and autonomic nervous system.

V. CONCLUSIONS

This research showed that murottal surah Ar-Rahman audio interventions can reduce the level of behavior of school-aged children with autism. Researchers suggest that parents can provide special time at home to apply audio therapy with murratal surah ArRahman which has been proven to be able to reduce autistic child behavior disorders and to the school can apply as companion therapy for example one session in one week.

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FOUR-HANDED METHOD IMPROVES NEONATES' COMFORT DURING SUCTIONING

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Abstract: Hospitalized neonates experience discomfort during suctioning procedure in intensive care unit. This study aimed to identify the effect of four-handed method in suctioning procedure on the neonates' comfort whom hospitalized in an intensive care unit. This study design was quasi-experimental using purposive sampling technique to choose 20 preterm low birth weight neonates. Controls (N=10) received routine technique while the intervention group (N=10) received four-handed suctioning technique. Data analysis was conducted using independent T test. The result showed that the implementation of the four-handed suctioning increases the comfort level of the neonates during suctioning. This was proved from the stability of the oxygen saturation as well as the increasing score of well-being. The oxygen saturation was significantly higher in the intervention group compared to the control group (p=0.038) while well-being score was higher in the intervention group (p=0.001). No significant differences were found on neonatal heart rate. Four-handed suctioning techniques can be used as an independent nursing intervention and a procedure remains at suctioned the baby in the hospital.

Keywords: Four-handed suctioning, Suctioning, new-born, Comfort

I. INTRODUCTION

New-borns, especially low birth weight babies and premature babies have various health problems. This condition causes these babies to require close monitoring in the neonatal intensive care unit (Hallowell, Spatz, Hanlon, Rogowski, & Lake, 2014). On the other hand, health equipment, nursing measures, and medical management in the room can also cause stress and discomfort in neonates. Nursing and medical procedures that can cause stress and discomfort in neonates such as infusion, blood collection, suctioning, and other actions that manipulate neonates (Altimier & White, 2007).

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Stressful behaviour in infants can be demonstrated by stretching the toes and hands, crying, and changing skin colour (Rustina, 2015). Stress in premature babies has a large impact, both short and long term. The response of premature infants is often not visible in their behaviour, but it greatly influences their neurological development (Wilson & Hockenberry, 2012). Environmental conditions in the NICU that create stress can cause disruption in neurosensory and behavioural development that resulted in the risk of visual impairment, motor development, cognitive decline, and emotional disturbance (Kenner, Altimier, & Boykova, 2020).

Many other effects of stress on infants, especially in premature babies that can interfere with various baby's body systems such as neurological, respiration, sensory, balance, and other systems, thus minimizing the risk of interference through non-pharmacological interventions must be done (Hadian & Sabet, 2013). Non-pharmacological interventions to reduce comfort in infants include implementing developmental care (minimizing lighting, reducing noise, nesting and positioning, minimal handling), swaddling, kangaroo care, breastfeeding, and family-centred care (Lista et al., 2013; Walter-Nicolet, Annequin, Biran, Mitanchez, & Tourniaire, 2010). Other actions to overcome breathing problems while comfort considering the babies are doing suctioned by the "four hands" technique.

This "four-handed" technique for mucus suctioning aims to create comfort, reduce stress, and improve the baby's self-regulation behaviour and facilitate the work of nurses in suctioning mucus. Comfort is one of the basic needs that must be met to improve health and productivity. This technique was introduced by Cone, Pickler, Grap, Mcgrath, and Wiley (2013) through a Cone dissertation (2011). Four-handed or four-handed technique is the implementation of mucus suctioning carried out by two people, namely the operator and assistant. The operator will focus on the mucus suctioning done, while the assistant will assist the implementation of mucus suctioning such as maintaining the position of the endotracheal tube (ET) tube to stay in position, as well as creating comfort for the baby such as positioning the arms and legs flexing if needed.

The implementation of mucus suctioning by these two people has been studied in various places and has become a recommendation and guide in several hospitals. Therefore, it is important to conduct research on the implementation of four-handed mucus suctioning techniques to create comfort in low birth weight babies.

This study aimed to identify the effect of four-handed method in suctioning procedure on the neonates' comfort whom hospitalized in an intensive care unit.

II. METHODS

This study was conducted in Neonatal Intensive Care Unit (NICU) ward at one of Indonesia national hospital for one month in 2016.

Study Design

This study design was quasi-experimental, divided into two groups (control and intervention) with a pre-test and post-test approach.

Technique of Sampling

Purposive sampling technique was used to choose 20 low birth weight neonates. Premature infants 28–36 weeks of gestational age with ventilators or CPAPs and suction performed were the sample criteria in this study. Babies who met these criteria were then determined including the control group or the intervention group. Controls (n = 10) received routine technique while the intervention group (n = 10) received four-handed suctioning technique.

Ethical Considerations

The ethical study was conducted by the Research Ethics Committee of the Nursing Faculty at the Universitas Indonesia.

Data Collection and Analysis

In both groups, control and intervention, measurements of oxygen saturation, heart rate and comfort scores were performed. Assessment of oxygen saturation and heart rate noted by reading the values listed on the patient monitor three times at 3 minutes before the suction procedure, the fifth second after inserted suction tube, and 5 minutes after the procedure was finished. The comfort score scores using a Paediatric Comfort Assessment tool (PCA) developed by Intermountain Healthcare (2007) based on Kolcaba's Behavioural Comfort theory consisting of vocal responses, signs motor movements, general appearance, face, and other signs such as mental state, communication, awakening, and changes in breathing. PCA scores were approved through the video recording by the researcher. Scores greater than 4 for each assessment item indicate discomfort, so the higher score obtained, then the baby feels stressed and uncomfortable (Intermountain Healthcare, 2007).

Both groups performed suction procedures to clear the airway. Mucus suctioning in the control group were carried out according to hospital standards while paying attention to the sterility of the action. The suctioning procedure in the intervention group was carried out by two nurses with different activities. The first nurse focused on mucus suction and ensured that the action remain sterile, the second nurse holding the endotracheal tube tube in position if needed and provided comfort position such as reflecting the baby's hands and feet with a gentle touch.

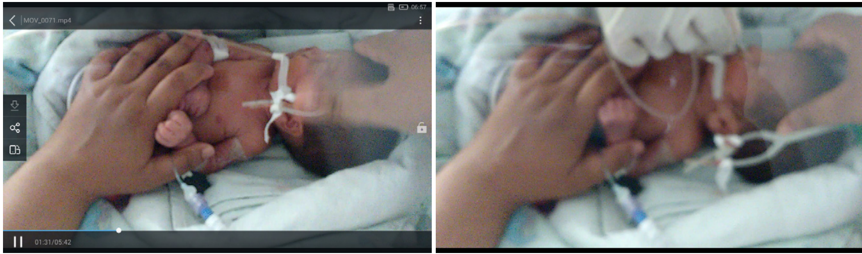

Figure 13.1 Hand - Position During Four-Handed Suctioning

Gestational age, correction age, oxygen saturation, heart rate, and well-being/comfort score were noted for both groups. Data analysis was conducted using independent T-test by computer program.

III. RESULTS

The result showed that the implementation of the four-handed suctioning increases the comfort level of the neonates during suctioning. This was proved from the stability of the oxygen saturation as well as the increasing score of well-being. The results describe on the table 1 and chart 1–3.

Table 13.1 Distribution of Respondents by Gestational and Correction Age (N=20)

Age	*Groups*	*N*	*Mean*	*SD*
Gestational	Intervention	10	32.9	2.13
	Control	10	32.7	2.11
Correction	Intervention	10	33.6	1.83
	Control	10	34.1	1.72

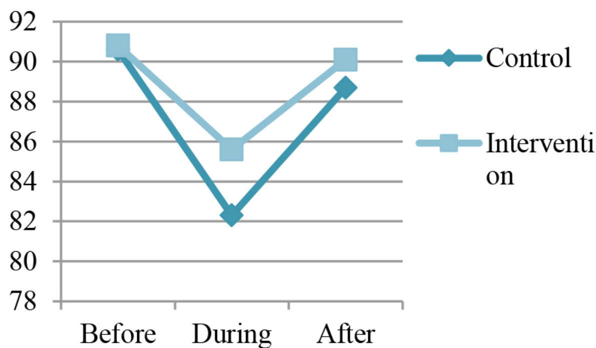

Figure 13.2 Mean Oxygen Saturation in Four-Handed and Standard Suctioning

The oxygen saturation was significantly higher in the intervention group compared to the control group ($p = 0.038$).

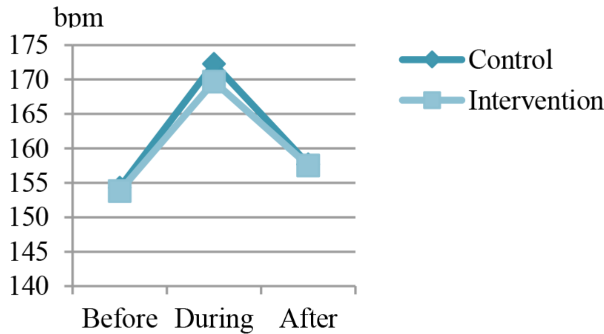

Figure 13.3 Mean Heart Rate in Four-Handed and Standard Suctioning

No significant differences were found on neonatal heart rate (p=0.096) and the PCA score was higher significantly in the intervention group (p=0.001).

IV. DISCUSSION

Premature infants in the Neonatal Intensive Care Unit (NICU) can experience discomfort caused by changes in environmental conditions that are very different between inside and outside the womb such as noise level, lighting, temperature, and actions that manipulate the baby (Kenner et al., 2020). Babies in the womb only hear sounds with low intensity such as the sound of the mother's heartbeat, while when treated in an intensive room there are various sounds with high intensity including the sound of an alarm monitor, incubator, ventilator, and syringe pump. The content with minimal lighting is very different from the external conditions of the womb, which is a brightly lit NICU room. Other conditions that make a baby stressed and uncomfortable are both invasive and non-invasive actions that cause pain and interrupt the baby's rest such as the implementation of a mucus suction procedure (Barbosa, Cardoso, Brasil, & Scochi, 2011).

On the other hand, babies cannot express their discomfort through verbal sentences as they do in adults. In addition, in the intensive care room, parents or other families are not always in the nursery, so nurses play an important role in detecting the discomfort. Assessment of discomfort includes the assessment of physical, psychospiritual, socio-cultural, and environmental discomfort (Apóstolo & Kolcaba, 2009; Kolcaba, 1995; Kolcaba, Tilton, & Drouin, 2006). In this study, the assessment of comfort scores using the Pediatric Comfort Scale (PCA) which is the adoption of Kolcaba comfort theory consisting of vocalizations (calm/awake, grimacing, and crying), signs of motor movements (calm, relaxed muscles, agitation, and anxiety), appearance (like touch, try to be interesting, anxious movements/ pulls, face (smile, calm expression, and fear), and others (mental focus, to unusual breathing) (Intermountain Healthcare, 2007).

In this study, suction was carried out by two nurses with good cooperation. Gentle touch is highly recommended when performing procedures on premature babies (Pepino & Mezzacappa, 2014). The touch given by the assistant procedure nurse to the baby by positioning the baby's arms and legs flexed and holding the baby's head gently, can provide comfort to the baby. In addition, before touching the baby, the assistant procedure nurse warms his hands first to prevent cold stress. Premature babies under 36 weeks' risk of developing hypothermia (Forsythe Saleski & Allen Jackson, 2013). Therefore, when the baby is in a comfortable condition, then suctioning mucus, the baby's stress level is not at a high score.

The implementation of the four-handed technique also aims to reduce work stress on nurses. Nurses who work in intensive rooms are more at risk of experiencing stress at work and need support (Bayuo & Agbenorku, 2018). With the implementation of mucus suctioning by two people, the risk of error is also reduced (Cone et al, 2013). Therefore, the implementation of this technique becomes the standard procedure for implementing mucus suctioning in several hospitals, one of which is in China.

In addition to comfort scores, other physical responses were also assessed in this study. The physical response in the form of changes in heart rate and oxygen saturation is one of the baby's responses to actions such as mucus suctioning. If both of these values are stable it indicates that the action can be well tolerated. In addition to physical responses, another response is the stress response that can be seen is blood cortisol levels which are also synchronous with cortisol levels in saliva (Calixto, Martinez, Jorge, Moreira, & Martinelli, 2002).

Breathing often occurs in infants with a gestational age of less than 37 weeks. Committee on Fetus and Newborn (2003 in Weiss & Tolomeo, 2012) states that significant apnea in infants is stopping breathing for more than 20 seconds or more than 10 seconds accompanied by bradycardia or desaturation <80–85%. Apnea of prematurity occurs in more than 50% of premature babies and the majority in infants weighing less than 1000 grams (Alden et al., 1972 in Weiss & Tolomeo, 2012).

Heart rate is one indicator of discomfort in infants. In this study, the heart rates of the two groups differed, but not significantly. This can occur because of heart control when pain occurs, according to the research of Waxman, Riddell, Tablon, Schmidt, and Pinhasov (2016) which states that heart rate can increase by 5–10 bpm in invasive procedures. Premature infants with gestational age of 28–32 weeks who performed stabbing procedures with a heel stick there was a significant increase in heart rate with an average increase in heart rate of 22.4 bpm with a standard deviation of 15.42. Infants with gestational age have a significant increase in heart rate in invasive procedures from birth to one month after birth in line with the increased role of parasympathetic nerves in controlling heart rate.

V. CONCLUSION

Implementation of mucus suction using the four hands method can increase comfort for the baby during the procedure. This can be seen from the presence of stable oxygen saturation values and vocalization responses, motor movements, faces, and general appearance. therefore, the implementation of this method is highly recommended for its implementation on the NICU space layout.

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COGNITIVE FUNCTION, SOSIAL SUPPORT AND A DEPRESSION IN INSTITUTIONALIZED OLDER ADULTS

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Abstract: Around the globe the increasing number of older adults is predicted to create many opportunities and challenges in the health services system. The overall changes in biological and psychological aspects due to aging and the involvement of chronic illness could lead to depression. This study aims to examine (1) the prevalence of depressive symptoms among institutionalised elders, (2) the relationship between cognitive function, social support and depression. A descriptive cross-sectional survey was performed on 58 elders living in institution using Mini-Cog to assess their cognitive function, Perceived Social Support Friend (PSS-Fr) to assess their perceived social support and Geriatric Depression Scale Short Version (GDS-15) to assess their level of depression. Chi-square and logistic regression were used to assess the association between variables. Chi-square analysis showed that depression was negatively correlated with social support (r=–.857, P=0.003), while cognitive function had no correlation with depression (x2 0.057, α 0.05). However, logistic regression analysis showed that both variables (cognitive function and social support) were correlated to depression x2 7,952 significant at 0.019 <0.05. Cognitive function and social support were associated with depression, with the strongest correlation was with the variable of social support. We encouraged that older adults who live in the institution to arrange group-based activities such as brain gym to maintain the elders' cognitive function and at the same time maintaining their social activities.

Keywords: Cognitive function, social support, depression

I. INTRODUCTION

The older adult's population have been growing rapidly worldwide, this situation creates positive dan negative impacts on the older adults, their family, the community and the government. The positive impact of the increasing number of aging population if they are healthy and well would be increased of productivity. However, if they have

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poor health and suffer from illness or chronic diseases the negative impact would be increased of health care costs, decreased income, and increased disability. Moreover, the absence of social support and an environment that is not friendly to the older adult could be added as part of the negative effects from being old (Indonesia Ministry of Health, 2017).

Aging is a natural process experienced by every human being, changes caused by aging not just affected the physical aspect, it also has an effect on physiological, mental and social aspect. This change influenced by a decrease in functional brain, decreased function of the body system and a decrease in intellectual aspect which includes perception, memory, learning ability and cognitive function (Prasetyo, Nugroh, & Sukrillah, 2015). Cognitive ability is the ability of the human mind to learn and process information that is able to come up with ideas, solve problems and make decisions (Wold & Gloria 2012).

The decline in all body systems causes the inability of the older adult to carry out activities as before. Impairment of physical or physiological functions can be in the form of impaired vision, hearing, greying hair, become toothless, which can cause other chronic diseases, whereas mental changes are caused by stress in dealing with life changes, loss of partners, retirees, and illness, these changes can make the older adult tend to experience loneliness, anxiety and depressed (Muhith, 2016).

Depression is common among the older adult aged 65 years and over. Depression that occurs in the community reaches 1% to 9%, 10% to 26% occur in the nursing homes and 11% to 46% in hospitalization older adult (Wold & Gloria, 2012). The perception of the older adult about their health greatly affects a person experiencing depression, if the older adult feels his health is a threat to him then it will lead to depression, whereas if the older adult can accept a decline in health, then the older adult tends to be more productive. Older adult who experience depression and decreased cognitive function will experience decreased physical activity (Sunaryo et al, 2016). The older adult needs social support from friends to improve psychological well-being.

Friend social support is assistance given in the form of affection, care, attention and assistance to the older adult. Social support can be verbal or non-verbal. Providing social support to the older adult can make the older adult feel cared for, valued, feel loved by others, provide encouragement when the older adult feels difficulties so as to increase motivation and control stress (Sarafino & Smith, 2012).

The objective of this study is to examine depression and describe its relationship with cognitive function and social support among institutionalized older adult.

II. METHODS

This present study used a descriptive correlational design in order to be able to describe the relationship between cognitive function, social support and depression in institutionalized older adults. In the following section we will describe the participant and setting, measurement and data analysis.

Participants and settings

Study population is institutionalized older adults living in nursing homes owned by Aceh Government. Banda Aceh city only has one nursing home and it was built in 1979 under the Social Welfare Agency of Aceh Government. The nursing only able to accommodate 60 older adults.

Prior to the study the subject criteria were to exclude older adult diagnosed with mental disorder and unwilling to participate. However, during data collection all older adult who live in the nursing home were eligible to be invited to the study and the response rate was 100%. This probably due to small number of samples.

This study used total population sampling because total sampling is a sampling technique where the number of samples is equal to the population (Sugiyono, 2017). The reason for taking total sampling is because the total population is less than 100, thus, the entire population is used as research sample.

Ethics were obtained from the Ethics Commission of the Faculty of Nursing, Syiah Kuala University and consent was given to the respondent orally after being given information by the researcher.

Measurement

The instruments used in this study were Mini-Cog, Perceived Social Support-Friend (PSS-Fr) and Geriatric Depression Scale Short Version (GDS-15).

Translation of Survey Instruments

Prior to data collection, the instruments went through the translation process called back translation we invite 3 experts to translate the instruments. There 3 experts were nurse educator at one of public University in Indonesia and fluent in English and Indonesian language. They are the first translates from English to Indonesian language, then the second translates back from Indonesian language to English, the third is re-examined whether there are differences with the standard questionnaire after a back translation is done.

Socio Demographic Variables

Socio demographic variables included in this study were: age, sex, marriage status, education, history of chronic diseases, current health condition.

Mini-Cog

Mini-Cog was used to evaluate cognitive impairment in older adults. One of the item in Mini-Cog is clock-drawing task. For assessment using score of 0–3 points to repeat a word, 1 point for each word spontaneously without being given a cue and 0–2 points for the clock drawing task, 2 points for a normal clock drawing with a final interpretation of 0–2 mean high probability of cognitive impairment and 3- 5 mean low possibility of cognitive impairment. Mini-Cog have validity value of 0.85 and reliability value (Cronbach alpha = 0.76) (Rezaei, Rashedi, Lotfi & Shirinbayan, 2017)\

Social Support

Perceived Social Support-Friend (PSS-Fr) was used to evaluated social support received from friend. PSS-Fr is a tool used to find support, information and feedback received from friends. In the PPS-Fr instruments consist of 20 items statements and using Likert scale with three option yes, no, or don't know. If +1 score for social support and 0 score indicates no social support. PSS-Fr with validity value = 0.83 and reliability value (Cronbach Alpha = 0.88) (Procidano & Heller, 1983).

Depression

In this study using depression was measured by the Geriatric Depression Scale (GDS) the short version. The short version consist of is items wit yes or no question and more preferable by the older adult especially those who are physically ill. The scale responses ranges from 0, +0, 15. (Yesavage et al., 1983). Answer criteria, if a value 0–4 no depression, 5–8 mild depression, 9–11 moderate depression, and 12–15 severe depression (Indawati, Notobroto, Qomaruddin, Majudin, & Aisha, 2016). GDS-15 with the validity value of Pearson Correlation = 0.5 and the reliability value (Cronbach Alpha = 0.7) (Indawati et al, 2016).

Data Analysis

The study used descriptive statistic to explore socio demographic data of the respondent. Also, correlation analysis which Chi-Square was used for investigating the bivariate relationship between research variables. Finally, logistic regression was used to evaluate the correlation of cognitive function and social support with depression.

III. RESULTS

Respondent Characteristics

A total of 58 older adult participated in this study. Table 1 showed the socio demographic data of respondent. The age of respondent mostly on the range 60–74 years old, according to WHO it fell under the category of elderly. The respondent predominantly by female (63,8%) and almost all the respondent was widowed (98,3%). Their education level mostly low (75,4%) only 5,2% of the respondent attend higher education, and 72,4% of the respondent diagnosed with a disease.

Table 14.1 Respondent Characteristic

Demographic Data	*Freq.*	*Percentage*
Age (WHO)		
Older adult (60–74)	35	60.3
Old Older adult (75–90)	23	39.7

Sex		
Male	21	36.2
Female	37	63.8
Marriage Status		
Single	1	1.7
Widowed	57	98.3
Education		
Did not attend school	20	34.5
Elementary	24	41.4
High school	11	19.0
Diploma/bachelor degree	3	5.2
Current health condition		
No disease diagnosed	16	27.6
Diagnosed with disease	42	72.4

The Correlation Between Cognitive Function, Social Support and Depression

Table 2, 3, and 4 display bivariate correlation between independent and dependent variables. Chi-square analysis showed that depression was negatively correlated with social support (r = -.857, P = 0.003), while cognitive function had no correlation with depression (x^2 0.057, α 0.05). However, logistic regression analysis showed that both variables (cognitive function and social support) were correlated to depression x^2 7,952 significant at 0.019 <0.05.

Table 14.2 Relationship Between Cognitive Function and Depression

Cognitive	*Depression*								*Total*		*α*	*p-value*
	No Depression		*Mild Depression*		*Moderate Depression*		*Severe Depression*					
	F	*%*	*F*	*%*	*F*	*%*	*F*	*%*	*F*	*%*		
High possibility of cognitive impairment	7	12.1	19	32.8	7	12.1	5	8.6	38	65.5	0.005	0.057
Low possibility of cognitive impairment	1	1.7	13	22.4	6	10.3	0	0	20	34.4		
Total	8	13.8	32	55.2	13	22.4	5	8.6	58	100		

Table 14.3 Relationship Between Social Support and Depression

Cognitive	*Depression*								*Total*		*α*	*p-value*
	No Depression		*Mild Depression*		*Moderate Depression*		*Severe Depression*					
	F	*%*	*F*	*%*	*F*	*%*	*F*	*%*	*F*	*%*		
Less support	1	1.7	10	17.2	7	12.1	5	8.6	23	39.7	0.005	0.003
Good support	7	12.1	22	38	6	10.3	0	0	35	60.3		
Total	8	13.8	32	55.2	13	22.4	5	8.6	58	100		

Table 14.4 Relationship Between Cognitive Function and Social

Cognitive	*Social Support*				*Total*		*α*	*p-value*
	Less Support		*Good Support*					
	F	*%*	*F*	*%*	*F*	*%*		
High possibility of cognitive impairment	13	22.5	25	43.1	38	65.5	0.005	0.243
Low possibility of cognitive impairment	10	17.2	10	17.2	20	34.5		
Total	23	39.7	35	60.3	58	100		

IV. DISCUSSIONS

The results of the study found that there was no significant relationship between cognitive function and depression (x^2 0.057, α 0.05). This finding was different with previous study which found that relationship between cognitive function and depression (Juniarta & Aryana, 2018; Nugraha & Kuswardhani, 2018). There was factor that might be contribute to the results. This study had different setting with the previous study. This study was conducted in institutionalized older adult. Most of older adult in institutionalized have high level of spirituality. Besides, in this place the older adult was facilitated with the caregiver, whose was in charge to help the older adult in all activities. So, the older adult does not suffer depression, although they had cognitive impairment.

Based on table 3 there was relationship between social support and depression, this study found that significant relationship between social support and depression (x^2 0.003, α 0.05). This finding was similar with previous study which found significant relationship between social support and depression (Saputri & Indra Wati, 2016). According to Stanley & Beare (2006) social support approach is one way to deal with depression in the older adult. Social support obtained from peers in institutionalized older adult can increase self-esteem and self-efficacy, which could change the maladaptive behaviour to be adaptive behaviour of the older adult (Stuart, 2016).

According to Azwan, Herlina and Karim (2015), the older adult who had a good social support could improve the quality of life of the older adult, so it could reduce the depression of the older adult. This social support was very important because the older adult who live in institutionalized older adult are far from their families. Related research conducted by Ariyanthi (2016) found good support from friends. Older adult who are in institutionalized older adult, they both give encouragement to each other if any of them need each other, provide treatment to each other, if the older adult has problems or difficulties in life, they will get social support from friends such as providing motivation, listening to complaints upset and exchange ideas to find a solution.

Friend social support was assistance provided in the form of affection, care, attention and assistance to the older adult. Social support can be either verbal or non-verbal support. Providing social support to the older adult can make the older adult feel cared for, valued, feel loved by others, provide encouragement when they feel difficulties so as to increase motivation and control stress (Sarafino & Smith, 2012).

This study also found no significant relationship between cognitive function and social support (χ^2 0.243, α 0.05). This finding was similar with previous study that conducted by Sims et al (2014) which found no significant relationship between social supports with cognitive function in institutionalized older adult. However, it was different with study that conducted by Yeh and Liu (2003), which found significant relationship between cognitive function and social support from friends in community. It was possible that these relations vary as a function of the population of interest. This study conducted in community different from current study that conducted in institutionalized older adult.

There was study that explained the beneficial effect of social support for cognitive function which was conducted by Ellwardt, Aartsen, Deeg and Steverink (2013), this study found the relationship between cognitive function with loneliness, and loneliness with social support. This study showed that the older adult who got emotional support could reduce feelings of loneliness and could improve cognitive function. However, the unexpected findings in the current study may be attributed to a curious phenomenon encountered within that investigate the receipt of social support. That is, for some individuals, particularly these with a chronic illness or disability, the receipt of social support may be perceived as a burden or stressor (Reinhardt, Boerner, & Horowitz, 2006 as cited in Sim et al, 2014).

Some limitation of this study include the limited number of samples. Should be further research is needed with longitudinal design and larger population scale in order to be able to assess the relationship between cognitive function, social support and depression. It is recommended to further researchers to involve more nursing homes.

V. CONCLUSIONS

Based on the results of research and discussion it can be concluded that there is a joint correlation between cognitive function and social support with depression, but when viewed separately only social support is associated with depression, whereas cognitive function with depression and cognitive function and social support there is no relationship. Based on these results, we need an activity carried out at the institution such as brain gymnastics which is carried out together.

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COGNITIVE FUNCTION AND FALLS AMONG ELDERLY

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Abstract: Falls among the elderly are one of the major causes of morbidity and mortality worldwide. One that causes falls is impaired cognitive function.The aim of the study was to find out the relationship between cognitive function and the risk of falling among the elderly. Method: a cross-sectional analytical study was conducted in the elderly. The population in this study is the elderly who live in the work area of Community Health Center in Banda Aceh, totaling 1,043 elderly scattered in 5 villages. The study sample size was estimated according to the Slovin formula, the sample size was estimated 91 respondents but 100 elderly adults were studied . The sample size in each village was proportional technique sampling. The sampling was done by non-random sampling and accidental sampling technique. The data collection technique was done by guided interview using questionnaire translated into Indonesia language, that is, Short Portable Mental Status Questionnaire (SPMSQ) which measure the cognitive function and Time Up and Go Test (TUG Test) measuring the risk of falling in the elderly. It showed that there is a correlation between the cognitive function and the risk of falling in the elderly with P value= (0.00<0.05), it indicates that there is a correlation between the cognitive function and the risk of falling in the elderly. The value of correlation coefficient (r) is 0.811. Conclusion: Generally, the falling correlates significantly with the impaired cognitive function. Therefore, it needs to plan and develop health awareness programs to improve cognitive good to prevent falls in the elderly.

Keywords: Elderly, cognitive function, falls

I. INTRODUCTION

The aging process occurs since conception and its manifestations are very visible in the elderly. The number of elderly people is increasing in both developed and developing countries, this can be seen in the increase in life expectancy. The increase in life expectancy in Indonesia occurs because along with the advancement and improvement of science and technology in the field of health that is able to improve

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nutrition, sanitation, slow down death and improve quality of life (Ministry of Health, 2017). Life expectancy in Indonesia increased from 70.06 to 71.20 years old (Central Statistics Agency, 2018).

According to the United Nation (2017), the elderly population aged 60 years or more in the world reaches 962 million. Based on the estimated elderly data made by the Ministry of Health of the Republic of Indonesia in 2017, it is estimated that the number of elderly people in Indonesia is 23.66 million. It is predicted that the number of elderly people in 2020 will increase by 27.08 million, in 2025 there will be 33.69 million, in 2030 it will be 40.95 million and in 2035 it will be 48.19 million. Based on data from the Profile of the Aceh Population in 2018, the elderly in Aceh reached 374,343 elderly. While the number of elderly people in Banda Aceh is 11,903 in 2017 (Central Statistics Agency of Banda Aceh, 2018). If the number of elderly people increases, the vulnerability of the elderly to the emergence of various health problems also increases. This is because aging is a natural process that will be experienced by every disease and results in the emergence of various health problems, one of which is a decrease in cognitive function.

Cognitive impairments and dementia are expected to increase globally and are expected to increase proportionally in developing countries (Mavrodaris, Powell, & Thorogood, 2013). According to the Directorate General of Medical Services Unit of the Ministry of Health (2010) in Lestari, Fikrani, and Maryanti (2015), the prevalence of MCI (Mild Cognitive Impairment) decline in Indonesia was 32.4%.

Decreasing cognitive function due to aging can have an increased risk of falling, balance disorders, slow and stiff movements, decreased muscle resilience and strength and decreased traction (Santoso & Ismail, 2009). One result of aging in the brain that regulates cognitive function is an increased risk of falling which can cause injury to the elderly (Ministry of Health, 2013).

Falling is one of the leading causes of death in the elderly and ranks sixth in death in elderly people aged 75 years and over (Beers & Berkow, 2013). The falling ranked second to cause mortality due to accidents worldwide (WHO, 2018). The prevalence of falling every year in the elderly in Indonesia is categorized by age, that is, age 65 years and over by 30%, age 80 years and over by 50% (Mupangati, 2018). In the community, as many as one-third of the elderly aged 65 years or older experience at least fall once in a year and, of the 40 elderly who fall, one elderly must be hospitalized (Sudoyo, Setiyohadi, Alwi, Sinadibrata, & Setiati, 2015).

Based on a study conducted by Ramlis (2018) in Bengkulu, the results showed that most of the elderly in the Senior Citizens Guidance at the Bengkulu Center for Senior Citizen Services and Supports (BPPLU) as many as 56.7% of the elderly experienced intrinsic disorders that were the cause of the risk of falling. One of the intrinsic disorders that cause the risk of falling is a nervous system disorder which includes cognitive function.

Based on the description above which explains that the decline in cognitive function and falling events that occur in the elderly, as well as the effects of these,

falls, the researchers want to see the relationship between cognitive function and the level of risk of falling in the elderly in the work area of Community Health Center in Banda Aceh.

II. METHODS

This study used a descriptive method with a cross-sectional study design in which data collection was carried out on April 24-May 20, 2019 in the work area of Community Health Center in Banda Aceh.

Participants

The population in this study is the elderly who live in the work area of Community Health Center in Banda Aceh, totaling 1,043 elderly scattered in 5 villages. The study sample size was estimated according to the Slovin formula, the sample size was estimated 91 respondents but 100 elderly adults were studied. The sample size in each village was proportional technique sampling. The sampling was done bynon-random sampling and accidental sampling technique. Respondents involved in this study were voluntary, aged 60 years and over, able to communicate well, physically and mentally healthy and lived in the work area of the puskesmas, exclusion criteria included a medical diagnosis of dementia and severe illness.

Setting

Data was collected from April to Mei 2019. Data collection was carried out after having an Ethical Test Pass Letter from the Research Ethics Committee of the Nursing Faculty of Syiah Kuala of University. Written inform concernt was obtained from all participant.

Measures

The data collection was done by questionnaire and guided interviews by using a questionnaire consisting of three parts, that is demographic data of respondents, SPMSQ questionnaire and TUG observation.

Sosio Demographic of Respondent

The first part of questionnaires concist of sosio demografhic data of respondent; age, sex, marital status, income, education, occupation, medicine of terapy, history of falling and smoking.

Cognitive Funtion

Questionaire used to measure cognitive funtion; Short Portable Mental Status Questionnaire (SPMSQ). SPMSQ has reability with alpha value; 0.82 (Pfeiffer, 1975).

Falls Among Elderly

Time Up and Go Test (TUG Test) Questionaire used to measure falls among elderly. The validity of the English version of TUG correlates well with the Berg Balance Scale score (r = -0.72), the gait speed (r=–0.55) and (r=–0.51) on the Barthel Index (Podsiadlo & Richardson, 1991) . The Indonesian version of TUG has a validity value of r=0.754 (Utomo & Takarini, 2009). TUG reliability with cronbach alpha value = 0.99 (Podsiadlo & Richardson, 1991). This assessment format only instructs the elderly to get up from their seats then walk 3 meters further, the road turns back to the chair and sits back on the chair. The interpretation of the Time Up and Go Test (TUG) is as follows: full independence (normal) = <10 seconds, risk of light fall = 10–<20 seconds, risk of moderate fall = 20–29 seconds and risk of high fall = ≥30 seconds (Fitzpatrick, 2007).

Data Analysis

Data analysis was conducted using computer program to determine certain objectives as follows: (1) To estimate the prevalence of falls of the elderly use of descriptive statistics, (2) To To estimate the prevalence of cognitive function of elderly use of descriptive statistics, (3). To investigate the relationship between the cognitife function and falls among elderly using Rank Spearman statistical testing.

III. RESULTS

Sosio Demographic Data

Based on the research that has been done, the results are as follows:

Table 15.1 Respondent Demography(N=100)

Demographic Data	*F*	*%*
Age (WHO, 2018)		
Elderly (age 60 and above)	86	86,0
Oldest (age 80 and above)	14	14,0
Sex		
Male	40	40,0
Female	60	60,0
Marital Status		
Married	80	80,0
Widower	8	8,0
Widow	12	12,0
Income (Aceh Minimum Wage, 2019)		
High Income(≥ Rp. 2.916.810)	26	26,0
Low Income(< Rp. 2.916.810)	21	21,0
No Income	53	53,0

Level of Education (Law No. 20 of 2003)		
No School	20	20,0
Elementary	41	41,0
High School	10	10,0
Higher Education	29	29,0
Occupation		
Not Work	53	53,0
Laborer	3	3,0
Farmer	2	2,0
Fisherman	3	3,0
Private Sector	12	12,0
Retired	27	27,0
Medicine Therapy		
Yes	47	47,0
No	53	53,0
Medicine Therapy		
AngiotensinReceptor II Receptor Blocker	2	2,0
Antidiabetic oral (Biguanide)	1	1,0
Insulin	2	2,0
Insulin, Antidiabetic (Biguanide) dan Vasodilator (Calcium Channel Blocker)	5	5,0
Statin	1	1,0
Vasodilator (AngiotensinReceptor Blocker)	1	1,0
Vasodilator (Calcium Channel Blocker)	27	27,0
Vasodilator (Calcium Channel Blocker) dan Antidiabetic oral (Biguanide)	2	2,0
Vasodilator (Calcium Channel Blocker) dan Statin	6	6,0
No Therapy	53	53,0
History of Falling		
Yes	21	21,0
No	79	79,0
Smoking		
Yes	11	11,0
No	89	89.0

Based on table 1 regarding demographic data. The highest age range was Elderly's category (age 60 years and above) with 86 respondents (86.0%). The majority of respondents were women as many as 60 respondents (60.0%). The most marital status is married as many as 80 respondents (80.0%). Most respondents in this study did not have any income as many as 53 respondents (53.0%). The highest level of education is inelementary education as many as 41 respondents (41.0%). No work dominates in employment status as many as 53 respondents (53.0%).

The average respondents in this study had more than one disease (multimorbidity) as many as 53 respondents (53.0%) and the most diseases suffered by the study

population were Cardiovascular System diseases as many as 43 respondents (43.0%). Respondents who did not use medicine therapy dominated, more than 53 respondents (53.0%). On average, 79 respondents (79.0%) never had a history of previous falls and no smoking dominates the result of the respondent demography in this study as many as 89 respondents (89.0%).

Cognitive Function Among Elderly

Table 15.2 The Prevalence Cognitive Function Among Elderly (N = 100)

Cognitive Function	*F*	*%*
Good Cognitive Function	65	65.0
Mild cognitive /intellectual function impairment	22	22.0
Moderate cognitive/ intellectual impairment	12	12.0
Severe cognitive/ intellectual impairment	1	1.0

Based on table 2, it shows that as many as 65 respondents have a good cognitive function (65.0%).

Falls Among Elderly

Table 15.3 The Prevalence of Level Falls Among Elderly

The Level of the Risk of Falling	*F*	*%*
No risk of falling (full/ normal independence)	52	52.0
Mild Risk of Falling	33	33.0
Moderate Risk of Falling	14	14.0
Heavy Risk of Falling	1	1.0

Based on table 3, it shows that as many as 52 respondents were not at risk of falling (52.0%).

The Relationship Cognitive Funtion and Falls Among Elderly

Based on study, it shows that 65 respondents (65.0%) had good (normal) cognitive functions and 52 respondents (52.0%) did not risk falling. Through the Spearman Rank statistical test, the value of p-value = 0.00 (<0.05) so that H0 is rejected, which means there is a relationship between cognitive function and the level of risk of falling elderly in Banda Aceh.

IV. DISCUSSION

Based on the results of statistical tests about the correlation between cognitive function and the level of risk of falling in the elderly in Banda Aceh, it is known that the value of p is 0.00. This p-value<0.05 so that the null hypothesis (Ho) is rejected which means that there is a correlation between cognitive function and the level of risk of falling in the elderly in Banda Aceh.

Based on the results shown in table 4, it shows that cognitive functions and the level of risk of falling have a very strong relationship, this is indicated by the value of the correlation coefficient obtained which is 0.811.

The results of this study are supported by the research of Eni & Safitri (2018) which states that there is a close correlation between severe cognitive impairment and a high risk of falling. Cognitive disorders occur with age. As age increases, the function of the human body decreases. This is in line with the theory of aging, namely Stochastic theory proposed by Beers & Berkow (2013), which states that every episode of events that occur throughout a person's life causes damage to body cells randomly and accumulates over time, causing aging (Mauk, 2006). The aging process affects all systems in the human body including cardiovascular system, respiratory system, integumentary system, musculoskeletal system, reproductive system, gastrointestinal system, urinary system, endocrine system, immune system, nervous system and neurological system (Saxon, Etten, & Perkins, 2015) One of the effects of aging that occurs in the neurological system is atrophy (shrinkage) in the brain, so that cognitive functions experience interference. The cognitive function consists of aspects of attention, language, memory, coordination of motion, visuospatial and executive functions (Ministry of Health, 2010).

Aspects of cognitive function show various changes as the age is increasing, including memory problems (easy to forget), difficult to recognize objects so it is also difficult to use things even though they are actually easy to use. Besides that, the visuospatial problems that arise often make the elderly arevulnerable to being lost in their neighborhood. Then the disrupted executive aspects cause disruption of elderly activities in daily life (Ministry of Health, 2010). The executive functions have an important role in cognitive function in that the executive functions play a role in the balance of the elderly. In addition, research conducted by Siswo, Arsyad, Waluyo, M, & Susilowati (2017) states that the attention aspect is also a major factor of falling in the elderly. Another impact of the decline in other cognitive aspects is the decrease in the level of psychomotor abilities, neuromotor coordination,and flexibility of the elderly so that the elderly have a risk of injuries such as falls while walking and limited physical activity (Eni & Safitri, 2018).

This is also in line with Sari's study (2015) which shows that there is a relationship between cognitive status and elderly balance disorders. The balance of the elderly is disturbed due to changes in the nervous, motor and central nervous system, especially in the vestibular nerve which regulates balance (Zhou et al., 2013). The disturbed balance is very likely to cause the elderly to fall. In addition, changes in the nervous system due to the aging process affect the entire body system including coordination ability, mobility, vascular system, visual activity and cognitive function abilities (Dewi, 2014).

The study can be used as a reference and information about cognitive functions and the risk of falling in the elderly in work area of Health Center in Banda Aceh, so nurses can socialize ways to maintain cognitive function is one methode to prevent

falls in the elderly and to increasing the goverment programe (Elderly Posyandu), such as holding elderly brain exercise activities and cognitive training.

V. CONCLUSION

Based on the results of the study, the conclusions obtained are that there is a correlation between cognitive function and the level of risk of falling in the elderly in Banda Aceh. Therefore, it needs to plan and develop health awareness programs to improve cognitive good to prevent falls in the elderly.

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QUALITY OF LIFE IN ELDERLY WITH RHEUMATOID ARTHRITIS IN ACEH REGENCY

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Abstract: Aging is now an important issue throughout the world including Indonesia. The number of elderly people in Indonesia is increasing with the incident of various chronic diseases that accompany it, one of which is rheumatoid arthritis. Several problems often experienced by elderly people with rheumatoid arthritis, not only physically but also psychologically. This causes a change in their quality of life and had effect on their daily life functioning. The quality of life of patients with rheumatoid arthritis is influenced by several factors, such as increasingly weak physical conditions, poor personal relationships, lack of opportunities to obtain information and new skills. This literature review aimed to determine the aspect and several factors influencing the quality of life of the elderly people with rheumatoid arthritis. Several databases such as PubMed, CINAHL, Science Direct, Google Scholar were used to search the articles published from 2010 to 2019 in English that combined the search terms "quality of life", "elderly quality of life", "Rheumatoid arthritis", "Elderly chronic disease' and "quality of life and chronic disease". This study provides an overview of each quality of life domain in the elderly with rheumatoid arthritis. The quality of life domains consists of physical, psychological, social relations, and environmental health.

Keywords: Quality of Life, Elderly, Rheumatoid Arthritis, Indonesia

I. BACKGROUND

Aging is now an important issue throughout the world, including Indonesia. In Indonesia, the elderly population in 2000–2010 has reached above 7%, where in 2012 it has reached 7.56%. It is even estimated that in 2050 the elderly population in Indonesia will reach 28.68%. Based on these conditions, it can be concluded that the population structure in Indonesia can be said to have an old structure (Zulfitri, 2015).

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With the increasing number of elderly people, various chronic diseases emerge in the elderly. One of them is rheumatoid arthritis. Rheumatoid arthritis sufferers worldwide reached 355 million in 2009, meaning that 1 in 6 people in the world suffer from rheumatoid arthritis. Rheumatoid arthritis has developed and attacks 2.5 million Europeans. World Health Organization (WHO) reports that 20% of the world's population suffers from rheumatoid arthritis, of which 5–10% are over 60 years of age (Chintyawati, 2013).

The prevalence of rheumatoid arthritis in 2004 in Indonesia reached 2 million, with the number of women sufferers tripling more than men. Rheumatoid arthritis sufferers in Indonesia in 2011 estimated the prevalence to reach 29.35%, in 2012 with a prevalence of 39.47%, and in 2013 with a prevalence of 45.59% (Bawarodi, 2017).

Based on preliminary data that the author obtained from the North Aceh District Health Office, the number of elderly (aged 60–69 years) who suffered from rheumatoid arthritis in 2018 there were 850 cases (North Aceh Health Office, 2019).

Problems that are often experienced by the elderly with rheumatoid arthritis are pain, stiffness (stiffness) and weakness, and the presence of three main signs, namely: joint swelling, muscle weakness, and movement disorders (Hyulita, 2014). Increased pain during activity, impaired function and structure of the body makes the activities of the elderly become limited (Oktarina, 2016). This causes a change in their quality of life.

Quality of life is a multi-dimensional phenomenon. World Health Organization (WHO) developed an instrument to measure a person's quality of life from 4 aspects namely physical, psychological, social and environmental. How important these various dimensions are without evaluating it is difficult to determine which dimensions are important from the quality of one's life (Putri, 2016).

Some studies show a decrease in the quality of life of the elderly due to the occurrence of the disease process (physiological) in the elderly, such as a decrease in the quality of life in the elderly with rheumatoid arthritis. Based on research conducted by Gezer, et al (2018) which evaluates the situation in elderly patients with rheumatoid arthritis and shows that pain, levels of depression, fatigue, and sleep quality worsen with age. Research conducted by Oguro, Nobuyuki, and Yusuke (2018), elderly patients with rheumatoid arthritis will have more difficulty in achieving a satisfying quality of life after receiving treatment with biological agents. And research conducted by Fajri (2019) on the quality of life of rheumatoid arthritis sufferers in the community showed that the quality of life of rheumatoid arthritis in the good category 91.2% had decreased quality of life according to the complaints felt by rheumatoid arthritis sufferers, but this rheumatoid arthritis sufferer able to manage pain felt well, able to control stress well, there is support from the family and the availability of information. A decrease in the quality of life of the elderly with rheumatoid arthritis can occur due to the chronic nature of the disease, which has an impact on the treatment and therapy being undertaken (Utami, 2014). The quality of life of rheumatoid arthritis

patients is influenced by several factors, such as a weaker physical condition, poor personal relationships, lack of opportunities to obtain information, new skills, and so on (Rohmah, 2012).

Based on the facts above and seeing the high number of rheumatoid arthritis sufferers in the elderly in North Aceh District, the researchers are interested in examining the quality of life of the elderly with rheumatoid arthritis in the North Aceh District Health Office Work Area.

II. METHODS

This descriptive study was conducted in North Aceh Regency. Participants in this study were 365 people, with the criteria: aged between 60–69 years, diagnosed with rheumatoid arthritis, willing to be a respondent, and living in North Aceh Regency. They were chosen based on the results of the examination and treatment they did at the puskesmas in North Aceh District. But puskesmas with many elderlies with rheumatoid arthritis are only a few puskesmas. There are no specific inclusion and exclusion criteria for prospective respondents. All respondents were asked to fill in WHO demographic data and the WHOQOL-BREF questionnaire.

Settings

The first part of the questionnaire consisted of demographic information: age, sex, ethnicity, religion, education, occupation, income and duration of rheumatoid arthritis.

Demographic Variables

Language of the questionnaire is provided in Indonesian. Several WHOQOL-BREF instruments in Indonesian have been available from previous studies such as those of Salim, et al (2007) and Fajri (2019).

Quality of Life Questionnaire (WHOQOL-BREF)

The World Health Organization's Quality of Life Questionnaire (WHOQOL) provides a detailed assessment of each aspect of the individual relating to quality of life. At present WHOQOL is an instrument that applies internationally, can be compared cross-culturally and generically for the assessment of quality of life. The original WHOQOL was made by the WHOQOL Group in 1995 and consists of 100 items. After the development of WHOQOL-100, the WHOQOL Group developed an abbreviated form, namely the Quality of Life of the World Health Organization (WHOQOL-BREF). WHOQOL-BREF contains a total of 26 questions. To provide a broad and comprehensive assessment, one item from each of the 24 aspects contained in WHOQOL-100 has been included. In addition, two items of overall quality of life and general health were included. WHOQOL-BREF is available in 19 different

languages. The appropriate language version, and permission to use it, can be obtained from The WHOQOL Group, Mental Health Program, World Health Organization, CH-1211 Geneva 27, Switzerland (WHOQOL-BREEF, 1996).

WHOQOL-BREF which has been translated into Indonesian is given a score that covers four domains, namely: physical consisting of 7 questions, psychological 6 questions, social relations 3 questions, and environment 8 questions. Each question is given a score of 1 to 5, and a higher score is a better quality of life. The score of the domain is calculated by multiplying the average of each facet by 4 (Salim et al, 2007). If more than 20% of the data is missing from an assessment, the assessment must be discarded. Where items are lost, on average, other items in the domain are replaced. If more than two items are missing from the domain, the domain score cannot be calculated, apart from domain 3, where the domain will only be counted if 1 item is lost (WHOQOL-BREEF, 1996).

Table 16.1 Characteristics of Respondent Demographics

Characteristics	*(F)*	*(%)*
Mean of age (64 years)	37	10.1
Gender		
Girl	240	55.5
Male	125	44.4
Mean of the tribe (Aceh)	317	86.8
Religion		
Islam	363	99.5
Catholic	2	0.5
Mean of education (elementary school)	133	36.4
Occupation		
Tutor	7	1.9
Housewife	161	44.1
Trader	29	7.9
Farmers	95	26.0
Civil	11	3.0
Retired	7	1.9
Entrepreneur	18	4.9
Does	37	10.1
Mean of income (<Rp 1.000,000.00)	274	75.1
Long illness RA		
1 – 6 years	255	69.9
7 – 12 years	110	30.2

Data Analysis

Descriptive test is used to determine the distribution of demographic data, quality of life, and domains of quality of life.

III. RESULTS

The sample consisted of 37 (10.1%) with a mean age of 64 years, 240 (65.8%) were female and 125 (34.2%) were male. Most of the Acehnese (n = 317; 86.8%) and Muslim (n = 363; 99.5%). Average education was elementary school (n = 133; 36.4%) and most were housewives (IRT) (n = 161; 44.1%). The average income is less than Rp 1,000,000.00 per month (n = 274; 75.1%) and the maximum duration of rheumatoid arthritis is 1–6 years (n = 255; 69.9%) (Table 1).

Univariate Analysis

Table 2 shows the quality of life of the elderly which was assessed based on 4 sub variables namely the physical domain, psychological domain, social domain, and environmental domain obtained a mean value of 1.78 (SD=0.42). Table 3 shows that the physical domain is the highest sub variable with a mean value of 25.88 (SD=1.51), then followed by the environmental domain with a mean of 24.44 (SD=3.18), psychological domain with a mean of 22.61 (SD=1.47), and finally the social domain with a mean of 8.62 (SD=1.39).

Table 16.2 Minimum, Maximum, Mean and Standard Deviation Values of Respondents' Quality of Life

Variable	*Minimum*	*Maximum*	*Mean*	*SD*
Quality of Life	64.00	107.00	81.55	5.56

Quality of Life

The results of the study conducted to 365 respondents obtained a picture of a minimum value of 64.00, a maximum value of 107.00, and obtained a mean of 81.55 (SD = 5.56). The frequency of quality of life with a high category is 244 respondents (77.8%). This shows that most of the elderly have a high quality of life. This shows that the health of patients with rheumatoid arthritis is not only influenced by physical health, but can be influenced by support from others, patient independence, social relations with others and environmental factors.

Physical Health Domain

The results of a study conducted to 365 respondents obtained a description of the physical health domain with a minimum value of 21.00, a maximum value of 32.00,

and a mean of 25.88 (SD = 1.51), a high frequency category of 228 respondents (62, 5%), shows that the average physical health domain of the elderly with rheumatoid arthritis is high.

Psychological Domain

The results of the study conducted to 365 respondents obtained a description of the psychological domain with a minimum value of 18.00, a maximum value of 27.00, and obtained a mean of 22.61 (SD = 1.47), high frequency category 196 respondents (54%) , shows that the average psychological domain of the elderly with rheumatoid arthritis is high.

Table 16.3 Minimum, Maximum, Mean and Standard Deviation Values of Respondents' Quality of Life domains

No	*Variable*	*Minimum*	*Maximum*	*Mean*	*SD*
1	Physical Domain	21.00	32.00	25.88	1.51
2	Psychological Domain	18.00	27.00	22.61	1.47
3	Social Domain	6.00	13.00	8.62	1.39
4	Environmental Domain	16.00	38.00	24.44	3.18

Domain of Social Relations

The results of the study conducted to 365 respondents obtained a description of the domain of social relations with a minimum value of 6.00, a maximum value of 13.00, and a mean of 8.62 (SD =1.39), a high frequency category of 171 respondents (46, 8%), shows that the average domain of social relations of the elderly with rheumatoid arthritis is low.

Environmental Domain

The results of the study conducted to 365 respondents obtained a description of the environmental domain with a minimum value of 16.00, a maximum value of 38.00, and obtained a mean of 24.44 (SD = 3.18), high frequency category 168 respondents (46%) , shows that the average environmental domain of the elderly with rheumatoid arthritis is low.

IV. DISCUSSION

The results of the research that have been done show that the age characteristics of the respondents are on average 60–64 years with a percentage of 55.5% or as many as 203 respondents. These results are in line with research conducted by Relas and Silja (2018) at the Rheumatology Clinic of the University of Helsinki Hospital

in 161 rheumatoid arthritis patients, where respondents who were diagnosed with rheumatoid arthritis were on average aged 18–65 years with a percentage of 24.18% or 39 respondents. From the results of the above research equation it can be concluded that the age of 60–65 years is at great risk of developing rheumatoid arthritis.

Table 16.4 Frequency and Percentage Distribution of Quality of Life and Respondents' Quality of Life Domains

Variable	*Category*	*Frequency*	*Percentage*
Quality of Life	High	284	77.8
	Low	81	22.2
Physical Domain	High	228	62.5
	Low	137	37.5
Psychological Domain	High	196	54
	Low	169	46
Social Domain	High	171	46.8
	Low	194	53.2
Environmental Domain	High	168	46
	Low	197	54

Based on gender characteristics, women are the highest number of respondents, 65.8% or 240 respondents. Men and women have different abilities in dealing with diseases, especially in patients with rheumatoid arthritis women 2–3 times diagnosed with rheumatoid arthritis than men. These results are in line with research conducted by Berner, et al (2018) in a cross-sectional study conducted in rheumatoid outpatient clinics in Vienna, Austria in 120 patients with rheumatoid arthritis, where respondents diagnosed with rheumatoid arthritis were more numerous in women with a percentage of 82, 5% or 99 respondents. From the above research equation, it can be concluded that the female sex is more susceptible to rheumatoid arthritis.

Based on the results of this study, the average level of education of respondents was Elementary School (SD) with a percentage of 36.4% or 133 respondents. The level of education will affect one's knowledge, someone with a good level of education will affect their knowledge and can receive information well so that it can improve the quality of life (Nainggolan, 2009). According to Klin (2018) in his research regarding the level of knowledge of Turkish rheumatoid arthritis patients about their diseases with a percentage of 62.7% or 141 respondents. Based on the above research equation supports the results of this study and it can be concluded that the higher the level of education the better the knowledge and information received.

Based on the results of this study that the majority of the respondents' work was as a housewife (IRT) with a percentage of 44.1% or 161 respondents. Housewives generally do a lot of activities at home which can result in a lot of movement in the joints. These results are in line with research conducted by Andriyani (2018), the

results show that the most work done is as a housewife with a total of 53.2%. Work is one of the factors that can cause joint disease. Free and strenuous activity and pressure can worsen the condition of the joints and doing work that moves a lot of the hands and feet in the long term can cause complaints that will be felt by people with rheumatoid arthritis (Bawarodi, Rottie and Malara, 2017).

Based on family income earned each month the average income is below Rp 1,000,000.00 with a percentage of 75.1% or 274 respondents, This is in line with the research of Berner, et al (2018), revealing that the variables of age, marital status, education level, monthly net income, the number of additional drugs, the presence of comorbidities, pain, disease activity, functional disability, fatigue, adverse social interactions and all dimensions of disease perception are significantly related to the quality of physical health.

Based on the duration of rheumatoid arthritis, the average respondent suffered from rheumatoid arthritis for 1–6 years with a percentage of 69.9% or 255 respondents. The long duration of suffering from rheumatoid arthritis caused respondents to be uncomfortable because they sometimes experienced relapses at any time. This is in line with research conducted by Berner, et al (2018) at the rheumatoid outpatient clinic in Vienna, Austria, showing that most respondents had suffered from rheumatoid arthritis for 5–10 years with a percentage of 33.3% or 40 respondents.

The results of the research conducted to 365 respondents obtained a description of the quality of life of respondents with a minimum value of 1.00, a maximum value of 2.00, and obtained a mean of 1.78 (SD = 0.42), indicating that the mean quality of life of respondents was in high category. This shows that a small proportion of respondents have low quality of life. This is supported by age, education and low income, and the length of time suffering from rheumatoid arthritis. This is not much different from the research conducted by Lai, Leung, Kwong, and Lee (2015) in Hong Kong, the results show that pain is one of the factors that can reduce the quality of life of the elderly in nursing home residents. Tavares, Dias, Santos, Hass, and Miranzi (2013) say that the decline in quality of life is caused by limited bodily functions, illness, education, low income and lack of contact with others.

The results of studies that have been conducted on the physical domain obtained a minimum value of 21.00, a maximum value of 32.00, and obtained a mean of 25.88 (SD = 1.51), indicating that the physical domain of the quality of life of respondents is high. This is supported by the respondent's age, education, occupation, income, and duration of rheumatoid arthritis. This is not much different from research conducted by Berner, et al (2018) in Austria, the results show that the age, marital status, education level, monthly net income, the amount of additional drugs, the presence of comorbidities, pain, disease activity, functional disability, fatigue, adverse social interactions and all dimensions of disease perception significantly affect physical health.

The results of studies that have been conducted on the psychological domain obtained a minimum value of 18.00, a maximum value of 27.00, and obtained a mean

of 22.61 (SD = 1.47), indicating that the psychological domain of the quality of life of respondents is high. This is supported by the respondent's age, education, occupation, income, and duration of rheumatoid arthritis. This is not much different from research conducted by Campos, Ferreira, Vargas, and Albala (2014) conducting research with WHOQOL-BREF on elderly people living in communities in the Brazilian region showing that women who have good physical condition and psychosocial health have a quality of life higher. Meanwhile, in men quality is associated with high socioeconomic and physical condition and good psychosocial health. Healthy elderly people do have a better quality of life.

The results of research conducted on the social relations domain obtained a minimum value of 6.00, a maximum value of 13.00, and obtained a mean of 8.62 (SD = 1.39), indicating that the social relations domain of the quality of life of respondents was low. The family is the main support system needed by the elderly in maintaining their health. According to Ryan (2014) that when someone suffers from rheumatoid arthritis there is a role in the family that must change and not every family member can accept the changes that occur. According to Agarwal, et al (2007) that the level of social support is known to have an impact on psychological well-being, and they have social support in the good category and tend to be less depressed.

Quality of life in the domain or environmental aspects of RA patients on average is low. This is supported by the state of physical health, psychological, and social relations of respondents. According to Malm, et al (2017) say that quality of life in patients with rheumatoid arthritis is good if it is independent in terms of physical function and to. This is supported by the state of physical health, psychological, and social relations of respondents. According to Malm, et al (2017) said that the quality of life in patients with rheumatoid arthritis is good if it is independent in terms of physical and financial functions, resources, empowerment in managing life and participating in experiences related to social context.

V. CONCLUSION

General description of the characteristics of respondents with the incidence of rheumatoid arthritis susceptible to occur in the age of 60–64 years. The sex of RA sufferers mostly occurs in women. The last education of RA sufferers is known to be mostly elementary schools. The occupational status of RA sufferers is mostly housewives. Monthly family income is below Rp. 1,000,000.00. Most RA sufferers suffer from 1–6 years ago. Quality of life in the physical health domain of RA sufferers is largely high. Quality of life in the psychological domain of RA sufferers is largely high. Quality of life in the social domain of RA sufferers on average is low. Quality of life in the domain or environmental aspects of RA patients on average is low.

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DEVELOPMENT OF CARE DEPENDENCY MEASUREMENT TOOL FOR INDONESIAN HOME DWELLING OLDER ADULTS: ANALYSIS OF CONTENT VALIDITY

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Abstract: The development of care dependency scale in Indonesian older adults who live in the community is a necessary precursor for their independent living improvement. However, existing tools to measure care dependency in older adults are mostly intended for implementation in hospitals or institutional setting. A new, care dependency survey was developed for use in community setting. This survey was tested for content validity utilizing a panel of five experts. It had interrater agreement (IR) of 0.75 and a content validity index (CVI) of 0.87. The content validity analysis served as a useful tool for assessing the relevance and comprehensiveness of this survey of older adult's care dependency who live in the community.

Keywords: Care dependency, Older adult's care dependency, Content validity, Measurement

I. INTRODUCTION

The increasing number of older adult population in Indonesia found to be in accordance with the worldwide trend. Current life expectancy in Indonesia is at 71 years old and it is expected to rise to 74 years old in 2025 (Ministry of National Development Planning, 2018). Indonesia can be categorized as aged structure population because the percentage of older adult population in Indonesia in the present time is at 8.43% and projected to rise to 15.8% in 2035 (Indonesian Statistical Bureau, 2018). A rapidly aging population raises the issue of the available support for sustaining their welfare, especially when the economically active working population starts to fall short (Abikusno, 2007).

In the older adult population, dependency is one of the major health-related problems. Many of the older adults have one or more physical problems, moreover, genetic factors and unhealthy lifestyle leading to changes that eventually weaken them and damage body function and affect their dependency (Sudré et al., 2012).

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Dependency can occurred due to life cycle stage, crisis, disablement, personality, and social or cultural expectations. Care dependency can also occurs due to illness or disability. It can be temporary, long-term or permanent and is often associated with the care of older people (Lohrmann, Dijkstra, & Dassen, 2003). Therefore, it is important to assess care dependency of the older adult and the impact of being dependent on the older adult's social integration, economic self-sufficiency, and psychological well-being.

Measuring care dependency of the older adult population can be very challenging due to difference in settings and subject-specific conditions. Many instruments have been developed to measure care dependency in various settings, such as the Therapeutic Intervention Scoring System (TTSS) used in the cardiac intensive care unit (Gój, Knapik, Kucewicz-Czech, & Lubon, 2009), the Northwick Park Dependency Scale (NPDS) and Barthel Index used in rehabilitation settings (Sainsbury, Seebas, Bansal, & Young, 2005; Turner-Stokes et al., 1998), the Home Dependency Scale (HDS) used for patients in the Hospital in the Home (HITH) program (Santamaria, Daly, Addicott, & Clayton, 2000) and Omaha Problem Classification System used in a community setting (Martin, 2005).

Several tools have been developed to assess care dependency based on subject specific-conditions, such as the Illness Dependency Scale (IDS) for cardiac patients (Riegel, Glaser, Thomas, Gocka, & Gillespie, 1997) and the Care Dependency Scale (CDS) for patients with the DSM-IV Classification 'delirium, dementia, and amnestic and other cognitive disorders (Dijkstra, Smith, & White, 2006). Some others, such as the TTSS and the NPDS, have been designed for the purposes of staffing estimation and resource consumption in home health care. Therefore, measuring care dependency is beneficial not only to meet patients' needs but also to determine service provision requirements in hospitals, long term care, and rehabilitation centers.

Difficulties in assessing care dependency using currently available tools have been reported by many researchers. For example, instruments assessing both personal and instrumental ability to perform activities of daily living (ADL) such as the Katz Index and the Barthel Index (Caprio & Williams, 2007; Sainsbury et al., 2005). These instruments have only been widely used in clinical settings and epidemiological surveys or for overall measurements in outcome studies, but found to be inadequate to assess the psychosocial aspects of care dependency and have no direct assessment of cognitive and communication functions, which are key factors that often reduce independence (Grimby et al., 1996). In addition, the information gathered by the tools is often too inadequate to allow the evaluator to make reliable conclusion about the psychosocial needs (Lui & Mackenzie, 1999). Other examples of instruments designed to assess the degree of patient dependency are the Rating Scale for Elderly Patients (RSEP), the Behavior Observation Scale for Intramural Psychogeriatrics (BOS-IP) and the Scale for Social Functioning (SSF). These instruments are found to be rarely used because they have been designed to indicate where help is needed so they do not directly measure the dependency status arising from the needs of patients (Dijkstra, Buist, & Dassen, 1998a).

Currently, the available instruments to measure care dependency among the home dwelling older adult are scarce, even if they exist; the instruments focus more on the older adult with specific chronic conditions or specific illnesses, such as the IDS and the CDS. Moreover, measuring care dependency among general patients imposes several limitations when used with older patients due to the complex, age related problems. These problems are often derived from a combination of age-related changes, age-associated diseases, heredity, and lifestyle (Mauk, 2010).

Assessment of care dependency among older adult population is complicated due to several factors such as frailty, perception and communication problems and possible cognitive impairment (Eliopoulos, 2001; Espinoza & Walston, 2005). Even though some older individuals may have no particular illnesses, the biological changes that define aging occur gradually over time and lead to various weaknesses and health problems. Aging inevitably induces harmful effects upon individuals' ability to perform daily activities and reduces their abilities to cope with the environment (Pickering & Thompson, 1998). Therefore, in assessing care dependency it expected to be more complicated compared to the younger patients.

Measuring and evaluating care dependency of the older adult offers many benefits for the health practitioners. They will be able to determine the degree of professional assistance needed to meet the older adult health demands and to develop appropriate intervention plans to restore their ability. The aim of such interventions would be promoting independence, autonomy and quality of life in old age (Dijkstra, Coleman, Tomas, Valimaki, & Dassen, 2003). A valid tool for measuring care dependency is expected to not only be used for clinical purposes, but can also be applied at the level of health care policy. Information on care dependency of the older adult will help program planners to identify the range of services that are required by the older adult.

Indonesia has a different cultural context from the western countries in which most of the existing tools have been developed and tested. The older adult in Indonesia, like most of Southeast Asian countries are respected by their offspring because of their age whereas in western countries people are respected based on their achievements or other notable qualities (Diamond, 2011). This view will affect the way each culture provides care for their elders. With aging, the likelihood to become disabled increases, consequently the chance of being care dependent will increase as well. If dependency situation arises, the children have to consider two options, either putting their aging parents in an institution or maintain them within their own homes. The majority of Indonesian older adult would prefer the later (Sabdono, 2007). However, the situation can be problematic for older adult who require more specialized care, which cannot be provided by family member. As more older adult become care-dependent, a tool to measure their care dependency is needed. By using appropriate tool, all health personnel will be able to determine their care demands and provide the proper assistance needed.

With the increase in both the dependency of older adult people and of the care needed for the dependent older adult in Indonesia, the demand for data recording regarding the care dependency of the Indonesian older adult also increases. Care

dependency survey in the older adult population in Indonesia has been found to be poorly investigated in Indonesia, consequently there are no instruments available in Indonesian. With the availabe tools that available right now, it may not fit the Indonesian older adult due to difference in the settings, health care systems and cultures. Indonesian is known as a unique culture group that significantly influenced by deep values of Islam. This country has specific ethnicity, socioeconomic status, and language that influence the way the older adult take care of themselves and their children take care of their aging parents. Therefore, the Indonesian version of the CDS is needed in order to reflect the cultural context. Moreover, this study aims to presents methods that produce a reliable and valid instrument to assess care dependency of the Indonesian older adult. Data about the Indonesian older adult care dependency is necessary to help allocate effective services and programs for older persons in Indonesia.

This paper describes the content validity investigation of a new survey for measuring care dependency of older adults in community setting. It represents the first phase in a larger study of Indonesian older adult's care dependency living in community. In subsequent research, using a key informant approach, the implementation of this survey among Indonesian home dwelling older adult will allow health personnel working at community setting to have their self-reported assessment of older adult's care dependency. However, prior to implementing the newly developed survey in a larger study, the content validity of the survey should be established (Waltz, Strickland, and Lenz, 2010).

II. MATERIAL AND METHODS

The establishment of content validity is important to all surveys, but it is especially critical when the intent of a survey is to ascertain how respondents will perform in situations represented by survey items (Waltz, Strickland, and Lenz, 2010). During initial instrument development, the purpose of content validation is to minimize potential error variance associated with a survey and to ensure that inferences can be made from data obtained by the survey (Yaghmaie, 2003). Data from an invalid instrument could over represent, omit, or under- represent dimensions of the construct or reflect irrelevant variables that are outside the construct domains. The standardized and quantitative process for investigating content validity requires assembling a panel of content experts to judge the extent to which items within a survey pertain to the construct of interest and the extent to which the entire set of items represent all components of the intended construct (Waltz, Strickland, and Lenz, 2010).

In this survey of Indonesian older adult's care dependency in community setting, the intent of the survey is to determine care dependency of home dwelling older adult and to determine the degree of dependency to which the elderly depend on others to engage in actions that they initiate, manage and perform on their own behalf,

as assessed through the answers given in a self-report questionnaire. Therefore, establishing content validity is the appropriate first step to ensure that the survey will collect data on older adult's care dependency. Once the content validity of the survey is established, a future investigation of construct validity is warranted.

The survey was designed to reflect domains of care dependency reported in the literature. Because no published surveys of Indonesian older adult's care dependency in community setting were found, the development of our survey items was largely informed by the two commonly used surveys of care dependency in hospitals and long term facilities (Dijkstra, 1998; Turner-Stokes et al., 1998)"publisher":"University of Groningen","author":[{"family":"Dijkstra","given":"Ate"}],"issued":{"date-parts":[["1998"]]}}},{"id": 267,"uris":["http://zotero.org/users/3065439/items/U7VGK6QD"],"uri":["http://zotero.org/users/3065439/items/U7VGK6QD"],"itemData":{"id": 267,"type":"article-journal","title":"The Northwick Park Dependency Score (NPDS. First, review of surveys items within the two widely used surveys for older adult's care dependency identified two common dimensions of care dependency: physical dimension and psychosocial dimension. However, because the survey was intended to be use by Indonesia older adult it needs to fit with Indonesia culture. Therefore, a qualitative study was carried out. As results, more dimensions of care dependency were added. Physical dimension expanded to management of activity, nutrition, skin and hygiene, sleep and rest, and elimination. Psychosocial domain did not change but added with management and becoming psychosocial management. Two more dimension were added to the survey: spiritual and health care practices, resulted in 72-items of care dependency scale for Indonesian older adult (CDS-I). The information on the qualitative study is reported elsewhere.

Afterwards, the new instrument need confirmation by specific number of experts, indicating that the CDS-I have good content validity. For this purpose, an expert panel is appointed. Five experts were asked to review the 72-item CDS-I, they were all have doctoral degree in nursing, had experience working in the clinical practice and work as a nurse educator. Expert 1, 2 and 3 were Indonesian, 4 and 5 were Thai. There are two method that was used to establish the content validity. First is qualitative content validity method, experts were asked to evaluate the grammar, to see whether the items are using appropriate and correct words, applying correct and proper order of words in items and appropriate scoring. Second is the quantitative content validity method, in assessing the relevancy of the items to the content addressed by the objectives, the following four-point scale was used: (1) Not relevant, (2) Somewhat relevant, (3) Quite relevant and (4) =Very relevant. The scores from the relevance scale were computerized for Content Validity Index (CVI) using the following formula described by Waltz, Strickland, and Lenz (2005):

$$\text{CVI} = \frac{\text{The proportion of items given a rating of 3 or 4 by most experts}}{\text{Total number of questions}}$$

The CVI value of at least 0.8 is acceptable (Waltz, Strickland, & Lenz, 2010). Considering the CVI of each item in order to determine which item to keep or to discard. Items with I-CVI's no lower than 0.78 were retained (Polit, Beck, & Owen, 2007).

III. RESULTS AND DISCUSSION

Five experts reviewed the initial item pool (CDS-I original version). These experts were asked to qualitatively and quantitatively evaluate the newly developed instrument. The feedback from expert 4 and 5 was not too extensive, meaning they mostly agreed with the original items of the scale. Some of the items that they questioned were items 1, 2, and 21, consideration related to this issue was made when revising them. However, expert 1, 2, 3 gave more resourceful suggestions, this is most likely due to the loss of meaning that took place during the translation. When the scale was translated into Indonesian most of the items were not in the layperson language, so it would be difficult for the older adult to understand. Therefore, the recommendation from the experts to change the items to be more appropriate for the elderly was accepted.

The experts reviewed the 72-item CDS-I (original version), most of them rated 63 items 3 or 4. Therefore, the calculation of CVI in this process was:

$$\text{CVI} = \frac{140}{72} = 0.875$$

The other method to determine CVI is using the Content Validity Index for Items (I-CVI), which has been used in this study to determine which item to keep and which to discard. Items with I-CVI's no lower than 0.78 were retained (Polit, Beck, & Owen, 2007). The scale CVI's were 0.8 and higher, therefore at this stage 9 items were subject to elimination. However, CVI is not the only criteria used to discard items. All comments and suggestions were reviewed and items were revised if suggestion appeared to be congruent with the purpose of the instrument and did not change the meaning, when placed in the Likert scale format (DeVellis, 2012).

After the items were revised, consultation with two Indonesian experts was performed. Expert #2 reported that the items were now simpler but still too many. Expert #1, on the other hand suggested adding several items to the scale, because those added items were common activities performed by Indonesian elderly. Despite a contrasting suggestion, the suggestion of expert #1 was chosen because in the first stage of item generation it is better to have more items as they is expected to reduce in number in the subsequent steps. The final determination of item inclusion was based on the I-CVI and all experts' comments resulting in 13 items being deleted (9 items for low I-CVI < 0.8, and 4 items for redundancy). Seven items were added to the scale based on expert #1 suggestions. Thus, resulting in 67 items from 72 items, see table 1.

Table 17.1 Care Dependency Scale for Indonesian Older Adults

No	*Items*	*Completely*	*A lot*	*Sometime*	*A little*	*Not at all*
Activity						
Mobility						
1	How capable are you to go to places outside home by foot unaccompanied					
2	How capable are you to go to places that must be reached by the vehicle alone					
3	Are you able to walk around inside your house unaided					
4	How capable are you to move from one place to another without help					
5	Are you able to stand up from sitting without help from others					
Preventing fall/injury/harm						
6	Could you reach items placed high without help					
7	Do you need help from others to take care of you while you were in the bathroom					
8	Are you able to going up and down stairs independently					
9	Are you able to avert if an oncoming vehicle is approaching					
Exercise and Physical Activity						
10	Are you able to raise your arm over your head without difficulty					
11	Are you able to raise your arm to the side of your body without difficulty					
12	Are you able to move your arm to the front of your body without difficulty					
13	Could you curl your arm effortless					
14	Could you curl your knee without difficulty					
15	Are you able to exercise brisk walk around your house without company					
16	Do you need help with doing light house chores e.g., raking leaves, sweeping floor					
Nutrition						
Managing Food Intake						
17	Are you able to serve your own food without the help of others					
18	Are you capable of cooking your own food					
19	Could you eat your meal by yourself					
20	Do you drink if reminded					

No	*Items*	*Com-pletely*	*A lot*	*Some-time*	*A little*	*Not at all*
Exercising Dietary Control Practices						
21	Do you need to be reminded to eat on schedule every day					
22	Are you able to drink 8–10 glass of water every day					
Skin and Hygiene						
Maintaining Skin Integrity						
23	Are you able to prevent skin dryness					
24	Do you have the ability to select soap that keep your skin moist					
25	Do you need help from others to apply oil/lotion to your body					
Maintaining Personal Hygiene						
26	Are you able to cleanse your mouth by yourself					
27	Are you able to dressed and undressed by yourself					
28	Are you able to clean your whole body by yourself					
29	Are you able to wash your hair at least once a week					
30	Are you able to clean your ear by yourself					
Psychosocial						
Communication						
31	Do you need help from others to clarify your words when speaking					
32	Do you understand the conversations of others without assistance					
33	Could you use mobile phone without trouble					
Managing Worry and Stress						
34	Do you rely on the help of others in times of stress					
35	How capable you are to anticipate stressful events that are going to happen					
36	How difficult for you to recognize the source of your stress					
37	When you're in stressful situation how easy for you to get support from your family and friends					
Maintaining Social Interaction						
38	Do you need help to invite friends to come to your house					
39	Are you able to exchange information with friends and family without the help of others					

No	*Items*	*Com-pletely*	*A lot*	*Some-time*	*A little*	*Not at all*
40	Are you able to visit friends and relatives by yourself					
41	Are you able to attend activities in the community (e.g., arisan gampong, pengajian, rapat gampong))					
Spiritual						
Connecting with God						
42	Do you need help to determine the direction of the qibla					
43	Could you perform wudhu without help					
44	Are you able to determine the time for shalat					
45	Are you able to read the Qur'an by yourself					
Connecting with Others						
46	Are you capable of visiting friends and relatives when they are sick or passed away by yourself					
47	Do you need help from others to attend religious activities e.g., wirid/pengajian/ceramah (Islamic lecture)					
Sleep and Rest						
48	Are you able to arrange time to rest					
49	Do you need others to help you sleep well					
50	Could you recognize your sleeping problem					
51	When you cannot sleep, can you provide your own remedy to help you sleep					
52	Are you capable of providing comfortable environment for you to sleep					
Elimination						
Maintaining Normal Elimination Pattern						
53	Are you able to defecate without straining					
54	Do you need to be reminded to eat high fibers food					
55	Are you capable of controlling your bladder					
56	Are you capable of controlling your bowel movement					
Maintaining Sanitary Condition						
57	Are you able to reach the toilet without wetting yourself					
58	Do you need help from others to clean yourself after urinate/defecate					
59	Are you able to arrange trip to the toilet regularly					

No	*Items*	*Com-pletely*	*A lot*	*Some-time*	*A little*	*Not at all*
Health Care Practices						
Maintaining Healthy Behavior						
60	Are you able to prepare the concoction drink to control your blood pressure by yourself					
61	Do you depend on other to remind you to check your blood pressure regularly					
62	Are you able to get your prescribed medicines by yourself					
63	Do you able to supervise your own medications (types of drugs, time and dose) by yourself					
Getting Health Related Information						
64	Are you able to look for health related information by yourself					
65	Are you able to find out information about modern medicines and traditional medicines that related to your condition					
66	Are you able to talk to the doctor (or other health care providers) by yourself					
67	Do you find it difficult for you to make decision related to your own health care without the help of others					

Present paper demonstrates quantities indices for content validity a new instrument and outlines them during design and psychometrics of care dependency measurement for Indonesian older adult living in the community. It should be said that validation is a lengthy process, in the first-step of which, the content validity should be studied, and the following analyses should be directed include reliability evaluation (through internal consistency and test-retest), construct validity (through factor analysis) and criterion-related validity (Grant & Davis, 1997).

IV. CONCLUSION

Content validity study is a systematic, subjective and two-stage process. In the first stage, instrument design is carried out and in the second stage, judgment/quantification on instrument items is performed and content experts study the accordance between theoretical and operational definitions. Such process should be the leading study in the process of making instrument to guarantee instrument reliability and prepare a valid instrument in terms of content for preliminary test phase. Validation is a lengthy process, in the first step of which, the content validity should be studied. The following analyses should be directed include reliability evaluation (through internal consistency and test-retest), construct validity by factor analysis and criterion-related

validity. Meanwhile, we showed that although content validity is a subjective process, it is possible to objectify it.

Understanding content validity is important for nurses working in the clinical and researchers because they should realize if the instruments, they use for their studies are suitable for the construct, population under study, and socio-cultural background in which the study is carried out, or there is a need for new or modified instruments.

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DEPRESSION AND NUTRITIONAL STATUS OF TEENAGERS FOLLOWING 2016 ACEH EARTHQUAKE

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Abstract: The earthquake that occurred at Pidie Jaya in 2016 while destroying the physical parameter such as buildings and road, it also had caused a trauma. It will cause the dietary habit disturbance which affected the nutritional status. This research aims to investigate the rate of teenage depression, nutritional status and the relation between depression with the level of nutritional status of the senior high school students in Pidie Jaya District who were victim's of 2016 earthquake. Using a random sampling method, a total of 256 samples were selected. It revealed that 34.4% did not have the depression symptoms, 33.2% determined with mild depression, followed by 21.5% by moderate depression while heavy depression was observed 10.9%. Concerning nutritional status, it was found that 8.6% was extremely underweight, 17.6% was underweight, normal weight in 62.9%, overweight 5.9%, and obese 5.1%. Based on statistical analysis, it was found that no relationship between the depression level with the nutritional status ($p>0.005$). It is important to provide basics information concerning the importance of disaster mitigation knowledge and maintaining the good nutritional status for high school students in a disaster-affected or prone area such as Pidie Jaya.

Keyword: Depression, nutritional status, and earthquake victims

I. INTRODUCTION

In the development process, teenagers had gone through a series of memories that will support or disturb the self-development process. The disturbance in development process usually known by psychosocial stressor, which refers to a condition when a person face such situation that cause to adapt the situation.

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One of mental disorders that affected by psycho-social is depression, which is the condition mood disturbance that indicated by loss of control and heavy subjective suffer feeling (Kaplan et al., 2010).

A previous study conducted three years after Taiwan's earthquake revealed that mental disorders was prevalent among the survivors, where 6.4% had major depression, and 4.4% had *Post-Traumatic Stress Disorder* (PTSD) (Wu et al., 2006). Similar condition was occurred in the observation between 8 to 15 months after Ike Storm. Around 13% of children were diagnosed with PTS 8 months after the storm, while 11% with depression, and 10% with comorbidity of PTS and depression symptoms. Fifteen months after the storms the children that diagnosed with PTS were reduced to 7%, while depression among them remain in 11%, and children with comorbidity of PTS and depression symptoms were also reduced to 7% (Lai et al., 2012).

One of the causes of mental disorders is disaster, such as earthquake. Not only causing fatalities, this disaster also lead to psychological trauma after the event. An earthquake was *occurred* on December 7th, 2016 which struck Pidie Jaya with 6.5 Moment Magnitude. The disaster killed 104 people, seriously injured 186, and 789 were minor injured, leaving 43.529 people as refugees.

According to The National Agency for Disaster (BNPB), 11.730 houses reported damaged, 105 shop houses collapse, 14 worship places heavily damage, and one school building was collapse after the earthquake. Besides fatalities, the earthquake was also giving damage to houses, infrastructures, economy, social, and mental health.

Some of teenagers who were victims of a disaster could possibly develop a trauma symptom in years (Pfefferbaum, et al., 2008). Averagely the major depression that occurred in kids and teenagers would last for 11 months, but in some cases, the individual episode of depression could last until 18 months (Goleman, 1994a in Nevid, 2005). The symptoms of stress post-trauma could last in a longer period and has been found in persons who faced the disaster (Masykur, 2006).

This study is aimed to reveal the status of depression level from teenager's earthquake victims from senior high school student in Pidie Jaya. Beside depression level, nutritional status was also observed, to measure the relation between it and depression level on teenager's earthquake victims from senior high school students.

II. METHODS

The sample of this survey consist of 256 senior high school students in Pidie Jaya. Inclusion criteria in this study were admitted to senior high school students in Pidie Jaya, on disaster location when the earthquake occurred, in healthy condition, willing to be respondent in this study, and within 18 years old or younger. The study was conducted on May 2018. The data that collected in this research were consist of respondent characteristic, which are; name, date of birth, sex, height, weight, parent income, parents occupation and smoking habit of the father.

Beck Depression Inventory (BDI) was used to examine the presence of depression. The BDI standard score were categorized into 4 which are no symptom of depression (0–9), symptom of mild depression (10–15), moderate depression (16–23), and severe depression (24–63). This inventory system was proven to be valid while used in Indonesia to detect depression (Suwantara, Lubis, & Rusli, 2005).

Nutritional status was determined by using anthropometric standard according to Indonesian ministry of health (2010) which used Mass Body Index (IMT) for kids with age 5–18 years old. Body weight measurement were done using bathroom scale, while the height was measured using stature meter.

III. RESULTS

Most of respondents in this study were girl (57%), aged 16 years old (45.3%). The majority of student's mother were not working (52%), and more than half of their fathers were active smokers (51.2%). The demographic features of respondents were summarized in table 1.

Table 18.1 Demographic Features.

Respondent characteristic	*N*	*%*
Gender		
Male	110	43
Female	146	57
Age (years old)		
15	9	3.5
16	116	45.3
17	107	41.8
18	24	9.4
Parent Income		
Low	58	22.7
Moderate	71	27.7
High	57	22.3
Very high	70	27.3
Working Mother		
Yes	123	48
No	133	52
Smoking Father		
Yes	131	51.2
No	125	48.8

The result of depression assessment of the respondent using BDI shown that 88 persons (34.4%) classified into no depression category. Mild depression found in 85

persons (33.2%) and severe depressed were observed in 28 persons (10.9%) which almost half of moderate depression patients (table 2).

Table 18.2 Depression Category of Pidie Jaya Senior High School Students

Category of Depressions	*N*	*%*
No symptom	88	34.4
Mild depression	85	33.2
Moderate depression	55	21.5
Severe depression	28	10.9

Based on nutritional level, it has been revealed that 22 persons (8.6%) is very thin, while 45 persons (17.6%) categorized to underweight. Normal weight person is recorded 161 persons (62.9%), while 15 persons was categorized overweight. Obesity category is revealed suffered by 13 persons (5.1%).

Chi-Square test was used to analyze the association between depression and nutrition status. It was found that no significant association between depression level and nutritional state of respondents (p=0.968).

IV. DISCUSSION

Most of respondent were categorized with no depression symptom with 34.4%. Other 33.2% were suffer mild depression while the moderate depression students were observed 21.5%. The students with heavy depression still the lowest compared to others with 10.9% from total. Similar study also conducted post-earthquake in Sleman, Yogyakarta in 2008. It revealed 32.7% were categorized mild depression while 12.9% in moderate depression. For heavy depression recorded 1.4% while keeping mostly 53% in normal condition (Nurhasanah., 2009).

The differences between the study result were caused by population and method difference which applied on both studies. Earthquake could happen at anytime and anywhere and causing trauma to the victims. Study also conducted after Wenchuan earthquake in 2008, with temporal observation. The observation was done 6.12, and 18 months after the earthquake. It revealed that per each time frame the victims that recorded with depression were male with 27.3%, 42.9% and 33.3%, while depressed female with 42.9%, 61.9% and 53.4% (Chui CH, et al, 2017).

Table 18.3 Nutritional Status Distribution of Pidie Jaya High School Students

Nutritional Status	*N*	*%*
Very thin	22	8.6
thin	45	17.6
Normal	161	62.9
Fat	15	5.9
Obesity	13	5.1

In this study, 62.9% of respondent were had normal nutritional status, while the rest of others were categorized very thin 8.6%, thin with 17.6%. In opposite, 5.9% were found in fat condition and 5.1% suffered obesity. Nutritional status was affected by two factors which are direct and indirect. Nutrition supply and infection disease were the direct factors that affect nutritional status (Supariasa, 2012). Other relevant research was taken placed in Cangkringan subdistrict, Sleman District after merapi volcano eruption with junior high school students as the objects. This study revealed that 50% of the students suffered underweight, 18.7% with overweight, and 31.2% others still in normal weight (Marga, 2015). Two years after Wechuan earthquake, level of malnutrition was increased especially for vulnerable groups such as babies and kids (Dong, et al, 2014). Kids were reported suffered *stunting* and *wasting*. Anemia prevalence also increase around babies and kids, especially with girls, pregnant and breastfeeding women (Dong, et al, 2014).

Based on analysis, there is no significant correlation between level of depression and nutritional status (p=0.968). Deficiency of nutrition would happen if someone did not get enough nutrition in a long period of time. In stressed condition, somebody tend to forget every basic need such as food, rest, and personal hygiene (Roberts, 2000). Several studies also revealed similar result which stating there is no significant correlation between depression and nutritional status of students like happened in Stella Duce 1 junior high school of Yogyakarta (Tirta et al., 2010) and with the opium ex users in drugs rehabilitation center (Ekawati, 2009).

The lack of correlation between depression and nutritional status in this study could be caused by both internal and external factors. The duration of observation during the study, perception of the depression, individual character which produce self-control with the help of religious faith were the internal factors that affecting the study. The external factors were consisting of the lack of role of depression towards nutritional status and completed by other variables which affecting the depression itself. Further study is needed to countermeasure the depression and nutritional status problem faster.

The teenagers need to be informed about their health education especially psycho-education. It was needed to make them realize, understand their psychological problems and how to deal with it. Depression could happen at anytime and anywhere, therefore the good environment combine with a lot of positive activities in school will keep the students from being depressed. In increasing the knowledge about nutrition, the cooperation between related stake holder were needed to achieve good nutritional status in order to support the development of the teenage in daily learning activities.

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ANXIETY AND SLEEP QUALITY OF ADOLESCENTS IN EARTHQUAKE AFFECTED AND NON-AFFECTED AREAS

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Abstract: The district of Pidie Jaya was severely hit by the earthquake on December 7, 2016. The disaster can cause various psychological problems, including anxiety and sleep quality of the survivors. The present study aims to determine the presence of anxiety and sleep problem among adolescents exposed to the earthquake and compared them to those who were not exposed to the earthquake. The presence of anxiety was assessed using the S-TAI questionnaire, while sleep quality was assessed using the PSQI questionnaire. The findings suggest that adolescents who were directly affected by the earthquake, the prevalence of state-anxiety was 85.4% and 1.7% of moderate and severe, respectively. Whereas the prevalence of trait-anxiety was 84.3% and 2.2% of moderate and severe, respectively. Among adolescents who were not directly affected by the earthquake, the prevalence was 58.2% and 2.4% of moderate and severe state-anxiety, respectively. The prevalence of sleep problem was found more frequent among non-earthquake affected adolescents (87.3%) than among those directly affected by the earthquake (73.6%) (2= 10.1, $\rho = 0.002$). The findings suggest that the presence of anxiety among adolescents affected by the earthquake were more prevalent compared to those who did not experience such disaster.

Keywords: Earthquake, anxiety, sleep-quality

I. INTRODUCTION

Disaster is a series of calamitous event that threaten and disrupt lives and community livelihood. It might be caused by natural factors, non-natural factors or human factors, thus resulting in human casualties, environmental disruption, property loss and psychological impact. Pidie Jaya is a district in Aceh, Indonesia that is prone

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to tectonic earthquakes because the fact that the land in the region is composed of alluvia types. On December 7th, 2016, the district had a devastating earthquake, caused 102 deaths, 650 injuries and damaged thousands of homes as well as public facilities (Satuan Tugas Pemulihan Gempa Pidie Jaya, 2016).

The survivors of an earthquake might experience various psychological problems, including anxiety and sleep problems. Anxiety is an unpleasant feeling, or uncertainty feeling because of uncertain causes or no real object (Puri, Laking, & Treasaden, 2002). Previous studies showed that the presence of anxiaty is prevalent among adolescents affected by such a natural disaster (Kar & Bastia, 2006; Marthoenis, Ilyas, Sofyan, & Schouler-Ocak, 2019; Weems, Russell, Neill, Berman, & Scott, 2016) comorbidity and predictors of Post-Traumatic Stress Disorder (PTSD. A study in the similar setting, Pidie Jaya, around six month after the earthquake found that 32.1% of adolescent affected by the earthquake suffered from anxiety symstoms (Marthoenis, Meutia, Sofyan, & Schouler-Ocak, 2018). Another study in China found a prevalence of 37.6% of adolescent with anxiety following the Wenchuan earthquake (Pan et al., 2015). These findings suggest that anxiety is common among adolescents exposed to a natural disaster such as an earthquake.

Apart from anxiety, adolescents who experience such a natural disaster might also suffer from sleep problems. Sleep quality consisted of two aspects they are sleep quantity and sleep quality. Quantitative aspect covers the duration of sleep while sleep qualitative is a subjective aspect of sleep latency and feeling fresh when awake (Lemma, Gelaye, Berhane, Worku, & Williams, 2012) sleep quality among university students has not been studied in Ethiopia. Thus, this study assessed sleep quality and its demographic and psychological correlates among university students. Methods: A cross-sectional survey was conducted in two universities in Ethiopia. Multistage sampling procedures were used to enroll 2,817 students into the study. A self-administered structured questionnaire including the Pittsburgh Sleep Quality Index (PSQI. A longitudinal study (Geng et al., 2018) 45.8%; mean age at baseline 15.01 years, standard deviation (SD found a wide range of sleep problems among adolescents affected by a natural disaster. The problem with short sleep duration varies from 49.8% at six months after the disaster to 27.8% at 12 months after disaster. Difficulty falling asleep was found in 26% at six months after disaster, and 10.6% at 24 months after disaster. Some 20.7% of adolescent had poor sleep quality at six months following the disaster (Geng et al., 2018) 45.8%; mean age at baseline 15.01 years, standard deviation (SD. Furthermore, the prevalence of sleep problems was significantly associated with the presence of post-traumatic problem among adolescent affected by an earthquake (Kar & Bastia, 2006) proportion of adolescents exhibiting post-traumatic psychiatric symptoms, prevalence of post-traumatic stress disorder (PTSD.

II. METHODS

This cross-sectional study was conducted in two senior high schools, one in an earthquake affected area, while another one in a non-earthquake affected area. Using a total sampling method, a total of 417 students were invited to participate in the study. However, only 343 respondents filled the self-reported questionnaire. The presence of anxiety was examined using the State-Trait Anxiety Inventory (STAI). The STAI questionnaire is psychological inventory that was developed by Spielberger (Spielberger, 1983). It consists of 40 questions on a self-report basis and rated on a 4-point Likert scale. It has two subscales, the state anxiety (S-anxiety) which evaluates the current state of anxiety and the trait anxiety (T-anxiety) which evaluates the stable aspect of anxiety. Each subscale has a possible score of 20 to 80, where higher score indicating greater anxiety.

The presence of sleep problem was examined using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. The PSQI was developed by the researchers at the university of Pittsburgh, which aims to assess sleep quality of a one-month time interval. It consists of 19 self-report items and rated on 4-point Likert scale. The higher score indicates poor sleep quality (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). The study was approved by an institutional ethics committee. The students' guardians gave informed consent.

III. FINDINGS

Out of 417 students who were invited to participate in the study, only 343 completed the questionnaires (response rate 83%). Some 178 respondents (51.9%) were recruited from an earthquake affected school, while the remaining 165 (48.1%) were recruited from a non-earthquake affected school. The mean of age of the respondents was 16.8 (SD = 0.86), and more than half were girls (62.8%). The fast majority were Acehnese (91.8%), while the remaining (8.2) were non-Acehnese. The occupation of the parent includes government employee (36.7%), private business (38.5%) and others (24.8).

The present study found that among adolescents who were directly affected by the earthquake, the prevalence of state-anxiety was 12.9%, 85.4% and 1.7% of mild, moderate and severe, respectively. Whereas the prevalence of trait-anxiety was 13.5%, 84.3%, and 2.2% of mild, moderate and severe, respectively. Among adolescents who were not directly affected by the earthquake, the prevalence was 39.4%, 58.2% and 2.4% of mild, moderate and severe state-anxiety, respectively. Whereas the prevalence of trait-anxiety was 3%, 94.5% and 2.4%, respectively. Further analyses found that the mean score of state-anxiety was higher among non-earthquake affected adolescents (mean = 46.4, SD=6.12) than among those directly affected by the earthquake (mean = 42.2, SD=10) (t=4.68, p= 0.001). Meanwhile, the score of trait-anxiety was

higher among earthquake affected adolescents (mean = 48.47, SD = 5.4), than among non-earthquake affected adolescents (mean = 46.6, SD= 6.12), (t = 3.06, ρ = 0.002). The prevalence of sleep problem was found more frequent among non-earthquake affected adolescents (87.3%) than among those directly affected by the earthquake (73.6%) ($x^2 = 10.1$, ρ = 0.002). Sleep problem was not associated with level of state or trait-anxiety, nor with gender and ethnicity (ρ > 0.05).

IV. DISCUSSION

The present study found a significantly high prevalent of moderate state-anxiety (85,4%) and trait-anxiety (84,3%) among adolescents who were directly affected by the earthquake. Meanwhile the prevalence of severe state and trait-anxiety was 1.7% and 2.2%, respectively. The proportion of adolescents with severe anxiety in the present study population is smaller than the proportion of generalized anxiety disorder examined among adolescents following a super-cyclone disaster in India (12%) (Kar & Bastia, 2006) proportion of adolescents exhibiting post-traumatic psychiatric symptoms, prevalence of post-traumatic stress disorder (PTSD. The finding of high prevalence of anxiety among those exposed to disaster has been in line with a previous study in the similar setting, where they found approximately 32.1% of adolescents had anxiety symptoms (Marthoenis et al., 2019).

High prevalence of sleep problem in the present study (73%) population was significantly higher compared to a previous report (Geng et al., 2018) 45.8%; mean age at baseline 15.01 years, standard deviation (SD. Interestingly, the present study also unveils that sleep problems are more prevalent among adolescents who were not affected by the earthquake than those who were affected. The non-affected respondents were recruited from a high school with a dormitory system, where students study and live in the school dormitory. The condition of the dormitory might responsible for their poor sleep quality. This hypothesis is supported by a study among university students living at the university dormitory where approximately 74.5% of them had poor sleep quality. Therefore, it might be concluded that sleep quality might be affected by the exposure to disaster, however, the living condition, such as dormitory might also play significant role. The present study did not seek other determinant variable that responsible for the sleep problem among adolescents. The future study should consider these variables.

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POST-TRAUMATIC STRESS DISORDER, DEPRESSION AND ANXIETY AMONG EARTHQUAKE AFFECTED ADOLESCENTS

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Abstract: The district of Pidie Jaya, Aceh Province, Indonesia, hit by an earthquake on 7 December 2016. The earthquake might lead to the presence of mental disorders. The purpose of this study was to determine the prevalence of Post-Traumatic Stress Disorder, depression and anxiety among adolescents six months after being exposed to the earthquake. A total of 321 students from 7 high schools in the surrounding areas participated in the study. It was found that 270 respondents (84.1%) were directly affected by the disaster, 199 respondents (62%) had PTSD, 268 respondents (83.5%) had depression and 232 respondents (72.3%) had anxiety. The prevalence of PTSD, depression and anxiety was high in the present population.

Keywords: Earthquake Disaster, Post Traumatic Stress Disorder (PTSD), Depression

I. INTRODUCTION

Natural disasters are traumatic events (Smith et al., 2009). Natural disasters cause damage, ecological change, and death (WHO, 2002). This can affect the health of the victim, including physical and mental health (Rubonis & Bickman, 1991). Some previous studies have found that natural disasters can increase anxiety levels, depression and post-traumatic stress disorder (PTSD) (Smith et al., 2009).

Indonesia is one country that has a high prevalence of disasters. According to the Centre for Research on The Epidemiology of Disasters (2012), Indonesia ranks 5th out of countries that are often hit by natural disasters, especially for geophysical and meteorological disasters. According to Simamora (2011), Indonesia is one of the countries in the world that is often hit by earthquakes, volcanic eruptions, tsunamis, floods and droughts.

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The 2016 Aceh earthquake struck the island of Sumatra on the scale of 6.5 Mw on 6 December 2016. The shock was reported to be at a depth of 13 km, categorized as a strong, shallow earthquake. The epicentre was located near the village of Reuleut in Pidie Jaya Regency, 164 km (102 mi) southeast of the province's capital, Banda Aceh. 104 people died in the quake, with at least 1,000 people injured. It was the deadliest earthquake in Aceh since the 2005 Nias–Simeulue earthquake and the deadliest in Sumatra since the 2010 Mentawai earthquake and tsunami BNPB, 2016).

Living with a high risk of disasters is a real situation in Indonesia (Murphy, 2012). This has made the Indonesian Government and NGOs build a disaster management system so that the community is better prepared to face disasters in the future. However, the disaster management program still does not pay attention to mental health perfectly. This is the same as previous studies which found that there is a high risk of post-disaster mental health disorders, especially in developing countries, such as Indonesia. In fact, in Indonesia, most victims need to deal with mental health quickly, but mental health problems still do not get enough attention from the Government (Astuti, 2012).

II. METHODS

Using cluster random sampling, a total of 321 students from seven public high schools in the Pidie Jaya Regency participated in the survey. The researchers were accompanied by the teachers in each high school during data collection. The respondents should be the survivors or participated in witnessing, experiencing events and being exposed or directly affected by the earthquake. To measure the prevalence of post traumatic disorder, depression and anxiety, a brief PTSD inventory, the Patient Health Questionnaire (PHQ), the Generalized Anxiety Disorder (GAD-7) were used.

III. FINDINGS

It was found that 270 respondents (84.1%) were affected by the disaster, 211 respondents (65.7%) were female, 199 respondents (62%) had PTSD, 268 respondents (83.5%) had depression and 232 respondents (72.3%) experience anxiety. The results of bivariate analysis showed that there was a disaster relationship (p = 0.004) and sex (p = 0,000) with the incidence of PTSD. The analysis showed that direct exposure to disaster was the most dominant factor causing PTSD (p = 0.001. OR = 2,203), and direct exposure to disaster was the most dominant factor causing anxiety (p = 0.006. OR = 2.016).

IV. DISCUSSION

The findings in the present study was in line with the results of Harini's study, et al. (2008), where they found majority of respondents experienced physical aspects of

disruption (55.8%), all respondents often experienced cognitive aspects disruption, some respondents were rather frequent and emotionally disturbed, some respondents never experienced behavioral disturbances, all respondents often experienced social aspects of disruption. some respondents have a tendency to experience PTSD (51.2%) and some also have PTSD (48.8%).

Jha (2010) stated that when an individual is faced with a condition of worry or fear, two choices will automatically be responded spontaneously by the body, which is facing (fight) or avoiding (flight), which the response causes different manifestations in each individual followed by anxiety or stress that will increase heart rate, excessive sensitivity to sound. The reaction or response sometimes also causes people with PTSD to be in an unstable condition where the person is faced with these two choices, even though the person is not necessarily in danger.

Many factors influence the condition of physical health after such a disaster. Some of them are psychopathological factors, social support, risky health behaviors, and barriers to health facilities. For psychological factors, problems that arise after a disaster include PTSD, depression and anxiety. These three conditions are closely related to health conditions (Astuti et al., 2018). Sandhu and Kaur (2013) states that the psychological effects that most often arise in cases of disasters are Post Traumatic Stress Disorder (PTSD), prolonged sadness, anxiety disorders, substance abuse disorders, distorted perceptions, pessimism and endeavor attempts self. The psychological impact of PTSD due to disasters is a psychological problem that often occurs most often in the first year or two years after a disaster. PTSD affects 6% of the general population during their lives, is a burden on the economy and health of the country, and makes a burden on the family. And has an impact on the quality of life of patients (Pagotto et al, 2015).

Anxiety is a response to a threatening situation, and is a normal thing that happens along with developments, changes, new experiences or that have never been done, and in finding self-identity and meaning of life (Nevid, 2008). Anxiety is a subjective feeling about disturbing mental tension as a general reaction to the inability to overcome a problem or lack of security. These uncertain feelings are generally unpleasant which will later cause or be accompanied by physiological and psychological changes (Lur, 2010). Many factors influence the condition of physical health post-disaster. Some of them are psychopathological factors, social support, risky health behaviors, and barriers to health facilities. For psychological factors, problems that arise after a disaster include PTSD, depression and anxiety. These three conditions are closely related to health conditions (Astuti et al., 2018). The finding of high prevalence of anxiety in the present study population requires further investigation and prompt treatment.

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UTILIZING EDUCATIONAL MEDIA OF DISASTER MITIGATION ON EARTHQUAKE AND TSUNAMI PREPAREDNESS FOR INPATIENT FAMILIES IN HOSPITAL

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Abstract: Disaster may threat and disruption for community's lives. Hospital is the front-line and evacuation sites for critical disaster events. Disaster mitigation education through media such as leaflet and flip chart are tools used to provide information. The disaster reduction was carried out by increasing disaster preparedness that includes knowledge, emergency planning, disaster warning system, and resources mobilization. The purpose of study was to examine effectiveness educational media of disaster mitigation preparedness for inpatient families in hospital. This study is a comparative study with sample independent t-test. The population was inpatient families using proportional stratified random sampling of 45 respondents for each group. The data were collected using the standard questionnaire of disaster preparedness from LIPI-UNESCO/ISDR and educational disaster mitigation from National Disaster Management Agency. Intervention both groups were delivered of educational material related to disaster mitigation for 40 minutes for one intervention each group, then was evaluated using the questionnaires. The findings of this study showed there were significantly effective using flip chart instead of leaflet on knowledge level between two groups with p value = 0.024 ($\alpha = 0.05$). The nurses are recommended to provide flip chart as printed educational media in educating the inpatient families in hospital settings.

Keywords: Educational Media, Mitigation, Disaster Preparedness, Inpatient Families, Hospital

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I. INTRODUCTION

Disaster is a series of adserve events that may threaten and damage community lives caused by natural and human factors. This causes losses on human, material and environment, as well as psychological impacts (UU RI No 24, 2007). Natural disasters cause many human casualties, injuries, direct losses and infrastructure damages (Pascapurnama et al., 2018b). According to Indonesia Disaster (2010), Indonesia is very vulnerable to disasters. In 2009, there were several disasters such as earthquake, tsunami, flood, tornado and landslide occurred in Indonesia (Putra, Petpichetchian, & Maneewat, 2011). In 2018, there were 1,999 disasters and caused 3,548 dead and missing people, 13,112 injured, 3.06 million evacuated and a lot of facilities damaged (BNPB, 2018). Kamal, Songwathana, & Saesia, (2014) explained that there disaster in unavoidable for any country, thus adequate disaster preparedness is required to reduce the impacts.

Aceh Province is located in subduction zones, Sumatra fault zones and Investigator Fracture Zone (IFZ) causing great potential to experience periodically both earthquakes and tsunami (Jihad & Banyunegoro, 2017). According to the report of the National Coordinating Board/BAKORNAS (2005), the 2004 Indian Ocean earthquakes and tsunami disaster caused 123,598 deaths, 113,937 people were missing, and 406,156 people were evacuated. According to Indonesia Institute of Sciences/Lembaga Ilmu Pengetahuan Indonesia & *United Nations Educations, Scientific and Cultural Organization/UNESCO* (2010), Aini & Husna (2017) stated that the lack of community preparedness for disasters was a factor that caused many casualties in the 2004 Indian Ocean tsunami. Therefore, disaster mitigation has become a necessity as an effort to reduce the risk of the disaster. Disaster mitigation is an effort to eliminate or reduce the risk of disaster through physical development, community awareness, and capacity building in the face of disaster (UU RI No 24, 2007). The concept of disaster risk reduction implies that disasters cannot be stopped, but the effects of disasters may be reduced through disaster planning (Takafuji, Takamatsu, Nakata, & Adachi, 2018). The quality of training and education essentially determine the disaster preparedness and response (Sonneborn, Miller, Head, & Cross, 2018) which require nurses to have adequate training and education of hospital disaster management plans to respond appropriately. The evidence-base of disaster preparedness in the acute setting is limited, particularly with regard to operating theatre nurses. Objectives: Explore operating theatre nurse's disaster knowledge of their role in a mass casualty event, and identify the preferred mode of disaster education and training to improve disaster preparedness. Design: A cross-sectional research design was employed with data collected using a survey tool. Settings: The research was undertaken on operating theatre nurses in a tertiary hospital in Victoria, Australia. Participants: The participants in this research included 53 operating theatre nurses, 51 Registered Nurses and 2 Enrolled Nurses. Methods: The survey was based on a disaster questionnaire for emergency

department nurses from South Australia, exploring knowledge and preparedness for disaster response in the acute setting, and altered to be specific and relevant to the operating theatre environment and broadened to focus on the training needs of perioperative nurses. Results: The survey of 53 operating theatre nurses identified that few had previous disaster experience (19.9%.

The implementation of disaster training and education may use media as a communication tool. There are some types of media that exist for providing disaster mitigation education, including illustrative media or posters, leaflets, and power points (Takafuji et al., 2018). Bretz cited in (Nuryanto, 2018) identified the main characteristics of the media into three elements. Those elements are sound, visual and motion. The visual media include illustrations, lines, and symbols which are a form that may be captured by the sense of sight. In addition, Bretz also distinguished the difference between broadcast media (telecommunication) and recording media into seven classifications of media, including audio-visual motion media, silent audio-visual media, visual motion media, visual silent media, semi-motion media, audio media and printed media. The tools used in this study is educational media of disaster mitigation in the form of leaflets and flip charts due to the simplicity and the easiness to understand.

Disaster preparedness is an activity that carried out with the aim of anticipating disasters through an effective organizing (UU RI No 24, 2007). Disaster preparedness is necessary because disaster risk reduction activities are the most important element in the pre-disaster phase (LIPI-UNESCO/ISDR, 2006). Disaster risk reduction activities in the pre-disaster is by increasing the people's capacity through training and education listed in National Medium Term Development Plan/*Rencana Pembangunan Jangka Menengah Nasional* III in 2015–2019 (BAPPENAS, 2014). The Important components in disaster mitigation are the existence of information and maps of disaster-prone areas, socialization for the community, understanding what should be done and avoided during the disasters and the arrangement of disaster-prone areas (Peraturan Menteri Dalam Negeri No 33, 2006). Disaster mitigation materials include the introduction of disasters, the causes of disasters, as well as the strategies before, during, and after disaster happened. The assessment components for earthquakes and tsunami disaster preparedness for family according to LIPI-UNESCO/ISDR, 2006, including knowledge, emergency action plans, disaster warning systems, and resource mobilization in hospital setting in disaster preparedness and response.

Hospitals are front-line responders and evacuation sites for crises like infectious disease outbreaks, hurricanes, and disaster. The public has high expectations that hospitals will provide compassion, care, and extensive support for survivors of community-based disasters (Liu, Fowler, Roberts, & Herovic, 2018). Based on the profile data of the Regional General Hospital dr. Zainoel Abidin Banda Aceh (2018), it is a type A educational and provincial referral hospital that has building area of 54,785.13 m^2, 1,125 nursing staffs and 739 beds. The number of bed occupancy

ratios (BORs) in this hospital is 96%. The total number of inpatient visits are 4,306/ month, and outpatient care are 4,080/month. The hospital is very crowded with the patients and families that visited it. These conditions need to be prepared with several effectively of educational media for disaster mitigation on earthquake and tsunami preparedness such as flip chart and leaflet that are commonly used in this hospital to educate the inpatient families.

According to Ratnasari (2017) mentioned that flip chart is visual media learning that has function of giving information symbolically, clarifying, easy to receive information about an event or object clearly. Leaflets are printed media in the form of folded sheets that are designed with attractive drawings and use simple language as a learning media. A good flip chart is display, clarity of objectives, learning material, images and font sizes that are appropriate, easy to understand, systematic and coherent, and useful in learning activities. The assessment of material and media by experts, the flip chart may be used for learning media. The study mentioned that there was increase in earthquake disaster knowledge in students before and after using flip chart as a learning media. The flip chart media influences student learning outcomes towards disaster knowledge.

Moreover, there are several studies related to disaster preparedness in facing the consequences of disaster that has been reported. The study was conducted by Nursaadah (2013), the preparedness of staff and Psychiatry and Mental Health Hospital Banda Aceh in facing the earthquakes is in the almost ready category. This study used the LIPI-UNESCO/ISDR questionnaire, 2006 to measure the level of disaster preparedness. Disaster preparedness planning was also examined by Kalanlar (2018) and put forward proposals in this respect. In this research, “quasi-experimental design pretest-posttest with control group” methods were used. Final year undergraduate nursing students who selected to study option module on disaster nursing and management constituted the treatment group. All of the students in the treatment group took scores with a success rate of 90% in the final examination of the module. Data analysis showed that there was significant increase in the knowledge and preparedness of the treatment group students for disasters, disaster nursing and management, which was relatively higher than those of control group students. It has shown that this module can be benefited from to equip undergraduate students to be effective in the processes of disaster preparedness, response, recovery and rehabilitation once they graduate. The result recommended that the module on disaster nursing and management should be included in all of the undergraduate programme of study of nursing faculties.”,”author”:[{“dropping-particle”:””,”family”:”Kalanlar”,”given”:”Bilge”,”non-dropping-particle”:””,”parse-names”: false,”suffix”:””}],”container-title”:”International Journal of Disaster Risk Reduction”,”id”:”ITEM-1”,”issued”:{“date-parts”:[[“2018”]]},”page”:”475–480”,”publisher”:”Elsevier Ltd”,”title”:”Effects of disaster nursing education on nursing students’ knowledge and preparedness for disasters”,”type”:”article-journal”,”volume”:”28”},”uris”:[“http://www.mendeley.com/documents/?uuid=34a1d6dd-

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nlar, 2018a about the influence of disaster lectures and the provision of disaster preparedness modules for nursing students in preparing disaster. Moreover, Nugroho (2007) stated that the government and the community must be able to deal with disaster preparedness issues that are considered as an emergency. The involvement of the government and the community in disaster preparedness has a positive impact on families and communities, especially those in public areas such as offices or hospitals. Related study using media exposure by Hong, Kim, & Xiong (2019) explained that media exposure such as traditional media exposure: the newspaper, magazines, listen to the radio, and watch TV had a positive effect on emergency preparedness behaviors and risk perception. The study also supported by Mendonca, Rosa, & Bello (2019) explained that teaching instruments such as booklets, games and mock-ups in order to enhance attractiveness in the learning process. The booklet or printed educational material such as flip chart and leaflet are important for communication was a result of practical activities.

II. MATERIALS AND METHODS

A descriptive comparative study was utilized with a questionnaire in the form of a Likert scale consisting 81 items. The instrument has been modified due to the relevance to the context of the hospital. The instrument has passed the validity and reliability testing. The validity test was carried out by colleagues from the Nursing Faculty of Universitas Syiah Kuala, Banda Aceh, while the reliability testing using Cronbach alpha has a value of 0.98. Initially, the questionnaire consisted of 85 items, after the validity tested there were 5 items that were invalid (values <0.44) then the items were deleted so that used in the study consisted of 81 items. This study was conducted with respect to the ethical principles in nursing research. It was approved with ethical No.1171012P after consideration by Health Ethics Committee of the Regional General Hospital dr. Zainoel Abidin Banda Aceh. The proportional stratified random sampling was conducted in the study. The samples were recruited by purposive sampling with inclusion criteria: non-intensive care patient families, age ≥17 year old, able to understand the Indonesian language. The sample was comprised of 90 respondents with 45 people for each group. Data were analyzed using independent t-test, due to data per group is normally distributed, data groups are unpaired, and variants between groups are homogeneous.

III. RESULTS AND DISCUSSION

3.1 Demographic Data

The demographic information includes of age, sex, education level, occupation, and residence as shown as follow:

Table 21.1 Demographic Data of Respondents (N=90)

No	*Demographic data*	*Intervention Group*		*Frequency Total (N=90)*	*Percentage*
		A (N=45)	*B (N=45)*		
1	Age (year)				
	12–25	10	11	21	23.3
	26–45	25	30	55	61.1
	>45	10	4	14	15.6
2	Sex				
	Male	12	16	28	31.1
	Female	33	29	62	68.9
3	Education level				
	Basic (elementary-secondary school)	16	11	27	30.0
	Moderate (senior high school)	22	24	46	51.1
	High (college)	7	10	17	18.9
4	Occupation				
	Government officer employees	5	5	10	11.1
	Farmer/trader	4	10	14	15.6
	Entrepreneur	8	8	16	17.8
	Retired	1	0	1	1.1
	Student	7	6	13	14.4
	Housewife	18	16	34	37.8
	unemployment	2	0	2	2.2
5	Residence				
	Banda Aceh	16	15	31	34.4
	Outside Banda Aceh	29	30	59	65.6
	Total	45	45	90	100

3.2 Earthquake and Tsunami Disaster Preparedness in Intervened Groups A and B

The results of the data of earthquake and tsunami disaster preparedness variables conducted in 18 wards were nine rooms for each group. Intervention group A disaster mitigation education activities used media in the form of a leaflet and group B used flip chart. The normality tested of the data was carried out through the Kolmogorov-Smirnov test. The results showed that all the data were normally distributed. The category levels of disaster preparedness are as follows: very ready if 80–100, ready

65–79, almost ready 55–64, less ready 40–54 and not ready <40, as shown as the table 2.

Table 21.2 The Distribution of Earthquake and Tsunami Disaster Preparedness Between Two Groups (N= 90)

Variable	*Frequency*	*Percentage*
Group A		
Ready	42	93.3
Almost ready	3	6.7
Group B		
Ready	42	93.3
Almost ready	3	6.7

3.3 The Difference of Disaster Preparedness for Educational Media of Disaster Mitigation Between Two Groups

To determine the differences of earthquake and tsunami disaster preparedness in groups A and B using educational media of disaster mitigation as follow:

Table 21.3 The Differences of Disaster Preparedness Between Two Groups

	Group A (leaflet) Mean (SD)	*Group B (flip chart) Mean (SD)*	*P-value*
Disaster preparedness	69.51 (3.321)	71.47 (4.654)	0.024

3.4 The difference Sub-Variables Between Earthquake and Tsunami Preparedness Between Two Groups

Sub-variables of the differences level of earthquake and tsunami disaster preparedness in group A and B using educational media of disaster mitigation as shown at table 4.

Table 21.4 The Differences Sub Variable for Earthquake and Tsunami Preparedness Between Two Groups

Sub Variable of Disaster Preparedness	*Group A Mean (SD)*	*Group B Mean (SD)*	*P-value*
Knowledge	67.11 (8.484)	73.88 (11.417)	0.002
Emergency plan	73.99 (10.193)	71.31 (11.145)	0.237
Disaster warning system	77.69 (13.709)	78.33 (14.222)	0.827
Resource mobilization	63.99 (13.200)	62.16 (14.781)	0.537

Based on the results of the study, there were differences in the average score of disaster mitigation education between group A and B. The difference in the mean values of the two groups was evidenced by p-value $<\alpha$. The average score of disaster preparedness for group B using flip chart is higher than group A by leaflet. Providing educational

media through flip chart affects the level of disaster preparedness. It explained that in intervention group A and B delivered of educational material by researchers related to disaster mitigation for 40 minutes for intervention, then was evaluated using the questionnaire for two days later. The value score of disaster preparedness in the sub-variable knowledge was better in group B than group A which was supplemented with leaflets as disaster mitigation reading material.

In addition, the demographic data may influence the results of the study. It showed that the age of the respondents was dominated by the age range 26–45 years (61.1%) which is assumed easy to accept, understand and interpret the information provided. The educational media for disaster mitigation that were used such as flip charts equipped by illustrations and interesting contents as well as an explanation needed from the researcher will facilitate the acceptance of information by respondents. In addition, the majority of the education level of respondents were in the middle category (high school equivalent = 51.1%) will be able to receive and understand the information provided so that it influences the sub-variables of knowledge obtained in terms of earthquake and tsunami disaster preparedness. This result is supported by Ambarika (2016) explained that education for preparedness gives a positive impact when using illustrative media and providing direct counseling. This is also in line with a research conducted by Zalukhu (2013) explained that the implementation of the extension program was able to improve disaster preparedness through extension media.

One of the educational media for disaster mitigation is illustration media. Several types of media may be used to provide educational program including posters, leaflets, power points, booklets, videos, etc. Delivering information with educational media gives a strong influence in increasing individual knowledge and understanding (Kumaat, 2017). According to the result of the study the p-values of 'earthquakes and tsunami disaster preparedness in emergency planning', 'disaster warning systems' and 'resource mobilization' with $\alpha = 0.05$ respectively are 0.237, 0.827, and 0.537. This indicates an indifferent disaster preparedness level between two groups that respectively utilize leaflet and flip chart. However, there is a difference in the mean scores of intervened groups A and B at the knowledge level ($p = 0.002$, $\alpha = 0.05$). The result suggests that the preparedness level is caused by the number of items in the educational media, such as the explanation of the disaster definition and the types of disasters. The disaster mitigation education material in this study, adopted from the National Disaster Management Agency (2012), were less specific in discussing the level of emergency planning, disaster warning systems, and resource mobilization so that it could be the factor of indifferent scores given by the variables in intervened group A and B. However, the difference is found in the preparedness knowledge from both groups. The study supported by Kalanlar (2018b) mentioned that learning media educational: module or printed learning media such as leaflet and flip chart should be included in educational program of disaster mitigation on earthquake and tsunami preparedness. Then, the study by

Pascapurnama et al., (2018a) explained that health education and promotion may be integrated into educational program or training-based disaster risk reduction programs such as modules, printed and visual media to mitigate disaster impacts particularly in community or public area such as hospital.

Otherwise, leaflets and flip charts as disaster mitigation education medias are less meaningful in improving disaster preparedness, especially in terms of emergency activity plans, disaster warning systems, and resource mobilization. This is due to the fact that there is an increase in digital-based information development, which is considered to be more effective. This is in line with Bhuvana & Arul Aram (2019) who mentioned that the digital world has transformed the way to communicate, network, seek help, access information, and gain knowledge. Disasters preparedness necessitates immediate communication and information by educational media of mitigation. There is a wide choice of communication platforms that facilitate from texting to posting on social media. Facebook and WhatsApp, for instance, are replacing conventional communication tools such as radio and television. Moreover, Pourebrahim, Sultana, Edwards, Gochanour, & Mohanty (2019) suggested that Twitter is a highly valuable source for disaster preparedness, particularly during the power outage. A large number of posts contain first-hand information about the disaster showing the intensity of the event in real-time. The social media analysis revealed, most important information may be retrieved from twitter during disasters. Sakurai & Murayama (2019) stated that it is important to use information technology in different disaster management stages such as disaster response, recovery, preparedness and risk reduction. Information and education systems play essential roles in recording, exchanging, and processing information. Hayes & Kelly (2018), Jamali, Nejat, Ghosh, Jin, & Cao (2019) stated that social media provides a real time information updates that may assist a decision making and preparedness and response in natural disaster.

According to Susanti (2014), educational media for disaster mitigation is a major factor in improving disaster preparedness, but not all media have the same effects. Learning by media would provide the same benefits to each individual but the impacts of each media will depend on the users so that the media's influence depends on the individual who receives the media content. This study findings are also similar to Johnson (2011) on disaster preparedness education in schools, which explained that there is an influence of providing disaster preparedness education in improving disaster preparedness with and without media. This study is also in line with the disaster preparedness planning study by Kalanlar (2018) and put forward proposals in this respect. In this research, "quasi-experimental design pretest-posttest with control group" methods were used. Final year undergraduate nursing students who selected to study option module on disaster nursing and management constituted the treatment group. All of the students in the treatment group took scores with a success rate of 90% in the final examination of the module. Data analysis showed that there was significant increase in the knowledge and preparedness of the treatment group students for disasters, disaster nursing and management, which was relatively higher than those

of control group students. It has shown that this module can be benefited from to equip undergraduate students to be effective in the processes of disaster preparedness, response, recovery and rehabilitation once they graduate. The result recommended that the module on disaster nursing and management should be included in all of the undergraduate programme of study of nursing faculties.”,”author”:[{“dropping-particle”:””,”family”:”Kalanlar”,”given”:”Bilge”,”non-dropping-particle”:””,”parse-names”: false,”suffix”:””}],”container-title”:”International Journal of Disaster Risk Reduction”,”id”:”ITEM-1”,”issued”:{“date-parts”:[[“2018”]]},”page”:”475–480”,”publisher”:”Elsevier Ltd”,”title”:”Effects of disaster nursing education on nursing students’ knowledge and preparedness for disasters”,”type”:”article-journal ”,”volume”:”28”},”uris”:[“http://www.mendeley.com/documents/?uuid=34a1d6dd-c057–4878-b4ab-2d8ee96ee5f3”]}],”mendeley”:{“formattedCitation”:”(Kalanlar, 2018a, mentioned that the influence of disaster lectures and the provision of disaster preparedness modules for nursing students in improving disaster preparedness. This study used media and illustration module that aimed to improve disaster preparedness. Jose & Dufrene (2014) stated that disaster preparedness education may be a suitable activity for inter-professional education in community level including patient’s family in the hospital.

In addition, considering the condition of the hospital, which is very crowded and its geographical risk for earthquakes and tsunamis occurrence, hospital management is suggested to prepare several media informing about disaster mitigation materials for the patients and their families. This is in line with the opinion by Liu, Fowler, Roberts, & Herovic, (2018) that hospital communicators must be prepared to effectively communicate internally, externally, and across organizations. In crisis situations, hospitals must apply guiding principles of public relations, and communication such as educational media of disaster mitigation to reducing the impact of the disaster.

Furthermore, Beggs (2018) mentioned that fundamental principles and best practices in educational media of disaster mitigation should be followed and developed into a plan to create understandable and follow-able messages for the public. Expanding educational media and information opens great opportunities to reach affected communities such as family of inpatients. The study by Chen et al., (2017) mentioned that an importance of innovative strategies to provide disaster nursing education for nurses or hospital staff. Disaster nursing education to reduce disaster that is tailored to nurses working in different settings and specialties to educate the patients and their family to expand the spectrum of the nursing workforce that may respond effectively to a disaster. More so, the study by Zhou, Perera, Jayawickrama, & Adeniyi (2014) mentioned that there is a need of mapping and integrating disaster risk reduction into formal, informal and non-formal education at policy, practice and community levels, including in the hospital. The study argues that integrating disaster resilience into education is a key factor for reducing the adverse impact of future disasters.

IV. CONCLUSIONS

The flip chart is visual media learning that has function of giving information symbolically, clarifying, easy to receive information about an event or object. Leaflets are printed media in the form of folded sheets that are designed with attractive drawings and use simple language as a learning media. Both of the medias of learning have a specific function that be used in the educational programs/trainings. The result of the study showed the educational media of disaster mitigation using flip charts have a significantly effective in knowledge level on earthquake and tsunami preparedness for inpatient families in the hospital instead of leaflets. However, for emergency plan, disaster warning system and resources mobilization, there was no a significant difference between the two groups (using leaflets and flip charts).

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DETERMINANTS OF MEDICATION ADHERENCE IN ADULTS WITH HYPERTENSION

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Abstract: Hypertension remains as one of the most significant causes of morbidity in the world. The risk of severe hypertension might be reduced by adhering to antihypertensive drugs. Various factors were identified contributing to medication adherence in adults with hypertension. These factors are important to be considered in designing health programs to improve medication adherence in adults with hypertension. Purpose: This study investigated the medication adherence in adults with hypertension and examined determinants of medication adherence. Methods: A cross-sectional design was adopted to facilitate the survey of adults with hypertension. Roy's Adaptation Model was used as the theoretical framework. The study was carried out in Lhokseumawe City, Aceh Province (Indonesia). The sample consisted of 140 participants. Focal, contextual and residual stimulus factors, and medication adherence were investigated. Multivariate logistic regression was used to test the determinants of adherence. Results: The focal stimuli associated with medication adherence are gender (p=0.006), education level (p=0.000), occupation (p=0.006), monthly income (0.003), duration of hypertension (p=0.000), daily frequency of taking medication (p=0.002), repeat medical visits (0.000), and regular blood pressure check (0.000). The contextual stimuli associated with medication adherence are number of daily hypertension medications (p=0.045) and diet (p=0.003), the residual stimuli (social support) associated with medication adherence (p=0.012). The most significant determinant of medication adherence is focal stimuli, which is the education level [(OR=39.4) and (95% CI=2.5–615.2). Conclusion: The most significant determinant of medication adherence is focal stimuli, which is the education level.

Keywords: Medication adherence, Adult, Hypertension

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I. INTRODUCTION

Hypertension remains one of the most significant causes of death worldwide. Increased blood pressure (BP) is a major risk factor for coronary artery disease and its complications, heart failure, stroke, renal insufficiency, and blindness in diabetic patients. The Global Burden of Disease Study estimates that hypertension is a major risk factor for disability worldwide (Lim et al., 2012). Globally, cardiovascular disease accounts for approximately 17 million deaths a year. Of these, 9.4 million deaths worldwide every year. Hypertension is responsible for at least 45% of deaths due to heart disease mortality, and 51% of deaths due to stroke. In 2008, worldwide, approximately 40% of adults aged 25 and above had been diagnosed with hypertension; the number of people with the condition rose from 600 million in 1980 to 1 billion in 2008. The prevalence of hypertension is highest in the African Region at 46% of adults aged 25 and above, while the lowest prevalence at 35% is found in the Americas. Overall, high-income countries have a lower prevalence of hyper tension-35%- than other groups at 40% (World Health Organization, 2013). Furthermore, in 2018, based on the results of the Basic Health Research 2018, the prevalence of hypertension according to the doctor's diagnosis was 8.4%, the prevalence of hypertension diagnosed by a doctor or taking medicine was 8.8%, meaning there were 0.4% of the population taking their own medication even though health workers had never been diagnosed with hypertension, this figure increased by 0.3% compared to the results of the Basic Health Research 2013 (Kemenkes RI, 2018). Based on blood pressure measurements, the prevalence of hypertension in residents aged 18 years and over in 2018 in Indonesia is 34.1%, when compared to 2013 there was an increase of 8.3% (from 25.8% to 34.1%). According to the proportion of history of taking medication, there are still 32,3% of hypertensive patients who do not routinely take medication and 13.3% do not take medication at all, with the reason that they feel unwell (59.8%), not routinely to health care facilities (31.3%), taking traditional medicine (14.5%), often forgetting (11.5%), unable to buy routine medicine (8.1%), not resistant to drug side effects (4.5%), medication not in health care facilities (2%), and other reasons (12.5%). The prevalence of hypertension in the Province of Aceh in 2018 tended to increase compared to 2013, namely from 21.5% to 26.4% (Kemenkes RI, 2018). Based on data collected by Aceh Provincial Health Service in 2017, the prevalence of Hypertension in Lhokseumawe City in the age group 18 years and over is 23,846 people, occupying the second position with the highest number of hypertension after Bireuen District (Dinas Kesehatan Aceh, 2018). The risk of worsening hypertension can be reduced by effective management of treatment therapies and significant lifestyle modifications. Compliance with medication for antihypertensive drugs is the basis for achieving control of hypertension (Abegaz, Shehab, Gebreyohannes, Bhagavathula, & Elnour, 2017). Generally, medication adherence is an important achievement in disease management, and it is very important to reduce complications

such as cardiovascular related morbidity and mortality (Brown & Bussell, 2011). Non-adherence with antihypertensive drugs is an obstacle in the management of hypertension which results in high rates of hospitalization and death (Herttua, Kivimäki, Vahtera, Tabák, & Martikainen, 2013). This undermines the efforts of health facilities, health professionals, and policy makers to improve and modify the health of community nursing. Non-adherence will be a source of psychological and medical complications and impact on the quality of life of patients, wasting health care resources and reducing individual trust in the health care system (Balkrishnan, 2005). The risk of worsening hypertension can be reduced by medication adherence, therefore, reviewing factors that can affect medication compliance in adults with hypertension is very important.

Based on Roy's Adaptation Model, in this study focal stimuli that can be related to adherence are age, gender, education level, occupation, monthly income, marital status, duration of hypertension, number of chronic disease, comorbid diseases, daily frequency of taking medication, repeat medical visits, regular blood pressure checks, taking drugs as prescribed or not, and emotional characteristics. While contextual stimuli can arise from number of daily hypertension medications, diets, and types of hypertension drug therapy. Meanwhile, residual stimulus is social support.

Based on the description above according to Roy's Adaptation Model, focal, contextual and residual stimulus factors can be related to medication adherence in adult aggregates with hypertension. The aim of this study is to describe medication adherence and identify the extent to which the determinants of focal, contextual and residual stimulus predict medication adherence.

II. METHODS

A cross-sectional design was adopted to facilitate the survey regarding treatment adherence and its determinant factors of patients with hypertension in Muara Satu Community Health Centre of Lhokseumawe City, Aceh Province (Indonesia). Roy's Adaptation Model was used as the theoretical framework. The data were collected using MMAS-8, DASS-42 and SSQ-6 and self-reported questionnaires.

Setting and Participants

The study used a simple random sampling method to recruit participants with hypertension. Participants were enlisted from the medical outpatient department of Muara Satu Community Health Centre of Lhokseumawe City of Aceh Province, Indonesia.

They were invited to take part in the study if they met the following inclusion criteria. The inclusion criteria were: (1) 26–45 years old, (2) diagnosed with hypertension (essential or secondary) for at least 3 months, (3) take hypertension

medication for at least 3 months, and (4) able to communicate in Indonesian Language. The sample consisted of 140 participants.

Measurements

Questionnaire part A

The instrument used to obtain a description of the respondent's characteristics is a focal and contextual stimulus from the Roy Adaptation Model consisting of: duration of hypertension, number of chronic disease, comorbidities, daily frequency of taking medication, repeat medical visits, regular blood pressure checks, taking drugs as prescribed or not, the number of daily hypertension medications, diets, and types of hypertension drug therapy.

Questionnaire part B

Part B instruments for measuring focal stimuli: emotional characteristics, were assessed using the DASS-42 (Depression, Anxiety, Stress Scale-42) questionnaire from the Australia Psychology Foundation which was designed to measure three types of emotional states, namely depression, anxiety, and stress in a person. The DASS-42 questionnaire used was a translation into Indonesian by Damanik (2014) with a Cronbach's alpha value of 0.9483. For each emotional state, there are 14 questions in each questionnaire using a Likert scale, with a score of 0–3.

Questionnaire part C

The instrument part C to measure residual stimulus is social support, using the Social Support Questioner (SSQ) questionnaire created by Sarason, et al (1983). This measuring instrument was chosen because in several previous studies, it has been proven to have good reliability. The SSQ questionnaire measures 2 aspects of social support, namely:

(1) Social Support Questionnaire Number (SSQN). This section measures the number of people as providers of social support for respondents (perceived availability). In this aspect the respondent is asked to write specifically (initials of name, gender and relationship to the subject) a maximum of 9 people, who are considered to provide support in certain situations for the respondent.

Rating for each item depends on the number of columns filled by the subject. Respondent's score in this section is 0–9. Each column filled by the subject gets a score = 1, while the column that is not filled gets a score of 0. The minimum score of the subject is 0 and the maximum score of the subject is 9 on each item. The final score is to add up the scores for each item and then divide the total items (6 items).

(2) Social Support Questionnaire Satisfaction (SSQS). This section measures the degree of respondent satisfaction with social support perceived by the respondent. In this aspect the respondent was asked to choose the degree of satisfaction he received for social support through people who had been written

specifically in the SSQN column. Respondents were asked to choose one of the six answer choices that were available to describe the degree of satisfaction of respondents for the social support they received through the people who were written by respondents in the SSQN section. The available answer choices are (1) very dissatisfied, (2) quite dissatisfied, (3) somewhat dissatisfied, (4) somewhat satisfied, (5) quite satisfied and (6) very satisfied. The minimum score is 1 and the maximum score is 6. The range of scores in this section is 1–6. The final score is to add up the scores for each item and then divide the total items (6 items). Through Sarason, et.al (1983) research, it is known that SSQN and SSQS are separate and independent factors, but in practice these two parts are asked simultaneously as a set of questionnaires.

Questionnaire part D

Part D instruments for measuring Dependent Variables: Medication Compliance were assessed using the MMAS-8 (Morisky Medication Adherence Scale-8) questionnaire. The MMAS-8 questionnaire used was a translation version into Indonesian by Riani (2017) with a Cronbach's alpha value of 0.824. Using the Guttman scale, then the answer for each question in the MMAS-8 questionnaire is a value of 1 for "yes" answers and a value of 0 for "no" answers.

III. PROCEDURE

The study was approved by the Ethics Committee of Faculty of Nursing, Syiah Kuala University. Then, address data for hypertensive patients taking antihypertensive medication were obtained from health workers at the Muara Satu Health Center. Then the door-to-door questionnaire was distributed using several enumerators. Patients who met the inclusion criteria signed informed consent to participate in the study. The researcher explained the purpose of this study to the patient and gave standard instructions before the patient filled out the questionnaire.

Participants were asked to fill in a series of questionnaires that included standard instruments to measure socio-demographic characteristics, emotional characteristics, social support, and medication adherence. This research is also available to answer questions and clarify problems when participants fill out questionnaires. Each respondent received the same gift, snack and drink as a token of appreciation for completing the survey.

Data Analysis

Focal, contextual and residual stimulus factors, and medication adherence were investigated. Multivariate logistic regression was used to test the determinants of adherence.

IV. RESULTS

Relationship Between Focal stimuli and Medication Adherence

Table 22.1 Relationship Between Focal Stimuli and Medication Adherence

Focal stimuli	*Medication Adherence*						*p*
	Adherence		*Non-Adherence*		*Total*		
	N	*%*	*N*	*%*	*N*	*%*	
Age							
26–35 years	4	2.9	14	10.0	18	12.9	1.000
36–45 years	31	22.1	91	65.0	122	87.1	
Gender							
Male	20	14.3	31	22.1	51	36.4	0.006
Female	15	10.7	74	52.9	89	63.6	
Education level							
Primary school	1	0.7	12	8.6	13	9.3	0.000
Secondary school	2	1.4	20	14.3	22	15.7	
High school	17	12.1	63	45.0	80	57.1	
College and above	15	10.7	10	7.1	25	17.9	
Occupation							
Work	23	16.4	38	27.1	61	43.6	0.006
Does Not Work	1	0.7	4	2.9	5	3.6	
Housewife	11	7.9	63	45.0	74	52.9	
Monthly Income							
< Rs 1,500,000	22	15.7	92	65.7	114	81.4	0.003
≥ Rs 1,500,000	13	9.3	13	9.3	26	18.6	
Marital Status							
Single	1	0.7	4	2.9	5	3.6	0.439
Married	32	22.9	92	65.7	124	88.6	
Divorced	0	0	6	4.3	6	4.3	
Widowed	2	1.4	3	2.1	5	3.6	
Duration of Hypertension							
< 1 years	29	20.7	38	27.1	67	47.9	0.000
1–5 years	4	2.9	51	36.4	55	39.3	
>5 years	2	1.4	16	11.4	18	12.9	
Number of chronic diseases							
≤ 2	27	19.3	62	44.3	89	63.6	0.085
>2	8	5.7	43	30.7	51	36.4	

Focal stimuli	*Medication Adherence*						*p*
	Adherence		*Non-Adherence*		*Total*		
	N	*%*	*N*	*%*	*N*	*%*	
Comorbid Disease							
≤ 2	33	23.6	96	68.6	129	92.1	0.731
>2	2	1.4	9	6.4	11	7.9	
Daily frequency of taking medication							
Once	28	20	51	36.4	79	56.4	0.002
Twice	7	5	54	38.6	61	43.6	
Repeat medical visits							
Regularly	29	20.7	29	20.7	58	41.4	0.000
Irregularly	6	4.3	76	54.3	82	58.6	
Regular blood pressure check							
Regularly	28	20	44	31.4	72	51.4	0.000
Irregularly	7	5	61	43.6	68	48.6	
Taking drugs as prescribed or not							
Yes	34	24.3	96	68.6	130	92.9	0.451
No	1	0.7	9	6.4	10	7.1	
Emotional Characteristics-Depression							
Normal	4	2.9	14	10	18	12.9	0.952
Mild	16	11.4	52	37.1	68	48.6	
Moderate	13	9.3	33	23.6	46	32.9	
Severe	2	1.4	6	4.3	8	5.7	
Emotional Characteristics-Anxiety							
Normal	2	1.4	5	3.6	7	5	0.888
Mild	5	3.6	13	9.3	18	12.9	
Moderate	19	13.6	63	45	82	58.6	
Severe	9	6.4	24	17.1	33	23.6	
Emotional Characteristics-Stress							
Normal	28	20	86	61.4	114	81.4	0.850
Mild	7	5	18	12.9	25	17.9	
Moderate	0	0	1	0.7	1	0.7	
Total	**35**		**105**	**75**	**140**	**100**	

Table 1 showed the focal stimuli associated with medication adherence are gender (p=0.006), education level (p=0.000), occupation (p=0.006), monthly income (0.003), duration of hypertension (p=0.000), daily frequency of taking medication (p=0.002), repeat medical visits (0.000), and regular blood pressure check (0.000).

Relationship Between Contextual Stimuli and Medication Adherence

Table 22.2 Relationship Between Contextual Stimuli and Medication Adherence

Contextual stimuli	*Medication Adherence*						*p*
	Adherence		*Non-Adherence*		*Total*		
	N	*%*	*N*	*%*	*N*	*%*	
Number of Daily Hypertension Medications							
1	29	20.7	63	45	92	65.7	0.045
2	6	4.3	37	26.4	43	30.7	
≥3	0	0	5	3.6	5	3.6	
Diet							
Yes	17	12.1	81	57.9	98	70	0.003
No	18	12.9	21	17.1	42	30	
Therapy Type							
Monotherapy	28	20	77	55	105	75	0.573
Multitherapy	7	5	28	20	35	25	
Total	35	25	105	75	140	100	

Table 2 showed the contextual stimuli associated with medication adherence are number of daily hypertension medications (p=0.045) and diet (p=0.003).

Relationship Between Contextual stimuli and Medication Adherence

Table 22.3 Relationship Between Residual Stimuli and Medication Adherence

Residual Stimuli	Medication Adherence						p
	Adherence		Non-adherence		Total		
	n	%	n	%	n	%	
Social Support							
High	35	25	85	60.7	120	85.7	0.012
Low	0	0	20	14.3	20	14.3	
Total	35	25	105	75	140	100	

Table 3 show that, the residual stimuli (social support) associated with medication adherence (p=0.012).

Predictors of medication adherence

The results of the multivariate logistic regression for predicting medication adherence are presented in Table 4.

Table 22.4 The Determinants of Medication Adherence

Independent Variables	*B*	*Odds Ratio (OR)*	*95% Confidence Interval (CI)*
Education Level	3.675	39.432	2.527–615.213
Duration of Hypertension	-2.658	0.070	0.008–0.650
Daily Frequency of taking medication	-1.416	0.243	0.063–0.932
Diet	1.129	3.094	0.855–11.190
Repeat medical visits	-3.337	0.036	0.008–0.160
Social Support	-20.229	0.000	0.000
Constant	23.018	9.925	

Table 4 shows that the most significant determinant of medication adherence is focal stimuli, which is the education level [(OR=39.4) and (95% CI=2.5–615.2).

V. DISCUSSION

To our knowledge, no studies on determinants of medication adherence among hypertensive adult patients in Lhokseumawe have been carried out previously. Therefore, this is the first attempt to determine the relationship between medication adherence and factors related to adherence in adult hypertensive patients in Lhokseumawe. A better understanding of the determinants associated with medication adherence has been an important result in management strategies for hypertension.

Independent variables have been reported to be significantly associated with the medication adherence are gender, education level, occupation, monthly income, duration of hypertension, daily frequency of taking medication, repeat medical visits, regular blood pressure check, number of daily hypertension medications, diet, and social support.

Male patients are more adherent to hypertension medication (14,3%), compared to female patient (10,7%). Patients who work more adherent in the medication of hypertension (16.4%), while many housewives do not adhere to antihypertensive medication (45%). Patient with low-monthly income are not adherence to take medication (65,7%). Patients with a duration of hypertension less than 1 year were more adherent to medication for hypertension (20,7%) compared to patients with a longer duration of hypertension 1–5 years (2,9%) and patients with a hypertension duration of more than 5 years (1,4%) who adhered to the medication. Based on the frequency of taking medication every day, adult hypertensive patients with the

frequency of taking medication once a day are more adherent than twice a day taking medication (20%). Based on medical visits, patients who regularly conduct medical visits are more adherent with medication (20.7%). Based on routine blood pressure checks, hypertensive patients who regularly perform routine blood pressure checks are more adherent (20%). Based on social support, hypertensive patients with high social support are more obedient to hypertension (25%).

The most significant determinant of medication adherence is focal stimuli, which is the education level [(OR=39.4) and (95% CI=2.5–615.2).

Education requires humans to act and fill their lives which can be used to obtain information thereby improving the quality of life. The higher one's education, the easier it will be for someone to receive information thereby increasing the quality of life and broadening knowledge. Good knowledge will have an impact on the effective use of communication.

Medication adherence is defined as the extent to which the patient's behavior follows medical instructions and recommendations with respect to the time, dose, and frequency of the drug (Sabaté, 2003). Medication adherence is also defined as the process by which patients take drugs as prescribed and is a dynamic process that changes with time (Vrijens et al., 2012).

According to research conducted by Ekarini (2011) and Mubin et al (2010) shows the level of education is related to the level of compliance with hypertension patients undergoing treatment. Respondents who have a high level of knowledge mostly have compliance in undergoing treatment

This study highlights several factors that can influence the level of adherence in adult hypertensive patients. We recommend the adoption of a health education campaign to increase awareness about risk factors, complications, and treatment of hypertension. Factors related to patients and health care providers, developing good health-care provider relationships, and innovating new ways to help patients remember to take their medication must be emphasized, without neglecting the social support factor of the family and friend.

Such understanding will help predict the life of hypertensive patients and disease perception. Therefore, the aim of this study in health care settings is to assess the relationship between treatment compliance and determinants in hypertensive patients. Determining patient compliance with antihypertensive drugs in outpatient settings is an important first step for nurses and other health care providers in understanding the effectiveness of hypertension treatment, identifying barriers to treatment, and improving blood pressure control (Zyoud et al, 2014). The ability to identify indicators of low medication adherence is very important to improve clinical care and determine intervention targets for prevention of complications and treatment of hypertension.

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ORGANIZATIONAL FACTORS OF PATIENT SAFETY AND HANDOVER IN A GENERAL HOSPITAL

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Abstract: Patient safety is currently a major concern for nurses in improving the quality of health services. One of the most important activities on patient safety is a handover by the nurse. Data shows that 70% of medical errors and treatments that can threaten patient safety are caused by poor handover activities. There are several organizational factors about patient safety that affect the success of handover activities by nurses. This type of this research is quantitative with cross sectional study design. The research population was 173 people of all nurses in the Inpatient ward of a General Hospital. Instrument to measure organizational factors about patient safety used was the Hospital Survey on Patient Safety from the Agency for Healthcare Research and Quality (AHRQ) U.S. Department of Health and Human Services. The instrument to measure nurse's handover was carried out using instruments developed by Arianti. Data were analyzed with the chi-square test and binary logistic regression with the stepwise method. The results showed that the variables of organizational factor about patient safety and enabling factor, enacting factor, and elaborating factor had a relationship with nurse handovers (all p-values = 0.000) and enabling factors were the most significant predictors related to nurse handovers in the Inpatient ward (p-value = 0.000) with OR 116.999 after being controlled by the enacting factor. All organizational factors regarding patient safety have a relationship and enabling factors are very significant factors related to the successful implementation of handovers by nurses in the Inpatient ward.

Keywords: organizational factor, patient safety, handover

I. INTRODUCTION

Patient safety is currently a major concern for nurses (Rose, 2016). Patient safety is the prevention of errors and side effects in patients related to health care. Although health care has become more effective, it has also become more complex with the use of new technologies, treatments and broader care techniques (Dekker, 2016).

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It is estimated about 421 million inpatients in the world each year and around 42.7 million patients experienced side effects during hospitalization. Recent data shows that hazards that threaten patient safety are the 14th largest cause of morbidity and mortality in worldwide. The estimation shows that in high-income countries as many as 1 in 10 patients are disadvantaged while receiving hospital treatment. Losses can be caused by various incidents or dangerous events, and 50% of these dangerous events can be prevented (Makary & Daniel, 2016). Whereas in low- and middle-income countries, the hazardous incidence rate is around 8%, where 83% of these events can be prevented and 30% cause more deaths (WHO, 2018).

In Indonesia, data about unexpected events (KTD) in hospitals is still difficult to obtain. According to Hospital Patient Safety Committee reports, in several provinces in Indonesia from January 2010 to April 2011, there were 137 reported patient safety incidents. East Java Province ranks highest at 27% among eleven other provinces. Based on the type of incident, out of 137 incidents, 55.47% were KTD, 40.15% were almost injured (KNC) and 4.38% were other events. 8.76% resulted in death, 2.19% irreversible injuries (permanent), 21.17% reversible injuries (temporary), and 19.71% minor injuries (KKP-RS, 2011).

The data of hospital patient safety incidents in Aceh Province up to date are very difficult to find, and the Banda Aceh City General Hospital is too. However, several studies related to the application of patient safety have been conducted in several hospitals in Banda Aceh. Julita's research (2016) with the title of the relationship between the supervision of the head of the ward and the application of patient safety in the inpatient ward of a General Hospitals illustrates that 31 nurses (77.5%) did not apply patient safety in the administration of drugs completely. Another study, Mentari (2016) entitled the relationship of nurses 'knowledge about patient safety with medication administration errors in the inpatient ward of general hospitals also found that there was a relationship between nurses' knowledge about patient safety with medication administration errors (p = 0.048).

Rich (2008) in his article described the application of patient safety in hospitals with the corkscrew metaphor. This metaphor explains that risk and patient safety are embedded in all health care environment systems, from blunt ends (leadership) to sharp edges (clinical interventions) such as bottle openers. Blunt ends of bottle openers refer to leadership, whose policies and outcomes clinically affects patient safety and the sharp tip of the bottle cap refers to the nurse, who is in direct contact with the patient. In addition, communication between the two ends must be two-way. This bottle-opener model seeks to answer questions about how safety culture can be embedded in organizational culture to ensure commitment to safety and a culture that is fair without blame and without shame.

In line with the concept of the bottle cap theory above, Govender (2016), in his research on evaluating patient safety culture as a critical element of health in public hospitals shows the results that areas that need to be considered in applying patient safety in hospitals are a across units teamwork, open-minded communication, staffing, non-punitive responses to errors and the level of patient safety as well as handover and

information between units. Handover is one of the concerns in patient safety activities in hospitals. Handover is a report of shifts or handovers between nurses which is a communication activity that occurs between two nurses' shifts where the specific purpose is to communicate information about patients (Rose, 2016). In recent years, a focus on handover in the clinical setting is fundamental to meeting patient safety challenges. Handover is also defined as a situation where professional responsibility for some or all aspects of the diagnosis or treatment of patients (or groups of patients) is transferred from one or several health care professionals temporarily or permanently (Siemsen et al., 2012).

The transfer of information in the handover creates continuity and allows the nurse in charge to make decisions about priorities and plan the provision of patient care during shifts. Internationally, communication in handovers is an important aspect of patient safety, but several research results have shown that handover communication is often incomplete and or inaccurate (Thomson, Tourangeau, Jeffs, & Puts, 2018).

Data have shown that although patient handovers are very important in a series of treatments, they are often done randomly (Richter, 2013). Medical errors and treatments that can threaten patient safety, 70% result from poor patient handover by nurses (Richter, 2013). Handover has been considered an important issue for patient safety, so WHO launched The Nine Patient Safety Solutions in 2007, one of which is a handover component (WHO, 2007).

Vogus, Sutcliffe, and Weick (2010) said that the application of patient safety in hospitals is influenced by organizational factors in implementing safety culture, namely enabling factors, enacting factors and elaborating factors. Research conducted by Richter (2013) shows that actions towards elaborating factors have the greatest effect compared to actions on enabling factors and enacting factors on nurse handovers.

Kamil (2011) in his article stated that the problem related to organizational factors in the implementation of nurse handovers was a matter of organizational culture that did not have enough attention to patient safety. Another problem is the hierarchical structure that can inhibit open communication.

Therefore, this study aims to determine the relationship of organizational factors about patient safety with its influence on the implementation of handovers by nurses.

II. METHODS

This type of research is quantitative with cross sectional study design. The study population are all nurses in the Inpatient ward of a General Hospital with amount of 173 people, the sample size used total sampling method. Instrument to measure organizational factors about patient safety used was the Hospital Survey on Patient Safety from the Agency for Healthcare Research and Quality (AHRQ) U.S. Department of Health and Human Services. The instrument to measure nurse's handover was carried out using instruments developed by Arini. Data were analyzed by chi-square test and binary logistic regression with the stepwise method.

III. RESULTS

Characteristics of nurses (Table 1) in the Inpatient ward of the General Hospital showed that 47.06% were 36–45 years old, 86.71% female, 49.03% had D.III Nursing education, 83.24% were contract nurses and 62.55% with tenure under 5 years

Table 23.1 Characteristics of Respondents

No	*Characteristic*	*f*	*%*
Age			
	20 - 35 Years	75	43.14
	36 - 45 Years	81	47.06
	46 – 60 Years	17	9.80
Gender			
	Male	23	13.29
	Female	150	86.71
Education			
	Ners	68	39.22
	D4	20	11.76
	D.III Kep	85	49.02
Employment Status			
	PNS	29	16.76
	Kontrak	144	83.24
Years of service			
	≤ 5 Years	108	62.55
	> 5 Years	65	37.45

Table 2 shows that the variables and all organizational sub-variables regarding patient safety were significantly related to the handover by nurses in the Inpatient ward of the General Hospital (p = 0.001).

Table 23.2 Relationship Between Organizational Factors and Nurse Handover (N = 173)

Variabel	*Handover*				*Total*		*p Value*
	Good		*Less*				
	f	*%*	*f*	*%*	*f*	*%*	
Organizational Factor							0.000
Good	12	63.2	7	36.8	19	100	
Less	1	0.6	153	99.4	154	100	
Enabling Factor							0.000
Good	12	36.4	21	63.6	33	100	
Less	1	0.7	139	99.3	140	100	

Enacting Factor							
Good	8	25.8	23	74.2	31	100	0.000
Less	5	3.5	137	96.5	142	100	
Elaborating Factor							
Good	11	40.7	16	59.3	27	100	0.000
Less	2	1.4	144	98.6	146	100	

Table 23.3 Results of Binary Logistic Regression Analysis Using the Stepwise Method for Organizational Factor Variables as Predictors of Nurse Handover

Variable	*OR*	*p Value*	*95% CI*	
			Lower	*Upper*
Enabling	116.999	0.0001	11.467	1193.778
Enacting	16.764	0.002	2.831	99.268
Constant	0.242	0.074		

Based on the results of logistic regression analysis (Table 3), it is known that from the two sub-variables of organizational factors regarding patient safety, after elaborating the factors from the first model, enabling factor (p-value: 0.000) is the most significant predictor related to nurse handover in the ward hospitalization after being controlled by enacting factors with an odds ratio (OR) of 116.999.

IV. DISCUSSION

Medical errors and treatments that can threaten patient safety, 70% result from poor patient handovers (Richter, 2013). Handover is one of the concerns in patient safety activities in hospitals. Handover is a report of shifts or handovers between nurses which is a communication activity that occurs between two nurses' shifts where the specific purpose is to communicate information about patients (Rose, 2016). In recent years, a focus on handover in the clinical setting is fundamental to meeting patient safety challenges.

Several factors greatly influence the implementation of handover in the context of the application of patient safety in hospitals. Vogus et al. (2010) said that the application of patient safety in hospitals is influenced by organizational factors in implementing safety culture, namely enabling factors, enacting factors and elaborating factors for patient safety.

The results showed that enabling factors were the most dominant influencing patient handover. Support from the head of the inpatient ward, open communication between the head of the ward and the implementing nurse and effective and efficient staff management with all the limitations of education, staffing status and years of service. This explains the leader's actions in improving the patient safety culture in the inpatient ward can influence the successful implementation of the handover for the

implementing nurse. Vogus et al. (2010) said that enabling factors are the actions of leaders who emphasize safety to bring up and resolve threats to safety based on the needs and culture of the hospital. The enabling factor in a patient safety culture is to choose and draw attention to the relevant safety aspects of the larger organizational culture and to create a context that allows people to translate these aspects into meaningful activities in the health care routine.

Evidence shows that there are at least two ways in which leaders practice enabling factors in a patient safety culture during handovers, first by directing attention to safety and second by creating a context in which nurses feel safe to talk and act to improve safety. Both ways encourage nurses to act more cautiously when doing handovers (Richter, 2013).

Singer and Vogus (2013) state that enabling factors in a patient safety culture means motivating goals to reduce errors in the hospital, directing attention and prioritizing safety and creating a context where nurses can practice safer nursing practices. One way to practice enabling factors in a patient safety culture is to start with a perception of the safety climate. This perception shows how nurses currently see patient safety based on their perceptions of leader commitment to safety, priorities for safety and the dissemination of information about patient safety (Morello et al., 2013). However, the safety climate competes with other climates (for example, efficiency, service) that come from different interpretations of what the organization expects, rewards and supports. Thus, both the safety culture and safety climate will be based on coherent and consistent managerial actions (Weaver et al., 2013).

Safety culture can also be implemented when leaders create a context in which nurses are empowered to talk and act in resolving threats to patient safety. Leaders create safe conditions for nurses on the front lines to talk by building good relations with nurses. A good leader and subordinate relationship are more likely to arise under conditions of psychological security (Vogus et al., 2010). Leaders create psychological security in a number of ways, including subtle actions such as changing the language used in organizations from threatening terms such as "mistakes" and "investigations" to psychologically safer terms like "accident" and "analysis" by becoming more inclusive and use words and actions that respect the contributions of subordinates and by forgiving nurses who reveal mistakes that are unintentionally done. Organizational practice alone can enable patient safety by creating a structured and safe forum where threats to safety can be identified and resolved. (Weaver et al., 2013).

Furthermore, Singer and Vogus (2013) say that the enacting factor in a patient safety culture that reduces hospital errors means that leading nurses consistently translate policies and patient safety guidelines into daily routine practices, especially when doing handovers. Enacting factors in patient safety culture occur through a series of multi-level processes including interpersonal behavior such as discussing and solving joint problems and organizing consciously within units and coordinating functional cross-functional (Vogus et al., 2010).

Research shows that enacting factors in a patient safety culture need to involve families and patients in effective interpersonal processes (i.e. teamwork, attentive

organizing, and relational coordination), improve routine reporting by distributing checklists and protocol standards to coordinate patient care (Siemsen et al., 2012).

Teamwork among nurses is considered an important component of safety culture and an important element to reduce medical errors during handovers. Qualitative research has highlighted the consequences of poor teamwork on the occurrence of hospital errors. Qualitative studies have also identified conditions and practices that hinder effective teamwork (Vogus et al., 2010). In addition, the literature describes various interventions to enhance teamwork. The most common are education-based team training initiatives, such as resource management training. This training has a positive impact on the quantity and quality of communication and teamwork behavior and team safety during handovers. The team training program aims to develop communication and coordination within the team by using various intervention modalities, including simulation-based training (Weaver et al., 2013).

According to Weick& Sutcliffe (Singer &Vogus, 2013), attentive organization consists of five interrelated processes, namely preoccupation with failure, reluctance to simplify interpretation, sensitivity to operations, commitment to resilience, and respect for expertise. High reliability organizations, which operate technically complex systems in an almost error-free manner for a long time, enforce these processes. Furthermore Vogus et al. (2010) say case studies show that the lack of attentive organization is a major factor contributing to developing awareness among front-line nurses to prioritize efforts to prevent errors during handovers. Evaluations show that increased awareness of the organization that is carried out by trusted leaders and structured protocols will result in fewer errors when nurses make handovers.

Furthermore, implementing the enacting factor in a patient safety culture requires relational coordination, a term that broadly includes strategies that focus on improving communication and relationships between individuals whose roles require them to work together in integrating tasks. Studies have linked the relational climate with adherence to the handover protocol. Compliance with the handover protocol is associated with operational reliability that makes performance free of errors that might occur (Siemsen et al., 2012).

Enacting factors in a patient safety culture are also determined by the ability to accurately show real and emerging errors and other problems and constructively arrange resources to solve the problems needed to overcome them. Accurately pointing out problems will be difficult in the context of health care because problems are often complex, unclear, and dynamic with information spread across many locations and parties (Richter, McAlearney, & Pennell, 2016). This is made worse by the fact that nurses often fail to revise situation assessments and act as individuals who are responsible for providing good care despite poor work.

Effective handover problem solving also depends on a combination of preventive measures to avoid problems and adaptive actions to correct the problem. In health care, the use of standard handover protocols is proven to reduce problems. Problem-solving behavior (for example, seeking feedback, using a structured problem-solving

process) also leads to successful handovers that improve safety and prevent future errors (Vogus et al., 2010).

Enacting factors in patient safety culture are also closely related to the organizing process. Performance that is almost error free in conditions filled with complexity, interdependence and pressure results from a consciously organized organizing process. Organizing that is done consciously is a process in which nurses continually and interactively develop, improve and update a shared understanding of the situation they are facing and define common problems and mobilize their existing abilities to detect and correct errors that arise, unexpected events and threats to safety during handovers (Richter, 2013).

V. CONCLUSION

Organizational factors that have an influence on the success of the handover of the nurses in the inpatient ward are enabling and enacting factors.

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EXPLORING EFFORTS TO PREVENT SMOKING BEHAVIOR FOR ADOLESCENTS: A QUALITATIVE STUDY IN INDONESIA

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Abstract: There is a high number of adolescent smokers in Indonesia, where many causal factors are involved. Therefore, the intervention of smoking prevention should be developed to be more effective and culturally appropriate. This study explored the efforts and appropriate program for smoking prevention among adolescents. Three Focus Group Discussion (FGD) sets, which consisted a total of 24 junior high school students, were included in this phenomenological qualitative study. Interview was conducted in three junior high schools in Aceh Besar District. Data were analyzed, by using inductive content analysis method. The efforts to prevent smoking behaviors were grouped into three themes which include (1) health intervention (with two sub-themes: health effect of smoking and interactive media) (2) Islamic Intervention (religious practices and parental roles) (3) and coping enhancement (self-concept and refusal skills). The results suggest that smoking prevention program for Indonesian adolescents should involve health intervention, Islamic intervention and coping enhancement. It is also suggested the health professional to take more considerations on those factors that contribute to prevent smoking behavior for adolescent.

Keywords: Effort, smoking prevention, program, adolescent

I. INTRODUCTION

A number of preventive efforts have been carried out to decrease the number of smokers in Indonesia but gives insignificant progress. A study in 9 North and Southeast Asian countries reported that Indonesia is one of the three countries (Maldives and Bangladesh) with the highest smoking rates (Sreeramareddy,

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Pradhan, Mir, & Sin, 2014). As an addition, the prevalence of smoking did not decrease significantly between 2007 and 2014 (Amalia, Cadogan, Suryo, & Filippidis, 2019). Moreover, smoking is also found to be among adolescent in Indonesia, where national surveys showed that out of 3,737 students, age 13 to 15 years, 37.7% were smokers, 13.5% were currently on tobacco, while 11.8% took cigarettes and 3.8% of them were reported to use other substances. Furthermore, 95.1% adolescents that stated did not smoke, desired to start smoking within the next 12 months (Tahlil, Woodman, Coveney, & Ward, 2013). This data shows a tendency for the increasing number of smokers in Indonesia. Therefore, an effective preventive effort must be prioritized because adolescents, who attempted this habit at the age of 10–14, were predicted to continue in the next two years (Sargent, Gabrielli, Budney, Soneji, & Wills, 2017).

There were many factors which is contributed to the smoking activities, among adolescents, where the highest rate of smoking for adolescents is between junior high schools and senior high school. One of the related factors was psychological distress (Lawrence, Mitrou, & Zubrick, 2011), Previous study indicated low level of psychological well-being among adolescent smokers (Fithria et al., 2018). Then, a number of adolescents tend to think that smoking habit helps the adaptation of physical, cognitive and emotional changes during adolescent period, in which this habit is also associated with depression (Chaiton, Cohen, Loughlin, & Rehm, 2009). One of the factors that contribute to the smoking cessation failure is the presence of notion that smoking is capable of eliminating negative effects (Garey et al., 2017). Moreover, smoking habit is perpetuated by socio-cultural identity, where smokers possess enhanced emotional and communal connection (Woodgate & Busolo, 2015).

Furthermore, smoking is closely attached to adolescents from low socio-economic circles, broken families with addicted parents (Bird, Staines-Orozco, & Moraros, 2016) the prevalence of smoking has decreased among adults but paradoxically increased among adolescents, particularly among young females. This study was designed to determine the association between adolescents' smoking experiences (smoking behaviors and second hand smoke [SHS] exposure, and conflicted households (Rajesh et al., 2015). Another factor that contributes to smoking is religiosity (Hussain, Walker, & Moon, 2017). Relationship between smoking activities and religious factors is very strong among Muslim men that share same activities for more than once a week. In contrary, the less number is found among non-Muslim men, who had never attended religious activities (Wang, Koenig, & Al Shohaib, 2015).

Due to the stated factors above, more effective efforts required to reduce the number of smoking among adolescents. Based on the previous study, prevention can be an effective strategy to help adolescents not to initiate smoking activities (Bird et al., 2016) the prevalence of smoking has decreased among adults but paradoxically increased among adolescents, particularly among young females. This study was designed to determine the association between adolescents' smoking experiences (smoking behaviors and second hand smoke [SHS] exposure. This is due to the fact

that 50% individuals, who give a first try to smoking, are found to develop smoking habit (Thomas, Baker, & Thomas, 2016).

According to Tahlil, Coveney, Woodman, & Ward (2013), smoking prevention among adolescents should include providing information about smoking effects and refusal skills (Tahlil, Coveney, Woodman, & Ward, 2013). However, the smoking prevention programs that have been carried out are mostly school-based interventions (Tahlil et al., 2013), (Gorini et al., 2014), (Crone, Spruijt, Dijkstra, Willemsen, & Paulussen, 2011), (Bühler et al., 2017). Unfortunately, in general, the program showed a positive short-term effects, where the long-term effects are still doubtful. The insignificant results are probably because of the exclusion of the adolescent's own perspective. Therefore, this study aims to explore various smoking preventive efforts that are based on the adolescent's perspective. The results are expected to provide recommendations for effective smoking preventive efforts for adolescents.

II. METHODS

Participants and Procedure

Study participants consisted of 24 male students, recruited from three junior high schools in rural area in Aceh, Indonesia. Each school was represented by 8 students. A purposive sampling method was applied in selecting study participants, the inclusion criteria were male, living with parents and age range 12–18 years old. Data collection was conducted in January 2019 with the written approval of parents. Approved participants were then contacted via their teachers and a date was set for the Focus Group Discussion (FGD).

Setting

Focus Group Discussion was conducted at each school in one room inside the school area which is prepared by the head of schools. The duration of interview was 60–90 minutes and was recorded using Audio-recorder. The researchers built rapport with the participants before data collection and the researcher also maintained trustworthiness of the study. Therefore, participants were told that this study aims to identify efforts for smoking prevention among adolescents and all information about their identity will be kept confidentially. Then, the teachers were not be included in the process of interview to explore their perception freely.

Measure

The interview guide was developed by the researcher based on the review of literature and all questions have approved by other authors. The researcher as the main instrument of the study have a good understanding about the qualitative methods. A semi-structured interview was initiated by asking question about smoking status "Do you smoke cigarette?" Subsequently followed by "Why did you/someone smoke?",

they were further requested to describe deeper about the efforts to prevent smoking. The questionnaires have passed the validity and reliability test and the ethical test of the Ethics Committee of Nursing Faculty, Universitas Syiah Kuala.

Data Analysis

This study employed a phenomenological study, which carried Focus Group Discussion (FGD). All data from interviews were analyzed using inductive content analysis, consistent with qualitative study by Graneheim & Lundman (2004). Transcripts of discussions were read repeatedly by authors to obtain an overall understanding, the units that described the efforts for smoking was then identified. The next phase was condensation, independent code labeling, to find a "general sense". During the analysis, the meaning of each word was explored. The codes were sequentially compared, and then formulated into sub-themes and themes, which were later translated into English version.

III. RESULTS

The efforts to prevent smoking based on adolescent's perspective were grouped into three themes which include (1) health intervention, with two sub-themes consisting health effect of smoking and interactive media (2) Islamic Intervention, consisting religious practices and parental roles, and (3) coping enhancement consisting self-concept and refusal skills.

Table 24.1 An Example of Theme, Sub Theme and Code of Data Analysis

Effort to Prevent Smoking		
Theme	*Sub Theme*	*Code*
Islamic Intervention	Religious Practices	Reciting Quran
		Increasing Islamic Knowledge
		Islamic law about smoking
	Parental Roles	Controlling
		Advice about smoking
		Punishment if smoking
		Parent do not smoke
		Instead activity for children

Health Intervention to Prevent Smoking

One of the efforts in smoking prevention, based on this study, is providing health intervention, where the first sub theme is *health effect of smoking*. When asking about the ways to prevent smoking, health problem is the first consent of the participants, as stated in the following comment:

"as I know smoking is not good and this behavior is dangerous for our health" (P1)".

"We must protect ourselves from people who smoke because smoking can harm our body and our health" (P4).

Moreover, most participants in this study talked about health when discussing about smoking behaviors, although majority of them smoked. They knew that smoking has negative impact for health. As said by the participant:

"we have to forbid the younger siblings from smoking habit, we need to educated them and tell them that if they smoked cigarette, they will suffer from many serious diseases" (P21).

When discussing about health intervention related to smoking preventions, participants suggested an interactive media for delivering the knowledge about health effects of smoking. As said by the participant:

"We have to show videos about people who are sick due to smoking….. so people become afraid to smoke" (P7)".

In addition, the results also showed the need to show pictures of people who were sick caused by smoking, as said by the participant:

"When giving information about the dangers of smoking, people were shown photos of smokers suffering from smoking-related diseases, so, people do not have desire to smoke cigarette" (P8)

Islamic Intervention to Prevent Smoking

Not unexpectedly, religious intervention was a focus in adolescent's discussion of smoking behavior. As all participant were Muslim, the Islamic intervention was believed to be an effective effort to prevent smoking. One of this intervention was to carry out religious activities, as stated by the participants:

"In Islam, one way that we can do to not participate in bad behaviors, including smoking, is by reciting Al-Quran frequently (P16)".

"We should pray and recite Al-Quran more often because prayer is worship, and worship can prevent us from doing bad things that are cruel and not good "(P14).

"we have to do a lot of prayer so that it is not easily affected by people who smoke" (P13).

Moreover, this study showed that by increasing the role of parents, the smoking preventions will be more effective. . As said by the participant:

"Parents must educate their children well, look after them, when the children came back from school every day, children were asked what did they do when they were at school with their friends" (P24).

"Parents must look after the family and educate children on a good path, encourage children to go to Islamic school and general school…. and parents should motivate children every day and ask them not to smoke" (P21).

Then, related to parental role, this study also found that punishment is one of the ways to prevent smoking among adolescents. Parents are expected to give punishment if they catch their child is smoking, as said by the participant:

"If parents see their child smoke cigarette, then he (the child) must be punished, (for example) if they are given a vehicle for school, the parents should take it back, so they do not have personal vehicle anymore" (P6). Another role of parents is giving advice when they give money for the children before going to school, as said by the participant:

"parents should remind their children when giving pocket money, so they will not buy cigarettes using that money, and this activity should be performed by parents everyday" (P14).

Coping Enhancement

This study showed that smoking prevention can also be implemented by coping enhancement including *self-concept* and *refusal skills*. Participant released the influence of peer and environment to their behaviors including smoking, increasing self-control and self-concept is significantly needed. As participant said:

"We must control ourselves and our desire when sitting close to a friend who is smoking because usually we were influenced to do so" (P13).

"We must be able to give reasons when invited by friends to smoke…as me, at that time, my friend offered me a cigarette…but I did not want to smoke, so I gave the reason that I am sick, therefore I was not allowed to smoke cigarette (P24) ".

However, the participants feel more confident if they smoke, as participant said:

"If you do not smoke cigarettes when sitting with other friends, they said that you are immature and often ridiculed by those friends" (21).

Then, another participant said:

"When we were hanging out with our friends, they would say that we are weak if we did not smoke like them. This can make us not confidents and want to smoke too, later we smoked again and difficult to stop it" (22).

IV. DISCUSSION

In this study, adolescents suggested various efforts that can be performed to prevent smoking behavior, including health interventions, Islamic interventions and also coping enhancement. According to the results of this study, the delivery of health information related to the impact of smoking is needed, so the adolescents have sufficient understanding of the consequences of smoking on health. A lack of information obtained about the effects of smoking can cause adolescents to be more vulnerable to smoking behavior. However, there are many adolescents with limited knowledge about health effects of smoking. It is in line with a study on junior high school students reported that a number of students in urban areas were lack of knowledge about smoking related diseases (Xu et al., 2016) sources of smoking-related knowledge and its influencing factor among male urban secondary school students. METHODS We conducted a cross-sectional survey, using a self-administered questionnaire, among 1297 male secondary school students in municipal areas of Chongqing, China.

RESULTS Non-smokers had a better knowledge of smoking hazards than smokers. Less than 20% of students knew that smoking can cause heart disease, peptic ulcer, and cerebral stroke. Sources of smoking-related knowledge differed between smokers and non-smokers, respectively: TV (76.5 vs. 76.7%. This shows the need for efforts to increase adolescent knowledge to prevent smoking, it is in accordance with previous study that indicated adolescents need to be informed about smoking in order to have sufficient understanding of the health impacts of smoking (Tahlil et al., 2013). Other study also noticed the importance of giving information to the public about the health impacts of smoking (Glock, Unz, & Kovacs, 2012) Skurka et al., 2018).

Based on this current study, the adolescents consider health to be a significant factor, affected by smoking behavior, but most of them did not aware about that because the health effect of smoking did not appear in the short time. Thus, in the prevention, health intervention must be included not only about long-term effect of smoking but also short-term effect of that behavior. However, this shows that adolescents in Aceh, Indonesia, have similarities in thinking of the importance of maintaining healthy behaviors. It is no doubt that smoking is dangerous for health, where the cigarettes contain more than 5000 chemicals (Gatto et al., 2017) that can cause many diseases (Duncan, Pearson, & Maddison, 2018). Therefore, smoking prevention program for adolescents must include adequate information on the health impacts of smoking.

Furthermore, the analysis of this study also illustrates the importance of using effective media in delivering the information regarding the dangers of smoking. The use of interactive communication methods and effective media can improve adolescents' enthusiasm, so they will be more participative in each intervention activity. The suggested media are videos and pictures of smoking caused diseases. This can help changing the perception of adolescents about smoking which is still perceived positive in some places. This is in accordance with previous study that recommended the use of multiple methods in providing health information such as lecture methods, interactive teaching methods, demonstrations through audiovisual devices, case studies, seminars and counseling, where interventions using video were considered to be more effective than using written text (Stanczyk, de Vries, Candel, Muris, & Bolman, 2016). This study is also in line with previous study which indicated the use of digital and interactive media could increase the participation of adolescents in health promotion activities (Park, Kulbok, Keim-Malpass, Drake, & Kennedy, 2017) the time and resources required, reasons for participation, and program satisfaction using checklists and interviews. Smoking intention was measured via pre- and post-intervention surveys and a quantitative analysis utilizing a Wilcoxon Signed Rank test to detect differences in intention for non-smoking. Results Participants worked in groups to produce four video clips containing anti-smoking messages. Three main themes (active engagement, participation for community health, and personal growth and healthy development.

Furthermore, this study showed that smoking prevention will be more effective by giving Islamic interventions. This is consistent with the characteristics of the Acehnese people who are mostly Muslim and have special characteristic. Where the

province happens to implement Islamic law since 2000. This result is also supported by previous research which indicated that smoking prevention strategies in adolescents in Aceh can be more effective if it is performed through Islamic teaching (Tahlil et al., 2013). This current study found that religion is one focus of the adolescents when discussing about smoking. Religion is a reference in the behavior of an individual. This is in line with previous study that indicated a relationship between religiosity and smoking behavior (Hussain et al., 2017), (Sucakli, Ozer, Celik, Kahraman, & Ekerbicer, 2011) attitude, and behavior of religious officials towards smoking and the new tobacco law.; Method: The study group was comprised of 492 Imams and 149 Quran course instructors working in Kahramanmaras city of Turkey, 641 religious officials in total, and our survey form was applied on 406 (63.3%, Wang et al., 2015), the low level of religious knowledge was related to the high rate of smoking, where fewer religious Muslims and Christians smoke than those who were not religious (Hussain et al., 2017).

Furthermore, adolescents in Aceh, Indonesia, believed that religion plays an important role in shaping a Muslim's behavior, thus religious approach is recommended. This is in accordance with previous study that indicated religious approaches can be effective in deserting cigarettes and drug addicts, and Islamic teachings have been reported to prevent children from smoking (Naing, Ahmad, Musa, Rizal, & Hamid, 2004). Other research also showed that religion is a significant factor in influencing smoking behavior (Manley, 2013), (Jawad, Nakkash, Mahfoud, Bteddini, & Haddad, 2015), as Muslim smokers in Malaysia referred to their religion as a guide to stop smoking or not (Yong et al., 2013). Moreover, previous research in Jordan, also showed the close relationship between religious obedience and smoking activity. The research also suggested the importance of being culturally appropriate, which could help health workers to prevent smoking behaviors (Alzyoud, Kheirallah, Ward, Al-shdayfat, & Alzyoud, 2015).

Moreover, this study finds that another smoking prevention effort is by increasing coping mechanisms. Adolescence is an important and challenging stage in the life cycle. When an adolescent does not have an effective coping mechanism, it is easier to experience psychological stress, which eventually can fall into smoking behavior. One of the challenges of adolescence is the ability to build good relationships with peers. A study found that a closeness to peers can affects subjective well-being and suicide ideas in adolescents, both directly and indirectly. It also gives a positive relationship with self-worth, and negatively related to self-depreciation/self-deprecation, behavioral focused coping and emotional focused coping (Yoo, 2019) 11th grade = 156, 12th grade = 153, boys = 50.3%. However, a close friend does not only have a positive impacts for an individual, but also can have negative impacts such as smoking influence (Joung, Han, Park, & Ryu, 2016). This is consistent with the previous study which reported a significant association between the status of family and friends with adolescent behavior (Joung et al., 2016), (Saari, Kentala, & Mattila, 2014), (Shaheen, Oyebode, & Masud, 2018). Therefore, there is a need for adolescent to have adequate self-control abilities, so they are not easily affected by others. This is in line with

other study which showed that individual factors including self-control contributed to smoking behavior in adolescence (Hwang & Yun, 2015).

Furthermore, the vulnerability of adolescents to smoking is because the tendency to think that smoking helps in the physical, cognitive and emotional changes adaptations. So according to this research, it is important to improve coping mechanisms and self-concept of adolescents, so that they are not easily caught up in smoking behavior. It is supported by previous study that showed smoking is also associated with depression in adolescents (Chaiton et al., 2009) and the assumption that smoking can eliminate negative affect is one risk factor for the failure of the smoking cessation program (Garey et al., 2017).

Moreover, another effort to prevent smoking among adolescents is by enhancing self-confidence and coping mechanisms. This effort will make adolescent more confident to be themselves, where they are not easily influenced to smoke. This is in accordance with previous study that stated the confidence and the ability to avoid smoking are important to reduce the risk of smoking (Duncan et al., 2018). An adolescent who has high self-control and self-concept will be more selective in doing any activates and hardly influenced by others.

V. CONCLUSION

The results of this study showed that the efforts to prevent smoking behaviors for adolescents, based on the adolescents' perspective, should include health intervention, Islamic intervention and coping enhancement. It is recommended for health professionals to pay attention to the stated efforts for the smoking prevention on adolescents, as this can develop the program to be more effective and culturally appropriate.

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PSYCHOLOGICAL WELL-BEING OF DISABLED PEOPLE: PRELIMINARY MIXED-METHOD STUDY IN ACEH, INDONESIA

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Abstract: Person with disabilities is considered to have mental, physical or intellectual limitations. Hence, these limitations made other people tend to judge them negatively and experience difficulties to build any social connection and negatively affect their psychological well-being. This research aims to identify the psychological well-being of people with physical disabilities related to their autonomy, personality development, environmental mastery, positive relation with others, purpose in life and self-acceptance. This preliminary study used sequential two-phase explanatory mixed method design with the goal of identifying suitable strategies to address their well-being. The approach begins with quantitative data collection, followed by qualitative data to explain and enrich the quantitative findings. In the first phase, quantitative data was performed using self-report questionnaires to collect data from 228 disabled people. The second phase utilised in-depth interviews with 6 physically disabled persons to enrich the findings by exploring their views on psychological well-being. The quantitative result confirms that psychological well-being of disabled people categorized in high level (90.9%). The study implied the dimensions of psychological well-being from the respondents were in high category of personality development (83.5%), positive relation with others (96.1%), purpose in life (93.5%) and self-acceptance (87.0%); but low category in autonomy (84.4%) and environmental mastery (88.3%). The study indicated that although people with disabilities have limitations on their physical condition, they do not result in limited psychological well-being. The findings of preliminary mixed methods study provide insights into psychological well-being condition that informs strategies to promote well-being of disable people. The study suggest to increase the autonomy and environmental mastery by strengthening the disability forum activities which focus on community engagement and social support.

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Keywords: Psychological well-being, Disable, People with disability, Physical disability, Indonesia

I. INTRODUCTION

Disability is a term that associated individuals with the condition of impedance, the movement limitation and participation restriction (Kanwal, Mustafa, 2016). This condition has made the individuals face difficulties in performing some tasks since they have problems in physical performance and structure (Puce, Marinelli, Mori, Pallecchi, Trompetto, 2017). Most studies involving with persons with disabilities reported that these individuals experience the elevated risk of weakened psychological well-being; which characterised by lower self-esteem, increased the anxiety and higher rates of depression among disable persons (Abubakar et al., 2013; Jakubec, Carruthers Den Hoed, Ray, & Krishnamurthy, 2016)

Persons with disability also associated with and tend to be less well accepted by the majority in most societies (Mpofu, Sefotho, & Maree, 2017; Tough, Siegrist, & Fekete, 2017). Due to the complexity of the problems faced by persons with disabilities, their psychological well-being is an experience that needs more attention (Di Cagno et al., 2013; Canha, Simões, Gaspar Matos, & Owens, 2016). This condition has made people with disabilities very vulnerable in terms of their psychological well-being (Mirandola, et., al., 2019)

Psychological well-being is stated as healthy mental functioning in order to fulfil the happiness (Susanti & Supradaniati, 2018), accomplishing goals (Heizomi, Allahverdipour, Asghari, & Safaian, 2015) and able to accept their strengths and weaknesses (Udhayakumar, & Illango, 2018)

According to Ryff, & Keyes (1995) psychological well-being consist of multidimensional which closely related in the ability to adapt and achieving target. These dimensions described the ability of individuals in controlling their lives and activities also support their lives living meaningfully. Understanding the psychological well-being from its multidimensions in disable people enable to improve their ability to adapt and performing better in their lives. Therefore, This research aims to identify the psychological well-being of people with physical disabilities using dimensions introduced by Ryff (1995) consisting autonomy, personality development, environmental mastery, positive relation with others, purpose in life and self-acceptance.

II. METHODS

Study Sample

This study was conducted with disabled people who are the members of an organization for people with disabilities in Aceh called ‘forum for communication of people with special needs’ in Aceh or in Indonesian language *Forum Komunikasi Masyarakat*

Berkebutuhan Khusus Aceh (FKM-BKA). The study was limited to disable people consisting of the blind, the deaf and physically disable people. These groups of disable people were considered able to participate and filled out the questionnaires also performed the in-depth interviews. The participants were approached to participate and provided written informed consent which was reviewed verbally by the interviewer especially for the blind people.

Study Design

The present study utilises a sequential two-phase explanatory mixed method design, using quantitative survey (questionnaires) and qualitative (in-depth interviews). The method begin with collecting the quantitative data, followed by the qualitative data in order to explain and enrich the quantitative findings. Within this study, the quantitative data was given the priority, where the qualitative data was obtained regarding the findings that required additional explanation. The questionnaires and interview data were collected at a number of time within one month of data collection process.

Phase I: Quantitative Study

The quantitative data was collected using self-report questionnaires for physiological well-being adapted from Ryff & Keyes (1995). The data was collected by distributing the questionnaires which consist of two parts. The first part is socio-demographic information which includes: age, gender, occupation, marital status, type of disability and duration of disability. The second part is the 42 items of psychological well-being which include: autonomy, personality development, environmental mastery, positive relation with others and purpose of life. These items had been translated and validated (r= 0.72 – 0.97) in various language and settings (Abbott et. al., 2006). Participants who participated in the quantitative components were approached and recruited through the director of *FKM-BKA*. All members of *FKM-BKA* community were conveniently sampling during one month duration of data collection process in order to fill out the questionnaires.

Phase II: Qualitative Study

In addition to collect quantitative data, this study also gathered qualitative data using semi-structured in-depth interviews. A qualitative method was designed in order to provide deep understanding and explanation regarding the dimensions of psychological well-being obtained from the quantitative part. The quantitative participants were invited to participate in an in-depth interview once all the questionnaires had been filled out. The agreed participants for the interviews were randomly selected to be in-depth interviewed. The interviews were conducted to collect qualitative data related to their experiences especially their psychological well-being as disable people.

The interview guide was prepared by the researchers by addressing the psychological well-being items in Ryff's (1995) questionnaires. The semi-structured questions were pre-analysed by 2 external experts from related field area. The interview

guide consist of 7 open-ended questions and additional probes. Most interviews lasted 50–60 minutes and took place in the participants' home.

The interviews with the deaf were facilitated by a disability assistant in order to interpret the words and meaning of the interview. Figure 1 provides the overview of the study design.

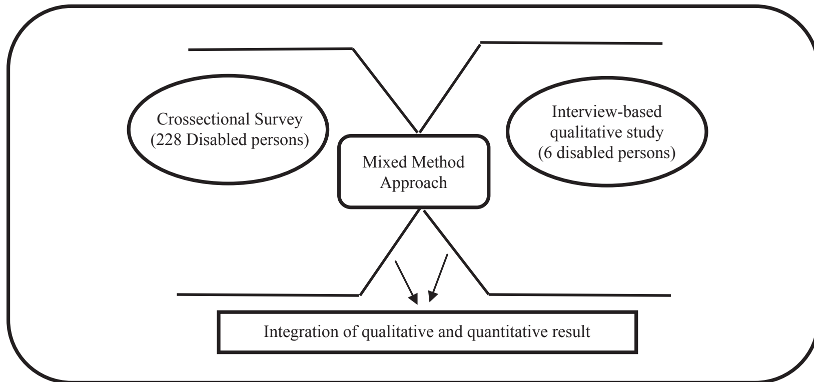

Figure 25.1 Overview of the Study Design

Data Analysis

The demographic and survey data were analysed by descriptive statistical analysis. Numerical data from the questionnaires were entered into the Statistical Package for Social Scientists (SPSS) version 19.0. The items are rated in the likert scale from 4 (strongly agree) to 1 (strongly disagree). The qualitative interviews were audio-taped and transcribed verbatim and analysed by using content analysis. The key terms in the transcript text were highlighted, coded and classified into themes, sub themes and categories. The transcripts were analysed multiple times in order to obtain full understanding of the context based on the research objectives.

III. FINDINGS

The total of 228 disabled people participated in this study by filling out the survey questionnaires. 34.2% of them were blind, 32.9% were deaf and another 32.9% were physically disabled person. Most participants (46.7%) were in the average group of 30–39 years old; where the vast majority of them (57.3%) were female and in senior high degree (41.3%).

The quantitative result confirms that psychological well-being of disable people categorized in high level (80.9%). The study also indicated the dimensions of psychological well-being from the respondents were in high category of personality development (73.5%), positive relation with others (86.6%), purpose in life (83.5%) and self-acceptance (77.0%).

However, they experienced low category in autonomy (54.4%) and environmental mastery (53.3%).

In addition, the qualitative data resulted from 6 participants who took part in the interviews. Each two of them represented all three types of disabilities. All of them explained the meaning of psychological well-being and its dimensions related to their experience as disable people.

Table 25.1 The Characteristics of the Respondents

Characteristics	*Categories*	*Frequency (N=228)*
Age	20 – 29 Years	22.3
	30 – 39 Years	36.7
	40 – 49 Years	24.6
	50 and above	16.4
Gender	Male	42.7
	Female	57.3
Education	Primary School	22.4
	Senior Highs School	51.3
	Bachelor Degree	23.6
	Others	02.7
Occupation	Government Employee	09.2
	Self-Employee	42.5
	Entrepreneur	22.8
	Others	25.5
Type of Disability	Blind	34.2
	Deaf	32.9
	Physically disable	32.9

Personality Development

In terms of personality development dimension, there were 191 participants (83.7%) reported that they had high personality development. Amongst these respondents, 40.3% of them were interested in conducting activities that increase knowledge; and majority of them were not giving up to change and improve their lives (57.1%).

The principal theme to emerge from qualitative data was the development of personality is a dynamic and self-growth process. The participants explained that attending and participating in several activities had increased their satisfaction in living their lives which ultimately enhanced their self-esteem. Most disable people in this study were working and had attended and participated several activities conducted by the disable forum (FKMBKA). This situation has helped them to built-up their confidence and self-regard by realising that they could still contribute and participated in living their lives.

> "With my limited condition like this, just staying at home will make me having more stress. Therefore, I need to take part in many activities so I can update things that happened around me".
> (42 years old, physically disable participant)

> "By participating in various activities in the community, I feel accepted and feel the same as the others. I don't really feel the limitations that I have because I can also do the activities and still participating like the others.
> (36 years old, blind participant)

Positive Relation with Others

Most participants in this study (73.5%) stated that they had positive relation with others. This is evidenced by the majority of respondents reported that they always had chance to interact with friends and families (83.2%) and having a warm and trusting relationship with other (61.1%).

The respondents interviewed in this study explained that some of them were still living with their extended family. Therefore, they are still maintaining their relationship with their families. Although some others were living apart from their family, yet they are still continuing to have contact with their family. Moreover, some respondents also actively held meetings and conducted activities in FKMBKA that allowed them to interact with other disable fellow and friends.

> "My family accepts and have already adapted to my condition. My mother can perform little bit the sign language and so does my dad… And so far, I am getting lots of supports from my family for my daily activities...especially raising my daughter since she is not deaf...she (mother) teaches her (daughter) to talk".
> (39 years old, deaf participant)

> "We often gather here (FKMBKA) and have meetings with each other, usually we talk about daily activities...what were the difficulties that we have face today (related to their disability) and we usually give input and share experiences. I also teach reciting the Qur'an (holy book) to the children in this neighbourhood and they never see me different (because of the disability condition). They still see me as the *ustadzah* (the qur'an teacher) and therefore, we still maintain good relationship".
> (45 years old, physically disable participant)

The respondents recognised that by maintaining communication with family and friends would have impact on the support that they received. Most respondents in this study were still living with or close to their family. Although they are far from their

families, they are still having good relation with fellow disable people through the social activities conducted by the FKMBKA.

By maintaining communication with family and friends will impact on the support that received by disable people. They feel part of the community so they can continue their lives in accordance with the goals they want to achieve.

Purpose in Life

The majority of disable people participated in this study (83.5%) mentioned that they had high purpose in life. Amongst them (48%) stated they are thinking for their future and (54.5%) understand what they want to achieve in life.

Furthermore, the respondents also explained that they have purpose and have some goals in their lives. Most of them have plan in the future in terms of short-term goals such as career and children, also long-term goals in terms of spirituality such as the desire to go on the pilgrimage. They are not discouraged, despite their condition and do not want to become burden to others.

> "Surely I have goals in life...for example my husband and I do not have permanent job at the moment.., so our hope that in the future we will get permanent job...so we wouldn't become the burden to others. Therefore, we are still trying and keep praying to get it (better permanent job)."
> (38 years old, blind participant)

> "My hope that has not been fulfilled is to perform the *Hajj* (pilgrimage). I still hope to do it in the future. I try to keep my saving and always pray that I will be able to do the pilgrimage before I die."
> (42 years old, physically disable participant)

Self-Acceptance

There were 77% participants reported that they had high category in terms of self-acceptance. These respondents stated that they felt confident and positive about themselves (55.8%) and satisfied with what has been achieved in life (46.8%).

Most respondents in this study able to accept and have already adapted to their conditions. This is due to the spiritual belief that they are given the disability condition with a specific purpose in life. They also explained that their disability condition had trained them to have a strong personality and character.

> "I feel no longer disappointed with my condition, because I have been physically disable like this for more than 20 years now...and have been adapted to it. I believe that God made me like this to practice my patience and be more resilient. I also became more reluctant to give up."
> (42 years old, physically disable participant)

Moreover, the respondent also explained that they never focus on the limitations that they have, since many fellow disable people they met in FKMBKA also have the same limitations even worse than them. Therefore, they can focus on what they can achieve and their spiritual belief had strengthened them in living their lives.

> "If we continue to look up (to normal people) we will continue to feel inadequate. I believe God provides people with strengths and weaknesses. Besides, I always remember that many of my friends at FKMBKA also have similar disabilities even worse than me, but they can do many things and strong."
> (36 years old, blind participant)

Autonomy

Unlike the other dimensions of psychological well-being, the respondents in this study reported that they had low category of autonomy dimension (54.4%). Amongst these respondents stated that their decisions were still influenced by others (42.9%) and tend to worry about other people's opinions about themselves (57.2%).

The qualitative interviews reported that most respondents to some extend still rely on support from others, especially from their family members or relatives. Therefore, every decision that have been made particularly regarding their mobility must involving others especially their relatives. Despite their self-confidence, they still consider them-selves as not fully independent person.

> "...After all I still depend on the help of my mother, especially those related to my daughter...because not everyone could speak the sign language...so I always ask my mother's opinion in any decision that I made...because later she will also be involved in my daily life"
> (39 years old, deaf participant)

> "Well, I still need help from my relatives, especially when I want to go to the places that I haven't familiar with... therefore I still consider the opinions of others when making decisions"
> (36 years old, blind participant)

Environmental Mastery

Similar to autonomy dimension, the environmental mastery also reported in low category (53.3%). This evidence reported by 56.8% disable person where they experienced the difficulty in adapting to the society. Moreover, 86% of them felt responsible for the situation that they experienced in life.

The participants in this study inform that they experiencing difficulties in performing daily activities due to the environmental conditions that are less friendly

to their conditions. This situation has made most of them have to depend on others in performing activities outside their familiar environment.

> "It is hard for me going to the town just by myself...we don't have that many option for public transport...even the transport is not accessible for disable people like me...beside, many places in our town is difficult to be explored by wheelchair and using the crutches like mine... therefore, I need somebody to accompany me."
> (45 years old, physically disable participant)

> "As a blind person I often feel overwhelmed going to places that I am not familiar with. So I need someone else to accompany me in doing my activities. In addition, there are several activities in my environment where I could not be involved because of my condition."
> (38 years old, blind participant)

IV. DISCUSSION

The integration of quantitative and qualitative methods provides more comprehensive picture of psychological well-being. The combination of quantitative and qualitative also enables deep analysis of the study findings (Guetterman, Fetters, Creswell, 2015). The results may contribute in obtaining opinions about strategies to promote psychological well-being of disable people, where the autonomy and environmental mastery elements need to be improved for people with disability.

The study indicated that although people with disabilities have limitations on their physical condition, they do not result in limited psychological well-being. Most respondents in this study are able to adapt to the conditions of their physical limitations and remain optimistic in living their lives in the future. Most respondents have some occupations and enduring several activities that helped them to adapt within the society. Moreover, the disable people also having strong support through their peer groups in FKMBKA, where they held regular meeting. A key component contributing to personal development is being active and participate also to interact with others in the community. Most respondents in this study are the members of FKMBKA which has many activities and provided opportunities to interact both with fellow disable person and other communities. This condition have made them stronger and mentally healthy in living their life.

The research also found that people with disabilities experienced difficulty in adapting to their environment. Furthermore, since the majority of them were still required support from others in performing their daily lives, has made them to be less independent and autonomous. Involving people with disabilities with more community-related activities is expected to increase their confidence and enhancing

their autonomy as disable person. In addition, by actively involving people with disabilities with the wider community, it is expected to increase public awareness on the importance of having suitable and supporting facilities for the mobility of people with disabilities (Dunn & Burcaw, 2013; Matteucci et al., 2019). Therefore, the autonomy of people with disabilities will be increased and their dependence on others will be less demanding and become more independent.

The main strength of this research is the utilisation of mixed method design that enables complete picture on the psychological well-being. Hence, it also informs strategies as well as the intervention for the well-being of the disable person. A limitation of this study is the various type of the disable person as respondents which allowing less exploration of the specific conditions and well-being.

V. CONCLUSIONS

This study illustrated the disable people had high level of psychological well-being. All dimensions of psychological wellbeing also showed in the high level except the environmental mastery and autonomy dimensions. The study suggest to increase the autonomy and environmental mastery by strengthening the disability forum activities which focus on community engagement and social support. Furthermore, building the relationship between the disable forums with wider community is also compulsory. This enable to increase the insight of the community regarding people with disability. In addition, the disable people could also learn to cope with the environment and manage to be more independent in living their lives.

VI. ETHICS APPROVAL

This study holds ethical approval from Ethics Committee of Faculty of Nursing, Syiah Kuala University in Banda Aceh, Indonesia.

VII. DISCLOSURE

The authors state that they have no competing interests.

VIII. AUTHORS' CONTRIBUTIONS

SS[1] and FN[2] involved in conceptualising and designing the study. SS[1] and FN[2] conducted both survey and the interviews. SS[1] performing data analysis and prepared for the article's first draft. All authors commented on the first draft and contributed to the revisions of the manuscript. All authors read and approved the final manuscript.

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ASSOCIATED FACTORS OF QUALITY OF LIFE AMONG MENOPAUSAL WOMEN IN PEKANBARU, INDONESIA

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Abstract: Much attention was paid to the issues of menopause in Indonesia due to increasing of life expectancy. The quality of life of menopausal women was also highlighted, as well as its associated factors which might affect the quality of life. This study aims to determine what associated factors of quality of life among menopausal women in Pekanbaru, Indonesia. A correlative cross-sectional design was applied by randomly recruiting 107 menopausal women as respondents. Data were collected using a set of questionnaires assessing the characteristics of respondents (age, education, occupation, BMI, duration of menopause number of children), as well as The Spiritual Intelligence Self-Report Inventory (SISRI), and The Menopause-Specific Quality of Life Questionnaire (MENQOL). The findings show significant correlations between occupation statuses, BMI, number of children, level of spirituality with quality of life among menopausal women. Therefore, this study recommends that health professionals should consider the factors of occupation status, BMI, number of children, level of spirituality in designing or implementing programs to improve the quality of life of menopausal women.

Keywords: Quality of Life, Menopausal Women

I. INTRODUCTION

Menopause is getting more attention in developed countries that adds the health problems which have emerged. The increasing length of life expectancy and the growing number of the women population entering menopausal periode are the reasons why menopause become important issue to discuss.

Mostly, women are estimated to spend nearly 1/3 of their lives in the menopause phase, usually starting in the fourth to the fifth decade of a woman live (Waheed et al., 2015). Menopause occurs when the estrogen hormone decreases sharply. It occurs when women are between the ages of 50 years and 55 years, with ages

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ranging from around 51 years (Reeder et al., 2011). The population of women over 50 years is expected to rise due to the increasing of woman's life expectancy. In 2030, the number of menopausal women is predicted to be increasing (Indonesian BPS, 2015).

According to the World Health Organization (WHO), in 2030, the population of menopause women are expected to increase by 3% per year and reach 1.2 billion women over 50 years. The life expectancy of elderly Indonesian woman is greater than the life expectancy of elderly man. Therefore, we need to pay attention for the health of menopause women. It will determine the life expectancy of a nation (Marrettih, 2012).

Changes in the conditions that occur in menopausal women greatly affects their quality of life. Menopause is characterized by several symptoms such as hot flushes, night sweats, feeling uncomfortable, and vaginal dryness that can affect the quality of life of a menopausal woman. Physically, menopausal women are easy to fatigue and weaker, reduce in physical ability, difficult to sleep and suffer muscles and joints pain (Moustafa, 2015). Based on research conducted in Iran by Kalarhoudi et al (2011), it is shown that women who have entered the age of menopause will have a poor quality of life that can be seen in the social and physical domain (Gharaibeh et al, 2010).

The phenomenon of quality of life in menopausal women can be explained using the Roy Adaptation Model (RAM). The Roy Adaptation Model focuses on three things including focal stimuli, namely stimuli or stimuli that come from within the individual or from outside the individual and must be faced directly at that moment. Contextuall stimuli are all stimuli that influence focal stimuli originating from the surrounding environment, while residual stimuli are factors that originate from the surrounding environment which can affect indirectly on the individual (Tomey&Alligood, 2010). Based on the Roy Adaptation Model, this study used a focal stimulus relating to the factors of quality of life of menopausal women are age, education, occupation, BMI, duration of menopause. While the contextual stimulus is in the number of children.

This study aims to determine the quality of life associated factors among menopausal women of in the Puskesmas Kota Pekanbaru, Indonesia.

II. METHOD

Design

This was a cross-sectional study. The survey was conducted regarding quality of life and the associated factors among menopausal women in the public health centre in Pekanbaru, Indonesia. Roy's Adaptation Model was used as the theoretical framework. The data were collected using *The Menopause-Specific Quality of Life Questionnaire* (MENQOL), *The Spiritual Intelligence Self-Report Inventory* (SISRI)

and general questions regarding to the characteristic of respondent (age, education level, occupation, BMI, menopausal duration and number of children).

Setting and Participant

The study used the simple random sampling method to recruit participants who are menopausal women. Participants were enlisted from the medical outpatient department of public health centre in Kota Pekanbaru, Riau Province, Indonesia.

The participants were invited to take a part in the study if they met the inclusion criteria. The inclusion criteria were: (1) 45–65 years old and menopause, (2) Live in public health centre in Kota Pekanbaru region (3) Willing to be a respondent and follow the research process to the end, (4) have children, (5) Able to read and write, and (6) able to communicate in Indonesian Language and local language. The total participants are 107 menopausal women.

Measurement

Data collection was performe dusing a questionnaire assessing the characteristics of respondents (age, education, occupation, BMI, duration of menopause number of children) for the independent variable. *The Menopause-Specific Quality of Life Questionnaire* (MENQOL). Each question assesses the impact of one of the four menopausal symptom domains, which are: Vasomotor Symptoms (items 1–3), Psychosocial Symptoms (items 4–10), Physical Symptoms (items 11–26), and Sexual Symptoms (items 27–29). The Spiritual Intelligence Self-Report Inventory (SISRI) questionnaire was being used to measure a person's level of spiritual intelligence. The SISRI questionnaire consists of 21 statements.

Procedure

The study has already approved by the Ethics Committee of Faculty of Nursing, Syiah Kuala University. Then, researchers and enumerators requested assistance from the public health centre in Pekanbaru in technically distributing questionnaires. The Head of public health centre facilitated researchers and research assistants to meet the elderly, especially women who have entered the period of menopause. After meeting with menopausal women, researcher and research assistants introduced themselves and explained the background, goals and benefits of research to the menopausal women.

Then researchers seek respondents' approval by asking them to sign the informed consent. Respondents filled out the questionnaire properly in accordance with those experienced by women who have entered menopause so far. After the questionnaire was filled out, it was returned to the researcher and enumerators.

Next, the researcher and research assistants rechecked; whether the all question was already answered or if there are items that had not been filled. If there was empty response, researcher and research assistants asked respondent to complete the answer on the questionnaire sheet.

Data Analysis

Focal, contextual and residual stimuli factors, and quality of life menopausal women were investigated. Multivariate linier regression was used to test the determinants of menopausal women.

III. RESULT

The Difference Between Focal Stimuli and Menopause Quality of Life Women

Table 26.1 The Differences in the Menopausal Women Quality of Life based on Focal Stimulus (N=107)

Stimulus Focal	*M*	*SD*	*SE*	*P*
Age				
Early Elderly	68.65	31.774	4.406	0.18
Late Elderly	77.16	33.423	4.507	
Education level				
Higher education	79.71	34.335	5.298	0.90
Low education	68.71	31.205	3.871	
Occupation				
Work	84.67	24.253	4.428	0.008
Does not Work	68.49	34.611	3.944	

Table 1 shows the difference between focal stimulus to the menopausal women quality of life. **Age,** there is no difference in the menopausal women quality of life between early elderly and late elderly (P = 0.180). **Education level,** there is no difference in menopausal women quality of life between higher education and lower education (P = 0.90). **Occupation**, there is a difference in the menopausal women quality of life of between working and not working (P = 0.008).

Table 26.2 The Relationship of Menopausal Women Quality of Life based on Focal Stimulus

		Quality of Life
Focal Stimulus	Pearson Correlation	-0.037
BMI	Sig. (2-Tailed)	0.706
	N	107
Length of Menopause	Pearson Correlation	0.332
	Sig. (2-Tailed)	0.001
	N	107
Contextual Stimulus	Pearson Correlation	-0.030
Number of Children	Sig. (2-Tailed)	0.757
	N	107

Table 2 shows that there is no significant relationship between focal stimulus: BMI and quality of life of menopausal women (r = -0.037; P = 0.706), and there is a significant relationship between focal stimulus: menopause length and quality of life of menopausal women (r = 0.332; P = 0.001). Whereas, the results of contextual analysis of Stimulus did not have a relationship between the Number of Children on the quality of life of menopausal women (r = 0.030; P = 0.757).

Table 26.3 Differences in the Quality of Life of Menopausal Women by Residual Stimulus: Spiritual

	N	*Mean*	*SD*	*SE*	*P*
Higher Spiritual	81	79.06	31.806	3.543	0.001
Medium Spiritual	26	54.23	5.641	5.641	

Table 3 shows that based on residual stimulus, which is spiritual factor, there is a difference between the quality of life of menopausal women who have high spiritual and moderate spiritual (p = 0.001).

IV. DISCUSSION

The results showed that based on focal stimulus: occupation there is a difference in the quality of life of menopausal women between working and not working (p=0.008), there is a significant relationship between focal stimulus: menopause length and the quality of life of menopausal women (p=0.001), residual stimulus: spiritual there is a difference between the quality of life of menopausal women who have a high spiritual and spiritual medium (p=0.001).

The results showed that based on focal stimulus: occupation there is a difference in the quality of life of menopausal women between working and not working. The results of a study conducted by Sudeshna and Aparajita (2012) found that women with menopause duration of less than 5 years had significant differences in the psychosocial and sexual domains. Broadly, the beginning of menopause is a period of adaptation of women in dealing with changes associated with a decrease in the hormone estrogen that affects their sexuality, besides the presence of various complaints at the beginning of menopause makes women feel burdened by various discomforts they face. Entering the climacterium, there is a decrease in estrogen production and an increase in the hormone gonadotropin.

Estrogend eficiency causes decreased β-endorphin sexpenditure, so the painthreshold is also reduced which causes menopausal women of ten complain of back pain or complain of pain in the genitals, bones and muscles (Baziad, 2003).

In addition to physical changes, during menopause there are changes in sex steroids that play a major role in the function of the central nervous system, especially in behavior, mood, and cognitive and sensory functions of a person. As a result of the

lack of estrogen in postmenopausal women, complaints such as irritability, irritability, and stress (Baziad, 2003). The cause of depression is thought to be due to reduced serotonin activity in the brain. Estrogen inhibits the activity of the enzyme mono amine oxidase (MAO). This enzyme causes serotonin and noradrenaline to be inactive (Baziad, 2003).

Apart from depression, sleepdisorders are the most common complaints of menopausal women. Sleep deprivationat night reduces the quality of life of the woman. Estrogen has an effect on sleep quality. Estrogen receptors have been found in the brain that regulates sleep. (Baziad, 2003). Another change that is no less important, and often becomes the main problem, isdecreased sexual drive. This is due to the menopause when the female sexual organs deteriorate. Most sexologists believe that itis not actually the physical factor that causes menopausal women not to have sex, the main problem is the psychological factor. When menopause, women have fear, anxiety and lack of confidence (Hawari, 2013).

Based on the description above the duration of menopause ≤ 5 years has a poor quality of life. This is related to the adaptation process experienced by post menopausal women. Women in the early stages of menopause need intervention, namely the provision of IEC about physical and psychological changes, as well as sexual during menopause and how to divert attention from perceived complaints, namely by increasing family support, especially the support of husband and children to increase self-confidence in dealing with the changes experienced and reduce stress by doing things that are recreational. In addition to support, they also need comunication, education, and information about adequate rest and increased physical activity which is one step to minimize physical complaints.

The results showed that based on focal stimulus: menopause length and the quality of life of menopausal women. The results of research conducted by Syalfina (2014) in Mojokerto get the results that there is a significant relationship between workers with the quality of life of menopausal women. The results of research conducted by Tarigan, Sinuhaji and Sembiring (2019) in Kabanjahe also found that there was a significant relationship between work and the quality of life of menopausal women.

Work can be related to one's income which directly influences the availability of facilities for certain activities such as information media to increase knowledge (Marettih, 2012). Socio-economic conditions will be related to physical factors, health and education of a person. If one's economic condition is good enough, it can reduce the physiological and psychological burdene specially on menopausal women.

The results showed that based on residual stimulus: spiritual there is a difference between the quality of life of menopausal women who have a high spiritual and spiritual medium. The research conducted by Ali, Marhemat, Sara, and Hamid (2015) in Iran shows that there is a positive relationship between spirituality and the quality of life of the elderly (p=0.008).

The research conducted by Seraji, Shojaezade, and Rakhsani (2016) in Iran shows that quality of life is related to the spiritual well-being of elderly. Rippentrop, et al. (2005) concluded that spirituality has a direct relationship with quality of life of the

elderly. Moreover, Daaleman and Studenski (2004) concluded that higher spirituality will provide better health conditions. In fact, while loneliness and difficulty, spirituality will make us relax and decrease our anxiety. In addition, spirituality and religion will create hope and they support the elderly during the tough situations Brown, 2005).

V. CONCLUSION

The results of this study indicate that there is a significant relationship between work (P = 0.008), duration of menopause (P = 0.001), and spiritual (0.001) on the quality of life of menopausal women. It is expected that nurses, especially Puskesmas nurses in the elderly section, make programs, especially in elderly women, related to preventing the effects of menopause so that elderly women still have good quality in carrying out their lives.

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THE EFFECTIVENESS OF POSITIVE SELF-TALK INTERVENTIONS ON INCREASING COPING MECHANISMS IN PREVENTING BULLYING

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Abstract: Bullying in adolescents is one of the common problems in schools that has destructive effects. During this period, adolescents have a need to accept and to be accepted by their peers. Coping mechanism is a way in which overcoming the changes faced or the burden received by the body so that the burden can cause a non-specific body response, such as stress leading to depression and anxiety. As a result, a certain intervention is needed to improve coping mechanisms in preventing and anticipating bullying. One of the interventions that can be used is positive *self-talk* that can change negative thinking into positive thinking. Related to above problem, this study was going to improve coping mechanisms in preventing bullying by using positive self-talk interventions. To get the data needed, this research conducted a Quasi-experimental study with pretest and post test groups from junior high school students totaling 100 respondents. The results proved that there was an increase in the mean value before and after the intervention given to the experimental group with p value 0.00 <α 0.05. As conclusion, the effective positive self-talk interventions are good to be given to improve coping mechanisms in preventing bullying among junior school students who need the certain mechanisms to overcoming their problems using their own efforts.

Keywords: Bullying, Interventions, Coping Mechanisms, and Positive Self-Talk

I. INTRODUCTION

Bullying in adolescents is one of the common problems in school environment that has destructive effects on adolescents' lives. During this period adolescents have a

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need to be accepted by their peers. Many studies report that the causes of bullying are varied. The cause can be as school culture, teacher attitudes that ignore, forgive, or even support aggression, personality and physical attributes of bullies (Rey, 2008). According to the Indonesian Child Protection Commission (KPAI, 2014), currently the bullying case is at the top of public complaints. From 2011 to 2014, KPAI recorded 369 complaints related to bullying issues. That number represents 25% of the total complaints in the field of education. The KPAI see bullying as a form of violence in schools, defeats student brawls, educational discrimination, or complaints of extortion.

In 2015, Plan International and the International Center for Research on Women (IRCW) conducted research on bullying in the Asian region including Vietnam, Cambodia, Nepal, Pakistan and Indonesia. As a result, Indonesia ranks highest for School Related Gender Based Violence (SRGBV) at 84%, followed by Vietnam at 71%, Nepal 68%, Cambodia 63% and Pakistan 43%. The criteria for bullying victims who tend to be quiet and show no resistance (Felipe, 2011), and have low self-esteem causes bullying to occur continuously which will ultimately have short-term and long-term effects. The short-term effects of bullying cause victims to have problems with school such as frequent escape and refuse to come to school (Kowalski & Limber, 2013), while the long-term effect is the emergence of low self esteem which ultimately leads to depression and further leads to suicidal thoughts in victims who experience persistent bullying (Surilena, 2016; Wolke & Lereya, 2015). Even further, bullying can lead to the emergence of antisocial personality disorders in victims (Swearer & Hymel, 2015), threshold personalities, and psychotic experiences such as hallucinations and delusions (Wolke & Lereya, 2015).

Coping mechanism is a mechanism in dealing with changes faced or burdens received by the body, so that these burdens can cause a non-specific body response, namely stress (Stuart, 2009). Coping mechanism is considered to be very important in determining whether a stressful event in life can provide a positive or negative response. Failure to develop adaptive coping that responds to any stressors that appears often has an impact on health, well-being and academic achievement (Deasy, Barry & Julie, 2014). Hackfort & Schwenkmezger quoted by Permatasari (2012) said self-talk as a dialogue in which individuals interpret feelings, perceptions, regulate, change evaluations and beliefs, and give themselves instructions and reinforcement. The type of self-talk that is used here is Positive Self-talk which can be used as a technique to stop negative thoughts in a person that causes a person to become anxious, pessimistic and depressed.

Based on existing study, positive self-talk is beneficial and makes patients have better coping and can reduce anxiety in dealing with the disease (Hamilton et al., 2011). Self-talk interventions have many advantages such as being able to build good self esteem, increase learning motivation (Indrayastuti, 2016) and increase self-discipline in students (Diswantika, 2016). Positive self-talk can also build self-esteem in victims of abuse and as an intervention to increase coping in breast cancer patients. So far, positive self-talk itself has been widely used by athletes to provide motivation

(Hardy, 2006) and increase self-efficacy before competing (Permatasari, Karini & Hakim, 2012).

Donoghue et al., (2014) conducted research on the types of coping that would be used by high school students if they were victims of bullying in the future and the results showed that high school students generally hoped to use an adaptive approach in solving problems or getting support from others, but those who have been victims of bullying compared to those not involved in bullying, predict that they will use a maladaptive avoidance coping strategy if they become victims in the future.

This is reinforced by research by Puhl & Luedicke (2011), where adolescents who have been bullied by their friends because of obesity tend to use maladaptive coping mechanisms, namely avoiding. Cassidy (2008) that adolescents who experience bullying tend to save what they feel themselves without informing others. Parents and teachers assume that this is a sign that adolescents do not want to work together so that they withdraw, even though they do not want to talk about problems, denying and avoiding them is a sign that adolescents have negative coping. During violent incidents, and afterwards, youth will use interpretation themselves (self appraisal), situational influences, and their understanding of the social environment to make decisions about how they are coping in solving problems (Lazarus, 2006 in Donoghue et al., 2014).

Other research conducted by Ben-Ari and Hirshberg (2009) on "attachment style, conflict perception, and adolescents' strategies of coping with interpersonal conflict" found that there is a strong correlation between the three. Adolescents who see conflict as a negative thing will use coping avoiding strategies, while adolescents who see conflict as a positive thing, tend to use coping strategies dominating, integrating and compromising.

Self-talk is a cognitive strategy that involves activation of mental processes to change or influence existing thought patterns. The conversation directed at himself has other potential that helps in overcoming pressure (Selk, 2009). There are two important aspects of self talk are: (1) self talk can be done openly so that it is heard by others, or closed cannot be heard by others; (2) self talk consists of statements addressed to himself and not to others (Komaruddin, 2015). Self-Talk consists of two kinds, namely positive self-talk and negative self-talk, both of which have a strong influence on thoughts and behavior. Positive self-talk is described as an asset that can increase self-esteem, motivation and concentration while negative self-talk is related to self-jugmental, anxiety and counterproductive (Geograkaki & Karakasidou, 2017). Self-talk has the benefit of providing motivation so that the person can do a good job. Furthermore, self-talk functions to reward or punish oneself, motivate someone to work according to their goals, regulate emotions, and increase one's social interaction.

As discussed above, bullying is an event that is often encountered at the adolescent stage which has both short- and long-term impacts. Therefore, students need to understand the self-control measures that can be taken if they face bullying

so that coping mechanisms that can be used are adaptive. There are many ways that can be used to improve adaptive coping mechanisms, one of which is by positive self-talk interventions. Positive self-talk helps teens to be able to use coping mechanisms that are adaptive in solving bullying problems. The purpose of this study was improve coping mechanisms in preventing bullying and to determine the differences in adolescent coping mechanisms before and after being given a positive self-talk intervention and to determine the effectiveness of the positive self-talk intervention in improving adolescent coping mechanisms before and after the intervention.

II. METHODS

To collect the data for this study, there were 100 teenagers from first grade students in junior high school were involved as respondents. All respondents filled out a questionnaire sheet consisting of informed consent sheets, demographic information sheets (age, gender, academic achievement, close friends at school, extracurricular activities, parental status, parental work and family income), and coping mechanism questionnaires.

Maladaptive and Adaptive Coping Styles Questionnaire (MAX) showed differences in adaptive and maladaptive coping. Directions for measuring results such as individuals suffering in the face of their stress. Whereas some people don't lose their inner balance when dealing with serious problems at work or home, others react by showing psychological distress. MAX assesses how one's experience and how someone faces a problematic situation. The response given is according to how you feel when you are experiencing problems. Statements consist of a Likert scale with incorrect scale (= 1), almost incorrect (= 2), almost true (= 3), and true (= 4).

Data collection was done by filling out questionnaires given to the experimental group (n = 50) and control (n = 50). The intervention used pretest-post test with PST intervention. This study compared 2 groups in which the experimental group was given PST intervention while the control group was not given PST and only received health education about bullying in general such as the definition of bullying, the type of bullying, the causes and effects of bullying. While the experimental group got intervention for 8 sessions within 4 weeks with 90 minutes meeting duration. These interventions included the concept of bullying (definition, causes and types), the impact of bullying, coping mechanisms, irrational thinking, how to change irrational thinking through self-talk and an explanation of self-talk, discuss about the types and benefits of self-talk, how change negative talk into positive talk and practice practicing positive self-talk.

The differences of coping mechanisms mean between pre-test and post-test, post-test and follow up in intervention group and control group were assessed by paired t test. The difference of coping mechanism between the intervention group and control group were assessed by independent t-test.

III. RESULT

Table 27.1 Respondent Characteristics

Respondents Characteristics *N*		*Treatment*		*Control*	
		%	*N*	*%*	
Age	a. 12 ys b. 13 ys c. 14 ys	26 17 7	52 34 14	19 27 4	38 54 8
Number of Children	1–2 3–5 >5	26 18 6	52 36 12	32 13 5	64 26 10
Sex	a. male b. female	16 34	32 68	25 25	50 50
Extracurricular	a. Yes b. No	16 34	32 68	10 40	20 80
Achievement	a. Yes b. No	11 39	22 78	11 39	22 78
Closed Friends	a. No b. 1–2 c. 3–4 d. >4	2 16 21 11	4 32 42 22	1 12 25 12	2 24 50 24
Parents Marital Status	a. Married b. devorced	46 4	92 8	45 5	90 10
Parents Occopation	a. House wife b. Civil Cervant c. Labour d. Trader e. Enterprenour f. Fishermen	9 3 11 9 2 16	18 6 22 18 4 32	7 3 10 8 3 19	14 6 20 16 6 38

Table 1 shows that in the intervention group the majority of respondents were 12 years of 26 people (52%), most of the respondents were 1–2 children as many as 26 people (52%), the majority were 34 women (68%), some Large did not participate in extracurricular activities 34 people (68%), the majority did not have academic achievements 39 people (78%), the majority had close friends 3–4 people as many as 21 respondents (42%), the majority of parental status was married 46 people (92%), the majority of jobs are fishermen 16 people (32%), and the majority of parents' income is 500,000 – 1,000,000, 37 people (74%)

Table 27.2 Differences in the Value of Pretest, Posttest and Follow-up Intervention Groups (N=100)

Group	*Mean*	*SD*	*p value*
Pretest Postest	58.98 70.92	8.17 6.53	0.000
Postest Follow up	70.92 72.40	6.53 4.44	0.022

Table 2 show significant differences in the scores for Pre-test (M = 58.98, SD = 8.17) and the post-tests (M = 70.92, SD = 6.53); ρ value 0.00 <α 0.05). These results suggest that positive self-talk interventions are effective in improving coping mechanisms in adolescents.

Table 27.3 Differences in the Value of Pre-test, Post-test and Follow-up Control groups (N=100)

Group	*Mean*	*SD*	*p value*
Pretest Postest	58.48 59.16	4.57 3.57	0.079
Postest Follow up	59.16 60.10	3.57 4.63	0.056

Table 3 show there was not a significant differences in pretest (M = 58.48, SD = 4.57) and posttest (M = 59.16, SD = 0.50) with a value of p value 0.07 ≥ 0.05.

Table 27.4 Differences in Coping Mechanisms Before and After PST Interventions (N = 100)

Test	*Group*				*p Value*
	Control		*Interventions*		
	Mean	*SD*	*Mean*	*SD*	
Pretest	58.48	8.17	58.98	8.17	0.70
Postest	59.16	3.57	70.92	6.53	0.00
Follow Up	60.10	4.63	72.40	4.44	0.00

Table 4 shows that the Independent T test was used to compare the coping mechanisms of the intervention group that received the Positive Self-Talk (PST) treatment with the control group that did not receive treatment. There was a significant difference in outcomes for coping mechanisms that received intervention (M = 70.92, SD = 6.53) from those who did not get intervention (M = 59.16, SD = 3.57); p value 0.00. This shows that Positive Self-Talk has an influence in improving adolescent coping mechanisms. The more often teenagers do Positive Self-Talk, the more adaptive coping they have.

IV. DISCUSSION

The results of the analysis of the Independent T Test and Paired T Test data (tables 4.4 and 4.5), it shows that there was an increase in the mean coping mechanism between before and after the Positive Self-Talk (PST) intervention given to the experimental group, where before the intervention the mean value 58.98 became mean 70.92 and 72.40 at follow-up with ρ value <α 0.05. The results of this study indicate the success of the Positive Self-Talk (PST) intervention in improving the coping mechanism of respondents (adolescents), where before given the Positive Self-Talk (PST) intervention there were still 10 respondents (table 4.2) in the experimental group who had a maladapative coping mechanism, after being given a PST intervention it becomes adaptive. Cocorada and Mihalascu's (2012) research on adolescent coping strategies in secondary schools where the results show that adolescents use productive coping strategies when experiencing problems with the highest percentage of strategies being planning, interpreting things positively (positive reinterpretation), acceptance and seeking social, emotional and instrumental support. Positive reinterpretation can be done with the Positive Self-Talk technique in which a person changes irrational (negative) thoughts into positive ones. In other words positive self-talk can improve or change coping mechanisms to be adaptive.

There are many factors that can make a person's coping mechanism high adaptive. One of them is to have social support and a positive outlook/belief (Hidayat, 2014; Ahyar, 2010). Having close friends at school is one source of social support, where acceptance from peers greatly influences a person in getting bullying from the surrounding environment. Teenagers who have many close friends are less bothered than those who do not have close friends. According to Garcia & Margallo (2014) If a friend can provide social support, this will reduce the harmful effects of bullying. Based on the results of the study most of the participants had good friends in school as many as 3–4 people, in the control group were 25 respondents (50%) and the experimental group 21 respondents (42%). This is inseparable from social development in adolescents where adolescents are more likely to be close to peers compared to parents and teachers so that the behavior and mindset of adolescents is largely determined by their peers and will also indirectly affect the coping used.

In addition to social support, positive beliefs have a large role in one's coping strategies because they are an important psychological resource that will lead individuals to assess something (Ahyar, 2010). This is in accordance with Santrock's opinion (2009) where the cognitive assessment or interpretation of children of life events that are dangerous, threatening and challenging are adjusted to their beliefs and resources. Furthermore, according to Seligman's theory (1995) in Santrock (2009) adolescents have a cognitive assessment that plays an important role in coping with stress. Optimistic children assume that a bad experience is something that is temporary. When it comes to self-blame, optimistic children blame their behavior, something that can be changed and learned, whereas children who are pessimistic are more likely to state that bad experiences are the result of qualities in themselves. Therefore, positive

self-talk is needed especially teenagers so that the irrational thinking that appears can be changed to be more rational, so that adolescent coping can remain adaptive if it has a problem.

Based on the discussion above, this study answers the purpose of the study where the Positive Self-Talk (PST) intervention is effective in increasing the mechanism of adolescent coping in preventing bullying. Also, positive Self-Talk (PST) intervention can improve adolescent coping mechanisms in preventing bullying. It is expected that adolescents can always think positively and do self-talk when facing problems.

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TYPES OF FAMILY SUPPORTS IN THE PREVENTION OF DENGUE FEVER: A QUALITATIVE STUDY

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Abstract: Dengue is one of the most common viral diseases among people living in in the Asia Pacific region. The purpose of this study was to explore the types of family support in the prevention of Dengue Hemorrhagic Fever (DHF) amongst people in one of municipalities in Indonesia's northernmost region. This phenomenological study used a qualitative design that involved six participants. Data were collected using in-depth interviews and observation. Data analysis was completed by content analysis. The findings suggested that the types of support obtained by family for DHF prevention included support from health workers, family support, and community support. This study emphasized on the support obtained during the prevention of DHF by families.

Keywords: Dengue Hemorrhagic Fever, family, Preventive Behavior.

I. INTRODUCTION

Dengue is one of the most common viral diseases transmitted by mosquitoes that affect humans. Dengue has become a health dilemma in the community (Bota, Ahmed, Jamali, & Aziz, 2014). In Indonesia, Dengue Hemorrhagic Fever (DHF) is one of the community health problems where the number of sufferers tends to increase and its distribution is increasingly widespread (Widoyono, 2011).

Data from the Ministry of Health of the Republic of Indonesia (2016) suggest that DHF cases in 2014 amounted to 100,347 cases with an Incident Rate (IR) of 39.80, increasing to 129,650 cases with a total death toll of 1,071 cases and in 2015 with an Incidence Rate (IR) of 50.75 per 100,000 populations, with Case Fatality Rate (CFR) per mortality (0.83%). While the Ministry of Health's Strategic Plan (renstra) targets

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for DHF morbidity in 2015 are less than 49 per 100,000 population. Thus, Indonesia has not yet reached the 2015 strategic plan target (Ministry of Health, 2016).

Aceh Province is one of the provinces in Indonesia with a high incidence of DHF. Data in the Disease Control Division of the Aceh Provincial Health Office in 2015 show that there were 1,516 DHF cases with an incident rate (IR) of 30 cases and a CFR of 0.40%. In 2016, there was a very significant increase of 2,672 cases with 52 IR cases and CFR of 0.79% (Health Office of Aceh Province, 2017). DHF cases were reported 280 cases with IR 143 in Lhokseumawe, 293 cases with IR 146 in Central Aceh, 278 cases with IR 63 in Bireun, 197 with IR 86 in South Aceh, 165 cases with IR 38 in East Aceh, and 69 cases with IR 205 in Sabang (Aceh Provincial Health Office, 2016).

Behavioral problems are issues that are the subject of discussion in health issues, because behavior is the key to the success of health programs (Sumijatun et al., 2010). In accordance with the Pender (1996) theory of the Health Promotion Model (HPM) in which HPM integrates nursing and behavioral science perspectives on factors that influence health behavior, which motivates individuals to engage in behaviors that are directed to health improvement (Pender, 1966 cited in Alligood & Tomey, 2006). The purpose of this study was to explore the sources of family support in the prevention of Dengue Hemorrhagic Fever (DHF).

II. METHODS

This study used a qualitative design with a descriptive phenomenological study approach, trying to investigate phenomena through direct interaction with research participants (Bowie & Wojnar, 2015). This study involved six participants, selected using purposive sampling technique. Data collection used in this study were in-depth interviews and observation. The interview was recorded using an audio phone, to facilitate researchers in transcribing the results of the interview. Analysis of the data used content analysis.

Information were provided to participants before the study conducted. All participants provided written consent. Ethical approval was obtained from the Nursing Ethics Committee of Nursing Faculty, University Syiah Kuala. Principles of research ethics (Polit & Beck, 2004) namely beneficence, respect for human dignity, and justice were applied in this study.

III. FINDINGS

Four categories of support were identified, including support from (1) health workers, (2) family support, and (3) community support.

Support of Health Workers

Health workers were one source of support received by families in the prevention of DHF. Through health workers, the family got information or alternative solutions to

the problems being faced, especially health problems. The following are the participant expressions related to the support from health workers they received: "*The [Health] Department also has a department to be able to dispose of powder for three months" (Participant#1)***.** *"Indeed, about DHF [counseling at posyandu by health workers] ..." (Participant#4)*

Family Support

Some participants also received support from families, especially from their husbands and children. The participants explained: **"***The father of the children also said that clothes do not hang, because that could be a den of mosquitoes" (Participant#1). "There were children who also help that they couldn't anymore, and they took care of themselves" (Participant#2). "Husband and child are there to help..." (Participant#3).*

Community Support

In addition to support from health workers and families, several participants revealed that the surrounding community also participated in the prevention of DHF around their places of residence. The following statements were expressed by participants: *"The community ... Yes, they also helped and worked together. Around this it cleans up its surroundings " (Participant#2). ".... each keep clean too" (Participant#4). "... it feels like all the families who clean-up have become a daily routine". (P6).*

IV. DISCUSSION

All families in this study were families with first-time experience of DHF. This is enough to make a family worried. To prevent this from happening again, in the prevention of DHF, family members participate in prevention. All mothers interviewed said they had the support of their children's husbands. Likewise, support was obtained from health workers.

Social support is an action that other people take when they deliver assistance. This can be in the form of emotional support, information and concrete support. Social support can take place naturally in the family, friends and peers' help network (Roberts & Greene, 2002). In this study the support obtained from the family in the form of assistance in cleaning the house.

Participants also revealed that support was also obtained from the community such as cleaning the environment around their homes, support from the surrounding community (social support). The behavior of a person's life tends to require legitimacy from the surrounding community, if the behavior is contradictory or does not get the support of the community then he will feel less or uncomfortable. But this is not in line with research (Hayati, Riza, & Siti Rofi'ah Liful Hidayah, 2017) which states that there is no relationship between family support and dengue prevention efforts.

Apart from family and community participants also received support from health workers. The support was in the form of information or counselling about DHF and

ABT powder administration. A Previous finding (Bota et al., 2014) suggests that increasing knowledge through different educational programs is needed to increase awareness in the prevention of Dengue Fever.

Roberts & Greene (2002) mentions that information support is obtained from someone who teaches something. This support can be in the form of formal support provided by professionals. In addition, information was also obtained by participants through television and social media. While Listiyorini (2016) got results in her research on the availability of information, attitudes and knowledge as well as the role of Health workers influence the behavior of eradication of dengue mosquito nests in the community.

This is consistent with the concept of Pender in the proposition of the health promotion model which states that families, groups and health care providers are important interpersonal sources that influence, increase or decrease the desire to behave in health promotion (Pender, 1966 cited in Alligood & Tomey, 2006).

V. CONCLUSION

This study identified sources of support received in the prevention of DHF. This support was obtained from health workers, families, and the community. The support provided has a positive impact in maintaining health behavior, especially in the prevention of DHF. The form or source of support for the community can be further research in the prevention of dengue.

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TEACHERS' PERCEPTIONS ABOUT THE IMPLEMENTATION OF SUBSTANCE USE PREVENTION PROGRAMS FOR JUNIOR HIGH SCHOOL STUDENTS IN ACEH, INDONESIA

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Abstract: Substance use and its associated effects have contributed significantly to the increase of public health problems in Indonesia including among adolescents. Therefore, an effective substance use prevention program should be developed and implemented. This study aimed to identify teachers' perceptions about the implementation of substance use prevention programs for school-age children in the Aceh Province in particular, and Indonesia in general. This qualitative study involved teachers and principals from four junior high schools randomly selected from a municipal district in the western part of Indonesia. Data were collected through in-depth interviews and analysed manually using content analysis techniques. Findings of this study suggest that all the interviewed teachers and school principals agreed to the importance of school-based substance use prevention programs for school-age children. An effective and appropriate program should be carried out continuously, use interactive methods, involve teachers and related experts, be implemented integrative and conducted during school time. The involvement of religious teaching and religious experts were considered vital for program effectiveness. Lack of time and low parent participation were considered as the main potential barriers for the program implementation. The implementation of school-based substance use prevention programs in schools would be accepted, feasible, and considered effective by school teachers in Aceh, Indonesia. The findings can be used as a basis for further research on substance use prevention programs for adolescents in school setting.

Keywords: Drug use, adolescent, Indonesia

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I. BACKGROUND

The use of drugs, psychotropic substances and other harmful substances (narcotics) and their effects continue to increase significantly in various parts of the world including Indonesia. As many as 243 million people in the world aged 15–64 years have been reported to have consumed drugs (World Health Organization, 2010), and around 5.6% of the world's population have used drugs at least once in their lives (The United Nations Office on Drugs and Crime, 2018). It was also reported that the proportion of drug use in children aged between 13–15 years was quite high (Chie et al., 2015).

In Indonesia, drug abuse and its effects have been showing a worrying development. It is estimated that around 68 types of narcotics have circulated widely in the country (Badan Narkotika Nasional RI, 2017a). About 1.8% of Indonesia's population aged 10–59 years used drugs (Badan Narkotika Nasional RI, 2017b), among which 59.5% of drug users were categorized as trying to use, 27.3% as regular users, 14.5% as non-injecting addicts, and 1.7% as injecting addicts (Badan Narkotika Nasional RI, 2017b). Almost all (99.5%) of drug addicts were reported to be in the community, both within the family, school, workplace and other communities (Badan Narkotika Nasional, 2012). In the case of children, school-based survey data (Kusumawardani et al., 2015) showed that 2.5% of 10,736 junior and senior high school children have consumed drugs. About 1.1% of children started consuming drugs at the age of seven or younger, and 1.7% consumed drugs between one and more than twenty times during their lifetime (Kusumawardani et al., 2015).

In the context of Aceh Province, the number of drug abuse also continues to experience a significant increase. In 2010 the number of drug users in Aceh reached 566 cases, and then in 2011 and 2012 the figure rose to 650 and 866 cases, respectively (Kementerian Kesehatan RI, 2014). Afterwards, the number of drug users soared to 63,000 cases in 2017 (Badan Narkotika Nasional RI, 2017b).

Drugs provide direct or indirect effects on the users, including physical, social and economic effects. In addition, drug abuse can result in death (James & Jordan, 2018), increase the risk of mental disorders (Kementerian Kesehatan RI, 2014), trigger the incidence of HIV and hepatitis C (Wirtz, Peryshkina, Moguilnyi, Beyrer, & Decker, 2015), and generate unhealthy behaviors such as smoking (Patton, Coffey, Carlin, Sawyer, & Lynskey, 2005), among others. Drug abuse will also lead in disruption of learning processes and academic performance, especially among school children (Bosworth, 2015a). In Indonesia, the number of deaths due to drugs has been reported as many as 11,071 people per year or 30 people per day (Badan Narkotika Nasional RI, 2017b), whereas economically, drugs have caused high economic losses in the country, reaching 84.7 trillion rupiah (Badan Narkotika Nasional RI, 2017b).

Several researchers, especially in developed countries, have tried to develop various strategies to prevent and stop drug use. Existing research results (Faggiano et al., 2010; Guo, Lee, Liao, & Huang, 2015; Thomas, Lorenzetti, & Spragins, 2011) showed that school-based programs could prevent/stop drug use. However, scientific

evidence related to the results of research on the effectiveness of the program in Indonesia and in other developing countries is still lacking. Systematic reviews that have been carried out revealed that the school-based drug prevention intervention program was very limited in Indonesia, in which the reviews also highlighted the need for a strong scientific foundation and further research. Based on the discussion above, the present study aimed to identify teachers' perceptions about the implementation of substance use prevention programs for junior high school students in the Aceh Province in particular, and Indonesia in general.

II. METHODS

The study employed a qualitative design. Participants of the study comprised teachers and principals from four junior high schools in one of the municipalities of Aceh Province in the western part of Indonesia. The participants were conveniently selected from the schools once school selection process was completed. School selection was completed through a simple random sampling. Sample size determination was based on school representativeness and data saturation.

Data collection was completed through in-depth and face-to-face interviews. The interviews were undertaken around school buildings or based on the participants' preferences and lasted between 50 to 60 minutes. Four core questions were prepared and asked to the participants exploring their perceptions about the importance of drug use prevention program for Indonesia adolescents, potential program effectiveness, appropriate program implementation strategies (i.e., preferred content, delivery methods, providers, time and setting for implementation) and barriers, if any. All the interviews were audiotaped and transcribed verbatim. Content analysis strategy was conducted to analyze the collected data.

Ethical approval was obtained from the Ethical Committee for Nursing Research of Nursing Faculty, Universitas Syiah Kuala. Information about the study was provided to the participants through letter and oral and their written consents were obtained. Participation in this study was voluntary, confidential, autonomous, and not harmful.

III. RESULTS

Participants' Background Information

The background information of the participants is detailed in Table 1 as follows.

Table 29.1 Background Characteristics of Participants (N=24)

Variable	*F(%)*
Sex	
Male	7(29.2)
Female	17(70.8)

Age	
30–40	6(25.0)
40–50	6(25.0)
Over 50	12(50.0)
Education	
Bachelor	23(95.8)
Masters	1(4.2)
Work experiences	
< 5 y	1(4.2)
5–15 y	7(29.2)
Over 15	16(66.6)

Table 1 shows that the majority of the participants were identified as females, aged over 40 years, and almost all of them have a bachelor degree and worked as junior school teachers for over 15 years.

Perceptions About the Importance of Implementing Drug Prevention Programs for School-Age Children

All of the interviewed school principals and teachers perceived that drug use prevention programs should be provided for school-age children. The main reason the participants agreed to the existence of such programs is that the programs may prevent the children from trying to consume drugs and eventually become addicted. The participants believed that it would be difficult to stop children from being addicted to drugs once they started using them. Their statements are as follows:

> *"[The programs] are very important. Don't let expand. There may already be seeds [of drug abuse] so don't let anyone imitate... to try [consuming]. Therefore, they won't dare to [consume drugs]."* [Female, Principal, 59 years old].

> "*I think [the programs] are very important because if we don't introduce them to the children, perhaps they will be familiar [with drugs]. If they're addicted, it will be hard to restrain them, to limit them."* [Male, principal, 57 years old].

Some participants also said that drug prevention programs in schools were not only useful to prevent children from taking drugs but also to provide a positive impact on the children development, especially in their education, in addition to the community. The followings are their remarks:

> *"Yes, that [program] is important. It's very important because this relates to our future later, the children's future. The future... but, if the*

> *students are involved in drugs, our future or their future later will be disrupted."* [Female, teacher, 60 years old]

> *"It's very important. So, if there is awareness of drugs, the children who study will be more focused, and won't be daydreaming... So, they will be more focused in receiving lessons."* [Female, Principal, 59 years old]

> *"[The programs] are important. It's even important so that our children do not..., for example, in terms of intelligence later, well, of some sorts of personality can be disrupted due to the influence of the drug substance."* [Female, teacher, 59 years old].

Some participants stated that drug prevention programs should have started as early as possible before the children get to know drugs. Some excerpts of their statements are below:

> *"Not only in junior high, but also in elementary school has started... that we see a lot now. So, starting from the end of elementary period to the beginning of junior high, or in other words from Year 1 of junior high, we have to give information or enlightenment about drugs*." [Female, teacher, 60 years old].

> *"Elementary school level may be provided [with the programs]... Elementary students also have started using drugs, started smoking."* [Male, Teacher, 51 years old].

Perceptions About the Important Role of Schools in Drug Prevention in Children

The participants considered that the school is responsible and an ideal place for organizing drug prevention programs for children. They mentioned that the school was not only the place where children spent their time but also the environment conducive to hold drug prevention programs. Here are their responses:

> *"The role of [school] is very important. The school has the responsibility to make sure how the children are not involved in drugs. School certainly plays an active role even though the responsibility of education is in the hands of the parents, ...school must be able to overcome and hinder it so that the children do not take drugs."* [Male, Principal, 57 years old]

> *"...When [the programs] conducted at school, they are organized, but if they are outside, we won't know. ... I think [the programs] are*

> *more easily carried out in school because there are several hours they spend in school."* [Female, Principal, 59 years old]

> *"It is indeed very important because we see the students from 8 am to 1 pm in school... Maybe by having them [the programs] in school, they can help students to avoid it through frequent socialization in school..."* [Female, teacher, 60 years old].

Perceptions About the Implementation of Drug Prevention Programs in Schools that are Appropriate for Children

According to the participants, for the programs to be effective, the drug prevention programs in schools should be able to provide the children the information about drugs and the impact thereof in detail, both physical and non - physical impacts. Their responses are stated below:

> *"...it cannot be [materials] in general. If it's too general, the children won't digest it."* [Male, Principal, 57 years old].

> *"Like I said, the dangers of narcotics... including in the types of drugs, to the smallest extent of the drugs are available. We can say, don't try this, if you take dope, you're not smart. You're a coward if you want to try it."* [Male, Teacher, 51 years].

In addition to the materials, the participants also stressed the importance of using attractive and interactive methods of delivery, such as visiting a rehabilitation center to see firsthand the condition of drug users and hear directly the impact of drugs on people who have consumed them, using the slide show to display the effects of drugs, playing games, and organizing competitions related to drug prevention. Their comments are shown in the following:

> *"It will not be impactful if [the programs] only include socialization. There may be other activities [involved], perhaps a visit to the rehabilitation center."* [Female, Principal, 59 years old].

> *"...it cannot be [materials] in general. If it's too general, the children won't digest it. It's very good... to provide materials about the films, about the types of drugs, the effects or dangers of drugs in which children are already high. Door prizes should be used to attract them only."* [Male, Principal, 57 years old].

> *"...such as the use of the media, including videos. For example, the religious teachers play or display the examples that are real or directly visible to children." [Female, Teacher, 59 years old]*

> *"...by learning games to remember them….with games by involving them as a leader, playing in the game."* [Male, Teacher, 51 years old].

In relation to the program providers, the participants suggested the need to involve teachers and related experts. They also emphasized the importance of providing adequate training to the providers, especially teachers, to improve their ability in organizing drug prevention programs. Here are the participants' comments:

> *"To support [the programs] it's possible that [others] are included… The ones who communicate a lot with the children are the teachers… we teach and educate. There is a didactic method [which] we must do."* [Male, Teacher, 51 years old].

> *"The teachers from school don't have enough knowledge, so there should be a special external team or a body that deals with this drug issue. So, in the collaboration with the school, we will provide a place, and the schedule is adjusted. We in school have no experts or teachers specifically designated to handle the drug problem."* [Female, Principal, 59 years old].

> *"...because the teachers are present at any time, there may be students who are bored already]. There should be a separate socialization team… It can be from BNN [National Narcotics Agency], from the health… I see that in general there are teachers who are smart, capable, [but] some are average, some are not, but many are capable that should be trained beforehand."* [Male, Teacher, 51 years old].

In addition, the participants recommended that drug prevention programs in schools be carried out continuously. Most participants also suggested to integrate the programs with relevant school subjects in order to reduce the students' workload. Below are the excerpts of their statements.

> *"It's best if it's done not only once ... [it should be] several times."* [Female, Principal, 59 years old].

> *"If we make a separate [program], the time is not enough. If we integrate it, we don't need extra time, right? A temporary program like this won't be a problem…"* [Male, Principal, 57 years old].

> *"[The programs] must be integrated with existing subjects or other lessons, one of which is social sciences... they can relate the dangers of drugs with the economic, religious and other aspects..."* [Male, Principal, 57 years old].

> *"...the materials are what we need to adopt [such as] social sciences. [In terms of] religion, it's free for us to adopt. If it's math, it can be related to its laws. Ideally, [the materials] are primarily [the subject of] physical education, and the second is Islamic religious education... We can insert them."* [Male, Teacher, 51 years old].

Perceptions About the Need for a Religious Approach in the Drug Prevention Programs in Children

Involving religious values and religious experts/figures from outside the school are considered important by the participants in order to increase the success of drug prevention programs for children. The followings are their comments:

> *"It is very important. There are hadith and [Qur'anic] verses about it. They will be more concrete in conveying that if they provide [the verses]. In the world [drug users] are punished, in the Hereafter also get punished..."* [Male, Teacher, 51 years old].

> *".... [The involvement of religious scholars] is necessary, the religious scholars are there to awaken us because religion and drugs are close related. So, if one is involved in drugs, it must be because of one's lack of religious knowledge. Not knowing which ones are halal and which are haram. [The religious scholars] are preferably from outside because the religion teachers at school don't have enough time..."* [Female, Principal, 59 years old].

> *"The role of religion is very important especially since all religions prohibit drugs. [Drugs] are not good. Religion is the same as the teacher. Only that a religious teacher is like this..."* [Male, Principal, 57 years old].

One participant suggested that the religious scholars involved should also be well-trained, understand drugs, and know how to properly transfer their knowledge to the students. The statements are in the following:

> *"For me, it's good, that's good… The Muslim scholars relate them to this verse and that verse, to the hadith….In my opinion, the religious scholars should be given some understanding on drugs... the way to tell [about drugs] to the children… They must be capable or competent in their fields, and really able, otherwise... they will exhaust [everything]."* [Male, Principal, SMP 1].

Perceptions About the Potential Obstacles to the Implementation of Drug Prevention Programs in Schools

Time constraint was considered as the main obstacle for the implementation of drug prevention programs in schools by the participants when the programs were carried out separately as a special independent activity. Therefore, the participants suggested that drug prevention programs were to be integrated with existing school subjects.

> *"[If it was made as a program] independently there are obstacles, but if we integrate it, there will be no problems."* [Male, teacher, 51 years old].

> *"It's about the time. But, if there is good cooperation, we can set the time. If it is scheduled there could be obstacles, but in terms of regulations, there is no burden."* [Female, teacher, 59 years old].

One participant also mentioned the lack of support from parents as one of the factors inhibiting the success of the implementation of the program. She stated that:

> *"Sometimes when we invited the parents, it was rather difficult to make them come... The parents tend to perceive that when in school, become the responsibility of the teachers..."* [Female, teacher, 59 years old].

IV. DISCUSSION

This study aimed to identify the feasibility, acceptability and effectiveness of the drug prevention/cessation program in schools for adolescents in Aceh, Indonesia. The results of this study indicated that school-based drug prevention programs were considered important and would be very beneficial to junior high school children in Aceh, Indonesia. It has been reported (Badan Narkotika Nasional RI, 2017b) that the number of drug users was quite high in Indonesia, which highlighted the need for serious coping efforts. Drug prevention efforts aim to prevent children from using drugs or to delay the initiation of drug use or to prevent them from the dependence on drugs if they start using them (United Nations Office On Drugs And Crime, 2015). An effective drug prevention program will have a positive impact on children, families, schools, and society (United Nations Office On Drugs And Crime, 2015). School-based drug prevention programs can prevent children from consuming drugs in the long run, prevent other high-risk behaviors, improve mental health, social involvement, personal and social skills, and academic success, and prevent various bad behaviors (United Nations Office On Drugs And Crime, 2015).

The results of this study also revealed that schools have had an important role in drug prevention in children so that the children can be prevented from trying to consume and/or experience drug addiction. The participants believed that it would

be difficult to stop children from being addicted to drugs if they have tried using them. The drug prevention programs in schools are believed to be not only useful for preventing the children from using drugs but also useful for improving the children's education, in addition to being useful for the society. It has also been reported (Bosworth, 2015b) that schools play a significant role in the development of children, both in the development of academic skills and in the process of transition from adolescence to adulthood. During adolescence, children spend more time in school and like to be with their peers than at home (United Nations Office On Drugs And Crime, 2015). Although the family remains the main socialization agent of children, the influence of school culture, the quality of education, and the community norms are also crucial for the children's emotional, cognitive, and social developments, especially when the roles of school and peers start to develop (United Nations Office On Drugs And Crime, 2015). Children from troubled families often begin affiliating with deviant peers at this period, thus placing them at a high risk of drug use and other illegal behaviors (United Nations Office On Drugs And Crime, 2015). Even though the institution of school is not responsible for the onset of misuse of substances or drugs and other high-risk behaviors among children, school is still a place where such deviant behaviors emerge (Bosworth, 2015b).

The findings of this study also showed that most participants agreed that it was necessary to start a drug prevention program for children as early as possible before children were even aware of drugs. Earlier reports (United Nations Office On Drugs And Crime, 2015) found that drug prevention programs given to younger children would be more effective than if the programs were introduced to older children. There are indications that drug use follows a logical and predictable sequence, mostly starting from the stage trials with smoking and alcohol, followed by the consumption of marijuana, and further developed into depressant, stimulant, hallucinogen, and other drug users, leading to addiction (Botvin & Griffin, 2006). This initiation pattern of drug use suggests that an early-prevention intervention program must be focused on the use of drugs at the beginning of its development, which usually begins at the junior/middle high school age. Thus, based on such findings, the vast majority of research involved students of junior high school as the participants, with seventh grade students being selected as the participants in the first year of intervention (Botvin & Griffin, 2006).

In addition, the findings also underscored the need for several specific strategies to be implemented to improve the effectiveness of drug prevention programs in schools. The strategies involve the ways of implementing the programs, such as integrating materials with appropriate school subjects, explaining to the children about drugs and their harmful effects in detail, using interactive delivery methods, and involving skilled providers. The results of a previous review (United Nations Office On Drugs And Crime, 2015) showed that the characteristics of effective interventions for children at the junior/middle school years level (early adolescence) are interventions that use interactive methods provided by trained facilitators (including trained peers), provide opportunities for children to learn and train their social and personal skills, emphasize

on the perception of risks related to misuse of drugs and its direct impact, as well as correct misconceptions about the normative attribute and expectations related to drug abuse.

The findings of this study also stressed on the importance of involving religious aspects including the involvement of religious experts to increase the success of the implementation of drug prevention programs. The religious factors have a close link with health problems. Several previous studies (DeWall et al., 2014; Moscati & Mezuk, 2014) indicated that religious factors were inversely related to the high proportion of substance/drug abuse and alcohol consumption.

V. CONCLUSION

The findings reveal that the substance use prevention programs for school-age adolescents can be implemented, accepted, and potentially effective if implemented integrative with existing school subjects, and carried out continuously, thoroughly and interactively, as well as involved religious component, relevant teachers and experts/professionals. However, there are some possible inhibiting factors such as limited time and low parental attention. The researchers, stakeholders/decision makers, and community members who are involved in drug abuse and hazardous substances (narcotics) prevention programs can consider using the findings of this study for further research.

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BEST PRACTICES APPROACH TOWARDS 100% VOLUNTARY BLOOD DONATION CAMPAIGN IN INDONESIA

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Abstract: The availability of safe blood stock becomes a concern in Indonesia. Having an adequate safe blood stock could reduce child & maternal mortality rate. Despite the increasing demand of blood every year, Indonesia is still lacking safe blood stock. This study explored the best practices strategy towards 100% blood donation campaign strategies in Indonesia. Six respondents consist of 3 experts and 3 community leaders were interviewed. This qualitative research is using semi structured interview and the data were analysed by using five stages analytical strategies from Schmidt, 2004. All community leaders have low knowledge about blood donation and perceived having less information regarding blood donation. Community leaders associate blood donation activity with pain and sick. Experts also think that most of the people having low comprehension about blood donation. All experts expressed that the most successful campaign program is by direct campaign while the least successful campaign method is via radio. Although blood donation is associated with pain and sick, most community leaders agreed that donating blood is a good act. Sufficient information will make people comprehend more about blood donation and the appreciation retain the blood donors.

Keywords: The VNRBD, Health Campaign, Red Cross, Blood donation

I. INTRODUCTION

From five million pregnancies every year in Indonesia, more than 20.000 women die annually during pregnancy and delivery. Demographic and Health Survey mentioned that the number of maternal mortalities in 2007 is 228 deaths per 100.00 births (IDHS, 2008). The figure below shows the trend of maternal mortality ratio from previous year and the projection year.

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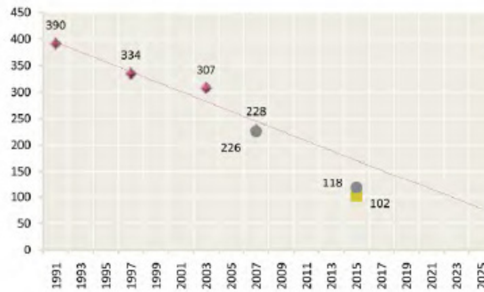

Figure 30.1 National Trend and Projection for Maternal Mortality (1991–2025)

Although the number of maternal mortalities has declining constantly, this number is still high. The declining of the maternal mortality is also supported by the increasing of the rate of birth attended by skilled health personnel from 65.3% in 2000 to 77% in 2009 (JICA 2011). In the regional health forum WHO South East Asia Region Volume 4, Dr. Sarimawar Djaja and Dr. Agus Suwandono cited that Fortney (1985) showed 67% of maternal death were related to bleeding, mostly postpartum, bleeding. A study also reported that in central Java, the highest case fatality rates were due to placenta retention, bleeding and infection or sepsis. All these major causes need a quick and reliable obstetric emergency service. According to Indonesia Demography and Health survey (2007), prolong labour was reported for 37% of birth and excessive vaginal bleeding was reported for 9 % of birth (BPS, 2008).

Major public health challenges include comprehensive neonatal obstetric service provision, basic neonatal obstetric emergency service, health service in general, and the fact that blood donor units are not widely distributed in all districts and not fully accessible by the people (BAPPENAS, 2010). Referral system from home to the health clinic and hospital also did not optimal. Moreover, with the problems of geography constrain, transportation barriers and culture factor. The health workers did not achieve proper training and sometimes lack of equipment's, medicines and lack of blood stock which all are needed to handle the emergency (BAPPENAS 2010, p. 72).

Since Indonesia's independent in 1945, Indonesian Government had giving mandate to Indonesian Red Cross (IRC) to run the Blood Service. National Societies (Red Cross) promote the collection of blood only from voluntary, non-remunerated blood donors from low-risk populations as the foundation of a global strategic plan to ensure safety, quality, availability and accessibility of safe blood transfusion (IFRC, 2006). A country blood requirement has been recommended by the WHO to be estimated as approximately 2% of the total population (WHO 2001). In 2006, more than 70 countries have blood donation rate less than 1% (10 donations per 1000 population) (WHO, 2008). Also, Indonesian Red Cross should provide 4 million blood bags to the national demands of blood as the official standard from the WHO, 2% from the total population (Unpublished Indonesian Government report). On the Global consultation seminar in Melbourne in 2009, the director of the blood transfusion unit of the Indonesian Red Cross at that moment said that the Indonesian Red Cross Blood

Service collected just over 1.7 million in 2007, and 82% of it were from voluntary donors.

Even though the national average percentage of voluntary blood donation is considered high compared to other South East Asian countries (figure 2), the percentage in most blood centres located outside Java Island is still below 50%. Some challenges are, for example on recruiting new donors and maintaining the existing donors (Soedarmono, 2010).

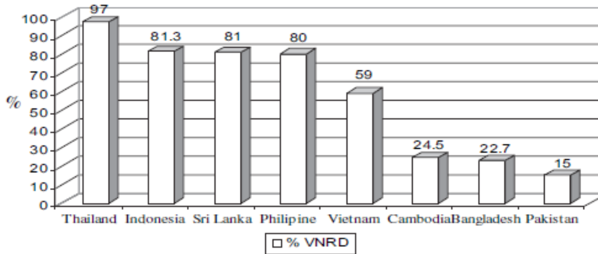

Figure 30.2 Percentage of VNRD in Some Asian Countries (June 2009)

Source: Soedarmono, Y. 2010, 'Donor issues in Indonesia: A developing country in South East Asia', Elsevier, Biologicals 38 (2010) 43–46

The World Health Organization (2011) stated that the key to recruit and retain safe blood donors is by good epidemiological data on the prevalence of infectious markers in general population to identify low risk donor population together with effective donor education, motivation and recruitment strategies. Some factors to retain the donors are a pleasant experience during blood donation, good donor care and effective communication between blood centre staff and blood donor. According to Soedarmono (2010), the blood awareness campaign has been introduced even in a very young age group in Indonesia. Advertisement in the media, conferences, and exhibition, letter of invitation and personal contact and telephone calls to dissemination of blood donation information. However, concerning the result showed in the figure 3, it seems retention program, in Indonesia needs to be improved.

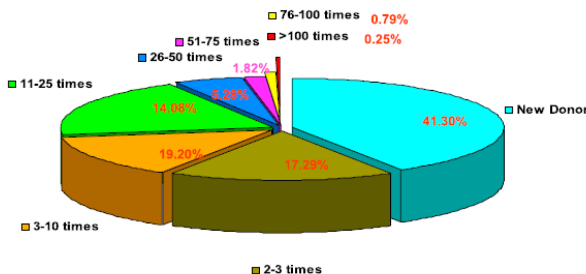

Figure 30.3 Blood Donors According to Donation Number in Indonesia

Source: Soedarmono, Y. 2010, 'Donor issues in Indonesia: A developing country in South East Asia', Elsevier, Biologicals 38 (2010) 43–46.

This study aims to explore what are the best practices strategy approach towards 100% blood donation campaign strategies in Indonesia. To explore kind of information on blood donation the people have received and their comments on it. To explore the people's opinion and suggestion on types of campaign strategies that fit into the people's characteristic and behaviour.

II. METHOD

Data are collected in three regions in Aceh, Indonesia where the Blood Donor Units (BDU) are available. From each region in Aceh, researchers selected two respondents; one from the community leader and one from the expert. In semi-structured interview, there are some guiding questions and topic that must be covered. The interviewer has some discretion about the order in which questions are asked, some probes and standardized questions might help to covers the correct material. Semi structured interviews are often used when the researchers want to delve deeply into a topic and to understand thoroughly the answer provided. (Harrell & Bradley 2009, p. 27)

The criteria selections were designed to specify and select the respondent that could possibly participated in this study. The inclusion criteria for community leaders during this study are as follows: living in the area where the chosen study location is conducted, have a profession as a community leader or local public figure. The inclusion criteria for the experts are as follows; having a strategic position to be able to explain the circumstances of Blood Donation issues, at least seven years actively involved in blood donor programs and activities.

To collect the data in this study, researchers used two kinds of interview guides. Each interview guide is specific to certain group of respondents. There are interview guides for three community leaders and for the expert. The researchers explored their knowledge toward the media campaign that are available in their town. Researchers also asked their suggestion on which way of campaign is best applied in their community according to the characteristic of the people. Researchers then explored their attitude towards blood donation activity, for example, whether they have an experience on donating blood, how were the experience and the reason when they decided to donate their blood.

The researchers used five stages analytical strategies from Schmidt, 2004. First the researcher read all transcribes one by one. In this stage, the researchers tried to find the main topic that occurred in each transcript. The researcher's prior knowledge and the research questions guide the researcher's attention in the reading of the transcripts (Schmidt, 2004). The second stage was making some open codes based on the interview guide. Furthermore, the researchers used the coding guide to asses and classifies each interview. The analytical categories that were established from the material in the previous stage are now applied to the material. The fourth stage was extracting the result of coding in to a table or matrix. In the table matrix, each line

is presenting each case, and each column gives the result of the individual analytic categories. Last stage was interpreting the case.

The symbols used to identify the respondent, is based on from which group of respondents they are, for example; CL stands for Community leaders, E for Experts and I for Interviewer. The next letter is followed by the region they are base. NA stands for North Aceh, EA for East Aceh and BA for Banda Aceh. One example is E-EA means Expert from East Aceh.

III. RESULT

A total of 6 respondents were interviewed: 3 experts and 3 community leaders. Demographic data for experts and the community leaders that are presented in this section are about the respondent's gender, marital status, education level, working experience and religion.

Total respondents for experts were 3 people, two of them were male. Most of them are medical doctor background. Their last education levels are varying from diploma to specialist doctor. Most of the experts have more than 10 years of working experience.

Table 30.1 Demographic Data in the Expert's Group (N=3)

Variables	*E-NA*	*E-EA*	*E-BA*
Gender	Male	Female	Male
Marital status	Married	Married	Married
Education level	Specialist doctor	Diploma	Bachelor
Working experience	3 years	30 years	14 years
Religion	Islam	Islam	Islam

There were 3 respondents from community leaders' group and all of them were male. The age range is from 37 to 67 years old. Their education levels also vary from high school to master's degree. Like most of all Acehnese people, all community leaders are Muslim.

The Most Successful

Expert said that, a few times ago, people were still hesitated to donate blood because of that negative opinion. One of the efforts to diminish that opinion was by providing information to every person who comes to the BDU to donate their blood, the information was mostly about the benefits of donating blood and about the service cost that the patient should pay. Another expert thinks the best way to inform the people is directly face to face. She also added, it would be better to make a campaign on the governmental sector, because seems they do not really pay attention to this issue. One expert told the researchers that the best way to do campaign was by visiting each company, institution, schools and villages.

Table 30.2 Demography Data in the Community Leaders' Group (N=3)

Variables	*CL-NA*	*CL-EA*	*CL-BA*
Sex	Male	Male	Male
Age	57	67	37
Marital status	Married	Married	Married
Education level	High school	Master	Bachelor
Religion	Islam	Islam	Islam
Length of stay in the village	57 years	30 years	37 years

The Least Successful

Two experts have the same opinion and experiences about the least successful campaign in their area. They said the least successful campaign strategy is through radio.

> *[CL-NA: 271–275] "We tried to do campaign with having talk show in the radio, either in private radio or radio owned by the government, we tried to make an interactive talk show, yes, indeed, theoretically, we think, this program could reach many people, this could be a good one, however the we did not received a good result. So, we were not just concentrating only through the radio"*

The experts added that theoretically radio could reach wide coverage of listener, but from the result is not very satisfying.

Donor Retention

Expert mentioned that giving the donor such as certificates and gift could also motivating, but the most important thing is the service that is provided to the donors. One expert mentioned that donors should be treated like a customer. Other experts also think that the BDU must be able to provide the blood if one day the donor or the family's donor need blood. One thing that is still in consideration for these experts is that, to have a program that will free the regular blood donors from charge. But this agenda is not implemented yet, since it will affect the financial system of the BDU. Expert from East Aceh said the most important thing to make the donor come back is to build self-motivation on the donor, to make the donor fully understand the benefits of donating blood for him and for the others.

Suggested Campaign

Researchers asked the CLs suggestion towards the media campaign they prefer to receive. Here are some suggestions that they mentioned.

Direct Campaign

The researcher asked the CL on which way is the people in your region will prefer to receive information from Indonesian Red Cross. The CLs recommended that, perhaps the best way to inform and motivate the people to donate blood is by religious media. Some example given from community leader is when IRC go to the community to spread the message about blood donation, it would be better to included one religious leader in the team.

Involvement of Religious Community Leaders

Aceh is one of the provinces in Indonesia who well-known with their religious life, the researcher tried to explore their religion perspectives regarding blood donation activity. All three CLs agreed that donating blood is a charity action that is very much supported by Islam. They know that by donating blood, they are doing a good deed to save someone else's life. All three CLs mentioned that if they help someone today, perhaps someone else will help them tomorrow.

> *[CL-NA: 174–177] "I think donating blood is not against Islam's rules, I think. But I don't know for sure since I'm not too religious person. Because donating blood is that we help our brothers who need it. We can only help, maybe if we help them with our blood, they will survive, even it's not a guarantee he will live."*

The CL mentioned that, donating blood is a recommended deed in Islam so that the people could help each other in the community. The Community Leaders believes that, what a person can do to help someone's life is by giving blood, but if after he got blood and at the end he died, that is his faith. At least something is done to save his life.

> *[CL-BA: 64–68] "I mean, when the messages are conveyed through banner, radio, while maybe there are people, in their daily activities, who could not see or listen to the radio or maybe watch TV or see the advertisement on the street. Maybe when Friday prayer or when the reading holy Qur'an occasion, if the religious leader says it (campaign), maybe they (community) will... (-)*
> *[I: 69] "Will listen?"*
> *[CL-BA: 70] "Will listen more, yes"*
> *[CL-BA: 85–86] "I think, like I said, the closest media to the community is through religious activity."*

Since the people in Aceh still obey and respect their religious leader, so it would be easier to convince the people about the benefits of donating blood in the perspective of Islam. Besides the idea to utilize religious medium as a perfect way to reach people's motivation to donate blood, some basic ideas were found on how to spread the message

about blood donation. They said that the best campaign is that, the community should receive it directly from the IRC officers. It means that the IRC should go to the villages and spread the messages verbally to the villager.

> *[CL-NA: 130–134] ". I think, it would be easier, or I prefer, for example there is information or a letter from related institution, for example from Health department or IRC. I Think it's should be that way, so if they give us a letter, it will be easier to talk to the villager, we can show them the letter."*
> *[I: 135] "So, it is direct?"*
> *[CL-NA: 136–143] "ya, it should be direct, but if we just talk like that {no letter}, seems like, the community will think that, we did as we {CL and staffs} want, 'ah Mr. CL did that because he has hidden agenda, that's why he did it, he took blood from the community, perhaps he want to sell it' yes something like that. That happens in the community. But if there is official letter from health department or IRC, it would be easier for us to show it in front of the people. Perhaps we can make a meeting, 'so we get a letter, it means we are told to do this', so we talk based on the letter, and if they {the people} ask {for the official letter}, it is there. But if we hear the information from radio, maybe they {the people} will argue that we just make it up. 'Why it is just in our village, why in other villages don't have something like this?'"*

Suggestions to directly go to the villages also came from the other Community leaders. They suggested that IRC should adopt the strategies applied by the PUSKESMAS (Primary Health Care). One CL had an experience worked with PUSKESMAS's health workers in his village. He said that at first, the community also had some hesitation to bring their children to the health centre to obtain free immunization and the pregnant women to check their pregnancy, but because of the health officer keep going to the people's house, door to door, later the people become more aware of their health.

Charismatic Figures and Modelling Approach

One CL suggested that there should be one famous or charismatic figure in the campaign team. He believes, people will listen to the charismatic figure more than to IRC officers. Besides having a charismatic figure in the team, he also suggested including the people who had donated blood for 2 or three times to give a testimony about his/her experience donating blood. The aim is to demolish some misperception that spread in the community about blood donation.

Targeted Campaign

Two of the community leaders said that it is important to see who the target audience is when the IRC doing campaign. Community leader mentioned that there is relationship

between Human Developing Index levels in Indonesia and their awareness on one issue.

> *[CL-EA: 98–99] "Because the society is differing from lower class, middle class and high class or all in one? So, we can share {about the information}? But if we never know this target, how come we will know?"*

> *[CL-EA: 311–314] "Our community, in Indonesia, you can see, the level of Human Index Development from UNESCO is gone down, because of what? Our people are just looking for a pack of rice. Whether it is about cigarette advertisement or whatever, no one cares because our society is still poor"*

This idea is also supported by the other CL.

> *[CL-BA: 207–214] "I think, like I said to you before, if it possible, give campaign to the lower level society, because maybe their level of understand is differ, they thought, what if I donate blood or whatever. They have different understanding to it. So perhaps, give campaign to the lowest level of the society."*

According to the experts, there are several levels in the community that are differentiated by their education background that effect how they understand something and depends on where they live, in the city or in the village. Socio-economic status of the people also plays a big role to determine the campaign method.

IV. DISCUSSION

Researchers found that there is lack of media campaigns available in the research locations. Two of the community leaders have admitted that they never see any media campaign in their town. Community leaders gave some suggestion on how to do better campaign in their town. Most of the information about blood donation was about the invitation to come to the blood mass events and some news in the local magazines informed the blood donor events. All the CLs suggested preferences of receiving direct campaign rather than receiving information from banner, poster and radio talk show.

This idea is supported by the experts. The most successful campaign strategy that all experts had mentioned is by direct campaign to targeted population group. Direct and targeted group population campaign could give the people a time and space to obtain or to ask information as much as they want from the expert.

Community leaders believe that IRC is the one who responsible for the availability and sustainability of blood for the community. Indonesian government has giving

mandate to the IRC to be responsible for blood service in Indonesia. In this matter, IRC indeed has the responsibility to give the people information and education about blood donation. The consequence of less educational campaign is that the people are less informed about blood donation. All community leaders said that, if only the people know and well informed about this condition, surely the people will donate blood.

This idea also supports by two experts. They said that the people will race to donate blood if only they know the benefits of donating blood for them and for the community. One expert said that the one who should responsible towards the availability and sustainability of blood in the BDU is the community itself. However, this condition will apply if the community had already aware of this issue. This situation has been confirmed by the WHO stated that without proper information, most people will just remain unaware of the blood transfusion service, even if the blood centre is attractive and well-located (WHO).

Perception and Knowledge about Blood Donation

In this study, researcher found that the community leaders' knowledge about blood donation is low and sometimes negative. Their perceptions are that this activity is a harmful activity and could produce inconvenient feeling and painfulness. The same idea has been supported by the experts. Experts said that the people's understanding and comprehension towards blood donation in general are low.

Expert mentioned some similar perceptions from the community's point of view. One expert said that the people in her town associates a drop of blood with a plate of rice and every blood drop that they donated will not be reproduced in the body. Despite of all the fears and negative perception, all community leaders argued that donating blood is a good deed and it is recommended by their religion. Community leaders agreed that blood donation activity is an action that can save many lives. They believe if today they safe someone's life, tomorrow someone else will save their life. However, the trend that emerged from all three community leaders that, they only donate blood for their family. In this study, researchers found that religious media is often mentioned as the best way to spread the blood donation message to the people. Since most Acehnese people are Muslim and the people are still obeying the religious leader better than other's political or social leader.

Attitudes Towards Blood Donation Activities

Researchers found that, all three community leaders have blood donation experience at least 1 time. The donation was performed for relatives only. According to the three types of donation defined by the WHO and IFRC 2010, their donation is categorized as family or replacement donations. This kind of donation is inevitable in the situation when the number of voluntary blood donation is low. WHO associated that family/ replacement donation with a significantly higher prevalence of transfusion-transmissible infection (TTIs).

Researcher also found the evidence of correlation between previous experience of donating blood and the willingness to perform blood donation again. As it stated by the WHO that pleasant experience during blood donation, good communication and caring attitudes from the blood centre staff towards the donor are the important factors for the retention of safe blood donors (WHO). One community leader said he had an inconvenient experience when his first experience of donating blood. He said that he felt that he almost fainted after donating blood, and he was carried home by his friend. He argued that the Blood Donor staff did not put any concern of what the donors might have after donating blood.

In contrary, one community leader told the researchers of the positive experience he had when he donated blood in the BDU. He admitted that he got a good explanation from the staff, so he felt secure and safe to donate blood. This experience is consistence with result that was conducted by France et al (2011). The result of the study showed the intervention of giving coping material either it is written, or audio visual could reduce anxiety, more positive change in attitudes towards blood donation among young adults.

The research found that, based on the characteristic of the people. The best strategy to donor retention is by giving appreciation. All community leaders showed the same idea that the donors are wanted to be appreciated and treated nicely. Awards like medal and certificates are only addition to recognize the people's good deed. Besides appreciation, the community leaders also think it would be great to begin the blood donation by building people self-motivation to donate blood. The negative attitudes of the people towards blood donation are just because they are not well informed.

Perceived Barriers

The main barriers for the expert to achieve the optimal result were about the human resource and fund. The community leaders think that there has been a distance that the staffs made to the donors. He argued that when he was in the BDU to take the blood for his family, he was sat there, and nobody care of what he is doing there and even the staffs did not say “Hi”. This condition is against what the WHO suggested that the strategies to retain the donor is by giving them special care, a feeling of being important person do not make them wait too long. A smile and letter to say thank you are also part of the retaining programs (WHO).

Lack of competence staff will also be increasing the task burden for each staff. A tired staff probably will have difficulties in performing his/her best service to the donors. The problems occur when the regular donor felt disappointed by the staff's attitude and talk about his/her bad experience in the BDU to other people. As it also one negative public perception that give negative impact or even losing the donors (IFRC and WHO 2010).

V. CONCLUSIONS

This study found that all community leader's perception as the leader in his region generally are still low. These are shown as they associated the blood donation action with pain, harm and could cause death. However, the community leaders see that blood donation activity is a positive attitude. All community leaders support the programs to spread more campaign to the community. Community leaders believes that the best way to motivate the donor is by giving appreciation and information so that the people can build their self-motivation to donate blood regularly, with or without rewards. The best way to convey the blood donation message is via religious media. Experts perceived barrier as lack of support from the Government to support the campaign programs. Human resource and Financial are two main problems for the expert to implementing the program. The crisis of community trust towards Indonesian Red Cross (IRC) make the IRC difficult to collect spread the positive message to the people.

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SCHOOL-BASED DRUG USE PREVENTION PROGRAMS IN THE EX-DRUG USERS' PERSPECTIVE

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Abstract: The prevalence of drug users remains high across societies in Indonesia, including among junior high school-age children. This becomes an alarm to remind us the importance of drug use prevention efforts. Moreover, the effects of drug abuse are dangerous for physical, mental and social well-being of school-age children, leading to poor academic performance. This initial study aimed at exploring the perspectives of former drug users on the development of effective school-based drug prevention programs for junior high school students. This qualitative study used Focus Group Discussion (FGD) as a tool for data collection. Study participants comprised a group of eight former drug users who were selected through a purposive sampling method. The data were then analyzed using a qualitative content analysis. Findings suggest that the ex-drug users believed that drug use prevention programs would be very important for the students in order to minimize any potential negative effects of drug use on the students' well-being and academic performance. Socialization and rehabilitation were proposed as the component models of drug use prevention programs. Peer groups, teachers, parents, and religious experts were expected to be involved in the implementation of school-based drug use prevention programs. The participants also expected relevant parties to provide more concern and to meet regularly to strengthen cross-sector cooperation. Various obstacles including policy, funding, support of authorities, and stigma should be solved properly to increase the effectiveness of drug use prevention programs. School-based drug use prevention should be provided and would be effective for junior high school-age students. Related stakeholders, especially the authorities should be involved to encourage good policy, to provide sufficient funding, to strengthen cross-sector collaboration with the same vision and goals in school-based drug use prevention programs.

Keywords: Drug abuse, School-based program, peer group, addiction, counsellor

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I. INTRODUCTION

The proportion of drug users and their associated impacts have been considerably high in Indonesia. A report from the National Narcotics Board (BNN) found that the prevalence of drug users in Indonesia reached about 2.9 % in 2017. Males and people with low level of education abused more drugs, most of whom were under 30 years old. In addition, workers and students dominated in drug abuse. And financially, the economic loss due to drug abuse was estimated at 84.7 trillion rupiah (BNN, 2017).

Narcotics, psychotropic drugs and addictive substances are often misused in Indonesia. These substances have varied negative effects on health, such as hampering brain performances, subsequently affecting individual's thinking, feelings and behaviors. Therefore, substance misuse is frequently associated with mental disorders. A survey showed that about 6,854 patients with opioid abuse in Indonesia experienced mental and behavioral disorders. Drug abuse might also lead to socioeconomic problems, such as social isolation, loss of productivity, criminal acts, financial burden, and school disruption (BNN, 2017; Fahrizal, Hamid, Daulima, 2018).

In general, there are three stages in drug abuse development. The first is experimentation that starts between 12–14 years old, in which about 0.94% (1,908,319) used drugs for experiment. The second is regular use that starts between 15–17 years old, of which about 0.53% (920,100) had used drugs regularly. The third is addiction that begins between 18–25 years old, in which about 0.29% (547,695) has been addicted by drugs (BNN, 2017; Cathy, 2013)

Although the prevalence of drug abuse in Indonesia has decreased continuously from 2012 until 2017; however, from 2017 to 2022 it is estimated to have a stable trend because the prevention of drug abuse will have entered stagnant periods in Indonesia, and the spread of drugs will tend to have a worrying development, especially for adolescents. With these reasons, BNN stated that Indonesia has been in drug abuse emergency (BNN, 2017). Moreover, Schepis, Teter, and McCabe (2018) remark that adolescents with poor engagement in school or outside the school are potential for drug misuse. Therefore, it is deemed necessary that an effective prevention program is developed to elicit drug users among adolescents, especially among school students. Departing from this discussion, this study aimed to explore an effective drug abuse prevention program from the perspectives of former drug users.

II. METHODS

Study Design

This study was designed with a qualitative phenomenological method. Following phenomenology, the study explored human perspectives to understand the meaning and the essence of their experiences.

Participants

Eight former drug addicts who have been working as counselors under the National Narcotics Agency (BNN) were employed as the participants of the study. The participants were recruited through purposive sampling. Ethical approval was accepted from the Nursing Ethics Committee of Nursing Faculty, Universitas Syiah Kuala. All participants provided voluntary written consents for their participation in the study.

Data Collection

Data were collected around July 2019. The Focus Group Discussions (FGD) method with the ex-drug users who have been working as staff (counselors) in the BNN was carried out to identify their perspectives about school-based drug use prevention programs. The data collection team comprised an interviewer (moderator) and a note taker. The FGDs were recorded by using a Dictaphone (Sony Recorder).

Data Analysis

The data of FGDs were transcribed and then analyzed using the qualitative content analysis method. This analysis method was undertaken to identify the meaning units of the data in order to analyze the underlying meanings and to formulate categories and themes relevant to the study objective (Graneheim & Lundman, 2004).

III. FINDINGS

Ex-Drug Users' Background Information

All of the participants were male. The majority of them aged over 30 years (62.5%), married (75%), classified as senior high school graduates (87.5%), started using drugs between 15–19 years old (87.5%), and had consumed crystal meth (75.0%) and marijuana (62.5%). Their reasons for drug use included peer pressure, experiment, friendship, and environment (37.5% each).

Ex-Drug Users' Perceptions About School-based Drug Prevention Programs

The ex-drug users believed that drug use prevention programs would be very important for the students in order to minimize any potential negative effects of drug use on the students' well-being and to increase the students' academic performance. The ex-drug users perceived that an effective model for a drug use prevention program should include socialization and rehabilitation for drug addicts. The selection of appropriate media, program target and time, promotion model use, program content and dissemination would influence the program effectiveness. It was also acknowledged that, for the rehabilitation of an addicted student, the availability of rehabilitation unit and outpatient rehabilitation program would be needed to support the program implementation.

Also, the ex-drug users highlighted the importance of peer groups, teachers, parents, and religious experts in the implementation of school-based drug use prevention programs.

The participants expected that relevant parties including schools, universities, health and education authorities, and the national narcotics agency to provide more concern and to meet regularly to strengthen cross-sector cooperation.

With regard to program obstacles, the participants mentioned that government support, as well as stigma and discrimination associated with drug use as the potential obstacles for the program implementation and effectiveness. They expected that policy, funding, support of authorities, and stigma should be handled properly to increase the effectiveness of drug use prevention programs. The overall findings of the study are summarized in Table 1 below.

Table 31.1 Main Findings of the Study, Including Themes, Sub-Themes, Categories and Sub-Categories

Themes	*Sub-Themes*	*Categories*	*Sub-Categories*
Drug abuse prevention programs	Goals	Minimize negative effects	Psychopathology
			Behaviors
		Increase students' academic performances	Disruption of learning activities
			Thought disorders
			Living a mess
	Drug abuse Socialization	Media for socialization	Social media use
			Films and posters
		Target group and time	Since early stage (elementary school)
			Since entering school
		Promotion model	Intra-curricular
			Extracurricular
		Contents of promotion	Early detection
			The dangers of drugs
			Adjusted to the target group
		Dissemination of information	Not vulgar
			Real and actual
	Rehabilitation for drug addicts	Rehabilitation unit for young people must be separated	Rehabilitation unit for children
			Combined rehabilitation can trigger stress
		The need of outpatient rehabilitation	Students need outpatient rehabilitation unit
	Parties must be involved	School	School
			Teachers
			Peer groups
		Family	Family
			Increase parents' knowledge
		Cross-sector cooperation	Education, health & religious authorities, BNN, school
	Obstacles	Government support	Financial
			Policy
		Stigma and discrimination	Negative labels

IV. DISCUSSION

Drug misuses are common problems in all countries in the world. Drug misuses in adolescents have negative impacts including poor academic performance, psychopathology and risky behaviors. Therefore, the respondents in this study conveyed that the main goals in drug misuse prevention programs would be to minimize the negative effects (psychopathology and behaviors) and to increase academic performances of adolescents (Schepis et al., 2018).

To develop an effective drug misuse prevention program in this current study, interviews were carried out with some relevant stakeholders, one of whom used to consume drugs. To prevent drug misuse in adolescents, the respondents concerned about two interventions, including drug misuse socialization and drug misuse rehabilitation. For drug misuse socialization, the respondents focused on five sub-themes (media for socialization, target groups, models, materials, and dissemination of information).

The use of social media, films and posters are considered effective by the respondents in drug misuse socialization. Das, Salam, Arshad, Finkelstein, & Bhutta (2016) in their systematic review conveyed that digital platforms, especially internet and mobile phone have become potential media for message delivery in smoking prevention programs. Whilst, Carney, et al., (2016) revealed that brief intervention via telephone showed moderate effect sizes of between 0.38 and 0.52 when conducted in schools. On the other hand, Popkova, Litvinova, Mitina, and French (2018) stated that social advertising through films and posters illustrated positive effects in promoting human developments.

In addition, the respondents in the FGDs proposed that prevention need to be done as early as possible. Children in elementary school are considered as a potential target group. This proposition is realistic because Schepis et al., (2018) revealed that drug misuse started to be problematic in adolescents aged between 12–17 years. The respondents also suggested that prevention programs of drug misuse in school should be started early from when the children would enter school.

There were two models drug misuse promotion in school proposed by the respondents, involving intra-curricular and extracurricular activities. The intra-curricular model can be implemented by adding a special subject concerning drug misuse prevention or by including the drug misuse materials into existing school subjects. However, adding a special subject can be quite problematic because it may increase the psychological burden of the students. Thus, the most likely scenario is by integrating promotional materials into the existing subjects. On the other hand, the extracurricular model can be inserted into extracurricular activities, such as scouting.

In terms of the contents of drug misuse promotion, the respondents stated that early detection could be an important theme in teaching the teachers and the parents so that they could help monitor the students in everyday life. This proposition is quite appropriate because school and family collaboration is very crucial in making the drug misuse prevention programs succeed. Walsh (2016) describes that family

is important and influential on health and well-being of the children. According to Walsh (2016), school has three important roles in drug misuse prevention. The first is demand reduction, which can be achieved by attempting to instill anti-drug misuse values, norms, beliefs, and attitudes, so that the students are able to say "no to drug". The second is supply reduction, which can be obtained by developing clear policies and rules aimed to prevent drug supply and distribution. And, the third is reducing the detrimental effects of drug misuse, which can be gained by appropriate counselling and treatment.

In this study, the respondents also mentioned that the dissemination of information about drug misuse had to be conducted carefully, consisting of real, actual and no vulgar contents. Showing drug samples can sometimes trigger adolescents to look for and try the drugs; however, showing drug samples along with their side effects can minimize their urge to use drugs. In addition, during drug socialization, it should be taken into account that the information delivery should not be done with the purpose of scaring and intimidating the students because such an action may backfire and trigger the students' curiosity of the drugs.

Rehabilitation was also proposed by the respondents as a type of intervention to stop drug misuse. In this case, the adolescents should have a special rehabilitation unit and not merge with the adults. This is because merged rehabilitation can trigger stress on the adolescents. Furthermore, the addicted students should be rehabilitated as outpatients to avoid disruption of their educational process. On the contrary, rehabilitation as inpatients will increase the stigma of drug users when they come back to school, and as a consequence they may choose to drop out.

Peer groups, teachers, and families play an important role in drug misuse prevention programs in school. Van Ryzin and Roseth (2018) have expressed that peer groups have the power to influence substance use, and cooperative learning can alter these influencing processes in a salutary manner. To support peer groups' influences in a salutary manner, the teachers can be the counselors of addiction who help the students to reduce the risk effects of drug misuse and of substance use. Further, families also have a role in drug misuse prevention. Chan, et al., (2017) state that reinforcing parents' disapproval through dissemination of the negative effects of drug misuse may be an important strategy in reducing adolescents' substance use. Thereafter, parents can supervise and motivate their children to say "no to drug". Therefore, the respondents conveyed that knowledge about drug addiction symptoms can help peer groups, teachers, and families for early detection drug misuse.

To add, cross-sector cooperation between schools and relevant agencies (education, health and religious authorities, BNN, prosecutors, and police) can also strengthen the effectiveness of school drug misuse prevention programs. The respondents opined that the (executive and legislative) government need to allocate good financial supports and to provide impartial policies to ensure that drug eradication efforts can run well and sustainably. Monaghan (2014) states that the policy goals should be clearly described and articulated so as to avoid confusion. Policy makers should listen to

the community aspirations, especially the affected groups and related stakeholders to produce effective law enforcements.

Further, the respondents also concerned about the stigma towards drug users. Benz, Reed and Bishop (2019) despite high rates of substance use (SU consider that stigma of the community and healthcare professionals is still a barrier in substance misuse promotion and treatment. The interventions to minimize the stigma within the school environments and the community towards the drug users can be the first step to increase the access to the drug users' private lives. Low stigma can encourage the students to share their problems, and early detection is helpful in drug use prevention and eradication.

V. CONCLUSION

Drug use prevention programs are an important effort to save the young generation. Evidently, drug misuses have many negative effects towards the students' psychology, behaviors, and academic performance. This qualitative research found that socialization (promotion) and rehabilitation were proposed as important drug use prevention programs. Further, the involvement of the (executive and legislative) government to produce good policies and to allocate enough funding can ensure the drug use prevention programs to run well and sustainably.

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TRADITIONAL BELIEFS AND PRACTICES REGARDING PREGNANCY OF ACEHNESE WOMAN: A QUALITATIVE APPROACH

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Abstract: Cultural beliefs in pregnancy exist in almost various cultures in the world. Health practitioners must be aware of these issues so they can contextualize health practices. This study aims to explore the existing cultural beliefs and practices within Acehnese pregnant women. This qualitative study involved data collection through Focus Group Discussion of 24 pregnant women in Aceh Besar District, Aceh. Furthermore, the data were analyzed with Inductive Content Analysis method. From the discussion, the results were grouped into 3 themes and 7 sub-themes, which are: 1) Outlawed attitudes (restricted food items, restricted behaviours); 2) Cultural beliefs (special pregnancy custom, relying on traditional leaders) and 3) Maternal responses on the cultural values (positive motivation to follow cultural beliefs, doubt in following cultural beliefs, rationalizing cultural beliefs). There are many cultural beliefs and practices affecting pregnancy, which are still maintained. Some of these beliefs are acceptable and give positive effects on the pregnancy, but there are some must be replaced with better beliefs. Understanding this complexity is the first step to improve the pregnant women awareness so they can carry out pregnancy more properly. Health workers are expected to understand and to combine these beliefs and practices with the health service settings.

Keywords: Pregnant, Perception, Beliefs, Practices, Culture

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I. INTRODUCTION

Pregnancy is a very important phase in a woman's life. This phase is considered to be a pleasant experience for women (Daba, Beyene, Fekadu, & Garoma, 2013). During the pregnancy, there are many things that can affect the mother in doing their regular activities. One of them is the cultural belief on pregnancy, adopted from generation to generation by the mother and the family. Globally, studies suggest that there is often a conflict between modern medicine and traditional beliefs for women (Harris, Fleming, & L. Harris, 2012). Studies have revealed that certain health beliefs can pose a danger to women's health (M'soka, Mabuza, & Pretorius, 2015). Incorrect cultural behavior not only affects pregnant women, but also to the fetus. This can happen because the cultural taboos, that the mother believes, gives limited intake of nutrients to the fetus, which affects the its growth (Mohamad & Ling, 2016).

In the past few decades, significant progress has been made as an effort to reduce maternal mortality primarily by improving the quality of antenatal care provided by Community Health Centers. The Indonesian government has also tried to revise antenatal service standard, so the pregnant women will get the best quality services. However, many advices delivered by antenatal service providers, sometimes are not fully applied because it contradicts the cultural values that have been embedded for a long time. Experts argue that the views on pregnancy and childbirth from a medical point of view often fail to harmonize with the traditional beliefs in a particular area (Benoit, Zadoroznyj, Hallgrimsdottir, Treloar, & Taylor, 2010; Teman, 2011).

Indonesia is an archipelago consisting of 17,000 islands along with diverse cultures. Acehnese is known to be one of the tribes, residing in Sumatra island, that strongly maintain their cultural beliefs. Aceh was also popularly dubbed as *seuramoe makkah* because of religious values and Islamic cultures were strongly attached to the daily lives of the people, integrated in the mentality, behavior and social order (Setyantoro, 2012; Usman, 2009).

Acehnese cultural values affected the people's lives at each stage, including during the pregnancy. These specific values are significant for them as an expression of respect to the elders, where it is inherent in the knowledge disseminated orally by the elders. In order to reduce maternal mortality according to the Sustainable Development Goals (SDGs) (Inter-Agency and Expert Group on SDGs Indicators 2016), health care providers must be able to identify the cultural beliefs of the targeted pregnant women and community. Especially in Aceh, they are expected to be able to harmonize the culture and medical practices. By recognizing and appreciating the prevailing local beliefs, health care providers can better support the pregnant women and improve the maternal health. The purpose of this study is to provide an overview of cultural beliefs and practices related to pregnancy carried out by Acehnese pregnant women and their responses on these beliefs. This research can be an input for health care providers to suggest which cultures can still be practiced, require modification or have to be prohibited during pregnancy.

II. METHODS

Study Design and Participants

This study involved data collection with Focus Group Discussion (FGD), conducted to explore the perceptions of pregnant women about the cultural beliefs and behaviors related to the pregnancy in Aceh Besar District, Indonesia in 2019. The FGD was chosen as a method of data collection in this study because this method allowed deep exploration to achieve the purpose of the study. Each participant could also support and clarified the views and opinions of other participants so that it can be known the strength of the statements stated. This research method extracted the conscious ideas, where they were correctly felt or believed by the participants.

The qualitative research approach was chosen as the most appropriate approach for achieving the study objectives. It was because through this approach, the researchers can gained a deep understanding and experience related to culture beliefs carried out during pregnancy. The data collection process was carried out for 5 months and conducted in 3 group sessions involved 8 pregnant women for each sessions. The exclusion criteria was the absence of participation willingness. This study is conducted with the approval of the Ethics Committee of the Nursing Faculty, Universitas Syiah Kuala, Aceh.

Data Collection

The selection of Acehnese pregnant women were chosen as participants in this study because Acehnese pregnant women were directly exposed to the local cultural beliefs and they were carrying out pregnancy, so the exploration of understanding and attitudes of pregnant women regarding Acehnese's cultural values in pregnancy was considered to be very suitable for this population. The participant rectuitment process began with the selection of three Community Health Centers in Aceh Besar District randomly. The recruitment of participants from many villages in the working area was assisted by local midwive coordinators to select pregnant women based on the inclusion criteria of this study. The participants were initially given an explanation of the purpose and benefits of this research. There were no any issues on participan refusal during the study conducted. Decisions about data saturation were obtained in this study when no new data or themes were stated by participants which the participants expressed the same ideas or themes.

The semi-structured questions used in the FGDs were pre-analyzed by 2 external experts. Tape recorder and notebook were used to collect all data during interview and notes-taking respectively (O.Nyumba, Wilson, Derrick, & Mukherjee, 2018) there are no critical assessment of the application of the technique. In addition, there are no readily available guidelines for conservation researchers. Here, we reviewed the applications of focus group discussion within biodiversity and conservation research between 1996 and April 2017. We begin with a brief explanation of the technique for first-time users. We then discuss in detail the empirical applications of this technique in conservation based on a structured literature review (using Scopus. The guided interview consisted

of 7 open-ended questions and additional probes. The question example was, "What do you think about dietary restrictions during pregnancy?" Research guides are written in Indonesian language, though there were some participants answered in Acehnese language. The duration of FGDs lasted for around 60–70 minutes and the results were further translated into Indonesian language completely. The verbatim results were evaluated, coded and analyzed manually using the Inductive Content Analysis (ICA) method (Graneheim & Lundman, 2004). The transcripts were analyzed multiple times in order to obtain a full understanding of the context. Afterward, all documents were put altogether and re-analyzed until the agreement was reached. Finally, the results were put under the themes and the sub-themes, which were based on the research objectives (Vaismoradi, Jones, Turunen, & Snelgrove, 2016).

III. RESULTS

Participants Characteristics

In this study, the majority of the participants were 20–35 years old (66.67%), some of them had the latest education in the low category (45.83%) and multigravida status (50%). A number of them also lived with parents (54.17%) and were in the second trimester of pregnancy during the period of this study (41.67%) (Table 1: Sociodemographic Characteristics of the Participants). The codes were classified into themes, categories, and sub-categories (Table 2: Examples of the Content Analysis, Coding, and Categorization).

Table 32.1 Sociodemographic Characteristics of the Participants

Variable	*Number*	*Percent (%)*
Age (in years)		
<20	3	12.50
20–35	16	66.67
> 35	5	20.83
Education		
Low	11	45.83
Middle	7	29.17
High	6	25.00
Gravida		
Primi	7	29.17
Multi	12	50.00
Grande	5	20.83
Living with		
Husband/Child	11	45.83
Parents	13	54.17

Gestasional Age		
1st Trimester	8	33.33
2nd Trimester	10	41.67
3rd Trimester	6	25.00

Table 32.2 Examples of the Content Analysis, Coding, and Categorization

Transcript/Meaning Unit	*Code*	*Sub Category*	*Category*	*Theme*
"It is durian, right? I want to eat durian last week, but my mom does not permit it, my husband and his family too. They said my pregnancy is still young so it is still vulnerable" (IH 1)	Durian	prohibited fruits during pregnancy	Restricted Food Item	Outlawed Attitudes
"Vinegar, but I used to vinegar. They said, it is because of carbonated consisted in vinegar, so it is not allowed if you are pregnant" (IH 6)	Vinegar	Prohibited soda during pregnancy		
"The crabs are also not allowed. My parents said if I eat crabs, my children would be naughty" (IH 3)	Crabs	Prohibited protein foods during pregnancy		
"Do not sit carelessly, do not sit in front of the door because it will lead to difficulties in giving birth" (IH 7)	Sit in front of the door	Prohibition sit in front of the house	Restricted Behaviours	
"I have heard that husbands cannot kill snakes because they are poisonous animals" (IH 13)	Kill the poisonous animals	Prohibition of killing animals		
"Then they said that our waist should not be trampled, it means that our waist should not be jumped up and down. For example, if we sleep, ask other person not jump around and can trampled on our waist" (IH 2)	Trample on the waist	Prohibition relating to the body parts		
"Do not sleep carelessly, for example where people often pass or walk by, if the children are passing by, we will be stepped on because we do not know. It is like my 4.5-month-old child that stepped on me while I was sleeping in his way" (IH 7)	Sleep carelessly	Prohibition relating to the resting position		

Category of Restricted Food Items

"Restricted food items" is included under outlawed attitudes theme, which further extracted into 3 sub-categories: prohibited food, prohibited soda during pregnancy, and prohibited protein foods during pregnancy.

The majority of participants in this study revealed that fruits such as durian, pineapple, rambutan, and papaya should not be consumed by pregnant women especially in the early days of pregnancy. They stated:

> "*In the early days of pregnancy, the restrictions exist. If we are weak, we cannot eat many kinds of foods and it happens in first trimester, for example if we eat durians, it will cause miscarriage immediately. It is also the same if you eat pineapple, there are certain people that definitely not allowed to eat it"* (IH 11)

Category of Restricted Behaviours

"Restricted behaviours" is included under outlawed attitudes theme, which further extracted into 9 sub-categories: prohibition sit in front of the house, prohibiton of killing animals, prohibition relating to the body parts, prohibition relating to the resting position, prohibition relating to personal hygiene, prohibition relating to physical activity, prohibition relating to household activity, prohibition relating to the clothes, and prohibition relating to leaving the house at certain times.

Almost all of the participants expressed to believe on the prohibition of sitting in front of the house, such as sitting on the door and on the stairs during pregnancy. Pregnant women and their husbands must also not kill animals, especially poisonous animals such as snakes as they reported:

> "*In our culture, if you are pregnant, you must not sit in front of the door ...*" (IH 11)

> "*I have heard that husbands cannot kill snakes because they are poisonous.*" (IH 13)

In addition, participants also mentioned that in Acehnese culture there is a prohibition to sleep carelessly for pregnant women, in order to avoid of being stepped on or leaped over by another person. It is believed to complicate the process when labor takes place later.

> "*Do not sleep carelessly, for example where people often pass or walk by, if the children pass by, we will be stepped on because we do not know. It is like my 4.5-month-old child that stepped on me while I was sleeping in his way"* (IH 7)

When talking about daily life, the participants in this study revealed that there is a prohibition on late bathing in the afternoon because it can cause a difficulty during labor and the women can sweat a lot during that process as they said:

> "*Then, if you are pregnant, do not be late take an afternoon bath. It can make us giving birth with a lot of sweat, my parents said that*" (IH 13)

In addition, some of the participants believed that in terms of the pregnant women appearance, they should not be wrapped the headscarf around the neckline because this could cause umbilical cord wrapped around too. Pregnant women also may not leave the house at certain times, such as during the day when the sun is right above the head, at night, and at the afternoon. It is believed to avoid the temptation of spirits as they stated:

> "*Besides, as pregnant women, we are no longer allowed to go outside the house when the sun above us. So, I believe the spirits exist. Pregnant women and children are very interesting to them so the elders make traditional advice reminding us, pregnant women and children, on what we need to do"* (IH 11)

> "*Many people remind us that we cannot go out at night*" (IH 12)

Category of Special Pregnancy Custom

"Special pregnancy custom" is included under cultural beliefs theme, which further extracted into 3 subcategories: culture carried out during the first trimester, culture carried out during the second trimester, and culture carried out during the third trimester.

A minority of the participants revealed that they had experience in carrying out the customary salvation in the first trimester, precisely at three months' gestation as one of them said:

> "*Just bring the antidote that I did. Yes, at the third months, ma'am"* (IH 1)

The majority of the participants said that their families held a traditional program in the second trimester, precisely in the fifth month of pregnancy. The event was carried out by bathing pregnant women with 44 kinds of leaves. In addition, pregnant women were also brought fruits as they stated:

> *"(Spontaneously answering) there are usually 44 kinds of leaves. Yes, the one who took the bath was looking for the leaves. The leaves were boiled first. It will be given by the midwife"* (IH 2)

> *"Yes .... On the 5th month they bring fruits to us*" (IH 6)

Furthermore, most of the participants also mentioned that a feast was carried out on the 7th month of the pregnancy. This involved the extended family to bring foods such as rice and side dishes with high nutrition for the pregnant women.

> "*I feel the same too (On the 7th month).. My current pregnancy is the third child. In the the second child of pregnancy, I was given rice by my sister and brother. Yes, my brother and sister who brought it*" (IH 9)

However, some participants also mentioned that there was a custom that required mothers to be given an antidote and bathed along with the feast in the tradition.

> *"Yes, that is the same (7 months). Given fruit, rice, and also an antidote, continued to bathing me and we eat together*" (IH 7)

Category of Relying on Traditional Leaders

"Relying on cultural leaders" is included under cultural beliefs theme, which further extracted into a subcategory: Mother's belief in traditional leaders.

The participants in this study also mentioned that they strongly believed in the traditional leaders (*teungku*) and believed in all the recommendations and prohibitions conveyed by them. In addition, the participants also highly upheld the *madis maja* that was conveyed. This was done because the *hadis maja* also contained religious values that should not be underestimated, as they stated:

> *"The traditional leaders and the hadis maja once said that the pregnant women should not going outside at night because there has been a dangerous event. The traditional leaders really prohibited it because all of them have a negative impact. So, I'm sure of the times because I heard directly from him"* (IH 12)

> *"Personally, I strongly believe that it is something that we must carry out the traditional advice and hadis maja because it consists of Islamic values. It is really different between every villages in Aceh but the traditional advice must be held firmly"* (IH 11)

Category of Positive Motivation to Follow Cultural Beliefs

"Positive motivation to follow cultural beliefs" is included under the maternal responses about cultural values theme, which further extracted into a subcategory: Perceptions that believe in cultural values.

Almost all of the participants revealed that they believed in cultural values adopted in Acehnese culture about pregnancy and tried to follow them. That is because the cultural value is inherited from parents who certainly give the best for their child's pregnancy as they stated:

> "*Whatever the parents say, it is definitely the best for the children"* (IH 2)

Category of Doubt in Following Cultural Beliefs

"Doubt in following cultural beliefs" is included under maternal responses about cultural values theme, which further extracted into a subcategory: Perception of doubting cultural value.

Converesly, some of the participants feel doubtful about the taboos that have been believed for generations. Some of them have violated these restrictions and have no bad impacts on the fetus. Others have also violated cultural taboos but have given themselves a sense of remorse and anxiety as they said:

> "*But there are also those who say that papaya is not allowed to eat if we are in the early pregnancy, is that correct? Hmm... but I have eaten it once and does not cause problems in my womb, insha Allah ... I mean I does not fall like that*" (IH 14)

> "*I often heard from my parents, the early pregnant women could not drive a motorbike or ride too much to climb the mountain. Coincidentally, before I knew I was pregnant, I had climbed a hill in Lamreh and had a road trip with my husband to Lhokseumawe. The main thing is that there are many trips that are horrible that I did, but my womb is okay. I am very grateful to God"* (IH 12)

Category of Rationalizing Cultural Beliefs

"Rationalizing cultural beliefs" is included under maternal responses about cultural values theme, which further extracted into a subcategory: Rationalized cultural perceptions.

In contrast to other information, some of the participants revealed that they did not directly accept or refused the cultural values. They will try to rationalize these cultural values scientifically as one of them stated:

> "*If I compare it with science, when I think it should be permit, then I do not do it for myself. If I say that is not logical, it is not logical. First, I would silent and respect what my parents said, but my head is looking for the accordance with the knowledge, like what is the relationship between the soaking clothes with a lot of amniotic fluid?*

We will give birth so the amniotic sac must break and that caused a lot of fluid. We should balance the traditional value with the logical science" (IH 11)

IV. DISCUSSION

This study found there are a variety of local beliefs pertaining to pregnancy believed by Acehnese women. Most of them are related to actions that prohibited during pregnancy, cultural beliefs, and the response of pregnant women to the culture. Because cultural beliefs related to health can affect all sectors of health practice, it is important for health practitioners to comprehend them (Harris et al., 2012).

Regarding the belief in dietary restrictions during pregnancy, almost all participants revealed that they should not consume fruits such as durian, pineapple, rambutan, papaya and carbonated foods. Fruits and carbonated foods such as *tape* and vinegar are believed have hot properties so they should not be consumed in the early pregnancy. This cultural belief also shared by other cultures such as Malaysia, China and India. However, this dichotomy of hot and cold foods does not originate from the temperature of the food. The grouping system came from China and India and was a symbol of the food. Chinese believe that pregnancy will cause an imbalance between *yin* (cold) and *yang* (hot), so it poses a danger to women's body (Mohamad & Ling, 2016).

Pregnant women are likened to being experiencing very hot conditions, so the cold food is needed and there is a prohibition on eating hot foods during the early pregnancy. Hot food can be consumed before the birth process to speed up labor (Montesanti, 2015). A study conducted by Harsoliya *et al.* (2011) found that the bromelain enzyme was found in pineapple and it can increase the risk of miscarriage. Pineapple also has a high sugar content which can increase the risk of gestational diabetes (Harsoliya et al., 2011). However, consuming durian during pregnancy has many benefits. Durian contains high sugar and carbohydrates so it can increase the baby's weight. However, mothers who have gestational diabetes have to reduce the consumption in order to maintain a stable glucose levels (Young Parents, 2019). There are many benefits of consuming rambutan during pregnancy. However, a very mature rambutan has an alcohol content and excessive sugar levels that are not safe for both mother and fetus (Shah, 2019).

Consuming carbonated foods during pregnancy can cause insulin resistance which eventually leads to gestational diabetes. Mother can also experience metabolic syndrome, excessive weight gain, and polycystic ovary syndrome, as well as being the main cause of future ovulatory infertility (Hatch et al., 2012).

In addition, cultural value also prohibits pregnant women from consuming protein-rich foods such as crabs and meat because it can make babies born disabled and naughty. The prohibition on consuming crabs and meat should be avoided because both contain high protein and omega 3 which contain unsaturated fats. These foods

also contain iron which can prevent anemia in pregnancy (Darmawati, Tahlil, Siregar, Kamil, & Audina, 2018). However, consuming crabs and meat must be properly cooked and hygienically processed. Pregnant women must also ensure to the health care providers before consume it especially if the body's cholesterol levels are not controlled (Malachi, 2019). In Islam, the word of Allah SWT in Al-Qur'an also mentions the prohibition to consume something in excessive amounts. Allah SWT encourages not to overeat, because it will have a bad impact on health. This value is found in QS. Al-A'raf: 31 which means "*Children of Adam, dress well whenever you are at worship, and drink (as We have permitted) but do not be extravagant; God does not like extravagant people"*.

In addition to the food restriction, Acehnese culture also has restrictions regarding behavior or habits must not be carried out during pregnancy. Prohibition of going out at certain times is reported to be the most frequently heard and believed by participants in this study. It is based on mystical beliefs where spirits will disturb pregnant women who leave the house at certain times, such as during the day, at the afternoon or at night. In Islam, night becomes the time when many devils and demons come out. These two creatures will cause disruption to humans, causing fear and discomfort. During pregnancy, the mother will have changes both physiologically and psychologically. Psychologically, mothers will experience hormonal changes so they become very sensitive. When going out at night, mothers often feel disturbed by unseen creatures. Therefore, this taboo is done so that it can calm them (Suri, 2018). Physiologically, pregnant women will tend to be susceptible to infectious diseases. One of the infectious diseases that occurs includes the bite of mosquitoes that often come out at night, especially *Aedes aegyptii* which can cause dengue fever (Frank, Beales, Wildt, Sanchez, & Jones, 2017).

Pregnant women are also prohibited from lazing like sleeping anywhere, taking a late shower (more than 4 pm), and soaking clothes for so long. Basically, all these prohibitions are carried out to make pregnant women more diligent in their daily activities. During the pregnancy process, a mother will experience drastic physical changes, such as fatigue, pain, and nausea, and make them become lazy. Physical activity during pregnancy is associated with reduced risk during pregnancy and childbirth, including preeclampsia, gestational diabetes, and premature birth. Regular physical activity during pregnancy can also improve good mood and self-esteem. *American College of Obstetricians dan Gynaecologists* (ACOG) and Indonesian Health Ministry recommends pregnant women to exercise for 30 minutes a day, with the exception of any health problems experienced (Kemenkes RI, 2010; Thompson, Vamos, & Daley, 2017).

In addition to the activities mentioned above, Acehnese cultural beliefs also include that pregnant women should not be dressed by wrapping a headscarf through their neck of head. This belief is based on the Al-Qur'an that advice a Muslim woman to laying their headscarf to cover their head, neck and shirt buttons. This is stated in QS. An-Nur: 31 which means "*...and they should let their headscarves fall to cover*

their necklines and not reveal their charms except to their husbands…." Based on this verse, it is clear that the prohibition that believed by traditional customs cannot be separated from Islamic values that have believed in Acehnese community.

Apart from the restrictions on food and activities carried out by pregnant women, Acehnese culture also advocates the implementation of cultural activities in the form of festivities carried out in each trimester of pregnancy. *Kenduri* is a feast to commemorate a particular event. In Acehnese cultural customs, *kenduri* is known as *mée boh kayee* for the first or second trimester and *mée bu* for the third trimester of pregnancy. In the first trimester, pregnant women will experience behavioral changes which also characterized by likes to eat acidic fruits. The pregnancy will attract the attention of her family and the surrounding community so that she will receive a variety of fruits (Daud, 2010). These fruits are brought by mother-in-law, relatives and neighbors who come to visit. The fruits (*boh kayée*) can be made into traditional fruit salad (*rujak*), which is favored by pregnant women (Soelaiman, 2011). Whereas in the third trimester or at the 7 months gestational age, *mée boh kaye* and *mée bu* will be held simultaneously and also called by *mée bu rayeuk*. Mother-in-law, accompanied by relatives, comes to her daughter-in-law's house with all sorts of foods and fruits (Daud, 2010).

This custom is good for pregnancy, considering that these traditional activities can simultaneously fulfill the nutritional needs of pregnant women. The nutritional status of a pregnant woman not only affects her health, but also the fetus. Health care providers must know the nutritional needs during pregnancy because these needs significantly different compared to the non-pregnant women (Kominiarek & Rajan, 2016). In addition to carrying out a tradition that has been passed down for a long time, participants in this study also mentioned that they strongly believed the words of traditional leaders and *hadis maja* in Acehnese culture. *Hadis maja* or *narit maja* is a short phrase taken from a long experience by elders. In *narit maja*, there are various suggestions, advice, teachings, prohibitions, invitations and social conditions of the Acehnese community. The wise person who usually keeps *narit maja* called *Petua Beuna*, which is the elders who always say the truth (Rijal, 2011). One of *narit maja* which is often mentioned in Acehnese culture was "*Hukom meunyo hana adat tabeue, adat meunyo hana hukom bateue*" means that the law without traditional beliefs would be tasteless, and traditional beliefs without the law are canceled (Muhammad, 2011).

Related to various cultures that provide flexibility and limitations for pregnant women to carry out their pregnancies, there are various responses displayed. Some of them believe and follow the culture because the value is directly instilled by their parents. Others do not believe and feel doubtful about the culture because they feel they have no bad influence after doing what is prohibited. In contrast to the two responses, there are some participants who try to rationalize the cultural values instilled to them, think rationally based on the knowledge they have. This response is also inseparable from the knowledge of pregnant women and the latest educational level they have. A majority of the participants had the latest education in the low category (45.83%).

The level of someone's education will influence the ability to act and find out the rationalization of an issue. People with higher levels of education will find easier way to understand and rationalize an accepted idea (Mariza, 2016).

This study provides information about traditional beliefs and practices regarding pregnancy in Acehnese pregnant women. The important information obtained from this study can be the basic information for carrying out local wisdom-based antenatal counseling that is culturally acceptable by the Acehnese people, especially pregnant women. We hope that the pregnant women can internalize pregnancy-related health messages delivered by health care providers because they are in accordance with their culture. However, there are some limitations found in this study. This study did not include other family members, especially parents, so the strength of the cultural beliefs embraced could not be explored. Thus, further researchers may be able to explore this problem.

V. CONCLUSION

In this study, the results show that there are still many restrictions and taboos in terms of food and behavior believed by pregnant women in Aceh. Some of these restrictions are good and supportive towards the pregnancy process, but some of them must be modified. Responses related to cultural beliefs also vary among pregnant women. Based on the results of this study, there is a suggested need for antenatal care providers to be able to develop local wisdom-based antenatal counseling by incorporating these cultural beliefs so the interventions carried out more acceptable to pregnant women and their families.

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THE FACTORS AFFECTING THE ACHIEVEMENT OF EXCLUSIVE BREASTFEEDING IMPLEMENTATION

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Abstract: The percentage of exclusive breastfeeding in Aceh Province in 2013 was 48%. In 2014 it increased to 55%. However, in 2015 it decreased to 53%. The cause of the decline in exclusive breastfeeding is believed to be due to lack of assistance from health workers. Other causes are physical complaints from mothers who are often exhausted at night and other environmental conditions that follow the trend of the use of bottle or infant formula. In accordance with the target report of exclusive breast milk from 71 mothers, the achievement of exclusive breastfeeding was only 21 people (30%). The purpose of this study was to determine the factors that influence the implementation of the achievement of exclusive breastfeeding in the sub-district Kuta Alam, Banda Aceh District. The research design used was an analytic survey with a cross sectional study approach. The population was 702 mothers who had babies and a sample of 106 mothers who had babies aged 6–24 months. The sampling technique used accidental sampling. The research instrument used a questionnaire that was analyzed by univariate, bivariate and multivariate statistics. The results showed that the factors that influence the achievement of exclusive breastfeeding are health conditions (p value = 0.0001), support of health workers (p value = 0.005), social support (p value = 0.004) and knowledge (p value = 0.018), while the most dominant factor affecting the achievement of exclusive breastfeeding was maternal health conditions. Conclusions are expected for breastfeeding mothers to maintain health conditions in order to provide better breastfeeding exclusively to their health babies from 0 to 6 months age.

Keywords: Exclusive Breastfeeding, Influence Factors, Health Achievement, Quantitative Study

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I. INTRODUCTION

Breastmilk or ASI is liquid resulted from the secretions of the breast glands of a mother that contains the best nutritional value for baby. Exclusive breastfeeding on the other hand, means that a baby from birth to six months period of time, only received breast milk without adding and/or replacing it with other foods or drinks (Hellwig et al., 2015). The World Health Organization and the United Nation Child's Funds (2015) issued a gold standard for feeding infants and children immediately one hour after birth, and exclusively breastfeeding babies from birth until the age of six months. After the age of six months babies started to get nutritious complementary foods or MP-ASI, according to their growth and development needs while continuing breastfeed the baby until the age of twenty-four months or more (Ministry of Health, 2016).

Exclusive breastfeeding can make a baby's brain develop and grow perfectly. Breastmilk can affect the improvement of the immune system, prevent diarrheal diseases, respiratory diseases, ear diseases, urinary tract diseases and build a trusting relationship between baby and mother (Prasetyono, 2009). Unicef (2013) in Cai, Wardlaw, & Brown (2013) also stated that children who were exclusively breastfed were 14 times more likely to survive in the first six months of life than children who were not breastfed. Starting breastfeeding on the first day after birth can reduce the risk of newborn death by up to 45%.

This is in accordance with several studies and global facts from Victora et al., (2016) which states that; exclusive breastfeeding reduced mortality due to infection by 88% in infants younger than three months, by 31.36% (82%) from 37.94% of children sick because they did not receive exclusive breastfeeding. The results of the UNICEF study (2018) stated that babies in Indonesia who received exclusive breastfeeding during the first 6 months were only 32% and breastfeeding until the age of 23 months was only 50%. (Unicef, 2011). While nationally, the coverage of exclusive breastfeeding in Indonesia is 54.3% of the total babies aged 0–6 months. The highest exclusive breastfeeding coverage was NTB province at 79.7% while the lowest was Maluku at 25.2%.

The current prevalence of exclusive breastfeeding has not been able to reach the Indonesian government's target of 80%. This situation is very difficult to achieve even the prevalence of exclusive breastfeeding is still far from the target (Balitbangkes, 2018). The decline in exclusive breastfeeding can be influenced by socioeconomic status, employment and education of mothers, ethnicity, shifts in neighbourhoods, imitating western lifestyles, the influence of health workers and the availability of formula milk (UNICEF, 2018), while Mamonto (2015) mentions the main problems in exclusive breastfeeding is a socio-cultural factor, incessant promotion of infant formula (a substitute for breast milk) and a lack of support from health services and health workers in an effort to support exclusive breastfeeding. In addition, other factors that cause the decline in breast milk achievement rates are related to lack of

motivation and confidence to breastfeed, as well as the wrong way of breastfeeding (Infodatin, 2014).

The role of the health service itself is very large in the success of exclusive breastfeeding, because its role has influenced since the beginning of pregnancy and at the time immediately after birth that affects the process of breastfeeding to the next stage. As stated in PP Number. 23 of 2012 which states that health workers have a very important role, task and responsibility in providing exclusive breastfeeding (Kemensesneg, 2012). There are several reasons for the low exclusive breastfeeding, that is, not all hospitals have implemented 10 LMKM (Steps to Successful Breastfeeding), not all infants have received Early Breastfeeding Initiation, the number of breastfeeding instructors is still 2,921 extension agents from the target of 9,323 extension workers, and the promotion of formula milk that is classified as vigorous. (Ministry of Health, 2012).

Health services and staff are obliged to facilitate mothers and babies to carry out an early initiation process (IMD) and help mothers and babies to be able to do skin to skin, health workers are required to place and facilitate mothers and babies in one room or to be admitted for 24 hours (rooming in) Unless there is a medical diagnosis that is not possible for mothers and infants to join in, health workers are required to provide information and education about exclusive breastfeeding to mothers and family members of infants from pregnancy check up until the exclusive breastfeeding period is complete. In addition, health workers are also prohibited from giving formula milk because it inhibits exclusive breastfeeding programs unless there are medical conditions and for the sake of infant safety (Kemensesneg, 2012).

After knowing the roles and obligations of the services and health workers in line with the results of research Rahayu and Yunarsih (2017) which states the predisposing factor for exclusive breastfeeding failure is due to the lack of knowledge and experience of the mother and the important enabling factors that cause failure is because the mother is not facilitated doing IMD. Babies born normally and placed on the mother's stomach immediately after birth with the mother's skin attached to the baby's skin for at least 1 hour in 50 minutes will successfully breastfeed, while babies born normally separated from their mothers 50% cannot breastfeed alone. Various studies have also reported that IMD has been shown to increase the success of exclusive breastfeeding.

The readiness of health service facilities especially pregnancy and childbirth services, including the readiness of human resources (HR) needs to be considered also whether these regulations have touched the role and consider the situation. The number of baby-loving hospitals is estimated to be only around 50 - 70% in government hospitals and 10 - 20% in private hospitals. The implementation of exclusive IMD and ASI is very dependent on the actions taken by health workers and health care facilities in the first hours. Various studies have shown the vital role of birth attendant health workers in the successful implementation of IMD and exclusive breastfeeding. In reality, not all birth attendants and doctors are free from the role of "agents" in formula milk (Fikawati & Syafiq, 2010).

The percentage of exclusive breastfeeding in the province of Aceh in infants 0–6 months in 2013 was 48%, in 2014 it increased by 55%, and in 2015 it decreased again by 53%. At the district level, the highest percentage of exclusive breastfeeding coverage was found in Simelue District at 89%, followed by Central Aceh District at 74% and Southeast Aceh at 71%. While the lowest percentage of initiation of early breastfeeding is found in Sabang City and Aceh Jaya Regency, which is 0 - 4% (Dinkes, 2017). Report of the monthly exclusive breastfeeding target of Kuta Alam Health Center in Banda Aceh in the period August 2016 - January 2017, that the target of exclusive breastfeeding was 71 people consisting of 6 villages namely Kuta Alam, Laksana, Keuramat, Peunayong, Mulia, and Beurawe. But of that number, 21 successful mothers were given exclusive breastfeeding with a percentage of 30%.

Aceh Governor Regulation Number 49 of 2016 concerning exclusive breastfeeding has been effectively applied. However, the achievement in exclusive breastfeeding still faces many obstacles that begin from the readiness of officers in providing education about exclusive breastfeeding to mothers, as well as health facilities and breastfeeding facilities that do not yet support breastfeeding exclusively for working and non-working mothers. From the results of field visits and brief interviews conducted by researchers at integrated health service post activities in the Kuta Alam village, on January 3, 2017, there were 18 mothers who had babies, only 4 people who managed to breastfeed exclusively. The success of exclusive breastfeeding is related to the experience of mothers who fail to exclusively breastfeed their first and second children. Furthermore, information and practices regarding exclusive breastfeeding that researchers obtained are also still very low, this is due to the lack of assistance for nursing mothers both for working and non-working mothers, coupled with physical complaints of mothers who are often exhausted at night in providing exclusive breastfeeding and many environmental factors that follow the trend of bottle feeding are more effective than breast milk.

In accordance with the report on the target of exclusive breastfeeding, the target to be achieved in exclusive breastfeeding is 80%, but there are still many obstacles to meet these achievements. Based on this background the researcher was interested in understanding the factors that influence the implementation of the achievement of exclusive breastfeeding in the work area of the Kuta Alam Health Center in Banda Aceh region. Therefore, the purpose of this study was to determine the external factors of breast-feeding mothers that influence the implementation of the achievement of exclusive breastfeeding in this capital city of Aceh Province area.

II. METHODS

This study was to determine the factors effecting the achievement of implementation of exclusive breastfeeding in sub-district Kuta Alam Community Health Center, Banda

Aceh District. To understand this problem, this research used analytic survey design with cross sectional study approach. The population amounted to 702 mothers who had babies and a sample of 106 mothers who had babies aged 6–24 months with a duration of study one month and two weeks. The sampling technique used accidental sampling technique which was determined based on the Lemeshow estimation formula with a proportion value of 50% (0.5) and d value of 10% (0.1) and the research instrument used was a questionnaire that was analyzed by uni-variate, bi-variate statistics and multivariate.

Table 33.1 Relationship Between Breastfeeding Mothers' Age with Exclusive Breastfeeding Achievements

Age	*Exclusive Breastfeeding Achievements*				*P Value*
	Achieved		*Not Achieved*		
	f	*%*	*f*	*%*	
Healthy reproductive age	46	50.5	45	47.2	0.169
Unhealthy reproductive age	5	33.3	10	66.7	
Total	51	48.1	55	51.9	

Table 1. It is known that of 91 mothers of healthy reproductive age, 46 people (50.5%) achieved exclusive breastfeeding. Furthermore, it is also known that as many as 15 mothers with unhealthy reproductive age, 10 people (66.7%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.169> 0.05, so that Ho is accepted, which means there was no significant relationship between the reproductive age of nursing mothers with exclusive breastfeeding achievement in Kuta Alam healthy service post work area.

Table 33.2 Relationship Between the Health Condition of Breastfeeding Mothers with Exclusive Breastfeeding Achievements

Health	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Good	39	78.0	11	22.0	50	100	0.0001
Less	12	21.4	44	78.6	56	100	
Total	51	48.1	55	51.9	106	100	

Table 2. It is known that out of 50 nursing mothers with good health, 39 people (78.0%) exclusive breastfeeding was achieved. Furthermore, it is also known that 56 breastfeeding mothers with poor health, 44 people (78.6%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0,0001 <0.05, so Ho is

rejected, which means there is a significant relationship between the health conditions of breastfeeding mothers with exclusive breastfeeding achievement in Kuta Alam health center.

Table 33.3 Relationship Between Breastfeeding Mother's Knowledge with Exclusive Breastfeeding Achievements

Knowledge	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Good	41	78.8	11	21.2	52	100	0.0001
Less	10	18.5	44	81.5	54	100	
Total	51	48.1	55	51.9	106	100	

Table 3. It is known that out of 52 nursing mothers with good knowledge, 41 people (78.8%) achieved exclusive breastfeeding. Furthermore it is also known that as many as 54 nursing mothers with poor knowledge, 44 people (81.5%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.0001 <0.05, so Ho is rejected, which means there is a significant relationship between knowledge of breastfeeding mothers with exclusive breastfeeding achievement in Kuta Alam Health service center in work area.

Table 33.4 Relationship Between Breastfeeding Mother's Perception with Exclusive Breastfeeding Achievements

Perception	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Good	38	66.7	19	33.3	57	100	0.0001
Less	13	26.5	36	73.5	49	100	
Total	51	48.1	55	51.9	106	100	

Table 4. It is known that out of 57 nursing mothers with good perception, 38 people (66.7%) achieved exclusive breastfeeding. Furthermore it is also known that 49 breastfeeding mothers with poor perception, 36 people (73.5%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.0001 <0.05, so Ho is rejected, which means there is a significant relationship between breastfeeding mothers' perceptions with exclusive breastfeeding achievement in Kuta Alam Puskesmas working area, Banda Aceh City.

Table 33.5 Relationship Between Breastfeeding Mother's Education with Exclusive Breastfeeding Achievements

Education	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
High	20	52.6	18	47.4	38	100	0.482
Middle	25	43.1	33	56.9	58	100	
Basic	6	60.0	4	40.0	10	100	
Total	51	48.1	55	51.9	106	100	

Table 5. It is known that of 38 mothers with higher education, 20 people (52.6%) achieved exclusive breastfeeding. Furthermore it is known that of 58 mothers with secondary education, 25 people (52.6%) achieved exclusive breastfeeding. Then it was also known that as many as 10 mothers with basic education, 4 people (40.0%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.482> 0.05, so Ho is accepted, which means there is no significant relationship between breastfeeding mothers' education with exclusive breastfeeding achievement in Kuta Alam health service center work area.

Table 33.6 Relationship Between Support from the Health Staff with Exclusive Breastfeeding Achievements

Health Staff Support	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Supporting	48	72.7	18	27.3	66	100	0.0001
Not Supporting	3	7.5	37	92.5	40	100	
Total	51	48.1	55	51.9	106	100	

Table 6. It is known that of the 66 breastfeeding mothers who expressed support from health workers, 48 people (72.7%) achieved exclusive breastfeeding. Furthermore it is also known that as many as 40 breastfeeding mothers who claimed no support from health workers, 37 people (92.5%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.0001 <0.05, so that Ho is rejected, which means there is a significant relationship between health care support for nursing mothers with exclusive breastfeeding achievement in Kuta Alam health Clinic work area Banda Aceh City.

Table 33.7 Relationship Between Social Support with Exclusive Breastfeeding Achievements

Social Support	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Supporting	30	76.9	9	23.1	39	100	0.0001
Not Supporting	21	31.3	46	68.7	67	100	
Total	51	48.1	55	51.9	106	100	

In table 7, it is known that from the 39 breastfeeding mothers who claimed to receive social support, 30 people (76.9%) achieved exclusive breastfeeding. Furthermore, it is also known that as many as 67 breastfeeding mothers who claimed no social support, 46 people (68.7%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.0001 <0.05, so Ho is rejected, which means there is a significant relationship between social support for breastfeeding mothers with exclusive breastfeeding achievement in Kuta Alam community health center.

Table 33.8 Relationship Between Promotion of Infant Formula with Exclusive Breastfeeding Achievements

Infant Formula	*Exclusive Breastfeeding Achievements*				*Total*		*P Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Not Influenced	30	62.5	18	37.5	48	100	0.011
Influenced	21	36.2	37	63.8	58	100	
Total	51	48.1	55	51.9	106	100	

Form table 8, it is known that of 48 nursing mothers who were not affected by the promotion of formula milk, 30 people (62.5%) achieved exclusive breastfeeding. Furthermore it is also known that as many as 58 breastfeeding mothers who were affected by the promotion of formula milk, 37 people (63.8%) achieved exclusive breastfeeding. Chi-square test results obtained p value is 0.011 <0.05, so Ho is rejected, which means there is a significant relationship between the promotion of formula milk for breastfeeding mothers with exclusive breastfeeding achievement in Kuta Alam community health center work area.

Table 33.9 Cultural Influences with Exclusive Breastfeeding Achievements

Cultural Influences	*Exclusive Breastfeeding Achievements*				*Total*		*p Value*
	Achieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Good	35	51.5	33	48.5	68	100	0.42
Less	16	42.1	22	57.9	38	100	
Total	51	48.1	55	51.9	106	100	

Table 9. It is known that of 68 mothers with good culture, 35 people (51.5%) achieved exclusive breastfeeding. Furthermore it is also known that as many as 38 mothers with poor culture, 22 people (57.9%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.420> 0.05, so Ho is accepted, which means there is no significant relationship between breastfeeding mothers' culture with exclusive breastfeeding achievement in Kuta Alam work area, Banda Aceh.

Table 33.10 Relationship Between Breasfeeding Mother's Work with Exclusive Breastfeeding Achievements

Occupation	*Exclusive Breastfeeding Achievements*				*Total*		*p Value*
	Acvieved		*Not Achieved*				
	f	*%*	*f*	*%*	*f*	*%*	
Not employed	24	55.8	19	44.2	43	100	0.236
Employed	27	42.9	36	57.1	63	100	
Total	51	48.1	55	51.9	106	100	

Table 10. It is known that of the 43 unemployed mothers, 24 (55.8%) were exclusively breastfed. Furthermore it is also known that as many as 63 working mothers, 36 people (57.1%) did not achieve exclusive breastfeeding. Chi-square test results obtained p value is 0.236> 0.05, which means there is no significant relationship between breastfeeding mothers work with exclusive breastfeeding achievement in Kuta Alam health center work area Banda Aceh.

Table 33.11 Results of the Latest Binary Logistic Regression Model Analysis for Factors as Predictors of Exclusive Breastfeeding Achievement

Predictor	*B*	*OR*	*p value*	*95% CI*	
				Lower	*Upper*
Health Conditions	2.510	12.305	.000	3.127	48.416
Health Dept. Support.	2.493	12.092	.005	2.145	68.173
Social support	2.227	9.269	.004	2.002	42.910
Knowledge	1.782	5.941	.018	1.353	26.090
Constant	-4.354	.013	.000		

Table 11. Shows the analysis of the binary logistic regression test with the Stepwise method for the last known model of 10 independent variables, there are 4 variables which are significant predictors of the achievement of exclusive breastfeeding, including health condition variables with a value (p value = 0.0001), support of health workers (p value = 0.005), social support (p value = 0.004) and knowledge (p value = 0.018).

III. DISCUSSION

The test results in Table 11 note that the binary logistic regression test obtained a significant value of maternal health conditions of 0.0001 <0.05, which means simultaneously or together variables of the health conditions of nursing mothers with exclusive breastfeeding outcomes have a significant effect on the achievement of breast milk exclusively in the working area of the Kuta Alam Health Center where the influence is 12,305 or 12 times. Based on these results, the conclusions of this study indicate that the health conditions of nursing mothers have a significant influence on the achievement of exclusive breastfeeding. The better the health condition of the mother, the higher the chance for the mother to exclusively breastfeed her baby. This statement is in line with the opinion put forward by Lawrence & Lawrence, 2010 which states that health problems in exclusive breastfeeding are the main factors for mothers to stop or not give breast milk when babies are 3–4 months old. Health problems or diseases suffered by the mother can cause contraindications to the mother.

Furthermore, Zubaran and Foresti (2013) showed that the presence or absence of clinical complications during pregnancy significantly affected the mother in providing exclusive breastfeeding. Other factors that influence exclusive breastfeeding are the health status of newborns, alcohol consumption and smoking during pregnancy or a history of depression. However, the most dominant factor influencing mothers in providing exclusive breastfeeding is the health status or health condition of mothers after giving birth.

Table 11 test results note that the acquisition of a significant value of health care support of 0.005 <0.05 which means simultaneously or together the variable support of health workers for breastfeeding mothers has a significant influence on the achievement of exclusive breastfeeding in the work area of the Puskesmas Kuta Alam Banda City Aceh where the influence was 12,092 or 12 times. Based on these results it can be concluded that the above described shows that the support of health workers is able to arouse the confidence of mothers in making decisions to breastfeed their babies.

This result means that nursing mothers who get the support of health workers that the information received by the mother gives an impact to the mother to do breast care, duration of breastfeeding, the benefits of breastfeeding and early breastfeeding

initiation (Ministry of Health, 2012). Furthermore, the conclusions are in line with Moore, Bergman, Anderson, & Medley, 2016 which states that the condition of mothers after childbirth, both normal deliveries and cesarean delivery, requires the support of health workers by showing the baby to the mother and giving the baby to breastfeed. The "early skin to skin" intervention was proven to improve breastfeeding practices and it was stated that the role of the nurse was the key to the success of the intervention program.

The results of the study as shown in table 11 binary logistic regression test obtained a significant value of 0.018 <0.05, which means that simultaneously or together variable knowledge of nursing mothers has a significant influence on the achievement of exclusive breastfeeding in the work area of the Kuta Alam Health Center in Kota Banda Aceh where the influence was 5,941 or 6 times. Based on these results it can be concluded that the knowledge of nursing mothers has a significant influence on the achievement of exclusive breastfeeding. The better the mother's knowledge, the higher the chance of the mother to exclusively breastfeed her baby. This is in line with the opinions of Kaleem, Sherwani, Adnan, and Rahat (2017) in their research which states that the mother's knowledge about breastfeeding initiation, colostrum administration and about exclusive breastfeeding influences the mother's actions to breastfeed her baby for 6 months.

Furthermore, Senghore et al. (2018) states that the mother's knowledge about Exclusive ASI is largely determined by monthly income, attitudes toward Exclusive ASI and support from those closest to her. Mothers from upper middle economic families have sufficient knowledge about exclusive breastfeeding. The results of the study as shown in table 11 binary logistic regression test obtained a significant value of social support of 0.004 <0.05 which means that simultaneously or together social support variables for breastfeeding mothers have a significant influence on the achievement of breastfeeding exclusively in the work area of the Puskesmas Kuta Alam Banda Aceh City where the influence is 9,269 or 9 times.

Based on these results it can be concluded that social support (husband and family) can provide adequate contribution and participation for mothers in improving maternal love and obedience relationships exclusively for breastfeeding. This is in line with research conducted by Ke, Ouyang, and Redding (2018) who decided to give milk or formula milk, with 13% of respondents being influenced by their mother or sister of the mother. Furthermore, Kristianti and Pratamaningtyas (2018) said that social and community support for mothers during six months of exclusive breastfeeding was found to be less than optimal which can be caused by less optimal breastfeeding, lack of understanding of mothers about proper lactation management, practical feeding, paid working mothers, and so far. The social influence on the cause of babies not exclusively breastfed for 6 months is babies given water or young coconut water by their grandmothers.

IV. CONCLUSION

Based on the results of the analysis, it was concluded that several factors have been resulted to have associated with the implementation of the achievement of exclusive breastfeeding in breastfeeding mothers are maternal health conditions, support of health workers, social support and maternal knowledge about exclusive breastfeeding. The most dominant predictor of these factors affecting the implementation of achieving exclusive breastfeeding in breastfeeding mothers in the work area of Kuta Alam Banda Aceh Health Center is the health condition of breastfeeding mothers, which is as much as 12 times

Based on the result of this study, the following recommendation would be good for the following studies to be conducted regarding the gaps in sufficient information for exclusive breastfeeding implementation in other part of health care center for mothers who plan to have breastfeeding inclusively. The recommendation as follows: Providing mothers who plan to have exclusive breastfeeding with better nutritional information so that the maternal health conditions can be improved as recommended in healthy breastfeeding guide. Providing mothers with encouragement to follow properly dietary guideline supported by healthy workers in hospital or community health center. Encouraging the mothers with enough intake of more water, juice and fruits during the breastfeeding period from 0 – 6 months as social supports from family members. Providing more knowledge and right information for the mothers who are having breastfeeding so that exclusive breastfeeding can be implemented successfully.

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INTERNET GAMING DISORDER AMONG INDONESIAN ADOLESCENTS: A CROSS-SECTIONAL STUDY

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Abstract: The continuity and uncontrolled online game use will raise game addiction on the users which will give negative impact on gamers. The online game addiction is called Internet Gaming Disorder (IGD). The IGD phenomenon is prevalent among adolescents. Nevertheless, few reports available in developing country settings. The present study aims to determine the prevalence of Internet Gaming Disorder among adolescent in the city of Banda Aceh, Indonesia. Using cross sectional design, a 9-item Internet Gaming Disorder Scale was distributed to a total of 268 students enrolled in a Senior High School. Approximately 21.6% off adolescents were risky gamers and 11.9% were disordered gamers. Approximately 37.7% played game ≥ 6 hours/day. PUBBG and Mobile Legends were among the most commonly game played by the adolescents. The findings suggest that in a developing country of Indonesia, the prevalence of online game disorder is relatively high and therefore special attention should be given to the adolescents at school age in order to prevent negative consequences of online gaming.

Keywords: Internet gaming disorder, adolescents, game addiction

I. INTRODUCTION

Nowdays, internet can be easily accessed by all people in the world, including the adolescents living in third world countries. They use internet facilities for various needs (Hakim & Raj, 2017). The Digital Global Yearbook (2019) stated that there are 4,388 billion people worldwide who use the internet. While in Indonesia, in 2019 internet users reached 150 million out of a total of 268.2 million people living in the country. Based on a survey by Asosiasi Penyelenggara Jasa Internet Indonesia (2017), more than 51% of internet users in Indonesia are male and more than 75% aged 13–18 years. In the province of Aceh, the number of internet users were 2.4 million people with a growth of 49% from the previous year (Asosiasi Penyelenggara Jasa Internet

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Indonesia, 2014). Social networks and games are very much related to internet usage problems. Playing games or playing online games is frequent among adolescents (Ginige, 2017).

The Statista (2019) reported that as many as 699.6 million people are online game players in the world. In Indonesia, online game players accounted to 43.7 million people (Newzoo, 2017). The survey conducted by the Central Statistics Agency (BPS) of Indonesian government stated that in 2014, more than 19.8 million internet users in Indonesia were children and adolescents (Misnawati, 2016). Excessive and uncontrolled internet access has a strong association with Internet Gaming Disorder or IGD (American Psychiatric Association, 2013). Despite that fact, the prevalence of internet among disorder among adolescents in Banda Aceh has been rarely studied. This paper, therefore, aims to study the prevalence of Internet Gaming Disorder and to explore the level of Internet Gaming Disorder tendency among senior high school students in Banda Aceh.

II. METHODS

This research is a descriptive study with cross sectional study design. Using total sampling methods, a total of 268 students in a Senior High School of Banda Aceh participated in the study.

Data were collected using the questionnaire. The questionnaire consisted of two parts: demographic data, and statement about Internet Gaming Disorder. The demographic data includes gender, age, grade, living with whom and family income. The presence of internet gaming disorders was examined using the 9-item Internet Gaming Disorder Scale developed by Lemmens, Valkenburg, & Gentile (2015). The scale has dichotomous answer option. The score of <2 was considered as normal gamers, $2 \leq x \leq 4$ as risky gamers, and $x \geq 5$ as disordered gamers.

The data of the research is analyzed using descriptive statistic including frequency distribution and percentage. This research was conducted after obtaining ethics approval from the Ethics Committee of a local institution. Informed consent was obtained from the guardian of the adolescents who participated in the study.

III. FINDINGS

From the total of 268 respondents participated in the study, approximately three fourth (75%) of them were male and more than half (55%) aged 16. According to the tool used to examine the internet gaming disorder, 11.9% were disordered gamers, and 21.6% were risky gamers. PUBG and Mobile legends are among the most commonly played games by them. More than half (65.2%) played game at home, and 8% of them spent more than 2 million rupiah for playing game. The detail of findings of the study are presented in table 1 and table 2 below.

Table 34.1 Demographic Features of Respondents (N = 138)

Category	*Frequency (N)*	*Percentage (%)*
Age (year)		
15	12	8.7
16	76	55.1
17	45	32.6
18	5	3.6
Gender		
Male	104	75.4
Female	34	24.6
Grade		
X	58	42
XI	80	58
Playing Duration		
< 6 Hours/day	86	62.3
≥ 6 Hours/day	52	37.7
Number of Online Games		
1	51	37
2	36	26.1
≥ 3	51	37
Online Game Name		
PUBG		
Yes	102	73.9
No	36	26.1
Mobile Legends		
Yes	64	46.4
No	74	53.6
HAGO		
Yes	14	10.1
No	124	89.9
Free Fire		
Yes	23	16.7
No	115	83.3
Clash of Clans		
Yes	21	15.2
No	117	84.8
Place to Play		
Home	90	65.2
Cafe	40	29
Internet Cafe	5	3.6
School	3	2.2

Category	*Frequency (N)*	*Percentage (%)*
Motives		
Entertaining	41	29.7
Excitement	49	35.5
Boredom	16	11.6
Fill the Free Time	12	8.7
Hobby	8	5.8
Relieve Stress	4	2.9
Others	<3	7
Playing Devices		
Handphone	127	92
Laptop	8	5.8
Computer	3	2.2
Device Ownership		
Yes	132	95.7
No	6	4.3
Device Prices		
Rp. < 1 Million	20	14.5
Rp. 1 - 5 Million	100	72.5
Rp. > 5 Million	18	13
Money Spent on Gaming		
Rp. < 1 Million	112	81.2
Rp. 1 - 2 Million	15	10.9
Rp. > 2 Million	11	8
Ability to Reduce Gaming		
Yes	107	77.5
No	31	22.5
Family Income		
Rp. < 1 Million/month	9	6.5
Rp. 1 - 5 Million/month	120	87
Rp. > 5 Million/month	9	6.5
Living with		
Parents	129	93.5
Grandmother	3	2.2
Dormitory	2	1.4
Siblings	2	1.4
Relatives	1	0.7
Student Guardian	1	0.7
Anxiety		
Yes	41	29.7
No	29.7	70.3

Category	*Frequency (N)*	*Percentage (%)*
Gaming Group		
Yes	85	61.6
No	53	38.4
Social Media		
Instagram		
Yes	130	94.2
No	8	5.8
Twitter		
Yes	16	11.6
No	122	88.4
Facebook		
Yes	51	37
No	87	63
YouTube		
Yes	78	56.5
No	60	43.5
Smoking		
Yes	24	17.4
No	114	82.6
Extracurricular		
Yes	108	78.3
No	30	21.7
Courses		
Yes	29	21
No	109	79
Religious Activities		
Yes	124	89.9
No	14	10.1
Last Semester Grade		
60–70	4	2.9
71–80	54	39.1
81–90	76	55.1
91–100	4	2.9
Number of Close Friend		
1–5	59	42.8
6–10	56	40.6
11–15	15	10.9
16–20	8	5.8

Category	*Frequency (N)*	*Percentage (%)*
Stress		
Yes	40	29
No	98	71
Loneliness		
Yes	41	29.7
No	97	70.3
Communication with Parents		
Rarely	5	3.6
Sometimes	29	21
Often	104	75.4
Eating Disorders		
Yes	38	27.5
No	100	72.5
Sleep Disorders		
Yes	55	39.9
No	83	60.1
Total	138	100

Table 34.2 Distribution Internet Gaming Disorder (N = 268)

The Tendency of Internet Gaming Disorder	*Frequency (N)*	*Percentage (%)*
Excluded Categories	130	48.5
Normal Gamers	48	17.9
Risky Gamers	58	21.6
Disordered Gamers	32	11.9
Total	268	100

IV. DISCUSSION

The present study found that internet gaming disorder is common among adolescent living in Banda Aceh, Indonesia. It was found that approximately 11.9% had disordered gamers while other 21.6% were risky gamers. It was also found that the trend of internet gaming disorder higher among male adolescents than the female. A total of 104 male fell into the three categories of internet gaming disorder while female were only 34 students.

The finding of this study is in line with a research conducted by Mihara and Higuchi (2017) who found that the prevalence of IGD is higher among male than female and higher at younger ages than older people. Another study conducted by Dong, Wang, Wang, Du, & Potenza (2018) also suggests that IGD is more frequent among male than the female. Nevertheless, it is not well understood why IGD more

prevalent in male than in female. Different vulnerability to internet gaming and different developmental trajectory courses between gender are among the explanation (Su, Han, Jin, Yan, & Potenza, 2019). Furthermore, Sun et al. (2018) explained that male who were addicted to gameplay, compared to controls and healthy conditions, showed changes in brain function in the superior frontal gyrus, an area of the brain's prefrontal lobe that is important for controlling impulses.

The present study also revealed that the common reasons for playing game were excitement and entertainment. Other reasons were to cope with boredom, and to relieve stress. These findings are supported by the research of Moudiab and Spada (2019) regarding maladaptive motivation and cognitive influences on IGD levels in 79 online game players. They found that stress, depression, anxiety, and coping mechanisms had a significant influence on the level of IGD.

Based on the studies above, the researchers argue that there are many factors for adolescent to play game. Playing game can be a medium of escape, mood modification, and friendship. Stress and loneliness in adolescents also affect the IGD itself. Adolescence changes and develops rapidly. Along with the changes that happen, they often experience various problems and turmoil, both concerning self-interest and daily life. This makes adolescents must face various problems and not all of them able to overcome the problem. So that teenagers run away to avoid the various problems they face and playing is one of the most common option.

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EXPLORING ISLAMIC VALUES TO DEVELOP SCHOOL BASED ANTI-STIGMA INTERVENTIONS: STUDY PROTOCOL

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Abstract: *Background:* People with Mental Disorders (PMD) struggle against illness and stigma. The problems are inseparable each other. Mental illness trigger public stigma and internalization of public stigma trigger severe mental illness. Recently, many adolescents experience mental illness and most of them are students. Students with mental illness usually avoid seeking professional's help because of public stigma. Therefore, school-based anti-stigma interventions are useful to promote both better mental health and academic performance. *Aims:* This paper explains protocol of the study in developing school-based anti-stigma intervention by exploring Islamic values and cultures. *Methods*: Guided by precede-proceed model as conceptual framework, the study will use Randomize Control Trials (RCTs) with pre and post-test design by using mixed methods for data collections. In total, 40 respondents will be interviewed by personal interview and FGDs, and about 500 respondents will be surveyed for baseline data to develop anti-stigma interventions. In total 150 respondents will be selected and assigned to two intervention groups and one control groups (50 respondents for each group) to test the effectiveness of interventions (ASI-HA and ASI-IA). The respondents in each group will be selected by multiple random sampling. Established measures will be used to evaluate study interventions at pre and post-test. Qualitative data will be analysed by qualitative content analysis. Quantitative data will be analysed by Pearson Correlation Coefficient (PCC) to evaluate the effect of interventions and linear or logistic regression to predict prospect of outcomes. *Discussion:* The development of anti-stigma interventions based on Islamic values is essential because stigma is strongly influenced by beliefs and cultures. Using precede-proceed model as conceptual framework give possibility to researchers to explore communities' ideas and

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predisposing factors of the problems for strengthen the interventions. Therefore, the researchers are very optimistic that the study will produce effective and suitable anti-stigma interventions to reduce public stigma of students toward people with mental disorders.

Keywords: Mental Health Stigma, Public Stigma, Adolescent Stigma, Reduce Stigma, Minimize stigma

I. INTRODUCTION

In 2016, earth's population were more than 7.2 billion, and 1.2 billion of them are adolescents with 10–19 years old (World Health Organization, 2016). In Aceh, about 1 million of 5.1 million populations in 2016 were adolescents with 10–19 years old (Badan Pusat Statistik RI, 2018). Based on classical theories, adolescence was identified as period of "storm and stress" or "identity crisis" (Erikson, 2015; Hall, 1904). Therefore (Patton, et al., 2016) revealed that 10–20% of adolescents experienced at least one mental health problem, and the common problems are depression and anxiety (Center for Desease Control and Prevention, 2013; Tran et al., 2019)

Adolescents with mental disorders always experience public stigma (DeLuca, 2019; Wahl, Susin, Kaplan, Lax, & Zatina, 2011). Public stigma arises when people admit and support stereotypes (Corrigan, et al., 2006). Stigmatized adolescents are usually rejected, discriminated and bullied by peer group. These negative responses will reduce self-confidence and self-efficacy, and make adolescents avoid seeking psychosocial assistances and treatments (Link & Phelan, 2006). These problems will increase the potential of mental disorders in future.

Adolescents spend more times in school. In 2018, about 20.25% of Indonesian pupulation and 21.58% of Aceh population are students. About 5.02% of Indonesian students and 5.29% of Aceh students study in Junior High School (Badan Pusat Statistik RI, 2019). Therefore, it is important to develop school-based anti-stigma interventions to minimize public stigma. Adolescence is the best period to improve positive perceptions about mental disorder, because adolescence has not been too influenced by myth and stereotypes toward mental disorder. Moreover, high prevalence of mental health problems among students require preventive and promotive effort to provide a conducive school evironments. It is not only to minimize the risk of severe mental illnes, but also for beter academic performance.

In the previous studies, culture and religion are revealed to have a great influence toward public stigma of mental (Abdullah & Brown, 2011; Cheon & Chiao, 2012; Ng, 1997; Pescosolido, Olafsdottir, Martin, & Long, 2008). On the other hand, Aceh province where the research will take place has a strong religious tradition, especially Islamic tradition. Therefore, the development of effective anti-stigma intervention by exploring Islamic values and cultures are expected to clarify myths and stereotypes in the community. Furthermore, the religious beliefs are considered as sacred values that must be followed by communities in Aceh, and Ignoring the religious beliefs is considered as human sin with his/her god.

In this study we are interested to develop school-based anti-stigma interventions by exploring Islamic values to reduce public stigma among students for better mental health. In this paper, researchers describe how the study will be conducted to develop effective anti-stigma interventions based on local wisdom (religion and cultures).

The study objectives are: 1) to develop anti-stigma interventions toward people with mental disorder based on Health Approach (ASI-HA) and Islamic Approach (ASI-IA); 2) to evaluate the effectiveness of each interventions in minimizing student's public stigma with: a) comparing student's public stigma between pre and post interventions; b) comparing student's public stigma among intervention groups and control group; and c) comparing student's public stigma between intervention groups (ASI-HA and ASI-IA).

II. METHODS

Theoretical Approach

Corrigan & Penn, (1999) initiated an essential conceptual framework in minimizing student's public stigma, included education, contact and protest. The conceptual framework has been used extensively in developing anti-stigma interventions in various settings and countries. But educational and contact interventions are often used (Economou et al., 2012; Lanfredi et al., 2019; Morgan, et al., 2018)

The important target groups of mental health education are school children, students professional and opinion leaders (Corrigan, Roe, and Tsang, 2011). The purpose of mental health education is not to make the target group to be experts, but to increase understanding, to clarify various myths and stereotypes, and to stimulate empathy (Corrigan, 2004; Corrigan & Penn, 1999).

Beside mental health education, contact with PMD can reduce public stigma. The negative perceptions of target groups will change by seeing productivity of PMD, and by clarifying their negative perceptions (Corrigan, Roe, and Tsang, 2011). But, not all types of contacts can reduce public stigma. Pre-contact interventions are essential to increase understanding and stimulate empathy. Storytelling and watching video about struggles of PMD and their family are very effective to stimulate empathy. These approaches have been implemented by counsellors of mental health problems in Great Britain (Corrigan, Roe, and Tsang, 2011).

The last approach in reducing public stigma is protest (Corrigan, Roe, and Tsang, 2011). Stereotypes spread not only people to people, but also via media, advertisements, billboards, and others. The spread of stigma in this ways goes on quickly and widely. Even though, protest cannot reduce public stigma directly, but protest can localize stigma and reduce discriminations (Corrigan, P.W., Roe, D., and Tsang, 2011; Rüsch, Angermeyer, & Corrigan, 2005).

According to Morgan et al., (2018) who reviewed 62 journals of studies by using RCTs to investigate the effect of education and contact for stigma reduction

is obtained that contact and education reduced stigmatizing attitudes from small to medium (d = 0.39, 95% CI: 0.22 to 0.55 for contact and d = 0.30, 95% CI: 0.14 to 0.47 for education). For mixed-interventions (contact combined with education) are also obtained similar effect without clear advantages.

The development of community-based interventions, PRECEDE-PROCEED model is often used as conceptual framework. This framework has been used widely in health promotion planning (Pender, Murdaugh, and Parsons, 2015). This framework called as participatory model by involving community to gain more and better ideas for problem solving (Community Tool Box, 2019).

The Precede-Proceed model is conducted in eight phases, namely: 1) social assessment; 2) epidemiological, behavioral and environmental assessment; 3) educational and ecological assessment; 4) administrative and policy assessment, and intervention alignment; 5) implementation; 6) process evaluation; 7) impact evaluation; and 8) outcome evaluation (Glanz, Rimer, & Viswanath, 2008).

Methodological Approach

Precede-proceed framework will be used in developing anti-stigma interventions. Although, there were only little evidence about the use of this framework in development anti-stigma interventions, but this framework has been used widely in developing health education and promotion (Calano et al., 2019; Khani Jeihooni & Moradi, 2018; Kim, Nam, Jin, & So, 2019; Sezgin & Esin, 2018). Combination this framework with Corrigan & Penn, (1999) theory with exploring the local context is expected to produce an effective school-based anti-stigma interventions. The process of anti-stigma interventions development can be seen as below figure:

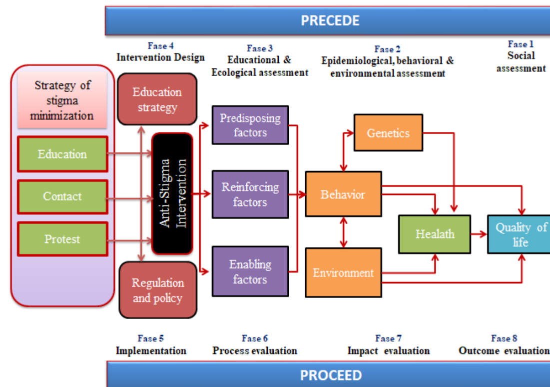

Figure 35.1 Methodological Approach

Study Design

This study comprise in two general steps: 1) interventions development; and 2) testing the effectiveness of interventions. The development of intervention will be conducted in mixed methods (quantitative, qualitative and study of literature). Qualitative study

will be implemented in Personal Interviews (deep-interviews), Focus Group Interviews (FGDs) and study of literature. While, quantitative study will be done by baseline surveys. The developed interventions will written in a module which equipped by Standard Operating Procedures (SOP), and equipment that needed in implementing anti-stigma interventions (video, leaflet and booklet).

Testing of anti-stigma interventions effectiveness will be used quantitative design with Randomize Control Trials (RCTs). This design will compare between pre and post interventions, and between intervention and control groups. Before testing the developed anti-stigma intervention, pilot study will be conducted to ensure that the interventions are feasible to be implemented. Before intervention testing, pilot study will be conducted to ensure that the interventions are feasible to be implemented in real study.

Ethical Consideration

The study protocol has been approved by Nursing Faculty Research Ethic Boards (NF-REB) of Universitas Syiah Kuala in Banda Aceh, Indonesia. For fairness and equity, the study interventions will also be applied to control group after research activities are complete.

Sample and Setting

Samples will be selected by multiple random sampling. First, researcher will select six from 23 junior high schools in Banda Aceh randomly (3 with accreditation A and 3 with accreditation B). Second, students with the desired criteria will be selected as prospective samples in each different class (first, second and third class). The prospective samples will be chosen by randomly if they more than predetermined quota. Third, all samples have been selected will be divided evenly and randomly to each intervention groups and control group.

Determination of sample size will be done by using Cohen table with considering on power and effect size (Cohen, 1998). Medium effect size (d = 0.60) with power 0.80 are used to determine sample size (Polit, and Beck, 2017), so the sample size are 44 respondents per group. To anticipate attrition factor (dropout) of the selected samples, we add 15% of sample size (6 samples). So the final sample size will be 50 students per group.

Participants must signature the informed consent before participating in the research. Participants have freedom to decide to accept or refuse to be sample.

Study Intervention

There are three study interventions that will be developed, namely: Anti-Stigma Intervention with Health Approach (ASI-HA), Anti-Stigma Interventions with Islamic Approach (ASI-IA), and Control Group (CG). There are five sessions for each study intervention: three sessions are dialog based learning, one session is storytelling, one

session watching video, and one session study trip to mental hospital to make a little contact with patients.

The completed figure of study intervention can be seen on the table below:

Table 35.1 Anti-Stigma Intervention Outline

Session	*Content*
Session 1 minutes)	**Dialog based learning**: presentation and dialog about mental health and mental disorder
Session 2 (100 minutes)	**Storytelling**: The struggle of patient and family in fighting public stigma and mental illness: • Introduction; • Storytelling; • Dialog/ discussion.
Session 3 (100 minutes)	**Watching video**: The struggle of patient and family in fighting stigma and mental illness: • Introduction; • Watching video; • Dialog/ discussion.
Session 4 (100 minutes)	**Field trip:** contact with patient in mental hospital: Introduction; • Seeing around; • Dialog with patient; • Dialog/ discussion.
Session 5 (100 minutes)	**Dialog based learning**: • Presentation about protest toward public stigma attitudes and behaviours; • Presentation about the important of counselling and support from peer group for stigmatized students; • Dialog/ discussion; • Forming counsellor group and anti-stigma group of students.

To evaluate the effectiveness of anti-stigma interventions, researchers will use three models questionnaire. The questionnaires (MHLq, CAMI and PHSS) will be conducted validity and reliability test before using in the real study. The using of questionnaires can be seen on the table below:

Table 35.2 Intervention Test Design at Each Study Group

Intervention Test Design and Data Collection Tools	*Intervention Groups*		
	ASI-HA	*ASI-IA*	*CG*
Sample size	50	50	50
Total of intervention groups	2	2	2

Intervention Test Design and Data Collection Tools	*Intervention Groups*		
	ASI-HA	*ASI-IA*	*CG*
Pre-Test (before intervention):			
Socio-demographic questionnaire	√	√	√
Mental Health Literacy Questionnaire (MHLq)	√	√	√
Community Attitudes toward the Mentally Ill (CAMI) scale	√	√	√
Peer Mental Health Stigmatization Scale (PMHSS)	√	√	√
Post-Test (Direct after intervention finished):			
Mental Health Literacy Questionnaire (MHLq)	√	√	√
Community Attitudes toward the Mentally Ill (CAMI) scale	√	√	√
Peer Mental Health Stigmatization Scale (PMHSS)	√	√	√
Follow Up (one month & three month after intervention):			
Mental Health Literacy Questionnaire (MHLq)	√	√	√
Community Attitudes toward the Mentally Ill (CAMI) scale	√	√	√
Peer Mental Health Stigmatization Scale (PMHSS)	√	√	√

Data Collection Procedures

In development of anti-stigma interventions, the data will be collected by qualitative interviews (deep interviews and FGDs) and based line survey. Then, for testing the effectiveness of study interventions, researchers will use some tools of stigma assessment. At pre-intervention, participants will fill out the socio demographic questionnaire, MHLq, CAMI scale, and PMHSS (Table 2). At post-test (immediately after interventions) participants will fill out MHLq, CAMI scale, and PMHSS (Table 2). For follow ups (one and three months after interventions) participants will fill out MHLq, CAMI scale, and PMHSS (Table 2).

In the socio-demographic questionnaire, participants will complete questions about age, gender, address, ethnicity, grade/ class, Grade Point Average (GPA), family income, parent's education, religion, the number of family members living in a house, mother language, and experience of interaction with mental illness.

Outcome Measure

There are four questionnaires will be used in this study, include socio-demographic questionnaire, MHLq, CAMI scale and PMHSS. Socio-demographic questionnaire is used for identify participants characteristic to determine eligibility of respondents. Respondents who are eligible will be included in the study. Socio-demographic characteristics are also used to evaluate the influencing of participants' characteristics toward public stigma.

MHLq is a 29-item self-report questionnaire divided in four sub-scales (knowledge of mental health problems, erroneous beliefs/ stereotypes, first aid skills and help seeking behaviours) to assess mental health literacy on young people. Internal consistency of Gronbach's α coefficients the questionnaire are 0.84 (Dias, et al, 2018).

CAMI is a 40-item self-reports used to measure public attitudes toward mental illness. This questionnaire is divided in four sub-scales; include authoritarianism, benevolence, social restrictiveness and community mental health ideology. Internal consistency of Gronbach's α coefficients in the last testing was 0.68 to 0.88 (Taylor & Dear, 1981)

PMHSS is a 16-item self-report questionnaire developed by Mckeague, et al., (2015) that is divided in two components (stigma agreement and stigma awareness). This questionnaire is suitable for measuring adolescent's public stigma. According to re-test reliability analysis (2 weeks for 109 participants), this questionnaire is considered very reliable (r = .0679 for stigma agreement and r = .745 for stigma awareness).

Fidelity of Implementation

There are two strategies that will be used to maintain the fidelity of study process. First, the five experts will be used for content and construct analysis to evaluate the study interventions, included expert in teaching methods and materials, expert in community nursing, expert in mental health nursing, and expert in Islamic religion.

Second, minimum qualification for facilitators of study interventions based on HA is nurse's specialist or masters with community mental health nursing background. Whilst, minimum qualification for facilitators of study intervention based on IA is master of Islamic education with background as lecturer/ teacher in Islamic education. Third, researchers will monitor all sessions of the study interventions using checklists of the planned activities as below:

Table 35.3 Checklist of Planed Activities

Day/ Date/ Session	*Activity*	*Group*	*Name of Facilitator*	*Type of Approach*		*Minute*			*Observation*
				ASI-HA	*ASI-IA*	*Introduction*	*Presentation*	*Dialog*	

In observation column will be recorded important issues during implementation of study interventions, like the number of participants, information originality according to each approach, and any others important issues

III. DATA ANALYSIS

There are three data analysis will be used in the study. First, *qualitative content analysis* will be used to analyse qualitative data from individual interviews and FGDs. The analysis process will be conducted in four steps, namely: transcribing of interviews, identify meaning unit, create codes and categories, develop sub-themes and themes based on research questions (Graneheim & Lundman, 2004).

Second, quantitative data will be analysed by: 1) *descriptive statistic* (distribution of frequency) will be used to analyse socio-demographic; 2) *Pearson Correlation Coefficient (PCC)* will be used to compare student's stigma and knowledge between pre and post-test and among groups; 3) Linear or logistic regression to analysed anti-stigma intervention prospect of outcomes (Polit, D.F. and Beck, 2017).

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PATIENTS WITH MENTAL DISORDER UNDER HOME RESTRAINT: PROGRESS AND CHALLENGE OF RELEASE

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Abstract: Restraint and confinement of people with mental disorders is still common in Indonesia. This paper aims at uncovering the condition of patients with mental disorder who were restrained at home, the progress and challenges in their release from restraints in the province of Aceh, Indonesia. This study uses secondary data that were extracted from Aceh provincial health office annual report on *Aceh Free Pasung* Program. The data includes the results from Focused Group Discussions among health practitioners that were conducted to unveil the challenges of releasing patients from restraints in the community and monthly report on patients' condition from community health centers to the provincial health office. A total of 129 patients with mental disorders were in restraint throughout 2016. Sixty-five (50.4%) of them were once released but then placed back into restraint, while others 46 (35.7%) had never been released since they were restrained. Socio-economic conditions, low literacy and stigma towards mental illness of the family and community are among the factors that delay the release of such patients from restraints. Efforts to release the patients from restraint were rather unsuccessful. The findings call for further investigations.

Keywords: Restraint, Challenge, Release, Mental disorder.

I. INTRODUCTION

Despite being admired as the role model for developing and implementing novel mental health care system in Indonesia (Epping-Jordan et al., 2015; Marthoenis et al., 2016b), the province of Aceh still struggles to release patients with mental disorder from restraint in the community. Pasung is an Indonesian term for restraining patients with mental disorder either by chaining, tying or locking their arms or legs in wooden stock and confining them in an empty or jail-like room. The patients might be locked inside a house or building, outside the house and even in the jungle, far away from where the community resides.

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Comparable to many other developing countries, the practice of restraints exists in most provinces of Indonesia. It was estimated that at least 18.800 patients were still restrained in 2016 across the country (BBC, 2016). In the province of Aceh, there were only 110 known restraint cases in 2009 (Puteh et al., 2011). However, the number increased to more than 200; some of restraint cases were hidden by the family members and were not reported to government officials.

Aceh is a province of Indonesia and it has nearly five million populations. Around 0.24% of Acehnese had severe mental disorders, while 6.6% suffered from mental emotional disorders (NIHRD, 2013), the rates of which are higher than the national rate. High prevalence of restraint in the community has been one of mental health services problems in this province. Therefore, the local government initiated an agenda called *Aceh Free Pasung* program in 2009 and effectively implemented in 2010 (Puteh et al., 2011). The central government and other provinces across Indonesia also accepted and implemented this effort. Nevertheless, the achievement has been far from the expectation. In this paper, we shall discuss the recent condition of patients who were restrained at home, the progress and challenges in releasing them from restraint in the province of Aceh.

II. METHODS

Data in this paper was extracted from Aceh provincial health office reports on Aceh free *pasung* program. Quantitative data of the reports consisted of information on age and medical diagnosis of the patients, type of restraint, duration of restraint, setting where the patients restrained, reason for applying restraint and whether the patients obtained pharmacotherapy or not. All restrained patients in 2016 were used as the main subject of this report.

Qualitative data was analyzed to provide information on the challenges in releasing the patients from restraints. The data had been generated from observations, interviews and focused group discussions (FGDs). A total of 12 FGDs were conducted among community mental health nurses, medical doctors and stakeholders of mental health services. Each FGD consists of six to eight participants, giving a result of 85 participants in total. The main question addressed to FGD participants was "What are the challenges to releasing patients from restraint?". Outcomes from each FGD were summarized and reported as part of the annual report on free *pasung* program in Aceh. The authors were present and observed some of the process of patient release. The second author and community mental health nurses conducted unstructured interview during their routine visit to the patients.

Members of an ethical committee of Syiah Kuala University concluded that ethical approval was unnecessary for analysis and reporting of secondary data presented in this paper. Informed consent has been obtained from the respondents participated in FGDs.

III. RESULTS

Demographic and Clinical Features

A total of 129 of patients had been restrained throughout 2016. The majority was male (75.9%) and more than half (51.2%) had been previously treated in the psychiatric hospital. Almost all were diagnosed with schizophrenia (97.6%) and had seen or consulted with traditional or religious healers (99.2%). The mean age was 36 (SD 10) and mean age at onset of mental illness was 27 (SD 9). More than half of the patients were chained or tied with rope (57.4%), 33.3% were confined in a small room and 8.9% had their legs locked in wooden stock. Seventy-four (57.4%) of them were patients from 2015, 52 (40.3%) had been released during the year, while others 46 (35.7%) had never been released since they were restrained or confined. At the end of 2016, a total of 76 patients (58.9%) were still in restraints at home. The median duration of restraint was one year, ranging from one to twelve years. On average, they had been restrained around 3.2 years. The family members initiated the great majority of restrain (90%). Having aggressive – violent and destructive behavior was the most common reason for restraining the patients (62%) followed by wandering (20.1%) and lack of caregiver to look after the patients (5.4%). Demographic and clinical features of the patients are presented in Table 1.

Challenges of Release

The consensus findings from observation, interview and FGDs on challenges in releasing patients from restraint are summarized in Table 2. The challenges were grouped into three main domains: resources, access, and socio-cultural. The problems in each domain do not stand alone but interact with or influenced by problems in other domains. For instance, people living in remote areas might suffer from financial shortcomings and thus cannot afford to visit health facilities. Therefore, they prefer to lock the patients at home. Both demographic and financial access play critical role in this case. Also, there were cases where the patients lived close to health facilities, but the family kept them in chains because of their disbelieve in the hospital or western system of treatment. Again, restraining the patient is not merely about the access and resource, but also about affection, as a wife of a restrained patient summarized:

> *"I know what the people say, human right this, human right that, that's your human right... just let my husband live with me. I lock my husband not because I hate (him), but because I love (him). I (feel) sad when people (the community, neighbor) taunted and embarrassed (the husband). If I open (the lock), he will go around, wandering, and the people will laugh at him. I (feel) sad when I see that, so let him (stay) with me. I share (with him) what I eat. I share what I drink. We live in the same hut. We are a couple!" (A wife – circa 50 years old).*

IV. CONCLUSIONS

In this paper, we report the characteristic of patients under home restraint, their conditions and the challenges in securing their release. Male gender seems to dominate the number of restrained patients, not only in the current report (two-thirds), but also in the previous reports of the similar settings (Puteh et al., 2011) and also in China (Guan et al., 2015). The perceived aggressive and violent behavior among male patients might explain this gender domination (Piyavhatkul et al., 2011; Tsigebrhan et al., 2014).

Compared to their fellow patients who had been released from restraint nearly six years ago (Puteh et al., 2011), their mean age was relatively similar (around 35 years old), so does the majority of schizophrenia diagnosis, and that most of the restraints were initiated by the family. However, the average duration of restraint seems to be shorter in the current population. The fact that some of the patients had ever been previously released and undergone the hospital treatment do shortens the average restraint duration. Nevertheless, it does not indicate the success of the project, since more than a quarter of the patients still have never been released since the initiation of restraint.

The fact that more than half of the restrained patients had ever been previously hospitalized is not entirely understood. The patients' low adherence to antipsychotic medication after hospitalization is among the possible explanations. Low adherence stimulates recurrent relapse (Haddad et al., 2014; Higashi et al., 2013) and then restraints were re-applied to them. Therefore, because the improvement of the patients' adherence to antipsychotic medication leads to improved quality of life (Hayhurst et al., 2014) and helps to reducing the relapse rate (Haddad et al., 2014), efforts aimed at improving the patients adherence are significant, especially in the settings where restraint is the most feasible problem-solving action.

Resource Challenges

Despite Aceh Province have been praised for implementing novel mental health care system in Indonesia, health care staff and stakeholders confirmed (during FGDs) that the mental health human resource has been limited qualitative and quantitatively. The currently available General Practitioner Plus (GP – plus) and Community Mental Health (CMH) nurses only obtained few days of training in psychiatry and mental health nursing. Therefore, their skill and knowledge to deal with mental problems is insufficient. Meanwhile, the number of psychiatrists and mental health nurses with proper and formal education is low. Also, some trained nurse and GP+ have been posted out on new assignments, leaving their task in mental health program unattended to (Marthoenis et al., 2016b) mental health services still require much attention. This paper aims to understand the mental healthcare system in Aceh Province, Indonesia; its main focus is on the burden, on the healthcare system, its development, service delivery and cultural issues from the devastating Tsunami in 2004 until the present. We reviewed those published and unpublished reports from the local and national

government, from international instances (UN bodies, NGOs. This human resource scarcity, therefore, directly and indirectly, hampers the release of patients who were in restraint at home.

Table 36.1 Demographic and Clinical Features of Patients

	Number or Year	*Percent or Range*
Mean of Age (SD)	36	10
Male Gender	98	75.9%
Mean of age at Onset of Mental Illness (SD)	27	9
Diagnosed with Schizophrenia	126	97.7%
Previously treated at Psychiatric Hospital	66	51.2%
Median duration of restraint (N=49) (range)	1	1 - 12 yrs.
Restraint initiated by Family Member	117	90.7%
Methods of Restraint		
Chained with rope	74	57.4%
Confined in a room	43	33.3%
Wooden stock	12	9.3%
Reasons for Restraint		
Aggressive - violence and destructive behavior	80	62.0%
Wandering	26	20.1%
No-one to look after the patient	7	5.4%
Others	16	12.5%
Frequency of restraint		
Always restrained	85	65.9%
Sometimes releases	19	14.7%
Released when the family present	8	6.2%
No report	17	13.2%
Who release from restraint		
Healthcare staffs	38	29.5%
Family	23	17.8%
Never been released	46	35.7%
No report	22	17.0%

Apart from human resource issue, mental health services in Aceh sometimes must deal with the inadequate supply of drugs, especially some types of antipsychotics. Although the national health insurance covers the mental health treatments, only the first generations or typical antipsychotics were available at the health post. The second generation or atypical antipsychotics must be obtained in a psychiatric hospital or in a General Hospital with mental health services. Patients who have used

atypical antipsychotics during hospitalization then reluctantly do take the typical antipsychotics. This problem also leads to low adherence, relapse and re-restraint.

Table 36.2 Consensus Findings of Challenges in Releasing Patients from Restraint

Resources
• Limited number of healthcare staff, especially medical doctors and nurses who work or specialize in mental health services • Insufficient or unavailability of medication at health post • Insufficient number of facilities for mental health treatment
Access
• Lack of physical access: geographic condition or location, living in remote areas • Lack of financial access: poverty, (cannot afford to hospital) • Lack of access to proper information, (low literacy on mental disorders) • Perceived of complicated bureaucracy
Sociocultural
• Stigma towards people with mental illness • Mental health is not a priority for the community nor for health care provider • Affection and bond with parents

Literacy and Stigma

Low literacy and stigma are among major determinants that hinder the patient from obtaining proper mental health treatment (Andersson et al., 2013; Crowe et al., 2015; Eisenberg et al., 2009; Franz et al., 2010). The community in this setting obtains very little information regarding mental health and thus, the patients and family are usually unaware of the suffering associated mental disorders (Marthoenis et al., 2016a). Some of them believe that mental disorder is a non-medical problem, is of supernatural cause hence the preference for traditional treatment (Diatri and Maramis, 2016; Marthoenis et al., 2016a). This is in line with the fact that most of the patients in this study had consulted traditional or religious healers for their mental problem. Lack of community knowledge on mental health treatment that leads to seeking help to traditional healers has also been consistently reported in other developing countries (Burns and Tomita, 2015; Furnham and Hamid, 2014).

Furthermore, the patients and their family suffer significantly from stigma. A patient with a mental disorder can be heavily discriminated against, ignored and barely trusted by the community because of his or her possible aggressive or inexplicable behaviors. The family might be frequently ridiculed or mocked by the neighbors, leading to the feeling of embarrassment because of having a family member with a mental disorder (Marthoenis et al., 2016a). This is a precise example of public stigma (Rüsch et al., 2005) that leads to self-stigma. When the family experiences such treatment, chaining or locking the patients usually ends it.

Also, the current study confirms that the perceived aggressive, violent and destructive behavior as the most common reason for restraining the patient. The

family usually mentioned their fright in the presence of these behaviors as the reason. Consequently, they rejected the idea from health care providers of release of patients from restraint. Previous reports also mentioned the violent behavior as one of the reasons for initiating and maintaining the restraint (Guan et al., 2015; Minas and Diatri, 2008; Puteh et al., 2011).

Another important finding from this study is that 35.7% of the patients who were in restraint during 2016 had never been released since the initiation of restraint. This generates further questions; has the *pasung* free program initiated in 2010 achieved its objectives? To answer with this question, further field research is suggested. However, based on the current condition, it might be concluded that the effort to unlock the patients from restraint in this province is only partially accomplished. Thus, considering the major challenges unveiled in this paper, more efforts should put in.

V. CONCLUSIONS

Efforts to release the patients with mental disorders from restraint should be a political agenda. The effort, therefore, should be comprehensive, involving interdisciplinary and inter-sectoral agencies starting from the planning, releasing, treatment, integrating the patients back to the community and evaluating the progress of the program. Raising the cases of restraint, as a human right issue should attract more attention from the human rights defender and the global community. This will generate more supports for patient release.

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THE EFFECTIVENESS OF PSYCHOEDUCATION ON KNOWLEDGE, ANXIETY LEVEL AND COPING MECHANISM OF MOTHERS TOWARDS IMMUNIZATION OF THEIR CHILDREN

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Abstract: Immunization is a way to increase one's immunity against an infectious and contagious disease. However, many parents still considered immunization was unsafe with many side effects, resulting to decision not to vaccinate their children. Immunization also raises anxiety and affects the coping mechanism of the family. This study aimed to identify the effect of psycho-education treatment on knowledge, levels of anxiety, and coping mechanisms of mothers towards immunization of their children. To answer th research problem, a series of experimental studies have been successfully carried out with a quasi-experimental pretest and post test design. The psychoeducation program was given for 8 sessions in 6 weeks for the experimental group as a comparison with the control group without giving any treatment. The total sample of this study population were 94 mothers who have children aged 1 month - 3 years old with incomplete immunizations and maternal age limits between 22-48 years old. Data collection showed that there was a significant influence between before (p=0.001) and after the implementation of psychoeducation (p=0.001) on knowledge (p=0.995), anxiety level (p=0.678), and family adaptive coping mechanisms (p=0.305) in accepting immunizations. The results of this study indicated that the effect of psychoeducation on increasing knowledge, decreasing anxiety, and adaptive coping mechanisms of the family in giving immunizations to their children. This study supported other studies conducted in other countries. Therefore, the psychoeducation program needs to be applied in order to increase family's knowledge, overcoming anxiety issues, and to support adaptive coping mechanism in providing immunizations children.

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Keywords: Anxiety level, Coping mechanism, Mother's knowledge, Immunization, Psychoeducation program

I. INTRODUCTION

Immunization remains one of the most important public health's interventions to increase one's immunity against infectious diseases. Many of these diseases can be prevented by administering a vaccine in the early years of life (Hadinegoro, 2011). In Indonesia ideally, every child must complete their basic vaccination that consist of 1 dose of Bacillus Calmette–Guérin (BCG) for tuberculosis, 3 doses of diphtheria, pertussis, and tetanus (DPT), 4 doses of polio, 3 doses of hepatitis B, and 1 dose of measles (Marimbi, 2010).

Vaccination coverage in Indonesia currently at 60% and it remains far below the World Health Organization (WHO) and United Nations International Children Emergency Fund (UNICEF) recommendation that is 80% (Holipah, Maharani, and Kuroda, 2018). The same situation is present in Aceh Besar District, the vaccination coverage is at 60.3% and there are more than 1.000 cases of vaccine preventable diseases found in children (Aceh Besar Health District Office, 2016).

Aceh Besar Health District Office (2016) reported that many families decided not to vaccine their children because they questioning the ingredients of it, whether it contain substances that considered haram (prohibited to consume following the Islamic law) and they are also afraid of the side effects caused by immunization to their children. Another reason was because of unpleasant experience caused by the needle penetrating skin and muscle when vaccine administered by injection that cause anxiety to the children and also the parent. Another reason behind parent refusal of vaccines was parent lack of knowledge about the benefit of vaccination to their children (Hadinegoro, 2011). Those reason contribute to the decline of vaccination coverage in Aceh Besar District.

Studies have confirmed that mother's knowledge and practice is very important in their children immunization status. Vaccination awareness is significantly lower in mothers with low education and their level of anxiety was higher. Therefore, it is important for mothers to have sufficient knowledge related to immunization in order to lower their level of anxiety and to motivate them to participate in complete immunization to their children (Safari, Liswanti, & Dewiarti, 2015).

Another variable that might link to vaccination is coping mechanism. Coping mechanism refers to strategies people often use in the face of stressful events. Vaccination can be considered as stressful event and it cause anxiety to family that could lead to the decision of parent to vaccinate or not to vaccinate their children (Kusuma, 2012). Lower anxiety level and the presence of adaptive coping mechanism will increase family confidence to vaccinate their children. One of many efforts to achieve it is through family psycho-education therapy.

Psychoeducation refers to the process of providing better information and education through therapeutic communication to those seeking or receiving mental health services (Stuart & Laraia, 2013). Rohmi (2015) found significant differences in anxiety levels in the psychoeducation group before and after the intervention implemented. In addition, psycho-education was proven effective in stress reduction, lower the anxiety and caregiver burden, and able to improve family ability in dealing with psychosocial problems (Zikrillah, 2016).

In general Indonesia still have to face the challenges in increasing the immunization coverage and based on review of literature we found that there are several factors that can contribute to a decline in vaccination rates, those factors are education, anxiety level and coping mechanism. Therefore, this study main objective was to identify the effect of psycho-education on knowledge, anxiety levels, and adaptive coping mechanisms of mothers towards immunization of their children.

II. METHODS

A quasi-experimental design pre and post test with a control group was used to evaluate the impact of psychoeducation on mother's knowledge, anxiety level and coping mechanism towards immunization of their children.

Participants

The sample size in this study was determined by Cohen's Tables using two-tailed $\alpha = 0.05$, power $(1 - \beta) = 0.80$, and effect Size (d) = 0.60. Therefore, number of research samples were 97. The inclusion criteria were mothers who live within the working area of Darussalam Primary Health Care Centre, Aceh Besar District, and has children age 1 month to 3 years old with incomplete immunization. Forty-seven samples were assigned to each control and intervention group using matching method based on the age and level of education.

Settings

The study was conducted in Darussalam sub-district, Aceh Besar District. Data was collected from June 2018 to October 2018 after ethical clearance approved by the ethics committee of Universitas Syiah Kuala. All respondents agreed to participant in the study by signing an informed consent letter.

Intervention

A psychoeducation program was developed for respondent in the intervention group. The intervention was conducted for 8 sessions and each session last for 90 minutes. In each session the intervention was; session 1: problem identification, session 2: family knowledge, session 3: anxiety management, session 4: adaptive coping mechanism management, session 5: coordination services, session 6: problem solving and communication skill, session 7: social and emotional support, 8: to evaluate the

obstacle and family empowerment. The control group on the other hand only received information about immunization in general only for 1 time at the primary care health center.

The outcome variables were first measured prior to program implementation, second measurement was conducted after psychoeducation program implemented that is 7 weeks after the first measurement. The last measurement was conducted 5 weeks after the last measurement.

Outcome Variables

To measure the outcome there are three instruments used for each of the variables, namely Basic Immunization Knowledge Questionnaire (BIKQ), Zung Self Rating Anxiety Scale (ZSAS), and Maladaptive and Adaptive Coping Style (MAX) questionnaire.

Basic Immunization Knowledge Questionnaire

The BIKQ is a questionnaire used to measure mother's knowledge about immunization. This questionnaire has an alpha cronbach reliability coefficient with a value of $\alpha = 0.842$. The number of items is 20. If the respondent answered "Right" the score is 2 point. If the respondent answered "False", it scored 1 point. The highest score was 40 and the lowest score was 20. The BIKQ reliability score was at 0,87 (Triana, 2016).

Zung Self Rating Anxiety Scale

ZSAS is a standardized instrument that measures anxiety levels. It has a Cronbach alpha reliability coefficient with a value of $\alpha = 0.80$. This questionnaire consisted of 20 items. If the respondent answers "a little of the time" the score is 4 point, "some of the time" is 3 point, "good part of the time" is 2 point, and "most of the time" is 1 point. The highest score was 80 and the lowest was 20. The clinical interpretation of ZSAS in one's level of anxiety is: 20–40 (normal range), 45–59 (moderate), 60–74 (severe), and 75–80 (extreme) (Lani, 2010).

Maladaptive and Adaptive Coping Style (MAX) Questionnaire Mechanisms

The MAX questionnaire has 21 items statement consist of three domains: adaptive coping ($\alpha = 0.87$), maladaptive coping ($\alpha = 0.85$), and avoidance ($\alpha = 0.65$). Analysis of the three components explained 53% of all statements, consisting of adaptive coping (26%), maladaptive coping (18%), and avoidance (9%) of all statements. The reliability of MAX was at 0.95. (Moritz, Jahns, Schroder, Berger, and Lincoln, 2016).

Data Analysis

Data from the pre and post intervention in both groups were entered into a statistical software program, Statistical Package for the Social Sciences - Version 20 (SPSS Inc., Chicago, IL, USA). Each step of the preparation for analysis including; coding, data cleaning and data verification was completed and checked before continuing with

the data analysis procedure. Demographic and characteristics related to the sample were summarised using descriptive statistics and measures of central tendency and distribution. The Kolmogorov-Smirnov was used to see the distribution of the data. The test results showed that the data are not normally distributed, therefore Wilcoxon test was used instead at 95% confidence level with a p value ≤ 0.05. For the repeated measure of the follow up study the Friedman test was used.

III. RESULTS

There were no significant differences in the characteristic of the respondents in both groups, both groups were homogenous (p>.05; Table 1).

There were no significant differences in knowledge (p>.309), level of anxiety (p>0.033), and coping mechanism (p>0.416) of the mothers in both groups before the therapy implemented (pre-test). The post-test also showed the same results that there were no significant differences in both groups in term of their knowledge (p>.995), level of anxiety (p>.678), and coping mechanism (p>.305) before and after intervention with psychoeducation (Table 2).

However, the followup study gave different results that there were significant differences on the effect of psychoeducation in mothers knowledge (p>0.025), level of anxiety (p>0.001), and coping mechanism (p>0.001) (Table 3).

Table 37.1 Respondents Demographic Characteristics

Characteristics of Respondents	*Treatment Group*		*Control Group*		*p-value*
	Frequency	*%*	*Frequency*	*%*	
Age					
a. Early adult (22–35)	43	86.0	38	76.0	0.846
b. Middle adult (36–48)	7	14.0	12	24.0	
Education					
a. Did not receive formal education	3	06.0	2	04.0	
b. Middle education	30	60.0	28	56.0	0.635
c. Higher education	17	34.0	20	40.0	
Work					
a. Housewife	16	32.0	18	36.0	
b. Private employees	4	08.0	4	08.0	
c. Government employees	10	20.0	9	18.0	0.821
d. Enterpreneur	18	36.0	16	32.0	
e. Labor	2	04.0	3	06.0	
Income family					
a. Rp 500,000 - Rp 1,000,000	10	20.0	17	34.0	
b. Rp 1,000,000 - Rp 2,000,000	30	60.0	23	46.0	0.656
c. > Rp 2,000,000	10	20.0	10	20.0	

Family Support					
a. Yes (support)	27	52.0	25	50.0	0.511
b. Does not support	23	48.0	25	50.0	

Table 37.2 Differences in the Effects of Psychoeducation on Knowledge, Level of Anxiety and Coping Mechanism Before and After Intervention

Variable	*Ranks*	*Pre-Test*				*Post Test I*			
		N	*Mean Rank*	*Z*	*P-value*	*N*	*Mean Rank*	*Z*	*P-value*
Knowledge of immunization	Negative Ranks Positive Ranks Ties	19[a] 21[b] 10[c]	17.61 23.12	-1.017[b]	0.309	19[a] 22[b] 6[c]	22.68 19.55	-0.006[b]	0.995
Level of family anxiety	Negative Ranks Positive Ranks Ties	31[a] 16[b] 3[c]	24.69 22.66	-2.133[b]	0.033	25[a] 21[b] 1[c]	23.14 23.93	-0.415[b]	0.678
Coping mechanisms	Negative Ranks Positive Ranks Ties	18[a] 12[b] 20[c]	15.11 16.08	-0.813[b]	0.416	20[a] 23[b] 4[c]	19.40 24.26	-1.027[b]	0.305

Table 37.3 Differences in the Effects of Psychoeducation on Knowledge, Level of Anxiety and Coping Mechanism Before and After Intervention (the Follow Up Study)

Variable	*Treatment Group*				*Control Group*			
	Pre-test	*Post test I*	*Post test II*	*p-value*	*Pre-test*	*Post test I*	*Post test II*	*p-value*
Knowledge of immunization	1.72	2.28	2.00	0.025	1.51	2.02	2.47	0.001
Level of family anxiety	2.43	2.00	1.57	0.001	2.18	2.26	1.56	0.001
Coping mechanisms	2.66	1.74	1.60	0.001	2.57	1.71	1.71	0.001

III. DISCUSSION

Most of mothers in this study have had basic knowledge about immunization, however, most of them did not understand why immunization important and what are the benefits of getting their children immunization. Most of their knowledge about

immunization was negative and they never confirmed any of the information that they know to the community health care provider at the primary care health centre. According to Triana (2016), knowledge is an important factor that will determine whether a mother will vaccinate their children or not. Research by Kettunen (2017) also confirmed that every level of education can show one's learning ability thus effect their decision.

This fact is in accordance with the research by Gulseran (2010) which indicates that there is a relationship between the level of anxiety and the characteristics of family's occupation, where the family has different socioeconomic or occupational levels and this affects the family's income. Based on the opinion of researchers, whatever type of work the respondent has it usually will affect the family in giving immunizations. It is because indeed the side effects caused after immunization will reduce work time.

This result is consistent with the results of the study from Rahmawati (2014) who identified that the level of income of respondents tends to vary; for respondents who have babies or toddlers with complete immunization status, most of them have an income of ≥ Rp 1.000.000. Meanwhile, respondents who have babies with incomplete immunization status mostly have an income of <Rp 1.000.000, tend to come from families with low-income levels and most of them use the facilities provided by the government such as immunization program at posyandu. Accordingly, there are no costs incurred by parents to give immunizations to their children since governments programs for the community are basically free of charge.

Most families have not been able to provide support for the provision of complete basic immunization to infants/toddlers because of confidence, the existence of information about fake vaccines, and the emergence of side effects after giving immunizations, namely fever for a long time (Puskesmas Darussalam, 2018). According to research conducted by Ritonga (2014), it was indicated that there is a relationship between family support and the level of compliance of the mother in carrying out basic immunizations for her children.

The results showed that before the immunization family psycho-education intervention was carried out at the time of the pre-test for the two groups there were still some respondents who had little basic knowledge about immunization. Usually for families when the immunization schedule meets, there will be an increase in anxiety so that it affects the adaptive coping mechanism of the family in accepting immunizations.

According to a research by Kusuma (2012), the families who have mild anxiety level prove that there is a correlation between the anxiety level family's coping mechanism. This fact could be influenced by several factors such as positive outlook, problem-solving skills, age, and social support. Based on these data, the researchers are of the opinion that the knowledge of low immunization, high anxiety levels, and low coping mechanisms possessed by the two groups can be caused by the lack of trust and concern of respondents regarding the benefits of immunization against infants/ toddlers.

After the immunization family psycho-education intervention before post-test for 8 sessions, through psycho-education therapy respondents can know that the effects of fever felt by children after immunization are temporary, immunization vaccines given are not prohibited in religion, and for the emergence of fake vaccines have been overcome by the government. This is consistent with many researches showing that through

the provision of health education from psycho-education activities, there will be an increase in problem solving skills, stress management, and the existence of psychological support (Saftari, Liswanti, and Dewiarti, 2015). Through family motivation to learn, there will be an increase in knowledge so as to be able to understand feelings of discomfort and focus on health related to immunization (Widiastuti, 2014).

According to Supratiknya (2011), the changes in the intervention group after getting psycho-education compared to the control group, namely increased knowledge, reduced stress levels, understanding how to deal with problems, and more enthusiasm, thereby reducing mood disorders. If the family is supportive enough in learning, improving the knowledge, and understanding the changes especially regarding the change such as feeling a discomfort associated with giving immunizations which in this case could be illustrated in the adaptive response range.

Through a psychoeducation therapy treatment, a family could improve the cognitive abilities since therapy contains elements to increase family knowledge about illness or family understanding of a need in avoiding disease, teach techniques that can help families to know the initial handling of symptoms of an illness or behavior deviation as well as increase the support for family members. In the practice, many psychoeducation programs are given to patients with psychiatric disorders including family members and people with an interest in caring these patients (Supratiknya, 2011).

Based on the statistical analysis, it shows that there are significant differences of the influence of knowledge, anxiety level, and family's adaptive coping mechanism in eccaptance of immunization between the treatment and the control group after the psychoeducation process is performed to the family. This result is in accordance with the research by Rohmi (2015) that there was no significant difference in anxiety level before and after the counseling conducted in the control group and there was a significant difference in anxiety level before and after the psycho-education conducted in the experimental group.

The similar result is also mentioned by Zikrillah (2016). He proved that psycho-education is proven to have an effect on reducing stress, anxiety, burden, and capable of improving the ability of families to deal with and overcome psychosocial problems. Other studies also proved that psycho-education therapy can be applied in any health program particularly to every family that does not yet have confidence in aceptance of complete immunizations. Through activities during the implementation of psychoeducation, each family would have additional knowledge, can train in controlling feelings of anxiety, gain motivation, be able to communicate, and have an

adaptive coping mechanism for the immunization program conducted, as well as in the implementation of daily activities.

IV. CONCLUSION

The conclusions of this paper regarding to the influence of psycho-education effect on the knowledge, anxiety level, and family's adaptive coping mechanism are described as follows:

There were significant differences in knowledge, level of anxiety, and family coping mechanisms in administering immunizations between the treatment group and the control group before and after family immunization psycho-education treatment (pre-tet and post-test). For the treatment group there was an increase in basic knowledge of immunization, decreased anxiety levels, and increased family coping mechanisms. While the control group had knowledge about basic immunization orientation with the level of anxiety and family coping mechanisms increased.

There is a significant change in the proportion of scores for immunization knowledge, anxiety level, and family's adaptive coping mechanism under the treatment group between the post-test I and post-test II. However, there is no significant change in the proportion of scores for immunization knowledge, anxiety level, and family's adaptive coping mechanism under the control group between post-test I and post-test II, where the immunization knowledge remains the same and both anxiety level and family's coping mechanism is increasing.

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