Impacts of Rationing and Missed Nursing Care: Challenges and Solutions

RANCARE Action

Evridiki Papastavrou
Riitta Suhonen
Editors

Springer

Impacts of Rationing and Missed Nursing Care: Challenges and Solutions

Evridiki Papastavrou • Riitta Suhonen
Editors

Impacts of Rationing and Missed Nursing Care: Challenges and Solutions

RANCARE Action

Springer

Editors
Evridiki Papastavrou
Department of Nursing
Cyprus University of Technology
Limassol
Cyprus

Riitta Suhonen
Department of Nursing Science
University of Turku
Turku
Finland

ISBN 978-3-030-71072-9 ISBN 978-3-030-71073-6 (eBook)
https://doi.org/10.1007/978-3-030-71073-6

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

This book is an introduction to the theory and research of rationing and missed nursing care. It includes information, discussed from different perceptions (i.e., conceptual, ethical, methodological, managerial), useful for researchers, health care workers and health care consumers, students, managers, and policy makers.

Rationing of nursing care is both a sensitive and challenging aspect of care that cause a great deal of controversy and debate at different levels, for example, research, education, clinical practice, and politics. Although the issue is discussed for some years now as a problem of under-staffing limited to nursing, it was realized that this phenomenon is much more complicated, having multiple dimensions given the complexity of contemporary health care organizations. This was more obvious during the COVID-19 pandemic, a health crisis that has shaken the entire global economy challenging the ability of health care systems to deal with and brought the problem to the surface.

The motivation for writing this book was also the fact that no systematic work that tackled the phenomenon from multiple perspectives of missed nursing care has been published before. On the contrary, the fragmented work and gaps related to issues such as ethics, patient safety, the availability of resources, and research inconsistencies created confusion and misunderstandings. The organized theoretical, empirical, and practical work done during the almost 5 years of life of the RANCARE COST Action gave the idea as well as the opportunity to gather all the conceptual, spiritual, philosophical, ethical, educational, and methodological pursuits together in a single book that aspires to fill in some gaps of knowledge in the science of care. Through this Action, we have advanced the understanding of the topic, added reading, and other material for scholars, students, and nurses in clinical practice. Much literature is produced, scientific, philosophical, and empirical that triggered the interest in the phenomenon internationally as it is shown by the vast increase of scientific publications on the topic during this last 5 years, from people participating the Action and globally.

Hopefully, this book will raise the level of awareness among practicing nurses, policy makers, and the general public and initiate discussion that in turn may entail major changes in care in which the beneficiaries will be both the health care systems and their consumers as well as the health care professionals.

Since the RANCARE Action was programmed to end by the year 2020, the International Year of the Nurse and Midwife, this book is devoted to all nurses, and to the memory of those nurses who lost their lives when struggling to offer care to people to the best they could.

Limassol, Cyprus — Evridiki Papastavrou
Turku, Finland — Riitta Suhonen

Acknowledgments

This book would not have been possible without the contribution of chapter authors as well as the input of many people who worked together during the almost 5 years of life of the RANCARE Action, discussing and bringing new ideas and conceptual challenges in the exploration of rationing and missed care phenomenon. The book is designed around the objectives of the Action, that is discussion, exploration, and understanding of (a) the concepts, the organizational factors, and the research methodology; (b) the interventions and strategies that may give some solutions to the problem; (c) the ethical perspective of rationing and missed care; and (d) the educational aspect of care rationing as related to patient safety. The above objectives were achieved through the endless efforts and commitment of the Working Group (WG) leaders and vice leaders whom we deeply thank and appreciate both for their devotion to the Action as well as their contribution for writing this book. Especially the leader of WG1 Professor Walter Sermeus from the KU Leuven Institute for Healthcare Policy (Belgium), the leader of WG2 Professor Maria Schubert from ZHAW Zurich University of Applied Sciences School of Health Professions Institute of Nursing (Switzerland), the leader of WG3 Professor Riitta Suhonen from the University of Turku, Department of Nursing Science (Finland), and the leader of WG4 Professor Olga Riklikiene from the Lithuanian University of Health Sciences, Faculty of Nursing, Nursing and Care Department (Lithuania).

The work of the WGs was facilitated by the WG Vice leaders to whom we would also like to express our gratitude for writing chapters and contributing to knowledge, namely Professor Anat Drah-Zahavy (Israel) and Dr. Renata Zelenikova (Czech Republic) of WG1, Dr. Dietmar Ausserhofer (Switzerland) of WG2, Professor Anne Scott (UK) of WG3, and Dr. Marcia Kirwan (Ireland) of WG4. Many thanks are expressed to those who contributed to the achievement of the capacity building objectives, namely the Short-Term Scientific Missions coordinator Dr. Georgios Efstathiou (Cyprus) and the Science Communication Manager Dr. Mario Amorim Lopes (Portugal). In addition, we thank all horizontal groups who organized conferences and supported training schools, headed by Dr. Raul Cordeiro (Portugal) and Dr. Izabella Uchmanowicz (Poland). The Vice Chair of the Action, Professor Chrysoula Lemonidou, Chair of the Department of Nursing of the National and Kapodistrian University of Athens, is also acknowledged for her support and encouragement throughout the duration of the Action.

Special thanks are ought to Professors Anne Scott, Riitta Suhonen, Marcia Kirwan, and Maria Schubert who took the lead in the publication of special issues in two prestigious international scientific journals, the Journal of Nursing Management and Nursing Philosophy, increasing the visibility and scientific impact of our work.

We also wish to thank those who, although they were not directly involved in the writing this book, through their support facilitated this endeavor. That is the funding organization, COST—European Cooperation in Science and Technology, for giving us this opportunity to share ideas and knowledge and create collaborations and synergies to go further and deeper into this intellectual and fascinating journey. COST is a funding agency for research and innovation networks. COST Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation (www.cost.eu). The Grant Holder Manager, Dr. Elena Rousou, and our associates Dr. Areti Efthymiou, Dr. Panayiota Andreou, and George Mitseas of the Cyprus University of Technology are also acknowledged for their support. Finally, we would like to acknowledge the contribution of the COST Science Officer Dr. Karina Marcus and the administrative officer Ms. Katchamon Nimprang for their help and their patience during these years.

Contents

Introduction

1

Evridiki Papastavrou and Riitta Suhonen

1.1 Introduction

The interest in the problem of care rationing and missed care came out after many years of scientific inquiry and studying the general area of "care" and its multiple dimensions, the elements, magnitudes as well as the challenges embedded in this elusive concept. Many professions claim that "care" lies within their own scope of practice although health-care professionals have historically supported having the exclusiveness of the term, the concept, and the notion. In his classic article for the history of the notion of care published in 1995, Warren Thomas Reich [1] describes the meaning of care in a variety of settings such as mythological, religious, philosophical, psychological, theological, moral, and practical and how the notion of care has developed throughout history, influencing moral orientation and behaviors. Although the author focuses on the ethics of care, he recognizes that there are constraints and restrictions in the delivery of care and interestingly in his conclusive statements he points out the "limits of caring of others" introducing to the idea of care rationing. The term rationing is used to demonstrate the allocation of scarce resources between competing health-care demands at a macrolevel, that is, both an economical challenge and a political problem (see Chap. 2). It is therefore argued that care rationing entails withholding potentially beneficial treatments from some

E. Papastavrou (✉)
Department of Nursing, Cyprus University of Technology, Limassol, Cyprus
e-mail: e.papastavrou@cut.ac.cy

R. Suhonen
Department of Nursing Science, University of Turku, Turku, Finland

Turku University Hospital and City of Turku, Welfare Division, Turku, Finland
e-mail: riisuh@utu.fi

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_1

individuals, but it is unavoidable because need is limitless, and resources are not [2]. Given these restrictions, at a microlevel, health-care professional usually focus on assessed needs and prioritize according to the severity or the urgency of patient needs according to their own judgment and ethical principles of justice, autonomy, fidelity, beneficence, and non-maleficence. However, there are strong voices and arguments against the use of the term "care rationing" in nursing, therefore several terms and concepts are developed to describe the phenomenon, such as missed care, care left undone, compromised care, and so on, increasing the confusion and misunderstandings.

In a resource allocation in nursing care discussion paper, Scott et al. [3] are making an important distinction in the terms "allocation of resources" and "rationing of care" raising interesting conceptual and ethical considerations. The difference lies on the fact that at the organizational level, allocation of resources is applied mainly by policy makers and is based on explicit principles and policies, whereas rationing of care at the bedside is based on an individual level, and it depends on the discretion of the clinician to use his or her own judgment on how to set priorities, always for the benefit and the best interest of the patient. Although in the medical profession, there is some form of generally accepted explicit rationing criteria based mainly on outcomes, in the case of nursing decisions on how nurses allocate their time to care for patients, these are left mainly to the professionals, although there are countries in which these criteria refer to nursing as well [4]. It is also interesting to note that in the medical literature that has a long tradition in discussing health-care rationing, the concept of omission is not treated as synonymous, and omissions are terms used only in cases of liability and legal responsibility. The argument here is the assumption that rationing of care is synonymous to other terms such as missed care, care omissions, care left undone, and so on, and it is creating a lot of misconceptions and misunderstandings. Instead, rationing of care is the focal point at which nurses make critical decisions using their own judgment on how to prioritize care which will inevitably lead to care omissions or delays, especially in situations of severe shortages of staff. Therefore, if rationing of nursing care is accepted as a part of the decision-making process, it is argued that there is a strong ethical element involved including decisions on whom to care, what the appropriate nursing care is, how much time and effort should each patient receive, how urgent the need for care is and how urgency is defined as well as by whom [5]. This means that at the bedside, that is, the microeconomic level of care, nurses' decisions may be more influenced by their knowledge and competence, their assessment, and decision-making skills, as well as their personal feelings, values, and beliefs. This situation also causes a moral burden on nurses who are left to use their discretion unaided and not supported by guidelines or explicit principles on how to act in the cases of time scarcity and raises emotions of guilt and ethical challenges on nurses. Missed nursing care, care omissions, or care left undone are the outcomes of this process which in turn may contribute to developing negative outcomes to patients such as severe complications or in simple words the patient will not receive the full care needed to promote health and recovery.

In nursing, the scientific inquiry has started in the USA in 2001 with the work of Linda Aiken et al. [6] using the term "care left undone", the conceptual definition used by B. Kalisch [7] with the term "care omissions" and in Europe M. Schubert

[8] made use of "implicit rationing of care" following the Donabedian theoretical framework of resource—process—outcome concentrating mainly on the process. Since then, a plethora of terms have emerged mainly focusing on the outcome, but all trying to understand the multidimensional nature and explain the phenomenon within the patient safety context.

The idea of looking on this phenomenon from a more broad, global and systematic perspective began in 2016 with the submission of a proposal to the COST ASSOCIATION (European Cooperation in Science and Technology) [9], a funding organization for research and innovation networks in Europe. The decision to apply to this organization is that it provided the opportunity to scholars and practitioners around the world to jointly discuss, develop their own ideas and explore new initiatives across all fields in the science of nursing, through pan-European networking of nationally funded research activities. The main aim and objective of the Action was to facilitate discussion about rationing of nursing care and missed care based on a cross-national approach with implications for practice and professional development [10]. This could be achieved by advancing collaboration and networking by integrating different disciplines including nursing, ethics, moral philosophy, psychology, and other health-care studies.

The specific objectives of RANCARE [10] were twofold, the research coordination and the capacity building. Research coordination included aspects such as (a) developing the theoretical conceptualization and creating a common understanding of the phenomenon and the associated factors as well as the directions of research, (b) encouraging discussion on the ethical perspective, exploring the available interventions, and examining the implications on nursing education.

The capacity building objectives included the creation of a network to foster knowledge exchange and dissemination of good practices at a European and International level, the development of Early Career researchers and bringing together academics, clinicians, policy makers, and care consumers to develop innovative approaches to minimize the problem [11].

The whole idea, the aim, and objectives of the RANCARE Action [10] were materialized through the work of four working groups working on the following pillars:

1. The mapping and evaluation of the existing knowledge on nursing care rationing and missed care and the examination of the evidence regarding organizational and system factors related to the phenomenon, as well as the concept and methodological considerations and challenges in investigating and monitoring the phenomenon and related aspects.
2. The investigation of theoretically and empirically based interventions and strategies that reduce or minimize missed care and the negative consequences on both patients and nurses and the exchange ideas for other possible solutions including the use of technology.
3. The exploration and understanding of the ethical perspective of care rationing and missed care, and the analysis of the issue from a patients' rights perspective (including possible discriminations), the value principles underlying clinical judgment, and the impact on nurses and patients.

4. The educational aspect and training nurses on the importance of looking on missed care from the patient safety perspective, as well as the examination of nursing curricula and exchange of practices regarding patient safety as related to missed care.

The working groups (WG) had several tools for the achievement of their specific goals, such as meetings, training schools, short-term scientific missions, conferences, and international workshops. Among the major deliverables that the WGs were engaged to provide were the scientific papers in national and international journals. RANCARE members were extremely productive in this aspect as they succeeded to publish internationally more than 50 articles in scientific journals before the end of the Action and with no budget supporting research since the COST Association supports mainly networking activities, not research. Added to this are two special issues published by the scientific journals "Nursing Philosophy" and "Journal of Nursing Management", devoted to the work of the Action. It is also very interesting to note that after the beginning of RANCARE, a huge interest on the phenomenon of rationing and missed care was observed as it is evident from the related published literature in scientific journals. Even research projects that were performed prior to RANCARE and looked on the issue as secondary and less important, they started analyzing and publishing parts of their work related to missed care. This means that the awareness of the academic community was increased and expanded to a problem that was hidden and not recognized nor accepted for many years by the academics as well as health-care practitioners.

In designing the book, the idea was to collect some of the work done by the RANCARE Action and present the main ideas, the notions, the concepts, and the challenges as well as the consensus that has been achieved after long discussions within the groups.

The aim is to inform both the academic community as well as the clinicians working in any health-care facility, about the knowledge obtained and the developments achieved during the 5 year's work. At a policy level, the aim is to increase acknowledgment on the phenomenon of missed care as an important dimension of the patient safety framework and provide the tools for assessing and recording missed care and hopefully reducing it to a standard that it is not harmful for patients.

The book consists of ten chapters, plus the conclusions, the preface, and the acknowledgments.

After Chap. 1 (that is, the introduction), Chap. 2 opens the discussion by examining the concept of missed care in the context of theoretical paradigms and reviewing the empirical evidence associated with the translation, interpretation, understanding, and popularity of the related terminology. The authors have attempted to draw a common conceptual picture that might be useful to the reader, given the challenges in translating missed care terminology across languages. They have also looked on the use of the term in other disciplines focusing on the health-care quality and placing the issue under the broader classification of errors as depicted in the patient safety literature. Chapter 2 continues with the prevalence of missed care in several health-care settings such as the acute care, the long care facilities for the

aged population, and in the community. Some useful theoretical perspectives are also explained within the microsystem, the macrosystem, and the integrated system, and it continues with the outcomes of missed care and the impact on the various health-care facilities both from a patients' and nurses' perspective.

In Chap. 3 the concept of nursing care rationing and missed care are discussed from the philosophical, the legal as well as the practical aspect. The authors refer to the concept of omission and how it is understood from the philosophical perspective raising interesting ethical and moral arguments. It continues with the legal point of view, making clear distinctions from the philosophical aspect explaining the liability in the case of actions and omissions, and giving examples from specific court cases. Similarly, the authors continue to explain the concepts of allocation of resources, rationing of nursing care, and missed nursing care from a different angle of laws and regulations. After describing the concept of rationing on the medical and nursing contexts, the authors discuss the notion and the possibility of harm associated with missed nursing tasks, and if missed nursing care can be counted as nursing error, concluding that nursing has always been striving for the best interest of patients by gathering evidence that will guide structural changes in the provision of health care.

Chapter 4 examines the research methodology used to date in the field of missed nursing care, the designs, the instruments, and the reporting guidelines developed inside the RANCARE network aiming in supporting the evaluation and comparison of studies in this area of research. Although the authors admit that most studies are in the level of finding associations, they observed some progress on the level of causation using an excellent description of the Hill's criteria for causation. Following, the existing instruments measuring missed care are described, including published studies that have validated the instruments as well as several critical issues regarding missed care instruments and their use both in research and in practice. The chapter continues with the work done by a steering group consisting by experienced researchers, members of the WG2 who developed the RANCARE guidelines. The group used the consensus approach consisting of a Delphi survey and an international workshop to identify, refine and agree on relevant items for the guidelines. The resulted "Strengthening tRansparent reporting of reseArch on uNfinished nursing CARE—the RANCARE guideline" is described in detail hoping to contribute to the better understanding of research methodology around the issue. The guidelines can also be used complementary with more general research guidelines that will facilitate meaningful comparisons across studies and improve the quality and replicability of research.

Chapter 5 analyzes the phenomenon from three different perspectives, that is, the organizational and societal level, the professional nursing staff, and the patient or care consumer's point of view, raising essential ethical and moral considerations and challenges, aiming to increase nurses' awareness of the ethical issues in missed care. Basic concepts such as equity, justice, autonomy, and liberty are explained in their relationship with the delivery of nursing care and the differences of care rationing at the different organizational levels as regards the ethical consideration are explained. The authors also discuss the need for clear guidelines in prioritization of

nursing care especially during periods of scarcity of resources (e.g., low staffing levels) together with the professional roles, responsibilities, and role conflicts. Most importantly, this chapter is the only one that looks missed care from the patient perspective and discusses the evidence about unmet care needs from studies and reports for violations of fundamental human rights, pointing out that the patients' perspective is largely neglected in the literature.

Chapter 6 reflects the ethical perspective and challenges in the research of missed care. The authors start with a brief introduction of research ethics and the ethical principles guiding research involving human subjects and health care providing a short historical overview. They continue with the most common ethical principles, for example, beneficence, non-maleficence, respect for autonomy, and justice, and they discuss those ethical principles at risk in the missed care research. The authors raise important issues and challenges, such as the risk of the participants to feel pressured, the moral obligations toward the participants and not viewing them as "means for an end," and the responsibility of the researchers to promote changes in nursing practice. Following they discuss the notion of justice supporting that research discovers that missed care often affects the most vulnerable, the elderly, the least outspoken, the ones with little family support, challenging in this way the researchers' responsibility when uncovering findings proves patients suffer from injustice. The chapter closes with research ethical responsibilities and implications and developing future research tacking on these aspects.

Chapter 7 explores interventions to reduce and limit rationing and missed nursing care, and the authors provide a synthesis of studies reporting on interventions to reduce or limit missed nursing care. They also try to outline in depth the current and future directions for promising interventions by taking a clinical-practical as well as research-methodological perspective. The authors divided the chapter into four major categories of interventions, describing and analyzing in depth the content and the evidence available for each intervention. The first category includes the state of the literature providing studies that investigated the effectiveness of certain approaches that can prevent missed care. These approaches include interventions focusing on the proper ward staffing and effective teamwork, care reminders, and interventions improving the quality of the nursing care process. Based on the Missed care model developed by Kalisch et al., the second category focuses specifically on teamwork and staffing as the two major issues in nursing related to missed care. The third category is concentrating on the technological solutions such as telehealth, telemonitoring, wearable devices for patient monitoring, unobtrusive sensing for patient monitoring, and the use of robots related to the promising possibility to reduce missed care due to scarce resources. The last category is about tackling methodological challenges underlining the lack of intervention studies with a strong experimental design and insufficient evidence regarding the sustainability of the effects of interventions, as the major gap in research. Each category in the Chap. 7 ends with a conclusion that summarizes the intervention and the discussion on the subject.

Chapter 8 gives a different perspective of the phenomenon, under the patient safety framework, and how it is included in nursing education. The authors start with a detailed historical and conceptual description of the evolution of the patient safety movement as an important discipline in health care, and they explain the role

of nurses in promoting and safeguarding patient safety. They continue by focusing on the status of patient safety in nursing education and reporting on the findings of a survey conducted by the RANCARE COST Action which examined patient safety teaching in nurse education across 27 countries. The chapter ends with suggestions for nursing education, based on recognized frameworks for teaching patient safety that have been developed in the USA or by the WHO that both offer a roadmap for patient safety education for nursing students as well as other healthcare workers.

In Chap. 9, the authors highlight the importance of nurse leaders in managing situations resulting from missed care, and they explain the process of building a good practice guide for nurse managers, regarding the promotion of patient safety through minimizing missed nursing care. It starts with some concepts of leadership, clinical governance, and accountability as well as caring for the nursing workforce. Managing the circumstances resulting from nursing care rationing is the focal point on which the authors based the good practice guide for managers, and they describe the objectives, the foundations of the guide, the process of development of the guide as well as the structure.

Chapter 10, that is, the last chapter of the book prior to the conclusions, is about the synergies formed during the RANCARE Action and the opportunities provided for networking and establishment of collaborations. Most of the work during the 4 years life was succeeded because of the collaborations between researchers, early career investigators, policy makers, academics, clinicians, and others, and the opportunities they had to study, to discuss, and to work on the several dimensions of the phenomenon under study. The chapter gives an overview of the work done through the Short-Term Scientific Missions, such as the examination of research methodologies and the conceptual basis of missed care, the managerial approaches and leadership interventions, education, the ethics of missed care as well as the collaborations on missed care developed through the STSM.

This book comes after almost 5 years' work and networking of 104 people coming from 34 counties from Europe as well as other parts of the World such as Neighboring countries (e.g., Lebanon), the USA, Canada, Australia, and New Zealand, underlining the significant work achieved by the RANCARE Action. Apart from multicultural, the RANCARE group is multidisciplinary, including professionals and academics from the health-care section, economics, philosophy, policy making, psychology, and others who all gave their own perspective in understanding the phenomenon under study.

In conclusion, this book is structured around the four main areas of the phenomenon explored through the RANCARE COST Action, and the basic assumption is that understanding rationing and missed care will facilitate to promote patient safety and quality of care. Although this is an international problem, there are still important differences between the EU and other participating countries, in terms of health-care systems, national legislations, experiences, tradition, and nursing educational systems. However, this COST Action gave the opportunity to understand and realize the commonalities and the unities within the group, to make synergies and collaborations working together to a common goal creating the basis for further research and development.

References

1. Reich WT. Classic article "history of the notion of care". In: Encyclopedia of bioethics. 2nd ed. New York: Simon & Schuster Macmillan; 1995. p. 319–31. https://theology.georgetown.edu/research/historyofcare/classicarticle/.
2. Scheunemann LP, White DB. The ethics and reality of rationing in medicine. Chest. 2011;140(6):1625–32.
3. Scott PA, Harvey C, Felzmann H, Suhonen R, Habermann M, Halvorsen K, et al. Resource allocation and rationing in nursing care: a discussion paper. Nurs Ethics. 2019;26(5):1528–39.
4. Tønnessen S, Christiansen K, Hjaltadóttir I, Leino-Kilpi H, Scott PA, Suhonen R, et al. Visibility of nursing in policy documents related to health care priorities. J Nurs Manag. 2020;28(8):2081–90.
5. Igoumenidis M, Kiekkas P, Papastavrou E. The gap between macroeconomic and microeconomic health resources allocation decisions: the case of nurses. Nurs Philos. 2020;21(1):1–9. https://onlinelibrary.wiley.com/doi/abs/10.1111/nup.12283.
6. Aiken LH, Clarke SP, Sloane DM, Sochalski JA, Busse R, Clarke H, et al. Nurses' reports on hospital care in five countries. Health Aff. 2001;20(3):43–53.
7. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. J Adv Nurs. 2009;65(7):1509–17. http://doi.wiley.com/10.1111/j.1365-2648.2009.05027.x.
8. Schubert M, Glass TR, Clarke SP, Aiken LH, Schaffert-Witvliet B, Sloane DM, et al. Rationing of nursing care and its relationship to patient outcomes: the Swiss extension of the international hospital outcomes study. Int J Qual Health Care. 2008;20(4):227–37.
9. COST—European Cooperation in Science and Technology [Internet]. [cited 2021 Jan 6]. https://www.cost.eu/.
10. Papastavrou E and the RC. Rationing—missed care: an international and multidimentional problem [Internet]. (COST Action CA15208). RANCARE technical annex, overview summary. Brussel; 2016 [cited 2021 Jan 6]. https://www.rancare-action.eu/.
11. COST Action. Memorandum of understanding for the implementation of the cost action "rationing—missed nursing care: an international and multidimensional problem" (RANCARE) CA 15208 [Internet]. Brussel; [cited 2021 Jan 6]. http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf.

2 Understanding Missed Care: Definitions, Measures, Conceptualizations, Evidence, Prevalence, and Challenges

Terry Jones, Anat Drach-Zahavy, Walter Sermeus, Eileen Willis, and Renata Zelenikova

2.1 Introduction

There is substantial empirical evidence that patients worldwide do not always receive the full complement of nursing care needed to promote health, alleviate suffering, and prevent illness and injury. Moreover, it is an issue that arguably fits the category of wicked problems resistant to singular disciplinary solutions and in need of transdisciplinary problem-solving [1–3]. Multiple teams of international scientists collaborate to inform our understanding of this phenomenon to include its causal mechanisms, the effectiveness of interventions, and the associated outcomes. Not surprisingly, the combination of rapid growth and broad interest has created critical challenges for those engaged in advancing this young science. One fundamental critical challenge is this—what shall we call this phenomenon? After almost two decades of inquiry, the science still suffers from a lack of conceptual clarity as

T. Jones
Department of Adult Health and Nursing Systems, Virginia Commonwealth University, Richmond, VA, USA

A. Drach-Zahavy
Department of Nursing, Faculty of Health and Welfare Sciences, University of Haifa, Haifa, Israel

W. Sermeus (✉)
Leuven Institute of Healthcare Policy, KU Leuven University, Leuven, Belgium
e-mail: walter.sermeus@kuleuven.be

E. Willis
Division, College of Nursing and Health Sciences, Flinders University and School of Nursing, Midwifery and Social Sciences, Central Queensland University, Adelaide, Australia

R. Zelenikova
Department of Nursing and Midwifery, Faculty of Medicine, University of Ostrava, Ostrava, Czech Republic

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_2

key stakeholders have yet to reach consensus on conceptual terminologies and definitions. This lack of conceptual clarity impedes the kind of cross-disciplinary knowledge exchange needed to support transdisciplinary problem-solving.

The phenomenon was first introduced in 2001 under the label *tasks left undone* [4]. By 2007, additional terms for the phenomenon began to appear in the literature with regularity to include *missed nursing care* [5] and *implicitly rationed nursing care* [6]. The findings of an early state of the science review suggested that these terms were being used to reflect a common underlying phenomenon, and the term *unfinished nursing care* was introduced to serve as a unifying umbrella term [7]. The common phenomenon was defined as, "a problem of time scarcity that prompts nurses to engage in implicit rationing of care through the process of clinical prioritization that results in care left undone" [7] (p. 1134). However, the umbrella term and associated definition were not widely adopted. The debate about whether the original terms (care left undone, missed care, and implicitly rationed care) really reflect a common phenomenon continues as does the diversity of terms appearing in the literature. Clearly, the underlying concept is not fully developed, and more theoretical scholarship is needed to attain conceptual clarity and shared meaning. For the sake of brevity, we will use the term *missed care* when referring to the general phenomenon of patients not receiving necessary nursing care.

The concept of missed care is a difficult concept to grasp because, in fact, it does not exist as it is *missed*. It is like a missed phone call, a missed opportunity, a job you did not get. The missed experience mainly exists in the mind of the beholder. Missed care is studied mainly because of the impact on patient safety and quality. When care is missed, we surmise that patient safety might be compromised. Missed care often acts as a *canary test*. Canaries were once used in coal mining to alert miners when carbon monoxide and other toxic gases reached dangerous levels. When canaries stopped singing (i.e., when they died and were *missed*), it was an early warning of danger and a signal to leave the tunnels immediately. Missed care seems to be the most sensitive "canary test" for health-care organizations and systems. Therefore, scholars in this field are challenged to develop robust theories to help explain why patients do not get the nursing care they need, what outcomes result, and what solutions are effective and sustainable. In this chapter we will address the use of multiple terms related to this phenomenon and the difficulties in translation of these terms to different languages, contexts, and cultures. Through this process we will consider whether common terms have the same or rather different meanings and potential interpretations. Finally, we will consider the prevalence and impact of missed care across selected practice settings.

2.2 Methods

We will provide a comprehensive discussion of the current science around missed care to achieve the aims of this chapter. Our discussion is based on a critical review of the relevant theoretical and empirical literature. The emerging body of science

related to this phenomenon is relatively young but growing rapidly. Findings from a bibliometric review of the SCOPUS database revealed an increase in published papers about missed care from 1 in 2006 to 27 in 2017 [8]. In PubMed alone the number of publications rose to 38 in 2018, [9] and in 2020 an entire issue of the *Journal of Nursing Management* and the *Journal of Nursing Philosophy* were devoted to the topic. In 2020, we updated previous searches for the three original terms used in naming the concept (missed care, care left undone, and implicit rationing of care) to include the most recent theoretical and empirical scholarship. Since the first publications appeared in 2000, more than 50 subsequent publications were identified. Almost 90% of the articles were published in the last 5 years with a substantial contribution (more than one-third) by authors and researchers involved in the RANCARE COST Action. The origins of missed care research were traced to the USA; however, the study of missed care became highly international over time, and by 2020 significant contributions from researchers around the globe were recognized. The body of science now includes first authors from 22 different countries, mainly from the USA, Europe, and Australia, but also from Asia (South-Korea, Israel, Iran, Oman, India) and Africa (Kenya).

We identified several systematic reviews that highly informed this chapter and are recommended to the reader. In total 14 systematic reviews have been published since 2014. The first review of the theoretical literature was published in Italian by Sist et al. in 2012 [10]. The review was replicated in 2018 by Bassi et al. [11]. A theoretical review also was included in the state of science review by Jones et al. in 2015 [7] The first systematic review of quantitative studies ($n = 17$) was published in 2014 [12]. In 2017, a second literature review on the impact of missed on patient outcomes was performed by Recio-Saucedo et al., in 2018 [13] including 14 studies. The most recent systematic review was published in 2019 [14] and included 57 articles.

Most of the original research has focused on missed care in hospitals. However, the phenomenon is now studied in other practice settings such as primary, community, and long-term care/residential aged care. A first review on missed care in residential aged care facilities was performed by Ludlow et al., in 2019 [15] including 17 research studies and 27 informing studies. A narrative review on omissions of care in nursing home settings was published by Ogletree in 2020 [16]. A systematic review of the impact of missed care in primary care, community care, and nursing homes was published by Sworn et al., in 2020 [17], including 5 empirical studies and 15 metric papers. There are also more focused reviews on determinants of missed care. Griffiths et al. [18] published a systematic review of 18 studies on the relationship between nurse staffing and missed care. Zhao et al. [19] published a systematic review of 15 studies relating the work environment to missed care. Finally, there are focused reviews related to the patient perspective of missed care [20] and the ethics of missed care [21]. Our discussion in this chapter was informed by the science emanating from these reviews and the primary studies included therein as well as the science gleaned from previous searches.

2.3 Conceptual Development and Intersubjectivity

Concepts are the building blocks of scientific theory, and science simply does not exist apart from them [22, 23]. According to Strauss and Corbin [24], "communication among investigators, including the vital interplay of discussion and argument necessary to enhance the development of science, is made possible by the specification of concepts and their relationships" [24 , p. 102]. Thus, concepts are the mechanism through which scholars communicate about a science—i.e., they are the language of a science. The purpose of language, to include *scientific* language, is to enable a common understanding of exchanged information. Moreover, the maturity of a science is evaluated based on the maturity of its language and the capacity for *intersubjectivity* among scholars. Intersubjectivity reflects a shared agreement among relevant individuals about the meaning of the concepts and the nature of proposed relationships between them [25]. Thus, intersubjectivity is recognized as a hallmark criterion for a robust body of knowledge [25].

Intersubjectivity is achieved as concepts are developed and matured over time. Concept development as described by Rodgers [26] and Toulmin [27] is a dynamic and evolutionary process facilitated by inductive inquiry, rigorous analysis, and careful consideration of context (sociocultural and disciplinary). The process begins when a new phenomenon or problem of interest is encountered. Subsequently, language is introduced in attempt to capture the essence or meaning of the phenomenon to facilitate understanding and communication. This language is in the form of the terms (i.e., labels and names) and definitions for concepts. Proposed terms and definitions are constantly evaluated by the end users based on how useful they are in conveying meaning. Based on this evaluation, terms and definitions are adopted, refined, or discarded by end users.

The role of context in concept development cannot be overestimated as words are value-laden and meaning is always context-dependent. Proposed concept labels and definitions may not convey the same meaning for end users in different countries, disciplines, practice settings, and political environments. Therefore, issues of acceptability and translatability are embedded in the evaluation of usefulness. Understanding phenomena with broad range applicability across sociocultural contexts requires a corresponding language that is acceptable and translatable across those contexts. Widespread adoption of language with limited acceptability across sociocultural contexts is unlikely. This appears to be the case with missed care.

2.3.1 Conceptual Terms for an Emotionally Charged Phenomenon

The three original terms used as conceptual labels for the phenomenon emanated from two countries with different cultures and primary languages. However, all three terms first appeared in the scientific literature in the English language. The USA was the country of origin for two terms (tasks left undone and missed nursing care), and Switzerland was the country of origin for the third term (implicitly

rationed care). As interest in the phenomenon spread, additional English terms were subsequently introduced suggesting that the original terms lacked cross-cultural acceptability. A key factor that likely underscores the ongoing challenge of acceptability is the negative emotional connotation associated with the phenomenon itself. The image of patients not receiving adequate care is laden with emotion and increasingly politicized. Each new term introduced seems to be an attempt to find a more emotionally neutral label for the phenomenon.

This process of moving toward words "less burdened with emotional and historical baggage" was also described by bioethicist Peter Ubel when writing about health-care rationing [28 , p. 16]. Historically, Ubel and Goold broadly defined health-care rationing as "implicitly or explicitly allowing people to go without beneficial health care services" [29 , p. 213]. They distinguished explicit rationing as "conscious decisions taken at an administrative level that make a service unavailable to some people" [29]. In contrast, they described implicit or bedside rationing as the withholding of a medically beneficial service because of the associated cost to someone other than the patient and identified the essential criteria for implicit/bedside rationing as follows [30]. "The physician must (1) withhold, withdraw, or fail to recommend a service that, in the physician's best clinical judgment, is in the patient's best medical interests; (2) act primarily to promote the financial interests of someone other than the patient (including an organization, society at large, and the physician himself or herself); and (3) have control over the use of the medically beneficial service" [30 , p. 75]. Mechanic [31 , p. 1655] included "cost sharing, waiting lists, and requiring professionals to work within a constrained budget" as examples of implicit/bedside rationing.

After decades of pushing for robust debate over the roles of explicit and implicit rationing in health care, Ubel recently issued a public statement indicating that he no longer supports health-care rationing [28]. However, based on the totality of his recent writing, the more accurate statement is that he no longer supports use of the *term* health-care rationing. He argues that while newer terms like "*financial stewardship*" and "*comparative effectiveness research*" do indeed reflect forms of health-care rationing, they are less emotionally charged. Thus, he summarized and justified his new position as follows.

> All ethical scholarship is ultimately about persuasion, about changing the way people think about moral problems. But moral arguments will not succeed in changing people's thinking if we insist on using words that close people's minds. For that reason, I no longer support health care rationing. I think health professionals not only need to reduce health care waste but also need to act as financial stewards of societal resources that are, after all, always limited. To most people, such stewardship, such parsimony, does not equate to rationing. That's good enough for me. [28 , p. 19]

Common terms associated with this phenomenon and their definitions are presented in Table 2.1. These terms seem to be used interchangeably despite being associated with somewhat discordant definitions on the surface. Although missed care appears to be a universally recognized phenomenon [38], a universally acceptable term has not emerged. It is possible, and likely, that members of different

Table 2.1 Definitions of key terms

Term	Definition
Missed nursing care	Any aspect of required patient care that is omitted (either in part or in whole) or delayed. Missed care is an error of omission [[32], p. 1510]
Implicit rationing of nursing care	The withholding of or failure to carry out necessary nursing measures for patients due to a lack of resources (staffing, skill mix, time) [[6], p. 417]
Unfinished nursing care	A problem of time scarcity that precipitates the process of implicit rationing through clinical priority setting among nursing staff resulting in care left undone [7]
Care left undone	Necessary nursing activities that were missed due to a lack of time [[33], p. 128]
	Tasks that went undone because of a lack of time to undertake them [[34], p. 13]
Unmet nursing care needs	Nursing care activities considered necessary by RNs but left undone during their last shift because they lacked the time to complete them [[35], p. 2301]
Priority setting	The classifying of problems and concerns into those that require immediate actions and responses, and those that can be delayed until a later time, and the ranking of problems and concerns, utilizing notions of urgency and/or importance to establish a preferential order for nursing actions [[36], p. 430]
Failure to maintain	The inadequate delivery of essential nursing care to a complex older person in the hospital [[37], p. 158]

cultures might consider and respond to this emotionally charged phenomenon and its associated labels differently. [39, 40] In the next section we examine trends in the use of these terms in the literature and address issues of translation, interpretation, and preference.

2.3.2 Terminology Trends, Translation, Interpretation, and Preference

Since its inception, the concept of missed care has spread from the USA to Western Europe and more than 22 countries, with varying languages, cultures, political systems, and health-care reimbursement arrangements [7, 12, 41]. In recent systematic literature and scoping reviews, missed care was the most frequently used term to describe the phenomenon [10, 11, 13, 17, 42–45]. Some reviews used different terms to describe the phenomenon, e.g., rationing of nursing care [12, 19, 46], or omissions of nursing care [16, 18]. There are also reviews using three different terms, e.g., unfinished nursing care, missed care, and implicitly rationed care [7]. Other reviews used care left undone [13] or unmet nursing care needs [20] in the title when describing the phenomenon. However, missed care, one of the original terms, seems to be the most prevalent term used in scientific papers.

How the concept of missed nursing care is translated and understood cross-culturally is not well understood. Although there are multiple studies from several countries which have investigated missed nursing care, the problem of translating

terminology into different national languages so far has not been rigorously investigated. Lack of translated terms in national languages, inconsistencies in terminology, and the use of several terms to describe the same phenomenon pose challenges for researchers and end users of research in this area.

Practically, translation of terms into national languages is necessary for clear understanding of the phenomenon for the nursing and health-care professional community. For translators, providing a conceptually accurate translation involves translating the concept conveyed in the sentence, the incorporation of subject matter knowledge, and the integration of the local contextual knowledge into the translation process. When a translator performs a translation, they translate not only the literal meaning of the word but also how the word relates conceptually in context [47]. The context may be the sentence itself, or the place where the person speaks it. The problem of translating the terms related to missed nursing care is significant in many countries. In many instances, a word or phrase to describe a health concept does not exist in another language [48]. This is especially true in places where the concept or terminology is not as well known, developed, or used.

Given that English-speaking end users cannot agree on a universally acceptable term for this phenomenon, it is not surprising that end users with other languages of origin also struggle with acceptable terminology. Whether the original English terms are understood similarly across nations and cultures warrants attention by the research community. A recent international study by Zeleníková et al. [49] provides significant insights into the unique challenges of translating missed care terminology across European languages. The aim of the study was to examine the translation, interpretation, and preferences of missed care terms across selected European languages. Study aims were achieved through an online survey conducted from November 2017 to February 2018. The survey consisted of semi-structured questionnaires which were emailed to 56 participants in the RANCARE Cost Action representing 26 member countries. The mixed method questionnaires were written in English. Participants rated the list of terms for perceived usability in their country on a 6-point scale (0 = fully unacceptable; 5 = fully acceptable), provided a translation of the terms in their country's native language, and submitted written responses to open-ended questions. The open-ended questions related to how the general concept is understood by academics and clinicians, how specific terms are understood, perceived causes of missed care, and perceived relationships of missed care to quality and safety [50]. Initial responses were compiled in a table which was distributed to participants in 2020 to validate the accuracy of translations and identified term preferences. The translations were refined, and identified term preferences were updated as indicated (See Appendix).

Findings confirmed the difficulties in translation of terms across national languages. Participants commented that some languages did not have an exact match for the English language terms. Participants also commented that in some instances a matching term was identified in their language but identified cultural differences in interpretation of the matching terms. In other words, the terms meant different things in different languages. Meaning is context-dependent, often framed by the culture of the languages involved, and translation requires

compromise between respecting the original terms and the need to make it comprehensible in the translated language.

With regard to the terms, in many instances no real preferences emerged, and participants reported the continued use of all three. Other participants indicated that none of the terms were recognized in their country and provided alternatives. For example, participants indicated that in Italy a new term, *compromised nursing care*, emerged as the preferred term to describe missed care from a consensus development process [51]. According to Italian researchers, the term *compromised nursing care* better reflects the meaning of missed care in the Italian nursing context and facilitates understanding both within and outside the profession in Italy [51].

Willis et al. [50] concluded from these findings that the concept of missed care is recognizable among researchers across multiple nations and attribute this to the general process of globalization. Through the time-space distantiation associated with modern technologies, information is shared and consumed more rapidly which speeds the processes of homogeneity, synchronization, integration, and unity [52, 53]. Such is the case within the missed care scientific community which has leveraged technology to support international research collaboratives and diffusion of ideas related to missed care. Although the concept of missed care may be globally recognizable, findings also suggest that nursing and other health-care professionals from different cultures interpret the terms associated with missed care differently and have different terminology preferences [49].

Key nuances related to intentionality and consciousness are embedded in these interpretations and preferences [50]. The term *implicit rationing* was more often associated with a conscious and intentional thought process by the nurse wherein she/he is aware that all elements of care cannot be completed and is an active participant in deciding which elements are ultimately left undone. In contrast, the term *missed care* was more often associated with unconscious decision-making and unintentional acts. Nurses do not consciously deliberate about what elements of care to leave undone—they simply keep working until time runs out. Thus, any care left undone is unintentional and unplanned. Key nuances also were noted between priority setting/prioritization and implicit rationing; notably a distinction was consistently made between these terms. Priority setting/prioritization was not always interpreted as a conscious process, whereas implicit rationing was consistently characterized as a conscious and explicit decision-making process. The subtle distinction between the processes of prioritization and implicit rationing has received little attention in the nursing literature. Jones [54] suggested that the processes might be distinguished based on the primary goals. The primary goal of prioritization is to establish the appropriate sequence of care activities while the primary goal of implicit rationing is to determine which activities/services are completed and which are not based on availability of resources. Presumably, implicit rationing decisions involve consideration of treatment priorities. In this context both require judgment and conscious deliberation. Moreover, Jones [54] argues that when time is scarce, the decision to place an activity at the bottom of the priority list is de facto a decision to leave it undone.

These findings suggest that missed care triggers some degree of cognitive dissonance and fundamental attribution error within nursing. The dynamic tension between a desire to claim autonomous agency and victimization by system structures simultaneously is palpable. Participant qualitative comments point to a desire for nurses to be viewed as autonomous professionals who use judgment and prioritization skills to make important decisions related to patient care. In the setting of positive outcomes such as the absence of missed care, the attributed cause is effective priority setting by the nurse—i.e., because of nurse agency. Participant comments also point to a desire to avoid blame for missed care and to avoid perceptions that nurses are actively involved in making rationing decisions. In the setting of negative outcomes such as missed care, the attributed cause is organizational system structures—i.e., because of nurse victimization by the system.

This kind of dynamic tension between responsibility and blame in the context of health-care rationing also was described by Ham & Coulter [55 , p. 165]. They describe the politics of rationing as follows.

> One clear conclusion from experience so far is the sheer messiness of health care decision-making and the inherently political nature of priority setting. The allocation of scarce resources between competing demands is both an economic challenge and a political puzzle. Giving higher priority to one service means giving low priority to another when budgets are fixed, and the evidence indicates that this is likely to stimulate lobbying among those groups affected. One of the reasons political leaders have been reluctant to engage in explicit rationing at a macro level in the past is that in determining priorities they are also accepting responsibility for what may be unpopular choices…… In these circumstances, there is a tendency for policymakers to seek to avoid blame either by ducking tough choices or by devolving responsibility to others.

2.3.3 Drawing a Common Conceptual Picture

The theoretical work of concept analysis is described as a formal linguistic exercise that helps to determine the defining characteristics or attributes of a phenomenon [56]. It involves the application of words to paint a mental picture that helps us *see* the phenomenon. The result of such analysis is a tentative operational definition that establishes boundaries around the phenomenon and give it form. The form created by these boundaries help us distinguish one phenomenon from another—i.e., to see what a phenomenon is and what it is not. Success is achieved when the chosen words capture the essence of the concept. If a clear picture is the goal and words are the tools, it may be helpful to start with the picture and work backward to select the words that best capture the picture. This approach might be particularly useful given the documented challenges in translating missed care terminology across languages. The picture in Fig. 2.1 depicts patients and families with nursing care needs for which there are known beneficial nursing interventions. These interventions may be independent, dependent, and/or interdependent in nature. The bar in the picture denotes a barrier or blockage to the flow of beneficial nursing services to patients and families resulting in situations in which some patients do not receive the full

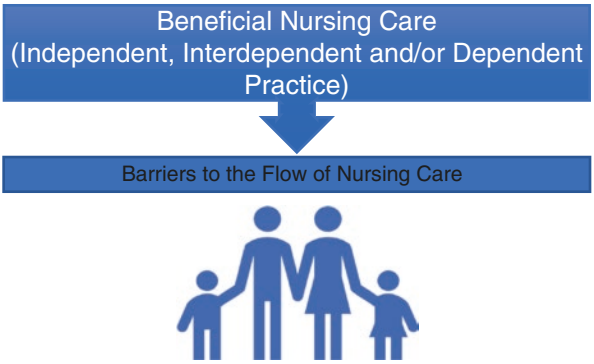

Fig. 2.1 Schematic representation of unfinished nursing care

complement of known beneficial nursing interventions. These situations are generally accepted as the essence of the concept—i.e., when patients do not receive all indicated elements of nursing care.

By focusing on the essence of the phenomenon, we can now ask different questions to facilitate concept clarification. Instead of asking end users "What does this term mean to you?" or "How do you translate this term?" we can ask "What term in your language best describes situations when patients do not receive all indicated elements of nursing care?" and "Does this situation of patients not receiving indicated care exist outside of nursing?" and "What do other disciplines call situations when patients or customers do not receive what is expected?"

2.3.4 Looking to Other Disciplines

The issue of patients not receiving all indicated elements of care is not unique to nursing. As previously described by Ubel, Goold [29, 30], and Mechanic [31], in the discipline of biomedical ethics, this was traditionally discussed using the terminology of *health-care rationing* and more recently using the term of *financial stewardship*. In the medical and health-care quality literature, the term *underuse* has long been used to denote instances where patients do not receive health-care services of known benefit [57, 58]. Underuse was initially defined as, "the failure to provide a health-care service when it would have produced a favorable outcome for a patient" [[58], p. 1002]. This definition has been refined and currently refers to, "the failure to deliver a health service that is highly likely to improve the quality or quantity of life, which is affordable, and that the patient would have wanted" [[59], p. 169]. Notably, the prevalence of underuse is consistently high across a wide array of patient populations in high, medium, and low-income countries [59]. Underuse is consistently the focus of quality metrics developed and supported by quality organizations and local providers [57, 60, 61]. The reasons for underuse are generally categorized as issues of inadequate access to any health care, lack of availability in a specific health system (e.g., system failures and human resource shortages), poor provider uptake of evidence-based practice (e.g., improper provider prescribing or

adoption), and patient preference/noncompliance [59, 62, 63]. The common term of *underuse* is used to encompass all instances when patients fail to receive care of known benefit regardless of the root cause.

The definition of underuse and the concept picture depicted in Fig. 2.1 are undeniably similar. Nursing care falls under the umbrella of health-care services; therefore, the concept known as missed care is arguably a discipline-specific type of underuse. Consequently, the reasons why patients may not receive the full complement of beneficial nursing services may be similar to the reasons for underuse of other types of health services (Fig. 2.2). Patients may be unable to access nursing services due to remoteness, immigration status, lack of insurance benefit coverage, and/or other socioeconomic barriers. Some patients may be offered nursing services but decline or be noncompliant with such services for a variety of reasons.

Underuse related to system failures and poor uptake of evidenced-based practice arguably fall under the broader category of error as depicted in the safety literature. Specifically, an error is defined as, "an act of commission (doing something wrong) or omission (failing to do the right thing) leading to an undesirable outcome or significant potential for such an outcome" [64]. Presumably, the right thing is to provide patients and families with the full complement of nursing services with known benefit; therefore, failure to provide beneficial elements of care constitutes an error of omission [65]. In the context of Reason's Accident Theory, also known as the Swiss Cheese Model, errors may occur at the sharp end of a production process (i.e., unsafe acts at the point of care by direct care providers) and/or at the blunt end of a production process (i.e., upstream latent errors by managers and administrators). Accidents occur when errors produce harm and are typically the result of multiple aligning errors. Root causes of accidents are most often attributed to latent errors

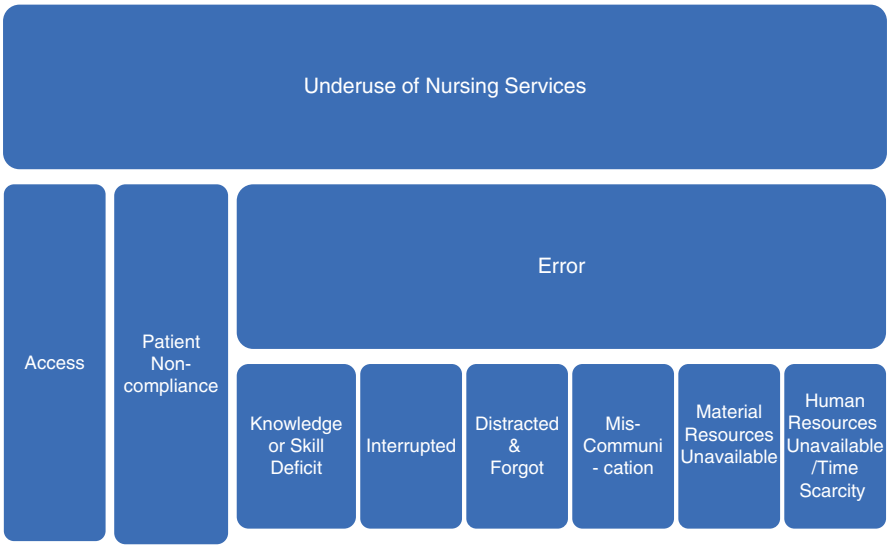

Fig. 2.2 Factors that contribute to the underuse of nursing services

rather than unsafe acts. Thus, while failure to deliver all elements of beneficial nursing care represents an unsafe act/error of omission by a direct care nurse, root causes may include multiple upstream latent errors by managerial/administrative staff. For example, an inadequate staffing plan based on imprecise estimates of nursing resources, insufficient education/orientation of staff to standards of care, failure to address a lack of teamwork on the unit, or insufficient access to necessary equipment. This framework illustrates the intersection of structure and agency [53]. Nurses face the need for implicit rationing because of faulty system structures but at the same time can exert agency to engage in implicit rationing and influence what elements of care are left undone.

2.3.5 Divergent Perspectives Revealed

The basic attribute of the phenomenon (i.e., when patients do not receive the full complement of beneficial nursing care) seems to be captured in most proposed definitions (Table 2.1). However, these definitions offer less clarity about attributes related to the barriers/blockages to the flow of nursing care. Published definitions associated with missed care and related terms do not typically include underuse from all causes (Table 2.1, Fig. 2.2). Barriers related to issues of inadequate access to any health care, poor provider uptake of evidence-based practice, and patient preference/noncompliance do not appear as part of the phenomenon of missed care as currently defined. Moreover, not all barriers related to lack of availability in a specific health system appear to be included. Specifically, barriers related to errors associated with knowledge deficits, distractions/forgetfulness, and interruptions are not addressed in conceptualizations of missed care. With one exception [32] the most common conceptual definitions refer to one specific error-related barrier (i.e., time scarcity/human resources). However, the published concept analysis associated with this exception does list three potential error-related barriers in the form of antecedents to the phenomenon: human resources, material resources, and team communications. Although this suggests that resource scarcity is an important attribute, we do not have consensus on which other root causes of underuse should be included in the concept of missed care. Thus, while some degree of intersubjectivity exists within the missed care scientific community, we still lack a common language and definition for this phenomenon.

2.4 Prevalence of Missed Care

The absence of a shared definition of missed care poses challenges related to generating prevalence estimates, comparing estimates over time to evaluate improvement, or comparing estimates across studies to examine explanatory relationships and determine effect sizes. In this section we will review variations in instrumentation and then discuss the range of reported missed care prevalence estimates across practice settings and sources of estimation.

Missed care is primarily measured using inventory-type surveys consisting of lists of nursing care activities. The inventory lists vary in size and content. The content of the inventories is typically tied to a practice setting such as acute, community, and/or long-term residential/aged care. Survey respondents rate the frequency with which each item on the inventory was previously missed. The recall period varies across instruments; some instruments offer no specified recall period, and others specify specific periods such as a week or a month. Frequency response options vary across survey instruments from a dichotomous response range (i.e., yes it was missed or no it was not missed) to various multiple response ranges (e.g., never missed, rarely missed, sometimes missed, often missed, and always missed). Some instruments request recall of missed care from any cause, while others request recall of missed care due to time/resource scarcity. Survey instruments also vary based on respondent type. Most surveys are based on self-report from the perspective of the focal nurse—i.e., the nurse responsible for delivering care during the time in question. In some instances, missed care is measured by self-report of patients receiving care during the time in question or by nurses assuming responsibility for care of patients previously under the care of the focal nurse.

Researchers typically report four main indices capturing the prevalence missed care from these inventory surveys: (1) *Any missed care*, representing the proportion of nurses who missed, delayed, or did not complete at least one nursing care activity listed on the inventory; (2) *Total missed care activities*, capturing the mean/median/range of activities left undone at least once; (3) *Composite mean frequency score for missed care*, representing the average frequency scores of missed care across listed activities (when a multiple response range is offered); and (4) S*pecific activity missed*, capturing the proportion of nurses which missed, delayed or did not complete a specific nursing activity.

2.4.1 Prevalence of Missed Care in Acute Care

The prevalence of missed care was first assessed in acute care inpatient settings. Thus, most instruments include an inventory of nursing care activities expected and common to this practice setting. Commonly used instruments include the following: the Basel Extent of Rationing of Nursing Care (BERNCA) survey [66]; the Perceived Implicit Rationing of Care (PIRNCA) survey [67]; the MISSCARE Survey [68]; and the Tasks Undone (TU) survey [69]. All these instruments have been translated into multiple languages and collectively represent the predominant source of prevalence estimates for missed care to date.

Prevalence estimates based on the *any missed care* index are typically high. Using the 20 -item BERNCA inventory which specifies a recall period of the last 7 days, Schubert et al. [66] reported that 98% of Swiss nurses surveyed left at least one activity on the inventory undone. Using the 31-item PIRNCA inventory which also specifies a 7-day recall period, Zeleníková et al. [49] examined the prevalence of missed care in four Eastern Europe countries and reported that 95.2–97.8% of nurses surveyed left at least one activity on the inventory undone. Prevalence

estimates based on the 13-item TU inventory, which often specifies a recall period of the last shift, are more diverse. For example, Zander et al. [70] reported a prevalence of 98% of nurses in Germany; Ball et al. [71] reported a prevalence of 86% of nurses in England; Ball et al. [72] reported a prevalence of 74% of nurses in Sweden; and Griffiths et al. (2018) reported a prevalence of 88% of nurses across 12 European countries. In non-western countries, prevalence estimates were similarly diverse: 81% of nurses surveyed in Korea [73], and 55% of nurses surveyed in Kuwait [74]. Users of the MISSCARE Survey inventory less frequently report prevalence estimates based on the *any missed care* index. Instead these users combine the response categories occasionally and always when dichotomizing. Based on this approach, Hessels et al. [75] reported that most nurses (77.9%) reported occasionally to always missing some aspect of nursing care.

Scholars that utilize the *any missed care* index may also report the *total missed care activities*, capturing the mean/median/range of the number of activities nurses left undone. Zeleníková et al. [49] reported that out of 31 care activities, on average, nurses left between one-third to more than half of the listed activities undone at least once. Mean values were as follows: Czech Republic = 9.66; Poland = 5.32; Slovakia = 11.01; and Croatia = 17.45. Similarly, Ball and colleagues [71] reported that on their last shift, nurses missed almost one-third of the 13 listed activities at least once (mean = 4); and Liu et al. [76] reported that a mean of 6 listed activities (of 12) were left undone due to inadequate time.

In summary, estimates relying on *any missed care* or the *total missed care activities* indices indicate that missed care prevalence is high and common, albeit moderately diverse across nations. A high proportion of nursing staff (48–98%) missed one or more activity, and the mean total missed activities ranged between one-ninth to half of the listed activities [7, 71]. Reported estimates of any missed care increased as the size of the inventory increased and as the recall period increased from one to seven shifts, suggesting some degree of variation in the sensitivity and specificity across instruments [7].

A different picture of the prevalence of missed care emerges when estimates are based on *the composite mean frequency score*. This index was more often reported in studies employing the MISSCARE Survey or the PIRNCA questionnaires. Whereas using the *any missed care* index clearly suggests that most nurses leave an element of care undone at least once, *the composite mean frequency score* indicates that most elements of care are not missed by individual nurses at a high frequency. Rather, the average frequency of reported missed care across all activities within an inventory typically ranges from *rarely* to *sometimes*. For example, using the MISSCARE Survey questionnaire, Harvey and her colleagues [77] examined New Zealanders' nurses and found that the average incidence of missed care was overall low, ranging (on a 5-point Likert-type scale) between 1.92 on morning shifts and 2.05 on night shifts. Drach-Zahavy and Srulovici [78] found similar findings with Israeli nurses: during their last shift, nurses reported that on average they occasionally engaged in missed nursing care (1.89 on a 5-point Likert-type scale). Similarly, using the PIRNCA questionnaire, Zeleníková and her colleagues [49] found that

nurses reported that on average they missed care at a frequency of *less than rarely* to *rarely* (from 1.13 to 1.92 on a 4-point Likert-type scale). In addition, Hessels et al. [75], found that the average *unit* composite score was $M = 2.56$, indicating the unit aggregate of all care missed was occasionally. Apparently, the mean missed care scores were slightly increased when the response referent included all unit staff versus the individual respondent only [7, 12, 75]. It must be noted, however, that these incidence estimates can be misleading. Patients in the acute care setting receive care from multiple nurses. Thus, incidence at the patient level of analysis must be considered. Thus, even if an individual nurse rarely leaves a specific activity undone, the fact that most nurses leave at least one activity, and often multiple activities undone, still suggests a high prevalence of missed care among patients.

Scholars have also tried to understand whether patterns of missed care exist using prevalence estimates for individual care activities. Based on accumulated findings from studies and research reviews across nations, wards, and type of instruments it seems that patterns of missed care do exist. Specifically, prevalence estimates for specific activities related to patients' medical/physiological needs are low [7, 18]. For example, assessment of vital signs assessed as recommended was the least missed activity in multiple studies using the MISSCARE Survey instrument [18, 75, 78, 79]. Patient monitoring as prescribed by the physician was reported as least missed in studies using the BERNCA inventory [66]; and pain management and treatment procedures were the least missed activities in studies using the TU inventory [71]. Although missed relatively less frequently, omissions of care in these areas were nonetheless substantial [7, 18], with potential devastating immediate implications for patients [80].

The activities most frequently missed, varied by the type of instrument, yet highlight that central nursing elements such as providing support and counseling for patients and their relatives as well as fulfilling patients' basic care needs are often left undone. In studies using the MISSCARE Survey instrument, core nursing care activities such as ambulation three times per day or as prescribed, turning patient every 2 h or as instructed, feeding patients on time, and doing mouth care were the most frequently missed activities [18, 41, 75, 78, 79, 81]. In comparison, the most frequently missed aspects of care reported in studies using the BERNCA and TU instruments were related to providing emotional and psychological support. Schubert et al. [66] utilized the BERNCA and found that 41% of nurses in Switzerland reported that emotional support was sometimes or often missed due to inadequate staffing in the past 7 days [66]. Similarly, using the 13-item TU, comforting/talking to patients, conversation, and education/counseling patients and family were among the most frequently reported aspects of care left undone on the last shift [18, 71, 72, 82]. Notably, the elements of care least likely to be missed are task-oriented standardized activities (e.g., measuring vital signs, administering medications), while core professional nursing elements of care that require higher levels of cognitive function (e.g., evaluation of care) and/or higher levels of individualization (e.g., providing emotional support to patients and relatives, education/counseling patients and family) are more likely to be missed.

2.4.2 Prevalence of Missed Care Reported in Long Care Facilities for the Aged Population

Research on missed care outside of the acute sector is emerging. Specifically, research on missed care in nursing homes typically employs the same research instruments used in acute care settings and found similar prevalence ratios [15]. For example, using the BERNCA in a large study of 156 Swiss nursing homes, Zuniga et al. [83] found that nurses and care workers gave priority to ADLs over documentation, social and emotional care, and rehabilitation. Respondents reported giving priority to tasks they defined as medically orientated or directly related to patient safety. Similarly, Henderson, Willis, Xiao, & Blackman [84] employed the MISSCARE Survey questionnaire and found that the activities identified as being most frequently missed (on a 5-point Likert-type scale were 1 is never missed and 5 is always missed) were responding to bell calls; toileting residents within 5 min of a request and ambulating with residents. In comparison, the tasks that were most frequently completed were medically instructed and to be completed by nurses rather than carers, such as blood glucose monitoring and IV-line assessment and care. Nelson and Flynn [82] found that about 48.2% of nurse respondents reported that they had missed at least one necessary care activity during their last shift, yet the number of missed care activities ranged from 0 to 9 with a mean of 1.22. Finally, a recent research review conducted by Ludlow et al. [15] summarized the findings from 17 core studies and 27 informing studies ($n = 44$) of missed care in residential aged care facilities, and reached similar conclusions: the most commonly reported activities missed were assistance with toileting/changing pads, communication with residents and family, mouth care/oral hygiene, patient surveillance, and general mobility ($n = 7$).

In contrast to the typical survey method to assess missed care in acute settings, Simmons, Durkin, Rahman, Choi, Beuscher, & Schnelle [85] used an observational strategy to assess MNC but gained similar conclusions. The authors employed structural observations to investigate the prevalence among residents in long-term facilities in three key nursing tasks: ambulation, toileting, and dressing. Findings demonstrated that the proportion of care provided on these areas ranged from 50 to 54% across the three care activities.

2.4.3 Prevalence of Missed Care in the Community

In contrast to the high volume of studies estimating missed care in the acute inpatient setting, comparatively few studies have estimated missed care in the community setting, partially due to lack of validated tools for this setting. Senek et al. [86], employed a single-item measure, and assessed the ratio of British nurses that reported agreeing or strongly agreeing (on a 5-point scale ranging from 1 = strongly agree to 5 = strongly disagree) that due to the lack of time, they had to leave necessary care undone. Missed care was reported by about one-third of the community nurses (32%). Another approach for assessing the prevalence of missed care among

community nurses was undertaken by Phelan, McCarthy, and Adams [87] in Ireland. The authors developed and validated a 44-item questionnaire covering six main areas of care that characterize nursing practice in the community setting: Health Promotion, Care Management, Disadvantaged Groups, Older People, Administration, and provision of other community services. Using the *any care missed* index approach, the findings indicated that about 70% of the nurses surveyed missed activities at least once, due to lack of time. The structure of the questionnaire allowed specifying the areas of community nursing care that were more vulnerable. The most missed element of care was related to administrative activities such as updating client notes (79%). Care activities related to health promotion, care management, and community nursing with special populations such as homeless or the elderly were missed by 70–74% of the respondents. Less missed care, though still substantial, was observed in the care of children; child health promotion was missed by 62.9% of the nurses 3–4.5-year child health check by 52% of the nurses, and 51.6% reported that they have missed visits aimed at providing supports to families and children.

2.4.4 Prevalence of Missed Care Reported by Patients and Non-Focal Nurses

In contrast to the informative prevalence reports of missed care from the focal nurse perspective, fewer studies explore patient recall of missed care. Patient recall of missed care was evaluated using three different instruments: the MISSCARE Survey—Patient [65]; the MISSCARE Survey [68], and Hospital Consumer Assessment of Health Providers and Systems survey (HCAHPS: [88]—all comprising different sets of elements of nursing care, rated on different scales, thereby making comparison relatively challenging. The findings of these studies reveal that patients can recognize and report several aspects of missed care [43].

Using the MISSCARE Survey—Patient, patients reported (on a 5-point scale from never to always), experiencing highest prevalence of missed care in the area of basic care (Mean = 2.29–3.57; any missed care ratio 17–50%), followed by missed communication (Mean 1.69–2.02; any missed care ratio 17–50%, 8–27%), and timeliness (Mean 1.29–1.52; any missed care ratio 8.6–18.4%) [43, 65, 89, 90].

Utilizing the MISSCARE Survey, originally developed to assess nurses' report of missed care, revealed similar patterns. Patients reported that basic care elements such as mouthcare and serving hot meals were missed the most; followed by discharge planning (reported as missing by 73.7% of patients); emotional support for the patient or family (43.7% of patients), and patient education (36% of patients). The least missed care activities, reported by patients, were clinical/physical care such as assessments by other professionals (26.2% of patients), and evaluating the effectiveness of medications (16.7% of patients) [43, 91]. Finally, about one-third (38%) of the patients reported at least one nursing activity from the HCAHPS survey as missed during their hospital stay [88].

Finally, one study [79] assessed the missed care prevalence with two different informants: the focal and the incoming nurses (i.e., the nurse who entered the afternoon shift, and were responsible for the same patients as the focal nurse) using the 22-item MISSCARE survey. The findings indicated that on average, nurses occasionally missed care during their last shift, yet the assessment of the composite score of missed care by the focal nurse was significantly lower than that of the incoming nurse (Mean = 1.87, and 2.09 for the focal and the incoming nurse, respectively). Of the 22 nursing activity items, the following activities were the most frequently missed according to focal and incoming nurses (with only slight differences between them): mouth care, feeding the patient warm food, patient bathing/skin care, and setting up meals for patients who feed themselves. However, for most activities, the incoming nurse assessed the missed nursing care in the previous shift slightly higher than the focal nurse did.

2.4.5 Prevalence Complexities

Missed care scholars agree on the high prevalence of the phenomenon across nations, wards, and research instruments. Yet the exact meaning of these high prevalence rates is yet to be understood. Prevalence of missed care is fundamentally based on nurses' self-report retrospective estimations. As it is challenging to collect and access actual data on missed care, surveys might represent a good way to capture proxy data and determine nurses' perceptions about the quality of care they offer on a daily basis [92]. Yet, its accuracy is still unknown and prone to biases, particularly the social desirability and recall biases. For example, the prevalence of self-reported missed care in the category of infection control activities might be underestimated, driven by the increased institutional and regulatory emphasis on hand hygiene [67]. Self-report measures of missed care in this area has consistently shown low rates of missed care in regard with hand hygiene. Yet, when assessed by direct observations, noncompliance with hand hygiene has been consistently high [18, 67, 93]. In contrast, missed care in areas that have received less regulatory attention (e.g., emotional support and basic care) might be overestimated as nurses are more willing to admit those areas of missed care.

Second, and closely related to the previous point, the scant research on missed care from patients and incoming nurses stress the importance of embracing a multisource perspective of the phenomenon, where each perspective provides a complementary perspective of the phenomenon [7]. Despite the similar patterns of missed care prevalence reported by different stakeholders, they may assess the phenomenon differently. Patients' typically report similar patterns of missed care to those reported by nurses, yet their appraisal of the frequency of missed care is surprisingly more modest. Perhaps patients do not recognize care needs with the same scope as professionals, but rather possess their own expectations for what is good nursing care [43]. In addition, focal nurses' lower assessments of missed care prevalence may suggest that they may be motivated to conceal their missed nursing care. In comparison, missed care that occurred in the previous shift is significant

information for the incoming nurse as it serves as an important source for setting priorities [94]. For example, a patient that was not mobilized in the previous shift as prescribed must be mobilized in the current shift, to reduce the chance for severe clinical implications, such as pneumonia or pressure ulcers. Further studies that strive to appraise the prevalence of missed care from a multi-source perspective are needed to assess the similarities and differences among the different stakeholders' perspectives (e.g., staff members, patients, and their relatives) [43, 67]. Their point of view can augment/complete the nurses' perceptions. Prevalence indicators based on the patients' medical records or direct observations are also warranted [7, 92].

Third, research varies in reporting prevalence indices: Some studies report only *the any missed care* frequency, *the specific missed care activity* frequencies, or *the total missed care activities*; others prefer *the composite mean score* of missed care activities or across activities, while only scant research report them in tandem. This issue is even more substantial, given that the conclusions from these distinct indices are somewhat contradictive. Whereas frequencies of leaving at least one nursing task missed are high (45–98%), the average frequency of missed care across tasks is typically lower and ranges from less to rarely to sometimes omitting care [7, 18]. It seems that relying only on frequencies prevalence indices or only on average scores may provide partial picture of the phenomenon and obscure its true prevalence. Apparently, each index provides a slightly different picture of the phenomenon. Looking at the frequencies of *at least one missed nursing task* might provide an over-estimation of missed care as some nursing activities might be normatively less executed than others. In comparison, the mean is a central value representing the nurse typical care provision, but it is also critically dependent upon extreme values, thus vulnerable to over or under estimations of the phenomenon. For example, because nurses typically engage less with emotional support or patient education, those items might depict an overestimation of the phenomenon using *any missed care index*, and underestimation, using the *composite mean score* of missed care activities. Thus, further studies striving to provide a fuller picture of the prevalence of missed care should provide information of the four prevalence indices.

Fourth, missed care prevalence could be underestimated or overestimated due to poor agreement or ambiguous professional/ward norms regarding the standard of care that should be provided. To better understand the meaning of the prevalence indicators, it is necessary to develop a reference point for the level of nursing care to be provided for a specific group of patients, based on the ideal concept of what nursing care should be, or on evidence-based data of what works [92].

Fifth, the prevalence findings of specific care elements highlight that missed care seems to occur in systematic and predictable ways rather than randomly. While the prevalence indices of specific missed care activities only reveal the relative frequencies with which rationing decisions are made, the consistent pattern of their occurrences across contexts, nurses, and research instruments, in combination with recent findings from qualitative studies, supports interpretations regarding rationing preferences. Nurses are perhaps more likely to miss care elements that: (a) are unlikely to have direct or immediate consequences for patients' health conditions, (b) are time consuming and cannot be shortened, (c) the time requirement to complete them

is unknown and/or difficult to estimate, and (d) are less monitored in the ward [37, 66, 67, 80, 95]. These interpretations are in line with cognitive theories of safety [96, 97], suggesting that given the overloaded and resource-constrained environment characterizing nursing workplace, nurses apparently develop implicit theories, heuristics, and rules of thumb for when and how to miss some care elements. Specifically, the findings suggest that nurses, as all human being, are subject to the melioration effect, indicating that people tend to choose actions for which they will immediately be rewarded over actions for which the rewards are postponed [96]. Yet, as with any heuristic, bedside nurses might be making poor rationing decisions, which while not immediate, may have devastating significant consequences for the patient and the health-care system [67].

All in all, no gold standard for measuring the prevalence of missed care has been identified yet, given that reports have indicated that the instruments available have weaknesses and strengths [92]. Interpreting the prevalence data of missed care should be done in context, considering the work environment (acute versus community care), the informant (nurse, other staff members, the patient), the specific research instrument, and the specific indicator of missed care. Prevalence estimates on missed care, including the *any missed care*, *total missed care activities*, and the *composite mean score of missed care*, although in themselves do not necessarily harm the patients, may create conditions that make such consequences more likely to occur. Namely, higher prevalence on these indices may hint at a problem in the safety culture of the ward [75]. Perhaps, higher rates of *the specific activity missed* (in percentages) may be more closely related to specific patient harm. For example, missed ambulation may be more related to patients' falls while assessing pressure ulcers to the frequency of patients suffering from this situation.

2.5 Understanding Missed Care: Useful Theoretical Perspectives

This section outlines the various theoretical perspectives used to help explain how missed care happens within the health-care system and what possible effects might result. Developing explanatory theories of missed care is a difficult task, given the complexity of health-care systems and the likelihood of complex multicausal pathways. Not surprisingly, multiple theoretical perspectives are used to guide inquiry about missed care. We have organized the science into three theoretical camps based on system-level focus (Fig. 2.3): microsystem, macrosystem, and integrated system (microsystem/macrosystem). These divisions are arbitrary, and the walls are quite permeable; however, they are useful to highlight general themes.

2.5.1 Microsystem Perspectives on Missed Care

We define microsystem perspectives of missed care as those that address nurse characteristics, the nurse's orientation to care, and the immediate nurse work

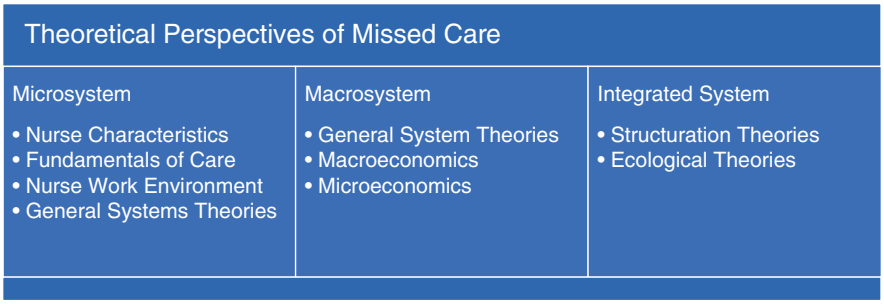

Fig. 2.3 Theoretical perspectives of missed care

environment. The science based on this perspective includes classic studies on the ward or hospital environment, but also studies that examine senior nurse leadership, as well as the individual nurse factors such as their age, training, education, or their orientation to care.

2.5.2 Nurse Characteristics

Studies that explore the impact of individual nurse characteristics, skills, or qualities on missed care are rare. As discussed, this is partly explained by a fear of blaming the nurse for what many see as a structural problem, rather than individual cases of neglect or personality. However, it is important to do this work, and a small number of researchers have taken up this task possibly motivated by early reports by Kalisch, and also by a realization that causation is multi-faceted [98, 99]. For example, Drach-Zahavy and colleagues found that personal accountability had a mediating impact on missed care; nurses with a highly developed trait of personal accountability reported less missed care, not only on their own shift, but in picking up work left undone from previous shifts [78, 79]. Drawing on this work, Labrague and associates examined the relationship between the nurse's caring behavior, adverse events, and missed care using four standardized tests: the caring behavior inventory (CBI-16), the Missed Nursing Care (MNC) scale, the Adverse Patient Events (APE) Scale, and a nurse-assessed quality of care scale [99]. They found the composite scores of the CBI consistent with international studies at around the mid-point level, with the rates of missed care and adverse events lower than international benchmarks. They also observed that where positive caring behaviors are present, missed care and adverse events are reduced.

Other studies have laid the responsibility for missed care at the feet of nurse managers [100], the model of nursing care employed [101], the capacity for teamwork [102], patient acuity or diagnosis [103], job satisfaction or intention to leave nursing [104], or the length of time in the position [87, 105]. Education is posited as a variable, but often not confirmed [106, 107]. Other studies have attempted to trace the interaction of these various variables and how they collectively produce missed care [108].

2.5.3 Fundamentals of Care

A small number of papers on missed care have used the Fundamentals of Care (FoC) theoretical framework [109]. This is not surprising, given the overlap between missed care tasks and the FoC [110]. What separates out the FoC research from missed care studies is its broader framework and the research methods, which tend to be ethnographic, case studies, or interview, rather than surveys [111, 112]. Fundamentals of care are the basic nursing tasks. We have placed Bail's theory *Failure to Maintain* within this category as it also draws parallels between the nurses' knowledge of fundamental care and patient outcomes [37]. While researchers in this field also identify structural issues such as human resource deficits, staffing, and funding shortfalls as explanations for failure to implement FoC, the focus of analysis is on the individual nurses' caring approach, their understanding of the importance of fundamental nursing tasks to overall patient health and well-being, and the capacity of the nurse to communicate and listen to the patient [112]. The slippage here between the individual and the organizational is well demonstrated in a paper by Jangland et al., which posits that resource deficits (structural) as well as the nurse's values (personal quality) contribute to missed care [111]. This approach is also consistent with Labrague and colleagues who suggest in their discussion of nurses caring behavior that it may be influenced by structural issues such as staff shortages and budget cuts [99].

2.5.4 Immediate Nurse Work Environment

A third set of studies that we have positioned within this category examine nurses' perception of the work environment and missed care. The Nursing Work Index Scale (PES-NWS) is often used as the measure. It asks nurses to comment on their participation in hospital affairs, their views on the quality of care, the competence of their nurse manager, support from hospital leadership and communication, and relationships between nurses and doctors as well as staffing levels [113]. Positioning these studies as theoretically microsystem based is admittedly problematic as a number of the measures are organizationally driven, such as participation in hospital affairs; however, others have an individual orientation, such as communication between doctors and nurses [114–117]. The ambiguity of this category of studies is evident in a recent study by Lake and colleagues. This study provides evidence of the impact of nurses' work environment and staffing levels on missed care, over a period of 10 years during which significant organizational (read structural) change occurred [117]. They note that over the last 6 years, there have been five systematic literature reviews that have identified the organizational determinants of missed care as the work environment and staffing levels [7, 12, 13, 68, 118]. These studies have established that the nursing environment has a mediating effect, along with staffing levels, on missed care. What is missing is evidence established over time that these factors cause missed care. Lake and her team examined longitudinal data in 2006 and 2016 from a large cohort of nurses and hospitals in the USA where staffing

levels (asking How many patients were assigned to the nurse on the last shift?), the nursing environment (Nurse Work Index (PES-NWI)) and missed care (RN4Cast survey) were examined. They found that over this period, that nurse–patient ratios decreased from 4.89 to 4.74 per shift, the nursing work environment score improved from 2.70 to 2.77, but the rate of missed care increased from 67 to 75%. However, when reporting on individual hospitals, they establish that where the nursing environment had improved there were lower rates of missed care. There was no relationship between staffing levels and missed care leading them to conclude that improved staffing levels is less a determinant of missed care and more a consequence of the working environment [117]. Many of the studies related to the nurse work environment were guided by systems theories as they capture both the personal characteristics as well as some of the organizational factors at the ward or hospital level and illustrate the interaction between the various components [119].

2.5.5 Macrosystem Perspectives of Missed Care

We define macrosystem perspectives as those that take a step back from the individual nurse, the ward or hospital and attempt to explain the problem of missed care more globally. As discussed, some of the work environment studies guided by general system theories might also fall into this category, given they take account of the total system. The other dominant macrosystem perspectives are related to economics and scarcity.

2.5.6 Economics and Time Scarcity

Several studies have dealt directly with economic perspectives of missed care, arguing that given health funding is finite, some elements of care may be rationed [119]. These studies have attacked the issue from two vantage points. The first approach simply states that health-care systems around the world have finite budgets, to operate outside budget limits lacks rationality; the solution is to maximize resources through efficient managerial strategies. Authors working in this space are aware that health care, and nursing in particular, are service industries and that providing a service differs from producing a product. The test is to use the nursing resource efficiently with an eye to maximizing nurse skills and expertise [119, 120]. For example, proponents of an economic approach ask nurse administrators to challenge the wisdom of underlying practices of floating nurses or casuals (who may be unfamiliar with patients and ward routines), assigning nurses to areas where they lack expertise, or calculating the marginal gains from employing less skilled occupational groups or not [121, 122]. The productive ward initiative is a further example of this approach [123].

A second group of researchers take a more practical, but indirect, approach to the economics of missed care [13, 65, 99, 124]. These studies assume that staffing levels, or nurse education, lead to care omissions which in turn leads to adverse events,

failure to maintain or patient mortality [107, 125, 126]. In effect, research on nurse workload, skill mix, shift work, burn-out, patient satisfaction, adverse events, re-admission rates, or patient mortality, often implicitly, assume missed care. The researchers assume the reader joins the dots between resource allocation, satisfactory outcomes, and the economic impact of a death, re-admission or a longer length of stay resulting from an adverse event [126].

The majority of studies on missed care identify lack of human resources, staffing levels, and skill mix as major causes of missed care [106, 127] with Jones identifying *time scarcity*, as the key underlying factor [7, 128]. Her argument is that there is a lack of time for the nurse to complete all the necessary tasks required in the allocated shift. Consequently, some tasks must be rationed, missed, or held over [66]. Schubert's rationed care theory makes a similar argument [66]. Jones argues that this time scarcity is characteristic of contemporary, industrial work arrangements and has its origins in early twentieth century Taylorism and Fordism [128]. Similar arguments are made by Willis [129–131] who argues the origins are in late twentieth century New Public Management or in events such as the Global Financial Crisis [132]; both authors are suggesting the reduction of the caring work to time metrics is a political and ideological activity. Nursing work is an economic activity where efficiency and productivity are measured in the time it takes to do the task; this is the case whether the health service is public or private-for-profit, driven by the high cost of health care. Arising out of this theoretical position are the numerous practical campaigns to establish adequate nurse–patient ratios, with solutions usually defined in terms of nursing hours per patient day or specific metrics linked to the time it takes to perform a nursing task [133–136].

2.5.7 Integrated System Perspectives of Missed Care

A small number of researchers have attempted to create approaches to missed care theory that bring together the micro and macro perspectives outlined above. Only two examples will be explored here: Gidden's structuration theory and Bronfenbrenner's socio-ecological systems approach [119, 136–138]. Jones et al. [119, 120] have published two papers arguing that there is a dearth of studies on micro approaches to missed care, specifically theories that explore nurse agency, or for that matter the agency of hospital managers, politicians, and other decision makers caught up in the rationing of health care. They propose that Gidden's structuration theory [53] provides a framework for exploring both individual agency and decision-making as well as the structural issues brought about by hospital policy instigated by the nation state. These are not two mutually exclusive components of the situation, but interactional problems [119, 136]. The studies conducted by Labrague, and colleagues and Jangland might be classified as taking this approach, whereby nurse agency is seen to interact with structural deficits although the authors do not explicitly draw on this theory [99, 111].

A more nuanced attempt to illustrate the interdependence between individual nurse characteristics, hospital environments, public policy, and global issues such as

the economy can be found in the case study of the Francis [139] and Portlaoize inquiries [140], detailed by Phelan and Kirwan [137]. Both inquires examined serious adverse events in the UK and Ireland with accusations of missed care leveled against nursing and midwifery. Using the text of these inquires, Phelan and Kirwan draw on Bronfenbrenner's socio-ecological theory, with adaptions, to trace problems at each level within the health-care system at the nation state level and within global systems that can be seen as a factor in the failure to care for the patient. For example, they note that issues of poor communication between nurses and patients at the micro level, failure of hospitals to provide adequate staffing resources at the meso level, poor hospital governance practices at the Exo level, failure of state-based policy makers to take account of their own inquiries into quality assurance at the macro level, and the very negative impact of economic austerity measures at the global level are all factors contributing to the adverse events explored in the two inquires. Importantly, the authors extend Bronfenbrenner's original approach to include the global and chrono levels. The inclusion of policy (macro) and economic (global) issues accord with the work of Jones [128] and Willis [132]; however, the conceptualization of a chrono level for consideration is a powerful insight into missed care, not readily seen in the research literature to date. The chrono system refers to changes that occur over time, within the health-care system, but also elsewhere nationally and globally. One example they provide will resonate with nurses worldwide. They refer to the shifts in nurse education over time. In many countries this has been characterized by a shift in education to the tertiary sector, seen as an advance from the apprenticeship system. However, universities themselves are now victims of macro and global austerity measures, enforced metrics, and increasing class sizes, and this is seen to impact on the quality of graduate education. Hence as they argue, no one level or event is the primary cause of missed care and possible subsequent adverse events, but the system in interaction can be seen to blame.

As we continue to explore terms and refine definitions for the concept of missed care, it is imperative that we engage in cross-disciplinary knowledge exchange. Assuming missed care is a special type of underuse and error of omission as we have argued, there is much to be gained by seeking and integrating related knowledge from other relevant disciplines. Examination of cross-disciplinary knowledge application widens the range of concept evaluation and expands the potential usefulness of concepts in achieving the purposes of science. We suggest that missed care is a complex socio-ecological problem juxtaposed between allocation of resources and the delivery of quality health-care services [136]. Missed care occurs in the broad context of health care which in turn exists within the broader context of social systems. Therefore, it is not likely that a discipline-specific theory will be sufficient to fully explain missed care and/or support development of sustainable solutions to missed care. Rather, we must draw from and contribute to the collective knowledge of social systems. In this section we presented evidence of how knowledge from other social sciences is currently being used to inform our understanding of missed care. While these efforts have been somewhat fruitful, gaps in understanding remain and the need for continued emphasis on transdisciplinary theoretical scholarship persists.

2.6 Outcomes of Missed Care

Missed care is best conceived as a mediating variable rather than a causal variable in relation to patient outcomes. We consider missed care a mediating variable because it lies in between a cause and an effect and is part of the explanatory mechanism. For example, we know that nurse staffing ratios have a strong effect on missed care. When nurses care for more patients, their workload increases, and they do not have the time to do everything they need or want to do. Consequently, elements of care may be missed. This leads among other things to less surveillance of postsurgical patients. When aspects of surveillance are missed, it might be that some complications like hemorrhage, wound infections, and deep vein thrombosis are detected much later and might be less reversible and lead to higher patient mortality. It is a complex chain of causes and effects in which many variables intervene. But missed care seems to be one of these early warning signs that the working environment of nurses may become toxic.

2.6.1 Impact of Missed Care on Patient Outcomes in Hospitals

The impact of missed care on patient outcomes has been predominantly evaluated in acute care hospital environments. A total of 20 studies from published systematic reviews evaluated the impact of missed care on patient outcomes [12, 13, 46]. All but one study used cross-sectional survey designs involving the main three instruments described in the chapter about MISSCARE Survey, BERNCA and Care left undone. Three types of patient outcome data were evaluated: nurse-reported patient outcomes, patient record data, and patient report data (mainly patient satisfaction data). Study sample size varied from less than 100 nurses in a one-hospital study to a large multi-country, multi-hospital study (RN4CAST) involving more than 30,000 nurses, more than 400,000 patients in 500 hospitals in 12 European countries [33, 141, 142].

Nurses-reported outcomes associated with missed care include increased medication errors [143, 144], increased nosocomial infections [143], patient falls [144], pressure ulcers [144, 145], and dialyses adverse events [146]. The only patient-reported outcome associated with missed care was decreased patient satisfaction [12, 144, 145]. Outcomes of missed care identified by analysis of patient records include patient falls [147], readmission after heart surgery [148]. An association between missed care and post-operative mortality [141] also has been described based on the patient record data ($N = 422{,}730$) in 300 hospitals in 9 European countries during the RN4CAST study.

2.6.2 Impact of Missed Care on Resident Outcomes in Nursing Home Settings

A first review on missed care in residential aged care facilities was performed [15] followed by a narrative review of omissions of care in nursing home settings by Ogletree in 2020 [16]. The studies represented in these 34 articles primarily focused on describing the nature of missed care (e.g., in personal care, mobility, person-centeredness, medical care, and general care) rather than the impact of missed care on resident outcomes. Only one study [82] assessed the association with resident outcomes. They found that missed care items such as inadequate patient surveillance and failure to administer medication on time were strongly associated with urinary tract infections.

2.6.3 Impact of Missed Care on Client Outcomes in Primary and Community Care

Our search identified only one study that specifically focused on missed care among community nurses [87]. Missed care was observed among public health nurses and community nurses in Ireland in the areas of health promotion, care management, disadvantaged groups, older people, family support, and home nursing care. For public health nurses, missed care impacted child health/child protection.

2.6.4 Impact of Missed Care from a Patients' Perspective

Increasingly more attention has been devoted to assessing missed care from the patient perspective. Bagnasco et al. [20] reviewed 44 publications addressing the patient perspective. Based on a thematic analysis, five themes of missed care emerged: communication, self-management, autonomy and education, personal sphere, essential physical care, emotional and psychological care. Most unmet needs identified by patients were related to the personal sphere and emotional and psychological aspects of nursing care.

2.6.5 Impact of Missed Care on Job Outcomes in Hospitals

In addition to patient outcomes, missed care also has been associated with nurse and organizational outcomes. Nurse and organizational outcomes associated with increased missed care include higher levels of intention to leave, higher turnover, and decreased job satisfaction [104, 149].

2.7 Summary and Conclusions

We have established missed care as a highly prevalent and highly relevant problem for health-care systems around the world. The significance and impact of this problem warrant considerable attention within the research and practice communities. Missed care is an emotionally charged problem that emerges from complex interactions between individual agents (e.g., nurses, patients, administrators, and politicians) and the myriad of social structures across multiple levels of the health-care system. Like other wicked problems, solutions will require a transdisciplinary approach to problem-solving. This requires significant cross-disciplinary and cross-cultural knowledge exchange. In the spirit of transdisciplinarity, missed care scholars must be intentional about the language used to describe the phenomenon and continue the journey toward intersubjectivity and shared meaning.

The search for a common language for missed care that is translatable and acceptable across the broad range of sociocultural contexts where nursing is practiced is akin to the Holy Grail [150]. Elusive though it may be, if ever found the payoff is immeasurable for the life of this emerging science. Thought leaders in the field recognize that the ongoing lack of consensus around concept terms and definitions is problematic and may impede scientific advancement. Thus, the search for shared meaning through the process of concept development must continue. We suggest that theoretical scholarship around missed care could benefit from the tenets of Rodgers' evolutionary view of concept development and a transdisciplinary approach to knowledge exchange [136].

Within the evolutionary view of concept development, concepts are characterized as dynamic, fuzzy, context-dependent, and possessing pragmatic utility [151]. This philosophical perspective opens the door for the acceptance of context-dependent terminology. The utility of terms within a specific context becomes more important than imposing a singular universal label for the phenomenon. For example, the term implicit rationing may never be accepted by end users in some nursing contexts. The terms of origin (missed care, implicitly rationed care, and care left undone) may ultimately have lower pragmatic value and acceptability than terms from other disciplines (e.g., underuse) or newer terms developed by context-specific consensus processes (e.g., compromised nursing care). Scholars must be willing to let go of terms with no pragmatic utility and embrace those that do. While a single term might be desirable within the nursing research community, it does not seem to be feasible at this point in the evolution of the concept. Thus, it may be more profitable to identify and accept a group of synonyms and move toward a shared definition among them.

Appendix. Translation and Preferences of Missed Care Terms

Country/ Language	Nursing care rationing	Missed nursing care	Care left undone	Preferred term
Australia (English)	Nursing care rationing	Missed nursing care	Care left undone	Missed nursing care; care left undone; nursing care rationing
Austria (German)	Rationierte Pflege	Veräumte/unterlassene Pflege	Nicht durchgeführte Pflege	[a]
Belgium (Dutch)	Rantsoenering van de zorg	Gemiste zorg	Niet uitgevoerde zorg	[a]
Belgium (French)	Rationnement des soins infirmiers	Soins infirmiers manqués	Soins non prodigués	[a]
Bulgaria (Bulgarian)	Разпределение на сестрински грижи	Липсващи сестрински грижи	Недовършени грижи	[a]
Canada (English)	Nursing care rationing	Missed nursing care	Care left undone	Nursing care rationing
Canada (French)	Rationnement des soins infirmiers	Soins infirmiers manqués	Soins non prodigués	Rationnement des soins infirmiers (Nursing care rationing)
Croatia (Croatian)	Reduciranje/racioniranje sestrinske njege	Nedostatna sestrinska njega	nezavršena sestrinska njega	Nedostatna sestrinska njega (rationed nursing care)
Cyprus (Greek)	Κατανομή νοσηλευτικής φροντίδας βάση προσδιορισμού προτεραιοτήτων / καταμερισμός της νοσηλευτικής φροντίδας	Παραλείψεις στη νοσηλευτική φροντίδα	Φροντίδα που δεν έχει πραγματοποιηθεί	Παραλείψεις στη φροντίδα (care omissions/missed care)
Czech Republic (Czech)	přidělování ošetřovatelské péče	chybějící ošetřovatelská péče	péče, která zůstala neprovedena	nedokončená péče (unfinished care)
Denmark (Danish)	Afmålt sygepleje/Gradvis pleje og omsorg	Manglende sygepleje/ Mangelfuld pleje og omsorg	Ikke udført sygepleje/ Pleje og omsorg ikke fuldført	Manglende sygepleje/ Mangelfuld pleje og omsorg (Missed nursing care)

(continued)

Country/ Language	Nursing care rationing	Missed nursing care	Care left undone	Preferred term
Finland (Finnish)	[b]	Toteutumatta jäävä hoitotyö	tekemättä jäänyt/jätetty hoitotyö	Toteutumatta jäävä hoitotyö (missed nursing care)
France (French)	Rationnement des soins infirmiers	Soins infirmiers inopportuns	Soins non prodigués	Priorisation des soins
Germany (German)	Rationierte Pflege	Veräumte / unterlassene Pflege	Nicht durchgeführte Pflege	Nicht qualitätsgerechte Pflege (nursing care not quality based); Pflege die nicht Qualitätsstandards einhält (nursing care not meeting quality standards)
Greece (Greek)	Κατανομή της φροντίδας	Παραλείψεις στην νοσηλευτική φροντίδα	Η φροντίδα που δεν έχει γίνει (δοθεί)	Παραλείψεις στη νοσηλευτική φροντίδα (nursing care rationing, missed nursing care) Νοσηλευτική φροντίδα που παραλείφθηκε (omitted nursing care)
Hungary (Hungarian)	megfelelő ápolás	hiányos ápolás	elvégzetlen ápolás	[a]
Iceland (Icelandic)	Forgangsröðun hjúkrunar/ Skömmtun hjúkrunar/Takmörkuð hjúkrun	Óframkvæmd hjúkrun	Óframkvæmd hjúkrun/ Hjúkrun sem er sleppt	Atvik vegna vanrækslu (Error of omission)
Ireland (English)	Nursing care rationing	Missed nursing care	Care left undone	Care left undone; missed nursing care
Israel (Hebrew)	ידועיס לופיטל מיבאשמ תאצקה	ספסופמ ידועיס לופיט	עצוב אלש לופיט	רסח ידועיס לופיט (missing nursing care)
Italy (Italian)	Razionamento dell'assistenza infermieristica	Cure infermieristiche mancate/ cure infermieristiche incomplete (unfinished nursing care), cure infermieristiche compromesse (compromised nursing care)	Cura infermieristica lasciata incompiuta/ incompleta	Cure infermieristiche incomplete (unfinished nursing care) o compromesse (compromised nursing care) [1]
Latvia (Latvian)	Profesionālās aprūpes normēšana	Nepilnīgi veikta aprūpe	Neveikta aprūpe	[a]

Lithuania (Lithuanian)	Slaugos normavimas	Neatlikti arba uždelsti standartiniai slaugos veiksmai	Neatlikti slaugos veiksmai	Neatlikti arba uždelsti standartiniai slaugos veiksmai (missed nursing care)
Malta (English)	Nursing care rationing	Missed nursing care	Care left undone	[a]
Netherlands (Dutch)	Rantsoenering van de zorg	Gemiste zorg	Niet uitgevoerde zorg	Gemiste zorg (missed nursing care)
North Macedonia (Macedonian)	рационализирање на медицинската нега	пропуштена медицинска нега	негата остана неизвршена	[a]
Norway (Norwegian)	Rasjonering av pleie og omsorg	Uteblitt omsorg	Omsorg som ikke er gjort	Rasjonering av tjenester or ikke forsvarlige tjenester (inadequate or insufficient services or not sound and diligent services)
Poland (Polish)	Racjonowanie opieki pielęgniarskiej	Brak opieki pielęgniarskiej, niedobór opieki	Opieka niewypełniona	Racjonowanie opieki pielęgniarskiej (nursing care rationing) Opieka pielęgniarska niedokończona (unfinished nursing care)
Portugal (Portuguese)	Racionamento de cuidados de enfermagem	Falta de cuidados de enfermagem	Cuidados de enfermagem que ficam por prestar	Falta de cuidados de enfermagem (missed nursing care)
Romania (Romanian)	Asistenta medicala bazata pe rationamente clare	Lipsa asistentei medicale	Ingrijiri medicale neacordate	Asistenta medicala bazata pe rationamente clare (rationing of care)
Slovakia (Slovak)	prideľovanie ošetrovateľskej starostlivosti	chýbajúca ošetrovateľská starostlivosť	starostlivosť, ktorá zostala nedokončená/ nevykonaná	nedokončená ošetrovateľská starostlivosť (unfinished nursing care)
Slovenia (Slovene)	Racionalizacija zdravstvene nege	Opuščanje aktivnosti zdravstvene nege	Neopravljena nega	[a]
Spain (Spanish)	Racionamiento de los cuidados enfermeros	Cuidado enfermero perdido	Cuidados no realizados	Cuidados perdidos (missed care); mission de cuidados (omitted care) [72]

(continued)

Country/ Language	Nursing care rationing	Missed nursing care	Care left undone	Preferred term
Switzerland (French)	Rationnement des soins infirmiers	Soins infirmiers manqués	Soins non prodigués	[a]
Switzerland (German)	Rationierte Pflege	Veräumte/unterlassene Pflege	Nicht durchgeführte Pflege	(Implizite) Rationierung von Pflege ((Implicit) rationing of nursing care); Prioritätensetzung in der Pflege (prioritizing nursing care)
Turkey (Turkish)	Hemşirelik bakımının gözardı edilmesi	Atlanmış hemşirelik bakımı	Yarım bırakılmış/ Bitirilmemiş hemşirelik bakımı	Gözardı edilen hemşirelik bakımı (rationed nursing care)
UK (English)	Nursing care rationing	Missed nursing care	Care left undone	Care left undone; missed nursing care
USA (English)	Nursing care rationing	Missed nursing care	Care left undone	Care left undone; Mmissed nursing care

[a]Not reported
[b]Not available

References

1. Godemann J. Knowledge integration: a key challenge for transdisciplinary cooperation. Environ Educ Res. 2008;14:625–41.
2. Jon F. Synoptic vision metatheory, conceptualisation, and critical realism. Can J Sociol. 2017;42:293.
3. Choi BCK, Pak AWP. Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. Clin Invest Med. 2006;29:351–64.
4. Aiken LH, Clarke SP, Sloane DM, Sochalski JA. An international perspective on hospital nurses' work environments: the case for reform. Policy Polit Nurs Pract. 2001;2:255–63.
5. Kalisch BJ. Missed nursing care: a qualitative study. J Nurs Care Qual. 2006;21:306–13.
6. Schubert M, Glass TR, Clarke SP, Schaffert-Witvliet B, de Geest S. Validation of the basel extent of rationing of nursing care instrument. Nurs Res. 2007;56:416–24.
7. Jones TL, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52:1121–37.
8. Petrovskaya O. Missed nursing care: a bibliometric study and some theoretical comments. In: International philosophy of nursing society conference, Galway, Ireland. 2018.
9. Smith JG. Missed nursing care is an urgent practice problem. Int J Nurs Pract. 2020;26:12815.
10. Sist L, Cortini C, Bandini A, Bandini S, Massa L, Zanin R, et al. [The concept of missed care: a literature review]. Assistenza infermieristica e ricerca: AIR. 2012;31:234–9.
11. Bassi E, Tartaglini D, Palese A. Missed nursing care terminologies, theoretical concepts and measurement instruments: a literature review. Assist Inferm Ric. 2018;37:12–24.
12. Papastavrou E, Andreou P, Efstathiou G. Rationing of nursing care and nurse-patient outcomes: a systematic review of quantitative studies. Int J Health Plann Manag. 2014;29:3–25.
13. Recio-Saucedo A, Dall'Ora C, Maruotti A, Ball J, Briggs J, Meredith P, et al. What impact does nursing care left undone have on patient outcomes? Review of the literature. J Clin Nurs. 2018;27:2248–59.
14. Mandal L, Seethalakshmi A, Rajendrababu A, Bagnasco A, Dasso N, Rossi S, et al. Unmet nursing care needs on medical and surgical wards: a scoping review of patients' perspectives. J Clin Nurs. 2020;21:1–15.
15. Ludlow K, Churruca K, Ellis LA, Mumford V, Braithwaite J. Understanding the priorities of residents, family members and care staff in residential aged care using Q methodology: a study protocol. BMJ Open. 2019;9:e027479.
16. Ogletree AM, Mangrum R, Harris Y, Gifford DR, Barry R, Bergofsky L, et al. Omissions of care in nursing home settings: a narrative review. J Am Med Director Assoc. 2020;21:604–614.e6.
17. Sworn K, Booth A. A systematic review of the impact of "missed care" in primary, community and nursing home settings. J Nurs Manag. 2020;28(8):1805–29.
18. Griffiths P, Ball J, Bloor K, Böhning D, Briggs J, Dall'Ora C, et al. Nurse staffing levels, missed vital signs and mortality in hospitals: retrospective longitudinal observational study. Health Services and Delivery Research 2018;6. https://doi.org/10.3310/hsdr06380.
19. Zhao Y, Ma D, Wan Z, Sun D, Li H, Sun J. Associations between work environment and implicit rationing of nursing care: a systematic review. J Nurs Manag. 2020;28:1841–50.
20. Bagnasco A, Dasso N, Rossi S, Galanti C, Varone G, Catania G, et al. Unmet nursing care needs on medical and surgical wards: a scoping review of patients' perspectives. J Clin Nurs. 2020;29:347–69.
21. Suhonen R, Stolt M, Habermann M, Hjaltadottir I, Vryonides S, Tonnessen S, et al. Ethical elements in priority setting in nursing care: a scoping review. Int J Nurs Stud. 2018;88:25.
22. Branch J, Rocchi F. Concept development: a primer. Philos Manag. 2015;14:111–33.
23. Chinn P, Kramer M. Theory and nursing: a systematic approach. 4th ed. St Louis: Mosby; 1995. https://www.amazon.com/Theory-Nursing-Systematic-Approach-1995-01-03/dp/B01F7Y33HU. Accessed 28 Dec 2020.

24. Strauss A, Corbin J. Basics of qualitative research: techniques and procedures for developing grounded theory. 2nd ed. Thousand Oaks, CA: Sage Publications; 1998. https://doi.org/10.1177/1350507600314007.
25. Reynolds P. A primer in theory construction. Indianapolis: ITT Bobbs-Merrill Educational Publishing, Inc.; 1971. https://openlibrary.org/books/OL5705041M/A_primer_in_theory_construction. Accessed 28 Dec 2020.
26. Rodgers B. Concept analysis: an evolutionary view. In: Roger B, Knafl K, editors. Concept development in nursing. Foundations, techniques, and applications. Philadelphia: W. B. Saunders; 2000. p. 77–102.
27. Toulmin S. Human understanding: the collective use and evolution of concepts. Princeton: Princeton University Press; 1972. https://www.amazon.com/Human-Understanding-Collective-Evolution-Concepts/dp/0691071853. Accessed 28 Dec 2020.
28. Ubel P. Why it's not time for health care rationing. Hastings Cent Rep. 2015;45:15–9.
29. Ubel PA, Goold SD. "Rationing" health care: not all definitions are created equal. Arch Intern Med. 1998;158:209–14.
30. Ubel PA, Goold S. Recognizing bedside rationing: clear cases and tough calls. Ann Intern Med. 1997;126:74–80.
31. Mechanic D. Dilemmas in rationing health care services: the case for implicit rationing. BMJ. 1995;310:1655–9.
32. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. J Adv Nurs. 2009;65:1509–17.
33. Ausserhofer D, Zander B, Busse R, Schubert M, de Geest S, Rafferty AM, et al. Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. BMJ Qual Saf. 2014;23:126–35.
34. Sochalski J. Quality of care, nurse staffing, and patient outcomes. Policy Polit Nurs Pract. 2001;2:9–18.
35. Lucero RJ, Lake ET, Aiken LH. Variations in nursing care quality across hospitals. J Adv Nurs. 2009;65:2299–310.
36. Hendry C, Walker A. Priority setting in clinical nursing practice: literature review. J Adv Nurs. 2004;47:427.
37. Bail K, Grealish L. 'Failure to maintain': a theoretical proposition for a new quality indicator of nurse care rationing for complex older people in hospital. Int J Nurs Stud. 2016;63:146–61.
38. Willis E. Rationed, missed, or nursing care left undone: a comment from the Antipodes. Central Eur J Nurs Midwifery. 2019;10:956–7.
39. Chun C-A, Moos RH, Cronkite RC. Handbook of multicultural perspectives on stress and coping. 2006 https://doi.org/10.1007/0-387-26238-5_2.
40. Lam AG, Zane NWS. Ethnic differences in coping with interpersonal stressors: a test of self-construals as cultural mediators. J Cross-Cult Psychol. 2004;35:446–59.
41. Palese A, Ambrosi E, Prosperi L, Guarnier A, Barelli P, Zambiasi P, et al. Missed nursing care and predicting factors in the Italian medical care setting. Intern Emerg Med. 2015;10:693–702.
42. Alsubhi H, Meskell P, Shea DO, Doody O. Missed nursing care and nurses' intention to leave: an integrative review. J Nurs Manag. 2020;28:1830–40.
43. Gustafsson N, Leino-Kilpi H, Prga I, Suhonen R, Stolt M. Missed care from the patient's perspective—a scoping review. Patient Prefer Adhere. 2020;ume 14:383–400.
44. McCauley L, Kirwan M, Riklikiene O, Hinno S. A scoping review: the role of the nurse manager as represented in the missed care literature. J Nurs Manag. 2020;28(8):1770–82. https://doi.org/10.1111/jonm.13011.
45. Ogboenyiya AA, Tubbs-Cooley HL, Miller E, Johnson K, Bakas T. Missed nursing care in pediatric and neonatal care dettings: an integrative review. MCN Am J Maternal Child Nursing. 2020;45:254–64.
46. Mandal L, Seethalakshmi A, Rajendrababu A. Rationing of nursing care, a deviation from holistic nursing: a systematic review. Nurs Philos. 2020;21:e12257. https://doi.org/10.1111/nup.12257.

47. Bennett A. James Paul Gee, social linguistics and literacies: ideology in discourses. Bristol, PA & Basingstoke, Hampshire, England: Falmer, 1990. pp. xxi+199. Lang Soc. 1993;22:572–6.
48. Frederickson K, Rivas Acuna V, Whetsell M, Tallier P. Cross-cultural analysis for conceptual understanding: English and Spanish perspectives. Nurs Sci Q. 2005;18:286–92.
49. Zeleníková R, Drach-Zahavy A, Gurková E, Papastavrou E, Papastavrou E, Lemonidou C, et al. Understanding the concept of missed nursing care from a cross-cultural perspective. J Adv Nurs. 2019;75:2995–3005.
50. Willis E, Zelenikova R, Bail K, Papastavrou E. The globalization of missed nursing care terminology. Int J Nurs Pract. 2020;27:e12859.
51. Palese A, Bassi E, Tommasini C, Vesca R, di Falco A, de Lucia P, et al. Developing policies and actions in response to missed nursing care: a consensus process. J Nurs Manag. 2019;27:1492–504.
52. Bornman E. Struggles of identity in the age of globalisation. Communication. 2003;29:24–47.
53. Giddens A. The constitution of society: outline of the theory of structuration. Cambridge: Polity Press; 1984. https://books.google.co.il/books?hl=iw&lr=&id=x2bf4g9Z6ZwC&oi=fnd&pg=PR9&dq=The+constitution+of+society:+Outline+of+the+theory+of+structuration&ots=jOTR2myyaA&sig=BBiqpqXYWdUjGHNv3atnxBAqmDE&redir_esc=y#v=onepage&q=Theconstitution of society%3A Outline. Accessed 29 Dec 2020.
54. Jones TL. What nurses do during time scarcity—and why. JONA. 2016;46:449–54.
55. Ham C, Coulter A. Explicit and implicit rationing: taking responsibility and avoiding blame for health care choices. J Health Serv Res Policy. 2001;6:163–9.
56. Walker LO, Avent KC. Strategies for theory construction in nursing. 3rd ed. Norwalk: Appelton & Lange; 1995. https://scholar-google-com.ezproxy.haifa.ac.il/scholar?q=Strategies+for+theory+construction+in+nursing&hl=iw&as_sdt=0%2C5&as_ylo=1995&as_yhi=1995. Accessed 29 Dec 2020.
57. Bodenheimer T. The American health care system—the movement for improved quality in health care. N Engl J Med. 1999;340:488–92.
58. Chassin MR, Gavin RW. The urgent need to improve health care quality. Institute of Medicine National Roundtable on Health Care Quality. JAMA. 1998;280:1000–6.
59. Glasziou P, Straus S, Brownlee S, Trevena L, Dans L, Guyatt G, et al. Evidence for underuse of effective medical services around the world. Lancet. 2017;390:169–77.
60. Ballard DJ. Indicators to improve clinical quality across an integrated health care system. Int J Qual Health Care. 2003;15:i13–23.
61. Levine DM, Linder JA, Landon BE. The quality of outpatient care delivered to adults in the United States, 2002 to 2013. JAMA Intern Med. 2017;176:1778–90.
62. Bickell NA, McEvoy MD. Physicians' reasons for failing to deliver effective breast cancer care: a framework for underuse. Med Care. 2003;41:442–5.
63. Bickell NA, Cohen A. Understanding reasons for underuse: an approach to improve quality and reduce disparities in breast cancer treatment. Mt Sinai J Med. 2008;75:23–30.
64. Agency for Healthcare Research and Quality (AHRQ). Patient safety primer. Adverse events, near misses, and errors. https://psnet.ahrq.gov/primer/adverse-events-near-misses-and-errors#. Accessed 29 Dec 2020.
65. Kalisch BJ, Xie B, Dabney BW. Patient-reported missed nursing care correlated with adverse events. Am J Med Qual. 2014;29:415–22.
66. Schubert M, Ausserhofer D, Desmedt M, Schwendimann R, Lesaffre E, Li B, et al. Levels and correlates of implicit rationing of nursing care in Swiss acute care hospitals—a cross sectional study. Int J Nurs Stud. 2013;50:230–9.
67. Jones TL. Validation of the perceived implicit rationing of nursing care (PIRNCA) instrument. Nurs Forum. 2014;49:77–87.
68. Kalisch BJ, Landstrom G, Williams RA. Missed nursing care: errors of omission. Nurs Outlook. 2009;57:3–9.
69. Aiken LH, Clarke SP, Sloane DM, Sochalski JA, Busse R, Clarke H, et al. Nurses' reports on hospital care in five countries. Health Aff. 2001;20:43–53.

70. Zander B, Dobler L, Bäumler M, Busse R. Nursing tasks left undone in German acute care hospitals-results from the international study RN4Cast. Gesundheitswesen. 2014;76:727–34.
71. Ball JE, Murrells T, Rafferty AM, Morrow E, Griffiths P. "Care left undone" during nursing shifts: associations with workload and perceived quality of care. BMJ Qual Saf. 2014;23:116–25.
72. Ball JE, Griffiths P, Rafferty AM, Lindqvist R, Murrells T, Tishelman C. A cross-sectional study of "care left undone" on nursing shifts in hospitals. J Adv Nurs. 2016;72:2086–97.
73. Cho E, Lee N-J, Kim E-Y, Kim S, Lee K, Park K-O, et al. Nurse staffing level and overtime associated with patient safety, quality of care, and care left undone in hospitals: a cross-sectional study. Int J Nurs Stud. 2016;60:263–71.
74. Al-Kandari F, Thomas D. Factors contributing to nursing task incompletion as perceived by nurses working in Kuwait general hospitals. J Clin Nurs. 2009;18:3430–40.
75. Hessels AJ, Wurmser T. Relationship among safety culture, nursing care, and standard precautions adherence. Am J Infect Control. 2020;48:340–1.
76. Liu X, Zheng J, Liu K, Baggs JG, Liu J, Wu Y, et al. Hospital nursing organizational factors, nursing care left undone, and nurse burnout as predictors of patient safety: a structural equation modeling analysis. Int J Nurs Stud. 2018;86:82–9.
77. Harvey C, Buckley C, Forrest RH, Searle J, Meyer A, Roberts J, Thompson S. Aberrant work environments—Rationed care as system failure or missed care as skills failure? In: Worldwide nursing conference (WNC). 2014. https://scholar-google-com.ezproxy.haifa.ac.il/scholar?hl=iw&as_sdt=0%2C5&q=Aberrant+work+environments-+Rationed+care+as+system+failure+or+missed+care+as+skills+failure%3F+&btnG=. Accessed 29 Dec 2020.
78. Drach-Zahavy A, Srulovici E. The personality profile of the accountable nurse and missed nursing care. J Adv Nurs. 2019;75:368–79.
79. Srulovici E, Drach-Zahavy A. Nurses' personal and ward accountability and missed nursing care: a cross-sectional study. Int J Nurs Stud. 2017;75:163–71.
80. Harvey C, Buckley C, Forrest R, Roberts J, Searle J, Meyers A et al. Aberrant work environments-rationed care as system failure or missed care as skills failure? In: Worldwide nursing conference (WNC). 2014. https://doi.org/10.5176/2315-4330_WNC14.78.
81. Saqer TJ, AbuAlRub RF. Missed nursing care and its relationship with confidence in delegation among hospital nurses. J Clin Nurs. 2018;27:2887–95.
82. Nelson ST, Flynn L. Relationship between missed care and urinary tract infections innursing homes. Geriatr Nurs. 2015;36:126–30.
83. Zúñiga F, Ausserhofer D, Hamers JPH, Engberg S, Simon M, Schwendimann R. Are staffing, work environment, work stressors, and rationing of care related to care workers' perception of quality of care? a cross-sectional study. J Am Med Dir Assoc. 2015;16:860–6.
84. Henderson J, Willis E, Xiao L, Blackman I. Missed care in residential aged care in Australia: an exploratory study. Collegian. 2017;24:411–6.
85. Simmons SF, Durkin DW, Rahman AN, Choi L, Beuscher L, Schnelle JF. Resident characteristics related to the lack of morning care provision in long-term care. Gerontologist. 2013;53:151–61.
86. Senek M, Robertson S, Ryan T, King R, Wood E, Tod A. The association between care left undone and temporary nursing staff ratios in acute settings: a cross- sectional survey of registered nurses. BMC Health Serv Res. 2020;20:1–8.
87. Phelan A, McCarthy S, Adams E. Examining missed care in community nursing: a cross section survey design. J Adv Nurs. 2018;74:626–36.
88. Orique SB, Patty CM, Sandidge A, Camarena E, Newsom R. Quantifying missed nursing care using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Survey. JONA. 2017;47:616–22.
89. Cho S-H, Mark BA, Knafl G, Chang HE, Yoon H-J. Relationships between nurse staffing and patients' experiences, and the mediating effects of missed nursing care. J Nurs Scholar. 2017;49:347–55.
90. Dabney BW, Kalisch BJ. Nurse staffing levels and patient-reported missed nursing care. J Nurs Care Qual. 2015;30:306–12.

91. Moreno-Monsiváis MG, Rodríguez CM, Interial-Guzmán MG. Missed nursing care in hospitalized patients. Aquichan. 2015;15:318–28.
92. Cordeiro R, Kirwan M, Harvey C, Diáz CR. Promoting patient safety through minimising missed nursing care: a recommended good practice guidance for nurse managers. 2020. https://www.lsmuni.lt/cris/handle/20.500.12512/106532. Accessed 29 Dec 2020.
93. Bsharat S, Drach-Zahavy A. Nurses' response to parents' 'speaking-up' efforts to ensure their hospitalized child's safety: an attribution theory perspective. J Adv Nurs. 2017;73:2118–28.
94. Drach-Zahavy A, Shilman O. Patients' participation during a nursing handover: the role of handover characteristics and patients' personal traits. J Adv Nurs. 2015;71:136–47.
95. Abdelhadi N, Drach-Zahavy A, Srulovici E. The nurse's experience of decision-making processes in missed nursing care: a qualitative study. J Adv Nurs. 2020;76:2161–70.
96. Drach-Zahavy A, Somech A. Implicit as compared with explicit safety procedures: the experiences of Israeli nurses. Qual Health Res. 2010;20:1406–17.
97. Henriksen K, Dayton E. Organizational silence and hidden threats to patient safety. Health Serv Res. 2006;41:1539–54.
98. Drach-Zahavy A, Dagan E. From caring to managing and beyond: an examination of the head nurse's role. J Adv Nurs. 2002;38:19–28.
99. Labrague LJ, de los Santos JAA, Tsaras K, Galabay JR, Falguera CC, Rosales RA, et al. The association of nurse caring behaviours on missed nursing care, adverse patient events and perceived quality of care: a cross-sectional study. J Nurs Manag. 2020;28:2257–65.
100. Dehghan-Nayeri N, Shali M, Navabi N, Ghaffari F. Perspectives of oncology unit nurse managers on missed nursing care: a qualitative study. Asia Pac J Oncol Nurs. 2018;5:327–36.
101. Moura ECC, Lima MB, Peres AM, Lopez V, Batista MEM, das Chagas Sheyla Almeida Gomes Braga F. Relationship between the implementation of primary nursing model and the reduction of missed nursing care. J Nurs Manag. 2020;28:2103–12.
102. Kalisch BJ, Lee KH. The impact of teamwork on missed nursing care. Nurs Outlook. 2010;58:233–41.
103. Kalisch BJ, Gosselin K, Choi SH. A comparison of patient care units with high versus low levels of missed nursing care. Health Care Manag Rev. 2012;37:320–8.
104. Kalisch B, Tschannen D, Lee H. Does missed nursing care predict job satisfaction? J Healthc Manag. 2011;56:113–7.
105. Phelan A, McCarthy S. Missed care: community nursing in Ireland. University College Dublin and Irish Nurses and Midwives Organisation. 2016. https://scholar-google-com.ezproxy.haifa.ac.il/scholar?hl=iw&as_sdt=0%2C5&q=Missed+care%3A+Community+Nursing+in+Ireland.&btnG=. Accessed 29 Dec 2020.
106. Blackman I, Henderson J, Willis E, Toffoli L. Hours nurse staffing, work intensity and quality of care-missed care study: New South Wales public and private sectors. Final report to the New South Wales Nurses …. https://dspace2.flinders.edu.au/xmlui/handle/2328/35448. Accessed 29 Dec 2020.
107. Aiken LH, Cimiotti JP, Sloane DM, Smith HL, Flynn L, Neff DF. Effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments. Journal of Nursing Administration. 2012;42:S10–6.
108. Blackman I, Henderson J, Willis E, Hamilton P, Toffoli L, Verrall C, et al. Factors influencing why nursing care is missed. J Clin Nurs. 2015;24:47–56.
109. Kitson AL, Muntlin Athlin Å, Conroy T. Anything but basic: nursing's challenge in meeting patients' fundamental care needs. J Nurs Scholarsh. 2014;46:331–9.
110. Feo R, Kitson A. Promoting patient-centred fundamental care in acute healthcare systems. Int J Nurs Stud. 2016;57:1–11.
111. Jangland E, Teodorsson T, Molander K, Muntlin Athlin Å. Inadequate environment, resources and values lead to missed nursing care: a focused ethnographic study on the surgical ward using the fundamentals of care framework. J Clin Nurs. 2018;27:2311–21.
112. Avallin T, Muntlin Athlin Å, Björck M, Jangland E. Using communication to manage missed care: a case study applying the fundamentals of care framework. J Nurs Manag. 2020;28:2091–102.

113. Liu J, You L, Zheng J, Ross A, Liu K. Effects of work environment on quality of care in ICUs. J Nurs Care Qual. 2016;31:E1–8.
114. Zúñiga F, Ausserhofer D, Hamers JPH, Engberg S, Simon M, Schwendimann R. The relationship of staffing and work environment with implicit rationing of nursing care in Swiss nursing homes—A cross-sectional study. Int J Nurs Stud. 2015;52:1463–74.
115. Smith JG, Morin KH, Wallace LE, Lake ET. Association of the nurse work environment, collective efficacy, and missed care. West J Nurs Res. 2018;40:779–98.
116. Rochefort CM, Rathwell BA, Clarke SP. Rationing of nursing care interventions and its association with nurse-reported outcomes in the neonatal intensive care unit: a cross-sectional survey. BMC Nurs. 2016;15:46.
117. Lake ET, Riman KA, Sloane DM. Improved work environments and staffing lead to less missed nursing care: a panel study. J Nurs Manag. 2020;28:2157–65.
118. Griffiths P, Recio-Saucedo A, Dall'Ora C, Briggs J, Maruotti A, Meredith P, et al. The association between nurse staffing and omissions in nursing care: a systematic review. J Adv Nurs. 2018;74:1474–87.
119. Jones T, Drach-Zahavy A, Amorim-Lopes M, Willis E. Systems, economics, and neoliberal politics: theories to understand missed nursing care. Nurs Health Sci. 2020;22:586–92.
120. TL J, Yoder L. Economic theory and nursing administration research—is this a good combination? Nurs Forum. 2010;45:40–53.
121. Knopp-Sihota JA, Niehaus L, Squires JE, Norton PG, Estabrooks CA. Factors associated with rushed and missed resident care in western Canadian nursing homes: a cross-sectional survey of health care aides. J Clin Nurs. 2015;24:2815–25.
122. Hyer K, Thomas KS, Branch LG, Harman JS, Johnson CE, Weech-Maldonado R. The influence of nurse staffing levels on quality of care in nursing homes. Gerontologist. 2011;51:610–6.
123. Orzel M. Releasing time to care- productive ward initiative. Devon: Royal Devon and Exeter NHS Trust. https://www.england.nhs.uk/improvement-hub/productives/. Accessed 29 Dec 2020.
124. Schubert M, Clarke SP, Aiken LH, de Geest S. Associations between rationing of nursing care and inpatient mortality in Swiss hospitals. Int J Qual Healthcare. 2012;24:230–8.
125. Aiken LH, Clarke SP, Cheung RB, Sloane DM, Silber JH. Educational levels of hospital nurses and surgical patient mortality. JAMA. 2003;290:1617–23.
126. Tubbs-Cooley HL, Cimiotti JP, Silber J, Sloane DM, Aiken LH. An observational study of nurse staffing ratios and hospital readmission among children admitted for common conditions. BMJ Qual Saf. 2013;22:735–42.
127. Ausserhofer D, Schubert M, Desmedt M, Blegen MA, de Geest S, Schwendimann R. The association of patient safety climate and nurse-related organizational factors with selected patient outcomes: a cross-sectional survey. Int J Nurs Stud. 2013;50:240–52.
128. Jones TL, Yoder LH. Dimensions of nurse work time: progress in instrumentation. Nurs Health Sci. 2015;17:323–30.
129. Willis E, Toffoli L, Henderson J, Couzner L, Hamilton P, Verrall C, et al. Rounding, work intensification and new public management. Nurs Inq. 2016;23:158–68.
130. Willis E, Henderson J, Hamilton P, Toffoli L, Blackman I, Couzner L, et al. Work intensification as missed care. Labour Industry. 2015;25:118–33.
131. Willis E, Henderson J, Couzner L, Toffoli L, Verrall C, Blackman I, et al. Rounding, work intensification and new public management. Nurs Inq. 2016;23:158–68.
132. Willis E, Henderson J, Carryer J, Harvey C, Pearson M. Austerity, new public management and missed nursing care in Australia and New Zealand. J Adv Nurs. 2017;73:3102–10.
133. van den Heede K, Bruyneel L, Beeckmans D, Boon N. Safe nurse staffing levels in acute hospitals. 2020. https://lirias.kuleuven.be/3028100?limo=0. Accessed 29 Dec 2020.
134. Thomas A, Jones H, Thomas A. National assembly for wales bill summary: the higher education (Wales) bill. 2014.
135. Henderson J. National aged care staffing and skills mix project report 2016 meeting residents' care needs: a study of the requirement for nursing and personal care staff. https://

www.academia.edu/30339875/National_Aged_Care_Staffing_and_Skills_Mix_Project_Report_2016_Meeting_residents_care_needs_A_study_of_the_requirement_for_nursing_and_personal_care_staff. Accessed 29 Dec 2020.
136. Jones T, Willis E, Amorim-Lopes M, Drach-Zahavy A. Advancing the science of unfinished nursing care: exploring the benefits of cross-disciplinary knowledge exchange, knowledge integration and transdisciplinarity. J Adv Nurs. 2019;75:905–17.
137. Phelan A, Kirwan M. Contextualising missed care in two healthcare inquiries using a socio-ecological systems approach. J Clin Nurs. 2020;29:3527–40. https://doi.org/10.1111/jocn.15391.
138. Bronfenbrenner U. The ecology of human development. Cambridge: Harvard University Press; 1979. https://scholar-google-com.ezproxy.haifa.ac.il/scholar?hl=iw&as_sdt=0%2C5&q=The+ecology+of+human+development.+1979%2C+Cambridge%2C+MA%3A+Harvard+University+Press.&btnG=. Accessed 29 Dec 2020.
139. Report of the Mid Staffordshire NHS Foundation Trust public inquiry: executive summary (vol 947). The Stationery Office. https://scholar-google-com.ezproxy.haifa.ac.il/scholar?hl=iw&as_sdt=0%2C5&q=Report+of+the+Mid+Staffordshire+NHS+Foundation+Trust+Pubic+Inquiry%3B+Exective+Summary&btnG=. Accessed 29 Dec 2020.
140. HIQA publishes review of progress at Midland Regional Hospital, Portlaoise, in implementing recommendations following HIQA's investigation|HIQA. https://www.hiqa.ie/hiqa-news-updates/hiqa-publishes-review-progress-midland-regional-hospital-portlaoise-implementing. Accessed 29 Dec 2020.
141. Ball JE, Bruyneel L, Aiken LH, Sermeus W, Sloane DM, Rafferty AM, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5.
142. Bruyneel L, Li B, Ausserhofer D, Lesaffre E, Dumitrescu I, Smith HL, et al. Organization of hospital nursing, provision of nursing care, and patient experiences with care in Europe. Med Care Res Rev. 2015;72:643–64.
143. Lucero RJ, Lake ET, Aiken LH. Nursing care quality and adverse events in US hospitals. J Clin Nurs. 2010;19:2185–95.
144. Schubert M, Glass TR, Clarke SP, Aiken LH, Schaffert-Witvliet B, Sloane DM, et al. Rationing of nursing care and its relationship to patient outcomes: the Swiss extension of the International Hospital Outcomes Study. Int J Qual Health Care. 2008;20:227–37.
145. Schubert M, Clarke SP, Glass TR, Schaffert-Witvliet B, de Geest S. Identifying thresholds for relationships between impacts of rationing of nursing care and nurse- and patient-reported outcomes in Swiss hospitals: a correlational study. Int J Nurs Stud 2009; 46: 884–893.
146. Thomas-Hawkins C, Flynn L, Dillon J. Registered nurse staffing, workload, and nursing care left undone, and their relationships to patient safety in hemodialysis units. Nephrol Nurs J. 2020;47:133–42.
147. Kalisch BJ, Tschannen D, Lee KH. Missed nursing care, staffing, and patient falls. J Nurs Care Qual. 2012;27:6–12.
148. Brooks Carthon JM, Lasater KB, Sloane DM, Kutney-Lee A. The quality of hospital work environments and missed nursing care is linked to heart failure readmissions: a cross-sectional study of US hospitals. BMJ Qual Saf. 2015;24:255–63.
149. Tschannen D, Kalisch BJ, Lee KH. Missed nursing care: the impact on intention to leave and turnover. CJNR. 2010;42:22–39.
150. Mann SA. The sacred golden cup. What is the holy grail? Catholic Answer. 2014;28:16–21.
151. Concept analysis: an evolutionary view. In: Rogers B, Knafl KA (editors) Concept development in nursing: foundations, techniques, and application. https://scholar-google-com.ezproxy.haifa.ac.il/scholar?q=Concept+analysis:+An+evolutionary+view.+In+Rogers,+B.+L.+%26+Knafl,+K.+A.+(Eds).+Concept+Development+in+Nursing.+Foundations,+Techniques,+and+Applications+&hl=iw&as_sdt=0,5#d=gs_cit&u=%2Fscholar%3Fq%3Dinfo%3AqFSTTxU-XNEJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Diw. Accessed 29 Dec 2020.

3 Does Rationing of Nursing Care Presuppose an Acceptance of Missed Care? Philosophical and Legal Aspects

Michael Igoumenidis and Evridiki Papastavrou

3.1 Introduction

As its title suggests, the central question of this chapter is whether missed nursing care constitutes an unavoidable presumption within the context of rationing discussions. The answer may not be as clear-cut as one would assume in the first place. Our point of view can change depending on the definitions we employ, the priorities we set, and the limitations we accept as our current reality. Thus, the aim of this chapter is to clarify some key concepts, discuss the ways in which rationing and missed nursing care are interrelated, and focus on what missed nursing care means for the essence of the nursing profession and the holistic care approach that it enshrines.

We shall begin this chapter by discussing the concept of omission, both from a theoretical point of view and from a practical one, mentioning philosophical and legal distinctions. At first glance, an omission is not equally bad as an action; but this has been contested, and it has important implications in the delivery of health care. Next, we shall shift our attention to omissions by nurses, put them in a framework, and differentiate them from physicians' omissions. To do so, we need to carefully explore the concept of rationing as its interpretation is vaster by far in nursing as opposed to medical care. Then we shall analyze in greater detail missed nursing tasks and their consequences, by referring to the growing body of related research evidence, acknowledging its limitations. We shall also try to provide an answer as

M. Igoumenidis (✉)
Department of Nursing, University of Patras, Patras, Greece
e-mail: igoum@upatras.gr

E. Papastavrou
Department of Nursing, Cyprus University of Technology, Limassol, Cyprus
e-mail: e.papastavrou@cut.ac.cy

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_3

to whether missed nursing care should be seen as an error, and of what kind of error it is. In conclusion, we shall adopt a somewhat idealistic approach of nursing care and its missing elements, which nevertheless lies in the core of the nursing profession. Rationing means purposeful omissions, but this cannot be easily compatible with nursing practice and the values it advances.

3.2 The Concept of Omission

Omission is defined as "someone or something that has been left out or excluded," "a failure to achieve something," or "a failure to fulfil a moral or legal obligation." Therefore, missed nursing care could be defined as an error of omission that falls under the broader framework of safety literature. Although errors and omissions are terms usually recounted together, there may be acts or errors of commission (like a nurse giving the wrong medication) and errors of omission which can be directly linked to harm to the patient (like a nurse omitting to provide a prescribed medicine) and thus lead to legal claims of negligence. Under Criminal Law, a person's failure to act is indeed a crime, though separate from a person's action which is also a crime. But the adequate level of harm done to the patient from an omission must be clearly defined, in order for a health professional to (a) have knowledge of what kind of omissions may be related to legal claims and thus give extra attention not to omit the most important aspects of care, and (b) distinguish between real health-care needs (*necessary care*) and mere health-care desires (*optional care*). It is perhaps difficult to link specific aspects of care with direct harm, but nursing research has provided ample evidence in recent years on such omissions, and thresholds of acceptable standards of care are subject to continuous change. Therefore, it is useful to consider the concept of omission both from a philosophical and from a legal aspect so as to be prepared for the changing demands and complexities of nursing care, and in relation to distinguishing between care deemed as necessary and optional care.

3.2.1 The Philosophical Distinction

The distinction between acts and omissions is not as simple as it may sound. The issues raised by the arguments over acts and omissions continue to inspire philosophical discussion, not permitting unchallenged decisions [1]. Most of relevant literature focuses on the issue of terminally ill patients and on the distinction between active and passive euthanasia, where decisions are more dramatic, triggering powerful emotions and thoughts on life and death. However, the concepts of acts and omissions are implicitly present in everyday clinical practice. Sometimes harms occur because an agent performed some action, and sometimes the harm occurs because the agent did not perform some action. Those who uphold the acts and omissions distinction claim that we are morally less responsible for our omissions than for our acts [2]. This is debatable in euthanasia cases, where there is a clear

intention to bring about someone's death, either by action (active euthanasia) or by omission (passive euthanasia). But can this distinction also be debated in everyday clinical practice? Euthanasia may be (or may not be) a *moral* error, but it is not a *practical* one; the agent intends to that result, and, arguably, no harm occurs when a terminally ill patient is relieved of further suffering. In contrast, when a nurse omits a crucial nursing task and harm occurs unintentionally, we are dealing with an error that is both moral and practical in nature. Can this *error of omission* matter less than an *error of commission*?

The main problem with this question is that we can never be sure as to whether there is an intention to omit some elements of nursing care. Although ideally the assumption of nursing care as a holistic approach of the person does not allow for any omissions in care, nurses do not have the time to satisfy all patients' needs, and they omit aspects of care that in their perception are less important, less urgent or less necessary than others. Harm is certainly unintended, but the omission that brings about the harm could be intended. In an ideal world of infinite resources, intended omissions would not constitute an acceptable practice. In the real world, the case is not that simple. As we shall discuss in greater detail in Sect. 3.3, nurses are often obliged to ration nursing resources (time and expertise) and prioritize their care both as regards tasks as well as patients. Rationing entails omitting. There are different kinds of omissions, and their importance varies depending on the adverse events and the harm that they can bring about. If a nurse failed to foresee the adverse event that occurred because of a certain task that she was obliged to omit, we need to ask whether it was reasonable to foresee the adverse event or not. The link between nursing actions (or inactions) and specific outcomes is less clear than in medicine. For instance, based on evidence, a patient's recovery can be directly connected to a surgical process or the prescription of a certain medicine; in contrast, nurses struggle to prove their contribution to patient recovery as not all nursing actions can be studied in a consistent way and linked to specific patient outcomes. A more detailed account of nursing tasks and their related consequences follows in Sect. 3.4, and further differences between medicine and nursing are discussed in Sect. 3.3.

However, it must be repeated that it is much more difficult to link omissions than actions with specific consequences; this shall be evident in the following discussion of the legal distinction as the law in general concentrates on prohibiting certain positive actions, and not on avoiding the infinite range of omissions which may have similar effects [3].

3.2.2 The Legal Distinction

Even when omissions are directly linked to harm, they may not entail legal consequences. In general, in both criminal and tort law, liability for an omission is exceptional. The Anglo-American tradition is one of reluctance to penalize omissions; for example, no offence is committed by the able-bodied adult who watches an infant drown in a shallow pool [4]. An omission is legally significant only if there is a legal duty to act. But even in continental European legal traditions, where "Bad Samaritan

laws" are at place (that is, laws that establish a duty to help others when this can be done to minimal risk, cost, and inconvenience), their enforcement is problematic, and they are very rarely used [5]. Harmful omissions are generally less culpable than equally harmful acts. However, this is not the case when distinct duties apply. As Tony Honoré explains,

> *Conduct can be divided into doing and not-doing. Sometimes conduct is contrary to a norm. A doing contrary to a norm is a commission, a not doing an omission. Omissions are therefore those not-doings that violate norms. Norms are divided for this purpose into ordinary norms and norms that impose distinct duties… In the language of duty, which is central to legal thinking, there is liability for omission only when one can show the breach of a duty to act owed to some individual or to the state, over and above the (mainly negative) duties we all owe one another as fellow human beings* [6 , p. 32].

As health-care professionals, nurses have a distinct duty of care to their patients, which is a fundamental aspect of nursing [7]. This legal duty is constantly reframed and increasing, in proportion to the updating of nursing clinical skills, practice, and responsibilities [8]. Therefore, there is liability for omission when this duty is breached. Still, this liability cannot be the same as liability for actions, even in cases of serious omissions:

> *Take the case of Susan, a nurse whose duty is to give a patient a certain medicine at six o' clock. Without a valid excuse she gives the wrong medicine or fails to give any medicine at all. Can her legal or moral culpability be different in the two cases, assuming that the impact on the patient's health is equally bad and that her character does not appear in a worse light in one of them (because, for example, in the second case she went off to watch a TV programme)?... Judgment is, however, clouded by the fact that it is very difficult to think of instances where the outcome of the acts and omissions are the same or closely similar. In the medicine example it is hardly plausible that giving the wrong medicine will have the same impact on the patient than failing to give any medicine at all… If A gives B the wrong medicine, his intervention may be irremediable. There may be no antidote. If A does not give B the right medicine someone else may do so, or he may do it himself later* [6 , p. 37].

We can thus ascertain that omissions are more easily overlooked than actions, and this may explain why the provision of health care is usually studied on the basis of "doings" rather than "not-doings." Yet this does not mean that there is no room for ample discussion from a different point of view. And, even though in general, actions matter most, it can be easily understood that there are omissions which can have far more serious consequences. For instance, in *Bode v. Parkview Health, 2009 WL 790199 (N.D. Ind.)*, the Emergency Department nurse was convicted for omitting to measure a pediatric patient's vital signs, which allegedly led to his death (vital signs measurement would have shown that the boy was dehydrated, and the physician would not have discharged him). Notably, this was a case where the physician who failed to estimate the danger and signed for the discharge was acquainted as the Emergency Department protocol was clear in that the nurse should inform the physician in case of abnormal vital signs, and the physician had assumed that the nurse had completed this task. But the concepts of nursing duties and missed care are not always that clear as in the case of *Bode v. Parkview Health*.

3.2.3 Omissions by Nurses

In recent years, missed nursing care is the subject of extensive research internationally as part of the continuing effort to ameliorate health care in terms of outcomes and patient satisfaction. This research aims to provide answers to three interrelated questions:

1. What kind of nursing care is most frequently missed?
2. What kind of adverse events can be linked to missed nursing care?
3. How can nurses ration their time and skills most effectively?

The third question presupposes an ethical acceptance of missed care. Indeed, rationing of nursing resources can be seen as engaging in purposeful omissions, by choosing the ways to distribute the system's limited resources. But as we discussed above, there are different kinds of omissions of various importance. Therefore, if we can hope to provide any answers to the third question (which fall out of the scope of this chapter), we need to draw as much a clear image with regard to the first two questions. In that way, we can understand what omissions can be seen as purposeful, presupposed, and necessarily (that is, realistically) accepted.

We shall briefly refer to research being conducted on the first two questions as there are some useful—albeit incomplete—conclusions out of it. But first, we shall clarify the meaning of rationing in nursing care, based on definitions provided by eminent writers within the context of missed nursing care literature.

3.3 Allocation and Rationing of Resources

The terms "allocation" and "rationing" of resources are often used interchangeably in health-care literature. Recent work on missed nursing care and the emphasis placed on its philosophical aspects brought out the need to draw clear distinctions between these two terms, alongside with other words and phrases which some authors have been using in the past without taking explicitly in consideration their conceptual framework. In some cases, similar terms can be used without creating serious inconsistencies; for instance, "missed care," "unfinished care," "omitted care," "implicitly rationed care," "care left undone," "task left undone" have the same meaning, and they have all been used as key words in systematic reviews exploring the issue of missed care from various perspectives [9–11]. But a clear distinction between "rationing" and "allocation" is important as these two terms have different implications in the discussions related to missed care. Rationing (also mentioned as "micro-allocation") involves leaving some people, at least temporarily and against their wishes, without particular forms of health care that might benefit them, whereas allocation (also mentioned as "macro-allocation") refers to health-care policies as set by policymakers, such as governments, health organizations, trusts, or funds, entailing decisions that determine the number of resources available for particular kinds of health-care services [12]. Thus, rationing is a

micro-level process that is normally expected to result in missed care, whereas allocation is a macro-level process that, ideally, should diminish the need for rationing.

By referring to Arthur Caplan's classic ethics texts [13], Scott et al. analyze the distinction between rationing and allocation in detail [14], and their work should serve as a guiding point to future researchers working with missed care so as to avoid conceptual confusion, propose solutions, and ultimately design policies that could deal with the problem in its root. As Scott et al. explain,

> *From an ethical perspective, resource allocation is a concept that is neutral with regard to the moral implications of the allocation decision... In contrast, rationing implies that necessary trade-offs due to resource scarcity are inbuilt into the decision-making process, with the implication that rationing will of necessity result in exclusion from resources, or less than optimal benefits for some potential resource recipients* [14 , p. 1530].

In this sense, and as noted earlier, allocation of health-care resources poses different ethical dilemmas than care rationing. Allocation creates the framework in which rationing takes place. Health professionals ration the resources allocated to them by policymakers. The allocation is either just or unjust, effective, or less effective at the policymaking macro-level; but, for health professionals, it is what it is, and they have to make the best out of it. Resources are finite in all health-care settings. The process of rationing constitutes a constant moral problem with no satisfactory, universally accepted solutions. Within this process, subjective, individual decisions more or less prevail. Health-care professionals understand the need for justice at a more personal level as they interact with patients directly and usually witness first-hand the results of their rationing decisions. On the other hand, policymakers are mostly guided by abstract principles of justice, thinking in terms of groups of patients, epidemiological data, impersonal statistics, and economic costs [12]. Thus, allocation decisions can be far more objective than rationing decisions.

3.3.1 The Concept of Rationing in Medical and Nursing Contexts

Another important distinction is drawn between rationing from the physician's and the nurse's perspective. Rationing performed by health professionals is different than allocation performed by policymakers. But rationing performed by physicians is also different than rationing performed by nurses. Within a medical context, rationing refers mostly to crisis situations and triage policies, where patients are explicitly excluded from receiving specific medical services as demand exceeds supply. This was apparent in some countries during the first wave of the Covid-19 pandemic. Within medical settings, patients who otherwise would likely survive if they received ventilator support probably died because no ventilator was available, and this created the need to draw a framework for rationing ventilators and critical care beds during the pandemic, based on cost-effectiveness calculations and using patients' age as a major rationing criterion [15]. But nurses' rationing decisions are different; they are much more implicit than some physicians' emergency triage policies, or life-and-death ethical dilemmas. The nurse provides care regardless of

whether the patient will probably die without a ventilator or an ICU bed. As Scott et al. put it,

> *…even in the face of staff reductions or increased demands by the institution, the individual nurses' role is still understood to include the provision of the full range of nursing care activities, but simply becomes less realisable with increasing demands on the individual nurse. Unlike doctors, nurses are not explicitly asked to apply specific cost-effectiveness considerations and continue to be expected to meet patients' needs fully* [14 , p. 1531].

This expectation is certainly utopian in nature. Even in countries abundant in nursing resources in terms of nurse-to-patient ratios, nurses may be unable to complete all necessary care activities and must often engage in what is described as "implicit rationing" [16]. The need to ration nursing care is indisputable; many nursing tasks are often left incomplete. Missed medical care is easier to frame and has a much clearer meaning than missed nursing care. On the other hand, nursing care has much more different aspects than medical care, and thus rationing decisions of nurses include more details and individualistic approaches. Having this in mind, the next step is to discuss these tasks' relative importance as evidenced by the growing body of literature examining the elements of care that nurses report they most frequently miss.

3.4 Missed Nursing Tasks and Their Consequences

In recent years, researchers have developed various instruments estimating missed care, and this can be viewed as an attempt to prioritize nursing tasks in terms of importance. It is a realistic approach; irrespective of the holistic nursing ideal, which dictates meeting all patients' needs, some nursing tasks are excluded more easily than others. The reasons why optimal care cannot always be provided have also been studied (inadequate staffing is obviously the main problem), but they are of no interest in our subsequent discussion; suffice to say that, as noted above, all health-care systems work on finite budgets and resources. Another challenge is the nursing scope of practice, which is not agreed by all nursing professionals, or could differ from one country to another; in addition, the "necessary nursing care" required by a patient to feel safe and cared for remains unclear [17]. However, recent efforts by nursing leaders, researchers, and educators have shaped an increasingly consistent professional nursing context. At the very least, the aspects to consider when developing a minimum standard of safe, competent nursing care are:

1. Provision of care according to patients' fundamental physiological, psychological, social, and spiritual needs.
2. Attention to fundamental needs such that moral values are safeguarded and in line with nurses' professional code of ethics.
3. Determination of the lower limit of fundamental care must meet the requirement of reliable and caring services according to setting and socioeconomic context in the relevant country [17].

Then it is up to each nursing professional to determine the degree to which this standard of care is satisfied, prioritizing nursing tasks accordingly.

3.4.1 Nurses' Assessment of Their Tasks' Importance

Missed care instruments classify nursing tasks in various ways, but they all share some common features. In general, rationing frequency varies among missed care items, thus indicating differing prioritizations of necessary nursing tasks. However, some clear patterns are visible. For instance, the nursing task of "talking to and comforting patients" always scores high at missed care research [10, 18, 19]—which shows that, although an essential part of nursing education and practice, nurses do not attribute the desired importance to it. Other frequently omitted tasks include "Teach/counsel patients and family," "Adequate patient surveillance," and "Develop or update nursing care plans." In contrast, the nursing task of "timely medications" is one that they rarely report as being omitted. The same applies with tasks such as "monitoring patients as prescribed by physician" and "change of wound dressings." This implies that nurses pay extra attention to actions classified as "clinical care," especially if these actions fall under the physician's delegation authority, and as opposed to actions that can be classified as "teaching and communication." Therefore, the relative neglect of these aspects of care proves that nurses assess and prioritize their tasks' importance and ration resources accordingly. Not all missed care is of equal significance and impact on patient outcomes varies [20].

3.4.2 Harm Associated with Missed Nursing Actions

When we refer to varying impacts of missed care on patient outcomes, it is implied that many omissions can go unnoticed if they do not produce significant and directly observable adverse results. According to Griffiths et al.:

> *While reported missed care is associated with nurse staffing levels and such reports may indeed be indicators of inadequate nurse staffing, there is no research demonstrating associations with objective measures of care. The extent to which the relationships observed in these studies represent actual omissions of care and the consequences of such failures, remains largely uninvestigated* [10 , p. 1485].

Indeed, it is very hard to link specific omissions with specific consequences. Existing research shows that low nurse staffing levels—and consequently, missed nursing care—are associated with a range of adverse outcomes, notably mortality [21], but direct evidence of omitted clinical care mediating the relationship between staffing and mortality is absent [9]. For instance, a 2019 study investigating the association between nurse staffing levels and the timeliness of vital signs monitoring concluded that objectively measured omissions in care are related to nurse staffing levels, and also that the absolute effects are small [22]. Confounding factors also pose a serious problem to missed care research. A 2015 study revealed an

association between missed nursing care (mainly talking to and comforting patients, developing, and updating care plans, and educating patients and families) to heart failure readmissions, but this relationship is largely contingent on the quality of the nurse work environment such that nurses working in favorable conditions are less apt to report missing care [18].

However, even when all the difficulties and the mishaps of missed nursing care research are acknowledged, they cannot discount the fact that nursing omissions have serious consequences. Unmet nursing care needs and adverse events such as medication errors, patient falls with injury and nosocomial infections, are significantly associated [19]. To what extent can omissions fall within the scope of acceptable practice, even in the face of indirect yet visible associations with harm?

3.4.3 Does Missed Care Count as a Nursing Error?

From a legal point of view, errors in health care must be followed by negligence claims. The plaintiff has to prove that harm occurred is adequately linked to specific doings (or not-doings) of the defendant. But errors tend to have a wider definition, and their results should not be the only guiding principle. Historically, patient safety researchers investigating the impact of error in medicine have adopted outcome-dependent definitions of medical error and its surrogate terms and have limited their focus to patients experiencing adverse outcomes or injury as a consequence of medical care. However, a definition of medical error should capture process or system failures that cause errors, irrespective of outcome; in other words, researchers should adopt not only an *outcome-dependent approach* but also a *process-dependent approach* [23]. Errors that do not result in injury are often referred to as near misses, close calls, potential adverse events, or warning events [24], and these remain largely unexamined. Therefore, definitions such as the following have been proposed:

"*Medical error: an act of omission or commission in planning or execution that contributes or could contribute to an unintended result*" [23].

This definition encompasses both acts and omissions and remains valid irrespective of outcomes. Accordingly, Johnstone and Katsinaki define nursing errors as follows:

> *… a nursing error (as distinct from a medical error, for example) is defined as a discipline-specific term that encompasses an unintended 'mishap' (*e.g. *involving slips, lapses, misjudgements,* etc.*) made by a nurse and where a nurse (as opposed to some other health care professional) is the one who is situated at the 'sharp end' of an event that adversely affected—or could have adversely affected—a patient's safety and quality care*" [25 , p. 369].

We can then ascertain that, as stated in the beginning of this chapter, missed nursing care is indeed an error of omission, even though it is quite difficult for specific negative outcomes to be directly linked to it—and thus actual legal consequences rarely follow.

Indeed, it is much more common for nurses to be involved in negligence claims when errors of omission have occurred. However, in her article of negligence and malpractice in nursing, Eileen Croke [26] analyzes more than 250 cases against nurses in the USA in which the major categories of negligence that resulted in malpractice lawsuits are very similar to the contemporary missed care research. Among others, she includes "failure to follow standards of care" (that is contained in many definitions of missed care), and "failure to communicate" which is the most commonly omitted activity, mentioned in almost all missed care reviews [9, 27]. Actually, communication and information sharing constitute the strongest element of care missing as described by patients who expressed their need for more information and discussion about their care [28]. Failure to document, to assess and monitor, and to provide a safe environment for the patient are also important aspects of care for which there is evidence (as reported by nurses) that they are regularly omitted. Although as it is discussed earlier, the liability for omissions is not as clear-cut as the liability for commissions, missed care can be theoretically regarded as malpractice and negligence. However, this problem goes beyond the microlevel of the clinician, including also factors that fall outside of the immediate control of the individual nurse, such as the nursing shortage that contributes to greater workload increasing the likelihood of omissions and errors, as well as the unavailability of material resources, environmental issues, economic constraints, social and political influences [29].

Therefore, with regard to understanding the essence of a nursing error, one last important point remains to be discussed, and that is the issue of feasibility. As discussed earlier, the meaning of an omitted legal duty is that although the perpetrator was expected to act, he/she did not eventually act, even though he/she could do so. In legal terms, for an omission to be a crime, the omitted act must be feasible. Therefore, in the case of nursing care, and considering the repeatedly reported understaffing of nursing wards in various countries and settings, what are the limits of feasibility? The quality of nursing care is proportional to the resources that will be rationed. In the nursing profession, the basic resource is the nurse's time and expertise. When the number of patients per nurse ratio is outbalanced, the time available for each patient is inadequate, not enabling to consider some tasks as feasible. However, the identification of organizational errors should not lead us into oversimplifying the complex problem of missed care. There are many aspects that need to be carefully explored.

3.5 Conclusions

In the absence of legal consequences for missed care, we should conclude that as a notion it is generally accepted, and that rationing constitutes a necessity within the reality of health-care systems. The perfect system does not exist; organizational errors of inadequacy and scarce resources seem to be inbuilt features of health-care services [30]. At an individual level, nurses fulfil their professional obligations, in the sense that patients' basic needs are met. Almost every patient would like for a

nurse to devote more time to "talking and comforting," but this is really more of a desire than an actual patient need. But can the answer to the central question of this chapter be that easy? Should we accept missed care based on nursing tasks' relative importance and on the assumption that perfect health-care systems do not exist?

Caring has been known as the inner core and the essence of nursing profession, and its boundaries are not easily set. It has to do with every single patient individually, every individual nurse and the way they see their profession and its related duties, the working environment within which they have the opportunity to exercise these duties, and even luck and other subjective elements. Perhaps the way that nursing care is described in nursing textbooks and taught in nursing schools is idealistic in nature, and holistic nursing without any missed care cannot be exercised in real-world settings. But this should not guide us into pessimistic approaches. Nursing has always been striving for the best. The increasing research concerning missed nursing care is not simply observational; its ultimate goal lies in ameliorating patient outcomes, by gathering evidence that will guide structural changes in the provision of health care. Rationing of nursing resources may always be necessary, and missed nursing care may always be unavoidable, but the nursing profession can never settle with these thoughts. To the best of their abilities, nursing leaders, educators, researchers, and practitioners continue their efforts to fill in as many blanks as they can.

References

1. Hope T. Acts and omissions revisited. J Med Ethics. 2000;26:227–8. https://doi.org/10.1136/jme.26.4.227.
2. Begley AM. Acts, omissions, intentions and motives: a philosophical examination of the moral distinction between killing and letting die. J Adv Nurs. 1998;28(4):865–73. https://doi.org/10.1046/j.1365-2648.1998.00700.x.
3. Clayden G, Mattar N. Acts and omissions: killing and letting die. J Med Ethics. 1984;2:59–60.
4. McCutcheon JP. Omissions and criminal liability. Irish Jurist. 1993;28/30:56–78.
5. Malm HM. Bad Samaritan laws: harm, help, or hype? Law Philos. 2000;19:707–50. https://doi.org/10.2307/3505072.
6. Honoré T. Are omissions less culpable? In: Cane P, Stapleton J, editors. Essays for Patrick Atiyah. Oxford: Clarendon; 1991. p. 31–52.
7. Dowie I. Legal, ethical and professional aspects of duty of care for nurses. Nurs Stand. 2017;32(16–19):47–52. https://doi.org/10.7748/ns.2017.e10959.
8. Young A. Review: the legal duty of care for nurses and other health professionals. J Clin Nurs. 2009;18(22):3071–8. https://doi.org/10.1111/j.1365-2702.2009.02855.x.
9. Jones TL, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52(6):1121–37. https://doi.org/10.1016/j.ijnurstu.2015.02.012.
10. Griffiths P, Recio-Saucedo A, Dall'Ora C, Briggs J, Maruotti A, Meredith P, Smith GB, Ball J, Missed Care Study Group. The association between nurse staffing and omissions in nursing care: a systematic review. J Adv Nurs. 2018;74(7):1474–87. https://doi.org/10.1111/jan.13564.
11. Mandal L, Seethalakshmi A, Rajendrababu A. Rationing of nursing care, a deviation from holistic nursing: a systematic review. Nurs Philos. 2020;21(1):e12257. https://doi.org/10.1111/nup.12257.

12. Igoumenidis M, Kiekkas P, Papastavrou E. The gap between macroeconomic and microeconomic health resources allocation decisions: the case of nurses. Nurs Philos. 2020;21(1):e12283. https://doi.org/10.1111/nup.12283.
13. Caplan AL. If I were a rich man could I buy a pancreas? And other essays in the ethics of health care. Bloomington: Indiana University Press; 1992.
14. Scott PA, Harvey C, Felzmann H, Suhonen R, Habermann M, Halvorsen K, Christiansen K, Toffoli L, Papastavrou E. Resource allocation and rationing in nursing care: a discussion paper. Nurs Ethics. 2019;26(5):1528–39. https://doi.org/10.1177/0969733018759831.
15. White DB, Lo B. A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. JAMA. 2020;323(18):1773–4. https://doi.org/10.1001/jama.2020.5046.
16. Schubert M, Ausserhofer D, Desmedt M, Schwendimann R, Lesaffre E, Li B, De Geest S. Levels and correlates of implicit rationing of nursing care in Swiss acute care hospitals—a cross sectional study. Int J Nurs Stud. 2013;50(2):230–9. https://doi.org/10.1016/j.ijnurstu.2012.09.016.
17. Tønnessen S, Scott A, Nortvedt P. Safe and competent nursing care: an argument for a minimum standard? Nurs Ethics. 2020;2020:969733020919137. https://doi.org/10.1177/0969733020919137.
18. Carthon JMB, Lasater KB, Sloane DM, Kutney-Lee A. The quality of hospital work environments and missed nursing care is linked to heart failure readmissions: a cross-sectional study of US hospitals. BMJ Qual Saf. 2015;24(4):255–63. https://doi.org/10.1136/bmjqs-2014-003346.
19. Lucero RJ, Lake ET, Aiken LH. Nursing care quality and adverse events in US hospitals. J Clin Nurs. 2010;19(15–16):2185–95. https://doi.org/10.1111/j.1365-2702.2010.03250.x.
20. Recio-Saucedo A, Dall'Ora C, Maruotti A, Ball J, Briggs J, Meredith P, Redfern OC, Kovacs C, Prytherch D, Smith GB, Griffiths P. What impact does nursing care left undone have on patient outcomes? Review of the literature. J Clin Nurs. 2018;27(11–12):2248–59.
21. Griffiths P, Maruotti A, Recio Saucedo A, Redfern OC, Ball J, Briggs J, Dall'Ora C, Schmidt PE, Smith GB. Nurse staffing, nursing assistants and hospital mortality: retrospective longitudinal cohort study. BMJ Qual Saf. 2019;28(8):609–17. https://doi.org/10.1136/bmjqs-2018-008043.
22. Redfern OC, Griffiths P, Maruotti A, Recio Saucedo A, Smith GB, Missed Care Study Group. The association between nurse staffing levels and the timeliness of vital signs monitoring: a retrospective observational study in the UK. BMJ Open. 2019;9(9):e032157. https://doi.org/10.1136/bmjopen-2019-032157.
23. Grober ED, Bohnen JMA. Defining medical error. Can J Surg. 2005;48(1):39–44.
24. Barach P, Small SD. Reporting and preventing medical mishaps: lessons form non-medical near miss reporting. BMJ. 2000;320:759–63.
25. Johnstone M-J, Katsinaki O. The ethics and practical importance of defining, distinguishing and disclosing nursing errors: a discussion paper. Int J Nurs Stud. 2006;43:367–76. https://doi.org/10.1016/j.ijnurstu.2005.04.010.
26. Croke EM. Nurses, negligence and malpractice. Am J Nurs. 2003;103:54–63. https://doi.org/10.1097/00000446-200309000-00017.
27. Chaboyer W, Harbeck E, Lee BO, Grealish L. Missed nursing care: an overview of reviews. Kaohsiung J Med Sci. 2021;37(2):82–91. https://doi.org/10.1002/kjm2.12308. Epub ahead of print. PMID: 33022855.
28. Bagnasco A, Dasso N, Rossi S, Galanti C, Varone G, Catania G, Zanini M, Aleo G, Watson R, Hayter M, Sasso L. Unmet nursing care needs on medical and surgical wards: a scoping review of patients' perspectives. J Clin Nurs. 2020;29:347–69. https://doi.org/10.1111/jocn.15089.
29. Jones T, Drach-Zahavy A, Amorim-Lopes M, Willis E. Systems, economics, and neoliberal politics: theories to understand missed nursing care. Nurs Health Sci. 2020;22:586–92. https://doi.org/10.1111/nhs.12700.
30. Singer SJ, Vogus TJ. Reducing hospital errors: interventions that build safety culture. Annu Rev Public Health. 2013;34:373–96. https://doi.org/10.1146/annurev-publhealth-031912-114439.

Studying Missed Care: Designs, Instruments, and Reporting Guidelines

4

Alvisa Palese, Michael Simon, and Walter Sermeus

4.1 Introduction

Studying a concept as "missed care" is not easy as it in fact does not exist as the care is not performed. That makes it extra difficult to study, to measure, to observe. The result is that the most common way to measure missed care is to ask health-care providers, in most cases nurses and midwives, to report on the care that they were not able to perform and ask them about the most prominent reasons. The narrative review of Vincelette et al. [1] including 52 primary studies and seven secondary studies as reviews is confirming this. In their review they are reporting six conceptual and methodological challenges whereof three methodological challenges are as follows: (1) use of cross-sectional designs; (2) use of self-reported measures; and (3) psychometric characteristics of the existing instruments. These three challenges are guiding this chapter. We are closing the chapter with the development of a reporting guideline for missed care.

A. Palese (✉)
Department of Medicine, University of Udine, Udine, Italy
e-mail: alvisa.palese@uniud.it

M. Simon
Institute of Nursing Science, University of Basel, Basel, Switzerland

Nursing research Unit, Inselspital University Hospital, Bern, Bern, Switzerland

W. Sermeus
Leuven Institute for Healthcare Policy, University of Leuven KU, Leuven, Belgium

Department of Public Health, Leuven Institute for Healthcare Policy KU, Leuven, Belgium

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_4

4.2 Designs to Study Missed Care

From the 52 primary studies that Vincelette et al. [1] included, 47 studies are cross-sectional (90%), 4 studies are qualitative (8%), and one study is a repeated measures study (2%). From the cross-sectional studies, 20 studies (42%) are making use of secondary data derived from general health-care databases. Missed care data are mostly collected in a cross-sectional way by surveying nurses. Secondary data are often used to get informed about determinants and/or patient outcomes.

The review shows that missed care research is still in its exploration phase. We find ample qualitative research looking for understanding better the phenomenon, trying to make a list of what is actually missed in different types of context (acute care, home care, community care, specialized settings). Based on this data, several instruments have been designed and developed. Mainly three families of instruments are available with small differences in the way missed care is defined and operationalized. But all three are self-reported survey instruments. Based on these instruments, the prevalence of missed care has been quantified. Associations with possible determinants and impacts have been explored.

The drawback of cross-sectional research is that no causal relationships can be inferred. The main reason is that all data are collected at the same moment in time. We can detect associations showing that some concepts are related, but we do not know in which direction. To give an example: we see that nurse staffing is higher on intensive care wards than on general med-surgical wards. At the same time, we see that mortality on intensive care wards is higher than on med-surgical wards. So the first observation is that higher nurse staffing levels are related to higher mortality. We understand that this contra-intuitive associated is caused by a third variable, namely how sick patients are. Intensive care units have more sick patients and that is why they have higher nurse staffing levels, what means that we have to correct for this factor what completely change the direction of the association. But it shows the difficulty in interpreting these relationships as it is a complex mix of factors that might be related. Similar findings might be around in missed care research.

Although the majority of studies are still situated in this first-level exploration and associations [2], there has been small progress made on the second level in the search for causation. The Hill's criteria for causation, formulated by Sir Austin Bradford Hill in 1965 [3], can guide us here. Bradford Hill's criteria have been widely accepted and guided many studies in epidemiology, even in quality improvement research [4]. Following nine criteria are formulated to provide evidence on the causal relationship between a presumed cause and an observed effect.

1. **Strength** (effect size): the larger the association, the more likely it is that there is a causal relationship. The RN4CAST study provided most of the evidence of the impact of nurse staffing on missed care and vice versa missed care on patient outcomes (mainly postoperative outcomes). The odds of missed care were increased with 26% when nurses were caring for more than 11.5 patients compared with nurses caring for less than 6 patients (OR = 1.26) [5]. The effect of

missed care on postoperative mortality leads to an odds ratio of 1.16. Both odds ratios show a small effect size (Cohen's d smaller than 0.2) [6].

2. **Consistency** (reproducibility): consistent findings observed by different persons in different places with different samples strengthen the likelihood of an effect. Even if all research is still observational and cross-sectional, there is a growing evidence because of the fact that similar findings on missed care are found across the globe, in different countries and cultures, in different health-care settings, with different survey instruments.
3. **Specificity** (is the outcome unique to the exposure): the more specific the association, the bigger is the probability of a causal relationship. It is clear that some progress can be made here. Most missed care instruments are listing a series of possible interventions/tasks that can be missed. The number of missed care tasks is then taken as a global indicator of missed care. It would be recommended to take one of the tasks (e.g., patient surveillance) and to link this specific intervention to a specific determinant or to a specific outcome. Bruyneel et al. [7] introduced two subscales in the "care left undone—TU-13" instrument, making the distinction between "clinical care left undone" and "planning/communication left undone."
4. **Temporality** (the effect has to occur after the cause): temporality is per definition difficult to assess in cross-sectional research. It requires a longitudinal approach in which at different moments in time the data are recorded and collected. The number of longitudinal studies in missed care is still low, but the number is growing. Simms et al. [8] studied cumulative missed opportunities for care (CMOC) and mortality in patient with ST-Elevation Myocardial Infarction (STEMI) via a cohort study. More than 100,000 patients were followed after hospital discharge from 4 years. Nine care components were monitored. Patients with no missed care opportunities had lower mortality than patients with ≥4 CMOC. Tubbs-Cooley et al. [9] performed a prospective study in a neonatal intensive care unit monitoring the work of 136 nurses caring for 418 infants during 332 shifts. Increased infant-to-nurse ratios during a shift were associated with increased missed nursing in about half of the measured missed care items. Nurses caring for three or more children were 2.5 times more likely to report missing any care during the shift. Dhaini et al. [10] performed a longitudinal study in a Lebanese hospital involving 102 nurses working on 10 medical, surgical, and pediatrics acute care wards during 90 days. A positive association was observed with self-perceived workload. Significant variability among nurses was observed.
5. **Biological gradient/Dose–response relationship**: greater exposure should generally lead to greater incidence of the effect. Dose–response relationships have been found all around the missed care research. If the staffing levels are going down, we see missed care levels are going up. If missed care is going up, then we see an increase in mortality rates [11]. Moreover, in having a closer look to the model, we see that if the missed care is moderate (up to 20%), the risk of mortality is not significantly increased. However, when missed care is increasing up to

30% and higher the likelihood for mortality is increased with 24% (OR = 1.24), showing dose–response relationships.

6. **Plausibility** (does the postulated causal relationship make sense): a plausible mechanism between cause and effect is helpful. There is growing consensus that missed care is a mediating variable between some individual and organizational characteristics of the work environment of nurses and patient outcomes. The mediating role has been tested by Zhu et al. [12], Ball et al. [11], Bruyneel et al. [7], Cho et al. [13], Kalisch and Xie [14], Liu et al. [15], and Rusá et al. [16].
7. **Coherence** (is the association compatible with existing theory and knowledge): a lot of progress has been made here (see Chap. 1) to relate the work on missed care to various models and theories explaining the effect.
8. **Experiment** (does a controlled manipulation of the exposure variable change the outcome): so far, no experiments have been conducted on missed care research. Of course, there are some ethical issues that make it difficult to decrease or increase nurse staffing levels to evaluate the effect on missed care. In nurse staffing research, natural experiments have been conducted, e.g., as a result of legislation (e.g., safe nurse staffing ratio legislation in California, USA, or Victoria, Australia), as a result of crisis (e.g., downsizing nurse staffing ratios as the result of the economic crisis 2008), or as a result of increased demands (e.g., covid-19 crisis in 2020). Unfortunately, missed care has not been the systematic focus of these studies.
9. **Analogy** (does the causal relationship conform to a previously described relationship): missed care is highly linked to the "adherence to guidelines" literature and research. McGlynn et al. [17] showed that adherence to the evidence is about 50%, varying from 80% for senile cataract down to 20% for alcohol abuse. Adherence seems to have a strong impact on patient outcomes. Although it is often related to knowledge-deficit problems, recent insights are widening this to organizational and implementation issues, what makes the concept very similar to missed care.

4.3 Instruments Measuring Missed Care

As reported above, measuring missed nursing care is still a challenge for researchers, nurse managers, and clinical nurses at different levels, that of bedside, at the unit, hospital, and system level. Conceptually, missed care indicates the gap between the nursing care needed by a given patient and that offered. Directly observing the practice (e.g., Seys et al. [18]; van Zelm et al. [19]) in order to measure missed interventions is practically unfeasible, given that it requires a huge amount of resources, a given standards of care, and continuous in-the-field observation; moreover, given that several not visible cognitive processes can lead to missed care, direct observations might fail in its intent. However, from their side, can be hesitant to report the missed care, also due to that this might trigger guilt [20]. According to these main issues, to date missed nursing care is still assessed with tools instruments (e.g., Jones et al. [21]; Kalisch and Williams [22]; Schubert et al. [23]) based upon

the perception of nurses as reported in an anonym fashion. More recently, studies involving patients have been also performed with the intent to validate tools reflecting their perceptions and expectations (MISSCARE–SP [Survey Patients] [24]).

4.3.1 Validation Studies Available

A recent systematic review of literature has been performed in the field [25] aimed at (a) identifying tools measuring missed nursing care subjected to a process of validation; (b) evaluating the methodological quality of methods adopted to assess their psychometric properties; and (c) comparing these properties. Researchers included all validation studies regarding tools in the missed care field, as composed by several items, combined in dimension/factors, to give a composite score, based upon a nurses' self-report published in indexed database or in gray literature up to June 30, 2018, in English and Italian. Therefore, tools including one single item [26] and involving patients and/or their caregivers (e.g., Kalisch et al. [24]) were excluded.

According to the findings, there were identified 20 studies with 17 tools validated and categorized in three families according to the common conceptual model: (1) the MISSCARE Survey tool and its subsequent development ($n = 10$); (2) the Basel Extent of Rationing of Nursing Care (BERNCA tool) and its subsequent development ($n = 5$); and (3) the Task Undone scale ($n = 2$). Studies have been published around 13 years ago with the first data collection performed in 2003 [23] in 15 different countries, mainly in the USA. However, the research in this field still continues by validating tools that can be considered as the third family generation of instruments in the field: in this context, Unfinished Nursing Care Survey has attempted to collapse all instruments established in the field which have been recognized to have similarities and common items [21]. On the other side, taking into consideration a single-item tool [26] in its power to detect failure in nursing care can be valuable to prevent the burden of nurses in measuring with complex tools the phenomenon of missed care. Although recently different ways of measuring missed care emerged such as a single-item measure.

In Table 4.1, an overview of tools published up to June 2020 has been briefly reported.

4.3.1.1 MISSCARE Survey

The MISSCARE survey has been indicated as the most famous validated tool in the world. The tool has been established by Kalisch and Williams [22] on the base of the missed care conceptual model. The tool is composed by two sections (section A; section B): in the first, it has been included a list of nursing interventions (22 items), and respondents are required to rank the frequency of those missed, from "rarely" to "always" (or "not applicable"). The second (section B) includes a total of possible 16 reasons of missed care categorized in three dimensions ("communication issues," "material resources issues," "labor resources issues"): in this case, respondents are asked to rank the degree of contribution of each reason to the perceived MNC, from "significant" to "not a reason." With the section B, this is the only tool

Table 4.1 Brief characteristics of instruments

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Kalisch and Williams (2009) [22] USA Validation study Year: NS	Part A = nursing care actions (22 items) Part B = reasons for missed care (16 items, 3 factors: Communication, material resources, and labor resources)	1. Ambulation three times per day or as ordered 2. Turning patient every 2 h 3. Mouth care 4. Patient bathing/skin care 5. Feeding patient when the food is still warm 6. Setting up meals for patient who feed themselves 7. Assess effectiveness of medications 8. PRN medication requests acted on within 15 min 9. Medications administered within 30 min before or after scheduled time 10. Assist with toileting needs within 5 min of request 11. IV/central line site care and assessments according to hospital policy 12. Hand washing 13. Focused reassessments according to patient condition 14. Patient assessments performed each shift 15. Monitoring intake/output 16. Vital signs assessed as ordered 17. Bedside glucose monitoring as ordered 18. Full documentation of all necessary data 19. Patient teaching about procedures, tests, and other diagnostic studies 20. Teach patient about plans for their care after discharge and when to call after discharge 21. Emotional support to patient and/or family 22. Response to call light is initiated within 5 min	Part A = 4-point Likert scale (1) Rarely (2) Occasionally (3) Frequently (4) Always + non-applicable Part B = 4-point Likert scale (1) Not a reason for unmet nursing care (2) Minor factor (3) Moderate factor (4) Significant factor	NS

Kalisch et al. (2012) [27] Turkey/USA Validation study: translation + psychometric analysis of the tool Year: NS	Part A = list of elements of missed nursing care (21 items) Part B = reasons for not delivering care (16 items, 3 factors: Communication/teamwork, Material Resources, Labor Resources)	1. Ambulation three times per day or as ordered 2. Turning patient every 2 h 3. Mouth care 4. Patient bathing/skin care 5. Feeding patient when the food is still warm 6. Setting up meals for patient who feed themselves 7. Assess effectiveness of medications 8. PRN medication requests acted on within 15 min 9. Medications administered within 30 min before or after scheduled time 10. Assist with toileting needs within 5 min of request 11. IV/central line site care and assessments according to hospital policy 12. Hand washing 13. Patient assessments performed each shift 14. Monitoring intake/output 15. Vital signs assessed as ordered 16. Bedside glucose monitoring as ordered 17. Full documentation of all necessary data 18. Patient teaching about procedures, tests, and other diagnostic studies 19. Teach patient about plans for their care after discharge and when to call after discharge 20. Emotional support to patient and/or family 21. Response to call light is initiated within 5 min	Part A = 4-point Likert scale (1) Rarely (2) Occasionally (3) Frequently (4) Always + non applicable Part B = 4-point Likert scale (1) Not a reason for unmet nursing care (2) Minor factor (3) Moderate factor (4) Significant factor	NS

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Kalisch et al. (2013) [28] Lebanon Cross-sectional study: preliminarily the tool was reviewed for cultural validity Year = NS	Part A = list of elements of missed nursing care (24 items) Part B = reasons for not delivering care, 17 items, 3 factors (Staffing Resources, Material Resources, and Communication)	1. Ambulation 2. Turning 3. Mouth care 4. Bathing 5. Feeding 6. Set up meals 7. Medication effectiveness assessments 8. PRN medication administration 9. Timely medication administration 10. Toileting assisting assistance 11. IV/central line site care 12. Hand washing 13. Focused reassessments 14. Each shift assessments 15. Monitoring intake/output 16. Vital signs 17. Glucose monitoring 18. Skin/wound care 19. Full documentation 20. Interdisciplinary care conference attendance 21. Patient teaching 22. Discharge planning 23. Emotional support 24. Call light response	Part A = 4-point Likert scale (1) Rarely (2) Occasionally (3) Frequently (4) Always + non applicable Part B = 4-point Likert scale (1) Not a reason for unmet nursing care (2) Minor factor (3) Moderate factor (4) Significant factor	NS

Castner (2012) [29] (dissertation); Castner and Dean-Baar (2014) [30]; Castner et al. (2015) [31] USA To test the psychometric properties of items for existing nursing error and omission questionnaire (MISSCARE part A and B + PPI) Year = 2011–2012	MISSCARE Survey [22], Part A (24 items) and Part B (17 items) Part A + PPI, 28 items, three factors (Acute care missed nursing care, errors of commission, activities of daily living omissions)	1. Ambulation 2. Turning 3. Mouth care 4. Feeding 5. Meal setup 6. Assess effectiveness of medications 7. PRN medications 8. Toileting 9. IV site care 10. Hand washing 11. Focused reassessment 12. Assessment 13. Intake and output 14. Vital signs 15. Bedside glucose 16. Skin/wound care 17. Documentation 18. Patient teaching 19. Emotional support 20. Call light response	Part A = 5-point Likert scale (1) Never missed (2) Rarely missed (3) Occasionally missed, (4) Frequently missed (5) Always missed	Last 3 months

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Papastavrou et al. (2016) [32] Cyprus Descriptive, co-relational, cross-sectional design with translation of the tool from English to Greek Year = 2014	Part A = elements of missed care, 24 item, 2 factors (Activities of daily living missed; acute care missed) Part B = reasons of missed care 17 items, 3 factors (Labor resources; material resources, and communication)	1. Ambulation three times per day or as ordered 2. Turning patient every 2 h 3. Mouth care 4. Patient bathing/skin care 5. Feeding patient when the food is still warm 6. Setting up meals for patient who feeds themselves 7. Assess effectiveness of medications 8. PRN medication requests acted on within 15 min 9. Medications administered within 30 min before or after scheduled time 10. Assist with toileting needs within 5 min of request 11. IV/central line site care and assessments according to policy 12. Hand washing 13. Focused reassessments according to patient condition 14. Patient assessments performed each shift 15. Monitoring intake/output 16. Vital signs assessed as ordered 17. Bedside glucose monitoring as ordered 18. Skin/Wound care 19. Full documentation of all necessary data 20. Attend interdisciplinary care conferences whenever held 21. Presence in medical rounds performed for the patients 22. Patient teaching about illness, tests, and diagnostic studies 23. Patient discharge planning and teaching 24. Emotional support to patient and/or family 25. Response to call light is initiated within 5 min	Part A = 4-point Likert scale (1) Never or rarely (2) Occasionally (3) Frequently (4) Always Part B = 4-point Likert scale (0) Not reason for missed care to (1) Minor reason (2) Moderate reason (3) Significant reason for missed care (4) A reason for missed care	Last working week

Dabney et al. (2019) [33] USA Pilot survey aimed at testing the revised MISSCARE Survey Year = NR	Part A = 25 items Part B, 17 items, 3 factors (The level and quality of communication among the health-care team; The labor resources as staffing and multitasking; the material resources such as supplies and medications	1. Ambulation/mobilization three times per day or as ordered 2. Turning patient every 2 h 3. Mouth care 4. Patient bathing/skin care 5. Feeding patient when the food is still warm 6. Setting up meals for patient who feeds themselves 7. Assessing effectiveness of medications 8. PRN medication requests acted on within 15 min 9. Medications administered within 30 min before or after scheduled time 10. Assisting with toileting needs within 5 min of request 11. IV/central line site care and assessments according to hospital policy 12. Hand washing 13. Focused reassessments according to patient condition 14. Patient assessments performed each shift 15. Monitoring intake/output 16. Assessing vital signs as ordered 17. Bedside glucose monitoring as ordered 18. Skin/wound care 19. Full documentation of all necessary data 20. Attending interdisciplinary care conference whenever held 21. Adequate surveillance of patients 22. Teaching patients about illness, tests, and diagnostic studies 23. Patient discharge planning and teaching 24. Providing emotional support to patient and/or family 25. Response to call light is initiated within 5 min	Part A = 5-point Likert scale (1) Never missed (2) Rarely missed (3) Occasionally missed (4) Frequently missed (5) Always missed Part B = 4-point Likert scale (1) Not a reason for missed care (2) Minor reason (3) Moderate reason (4) Significant reason	NS

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Schubert et al. (2007) [23] Switzerland Validation study Year = 2003–2004	20 items, 5 dimensions (Activities of daily living; caring and support; Rehabilitation and instruction and education; Monitoring and safety; Documentation)	1. Activating/rehabilitating care 2. Mobilization/changing position 3. Perform oral or dental hygiene for patients 4. Bathing/Skin care 5. Changing bed linen 6. Eating 7. Managing body waste (urine, stool, vomit…) 8. Toilet training 9. Adequate hand hygiene 10. Adequate monitoring of patients' vital signs 11. Documentation of performed nursing care 12. Adequate monitoring of confused/impaired patients 13. Coping with the delayed response of a physician 14. Review patient documentation at the begging of each shift 15. Formulate/update patient care plans 16. Conversation with patients or their families 17. Education of patients/families about self-care 18. Preparation for hospital discharge 19. Emotional or psychosocial support 20. Respond promptly to patient calls	4-point Likert scale (0) Never (1) Rarely (2) Sometimes (3) Often	Previous 7 working days

Zúñiga et al. (2016) [34] Switzerland Validation study on validity and reliability of the German, French, and Italian language tool version Year = 2012–2013	19 items, 4 factors (Activities of daily living; Caring; Rehabilitation and monitoring; Documentation; and Social care)	1. Activating/rehabilitating care 2. Mobilize/change of the position 3. Oral hygiene 4. Sponge Bath/partial sponge bath/skin care 5. Assist food intake 6. Assist drinking 7. Leave a resident in urine or stool longer than 30 min 8. Toileting/continence training 9. Monitoring residents as care workers felt necessary 10. Documentation of care 11. Monitoring of confused/cognitively impaired residents and use of restraint or sedatives 12. Studying care plans at the beginning of shift 13. Set up or update residents care plans 14. Necessary conversation with patient or family 15. Emotional support 16. Scheduled single activity with a resident 17. Scheduled group activity with several residents 18. Cultural activities for residents with contact outside of nursing homes 19. Keep residents waiting who rung	4-point Likert scale (0) Not necessary (1) Never (2) Seldom (3) Sometimes (4) Often	Last 7 working shifts

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Norman and Sjetne (2019) [35] Norway To adapt and modify a Norwegian version of BERNCA-NH intended to be applicable to all workers, and assess the psychometric properties Year: 2017	20 item, 4 factors (Routine care, when required care, psychosocial care, and documentation)	1. Mobilization/ change of the position 2. Oral hygiene 3. Sponge bath/partial sponge bath/skin care 4. Provide food other than regular meals 5. Assist food/drink intake 6. Administer prescribed medication 7. Leave a patient in urine/stool longer than 30 min 8. Assist to the toilet when needed 9. Monitoring residents as care workers felt necessary 10. Change/apply wound dressings 11. Documentation of care 12. Monitoring of confused/cognitively impaired residents and use of restraint or sedatives 13. Studying care plans at the beginning of shift 14. Set up or update residents care plans 15. Necessary conversation with patient or family 16. Allow necessary time for patients to perform care themselves when possible 17. Emotional support 18. Experiencing community and meaning 19. Activity that she/he wanted 20. Keep patients waiting who rung	4-point Likert scale (1) Never (2) Seldom (3) Sometimes (4) Often + Activity was not necessary + Not within my field of responsibility	Last 7 working shifts

Jones (2014) [36] Jones (2015) [21] Texas USA Cross-sectional + validation data Year = 2010	31 items, 1 factor 1 item omitted for Licensed Vocational nurses because out of the scope of their practice Items revised for nurse managers by prompting to rate how often nurses on their unit were unable to perform the listed activities	1. Assist with needed ambulation 2. Mobilize or change patient position 3. Routine skin care 4. Change soiled linen 5. Routine hygiene 6. Assist with feeding patient 7. Administer enteral nutrition 8. Administer medications 9. Timely assistance with elimination 10. Promote physical comfort 11. Change intravenous site or tubing 12. Monitor patient safety 13. Follow-up on status changes/requests/unclear orders 14. Provide wound care 15. Change dressing 16. Document all nursing interventions/care 17. Important conversation with other team members 18. Review documentation by care team 19. Evaluate the plan of care 20. Document initiation or revision of plan care 21. Document assessments and monitoring activities 22. Important conversation with external agency 23. Supervise delegated tasks 24. Adhere to infection control guidelines 25. Patient teaching 26. Important conversation with patient about discharge 27. Emotional or psychosocial support 28. Prepare patients for treatments 29. Timely response to request/need (less than 5 min) 30. Monitor patient physiological status 31. Monitor patient behavior	4-point Likert scale (0) Never (1) Rarely (2) Sometimes (3) Often + not needed	Last 7 working shifts

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Gurková et al. (2019) [37] Slovak Republic To adapt and validate the perceived implicit of rationing of nursing Care in Slovak nurse work environment Year = 2018	31 items, 4 factors (Assistance with physical care, implementation of prescribed treatment plan, surveillance, coordinator of care and discharge planning, documentation, planning and evaluation)	1. Assist with needed ambulation 2. Mobilize or change patient position 3. Routine skin care 4. Change soiled linen 5. Routine hygiene for patients 6. Assist with feeding patient 7. Administer enteral or parenteral nutrition 8. Administer medications 9. Assistance with bowel/bladder elimination 10. Implement measures to promote physical comfort 11. Change intravenous access sites, tubing, or dressing 12. Monitoring patient physical safety 13. Follow-up on change in patient status 14. Provide wound care 15. Document all nursing care/interventions 16. Important conversation with team member 17. Review documentation by care team 18. Evaluate plan of care 19. Document initiation or revision of a patient's plan of care 20. Document assessments and monitoring activities 21. Important conversation with external agency 22. Provide supervision of delegated tasks 23. Adherence to safe patient handling guidelines 24. Adhere to infection control guidelines 25. Patient and family teaching 26. Important conversation with patient or family about discharge 27. Emotional or psychological support 28. Prepare patients for treatments, tests, or procedures 29. Timely response to request/need (less than 5 min) 30. Monitoring patient physiological status 31. Monitoring patient affect and behavior	4-point Likert scale (0) Not needed (1) Never (2) Rarely (3) Sometimes (4) Often	Last 7 working shifts

Lucero et al. (2009) [38] USA Secondary analysis of a 1999 survey with validation data Year = 2008	7 items	1. Oral hygiene 2. Back rubs and skin care 3. Adequately document nursing care 4. Develop/update nursing care plans 5. Teach patient or family 6. Prepare patient and families for discharge 7. Comfort/talk with patients	Yes or No	NS
Bruyneel et al. (2015) [7] Europe Secondary analysis of RN4CAST cross-sectional study with validation data Year = 2009–2010	12 items = 7 + 5	1. Frequently changing position 2. Oral hygiene 3. Skin care 4. Administer medication on time 5. Pain management 6. Adequate patient surveillance 7. Treatments and procedures 8. Developing/updating nursing care plans/care pathways 9. Planning care 10. Educating patient or family 11. Preparing patient and families for discharge 12. Comfort/talk with patients	Yes or No	Last working shift

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Bassi et al. (2020) [39] Italy Validation study Year: 2017	Part A = elements of unfinished nursing care, 21 items Part B = 18 items, reason of unfinished nursing care, 5 factors (Communication, Priority Setting, Nurses' Aide's Supervision, Material Resources, Human Resources, and Work Flow Predictability)	1. Provide mouth care to patients who need it 2. Provide personal hygiene to patients who need it 3. Monitor administered medication effects 4. Administer PRN medications within 15 min from the patient's request 5. Monitor pain as planned 6. Ensure patients' comfort (microclimate, patient positioning) 7. Prevent health-care-associated infections adopting good clinical practice (e.g., hand hygiene between patients, closed urinary drainage system) 8. Assess the effectiveness of the care provided, e.g., reviewing if nursing care needs have been met 9. Perform physical assessment (e.g., skin integrity, invasive device insertion site) 10. Record vital signs as planned 11. Perform bedside glucose monitoring as prescribed 12. Prevent negative outcomes for patients at risk (e.g., falls, pressure ulcers, malnutrition) 13. Check pressure ulcers and change dressing according to protocols 14. Document properly the interventions provided and the revision of the care plan 15. Supervise the tasks assigned to the nurse aides 16. Perform clinical handover to adequately inform the next shift nursing team about patients' conditions 17. Communicate with patients and caregivers 18. Teach patients and caregivers how to self-care at home 19. Respond promptly to patients' calls (within 5 min) 20. Spend time with patients and their caregivers 21. Involve patients and caregivers in the discharge planning	5-point Likert scale from (1) Never unfinished (2) Rarely (3) Occasionally (4) Frequently (5) Always unfinished + Not applicable in my setting Part B = 4-point Likert scale (1) Not a reason for unfinished nursing care (2) Minor reason (3) Moderate reason (4) Significant reason	The last 7 working days

Uchmanowicz et al. (2020) [40] Poland Adaptation of the PIRNCA questionnaire and a cross-sectional validation study Year: 2018	31 statements Two additional questions (nurses' assessment of patient care; job satisfaction)	1. Hygiene 2. Skin care 3. Bedding 4. Walking assist 5. Position 6. Bladder or bowler 7. Food intake 8. Physical comfort 9. Medications 10. Nutrition 11. Wound care 12. Intravenous port 13. Safe practices 14. Infections 15. Education 16. Preparation 17. Emotional 18. Physiological 19. Behavior 20. Safety 21. Missed requests 22. Waiting time 23. Member team 24. External unit 25. Family member 26. Delegations 27. Patient data 28. Care plan 29. Assessment 30. Nursing process 31. Nursing plan	4-point Likert scale (0) Never (1) Rarely (2) Sometimes (3) Often + not applicable 1 question = nurses' assessment of patient care 10-point Likert scale from (1) dangerously low quality of care to (10) very good quality of care; 2 question = job satisfaction 10-point Likert scale from (1) "it is terrible" to (10) "I love it"	Last 7 working shifts

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Hübsch et al. (2020) [41] Germany Pilot study aimed at assessing the reliability, validity, and applicability of the German-language MISSCARE and BERNCA-R questionnaires Year:	MISSCARE survey [22] Part A (25 item) BERNCA-R (Schubert et al. 2013) (32 item)	MISSCARE survey 1. Ambulation as planed or ordered 2. Turning patient as planed or ordered 3. Feeding patient when the food is still warm 4. Setting up meals for patient who feeds themselves 5. Support with bathing 6. Skin care 7. Wound care 8. IV/central line site care and assessments according to hospital policy 9. Mouth and/or dental 10. Assist with toileting needs within 5 min of request 11. Vital signs assessed as ordered 12. Monitoring intake/output 13. Glucose monitoring as ordered 14. Medications administered within 30 min before or after scheduled time 15. PRN medication requests acted on within 15 min of needs assessment 16. Assess effectiveness of PRN medications 17. Leading conversations with patients and/or family concerning implementation of care processes (e.g., nursing assessment) 18. Focused assessments according to patient condition (e.g., assessment of pain or delirium) 19. Patient and/or family teaching about illness, tests, and therapy 20. Preparation with patient and/or family for discharge 21. Teaching and training of patients and/or family (e.g., insulin injection) 22. Emotional support to patient and/or family 23. Full documentation of all necessary data	MISSCARE survey: 5-point Likert scale from (1) nearly always to (5) nearly always missed + activity not necessary BERNCA-R 5-point Likert scale (0) Not required (1) Never (2) Rarely (3) Sometimes (4) Often	Last 7 working days

		24. Response to call light is initiated within 5 min of request 25. Participation in doctors' rounds BERNCA-R (see Schubert et al. 2013) 1. Sponge bath 2. Partial sponge bath 3. Skin care 4. Oral hygiene 5. Dental hygiene 6. Assist food intake 7. Mobilization 8. Change of the position 9. Change of the bed linen 10. Emotional & psychological support 11. Necessary conversation 12. Information about therapies 13. Continence training (diapers) 14. Continence training (insert catheter) 15. Activating or rehabilitating care 16. Education and training 17. Preparation for discharge 18. Monitoring patients as described by physician 19. Monitoring patients as the nurse felt necessary 20. Monitoring of confused patients & use of restrains 21. Monitoring of confused patients & use of sedatives 22. Delay in measure because of a physician delay 23. Administration of medication, infusions 24. Change of wound dressings 25. Preparation for test and therapies 26. Keep patient waiting who rung 27. Adequate hand hygiene 28. Necessary disinfection measures 29. Studying care plans 30. Assessment of newly admitted patient 31. Set up care plans 32. Documentation & evaluation of the care		

(continued)

Table 4.1 (continued)

Author, publication year, Country, Study design, and data collection year	Instrument characteristics	Items	Metrics	Time reference
Kalánková et al. (2020) [42] Slovak Republic Evaluation of the psychometric properties of the PIRNCA instrument with validation data Years: 2017–2018	31 items, 5 factors (Assistance with physical care; Monitoring safety-support; Documentation-supervision; Communication; Implementation of the prescribed treatment plan)	1. Routine hygiene 2. Routine skin care 3. Changing soiled bed linen 4. Assistance with needed ambulation 5. Mobilization or changing patient position 6. Timely assistance with bowel or bladder elimination 7. Assistance with the intake of food or fluids 8. Promotion of physical comfort 9. Administer medications 10. Administer enteral or parenteral nutrition 11. Provide wound care 12. Change intravenous access sites, tubing, and/or dressings 13. Adherence to recommended guidelines for safe patient handling 14. Adherence to infection control guidelines 15. Providing the amount of teaching for the patient or his/her family 16. Preparing patients for treatments, tests, or procedures 17. Emotional or psychological support 18. Monitoring the patient's physiological status 19. Monitoring the patient's affect and behavior 20. Monitoring the patient's physical safety	5-point Likert scale (0) Not needed (1) Never (2) Rarely (3) Sometimes (4) Often	Last 7 working shift

		21. Following-up on patient status changes 22. Timely response to request/need in less than 5 min 23. Important conversation with team members 24. Important conversation with an external agency 25. Important conversation with a patient or family member about discharge 26. Provide adequate supervision of or follow-up on delegated activities 27. Reviewing the multidisciplinary patient documentation 28. Documentation of the initiation or revision of plan care 29. Documentation of assessments and monitoring activities 30. Documentation of all of the nursing care provided 31. Evaluation of the plan of care		

IV Intravenous, *NS* Not Specified, *PRN* Pro Re Nata, means medications that are taken "as needed", *UNC* Unfinished Nursing Care, *PRINCA* Perceived Implicit Rationing of Nursing Care, *PRN* Pro Re Nata, *RN4CAST* Registered Nurse Forecasting

detecting the perceived missed care reasons, thus allowing the design and implement interventions, in addition to diagnose the occurrence of the phenomenon.

After its establishment, the MISSCARE survey tool has been validated for language and cultural issues in Turkey [27], Lebanon [28], Brazil [43, 44], Iceland [45], Cyprus [32], Italy [46], and more recent in Ireland [47]. This first generation of the MISSCARE survey tools have then been followed by the second generation where substantial developments have been introduced in order to shape the tool to the needs of non-hospital settings e.g., community care [47]; or expanding its value in the context of nursing errors/omissions [29]. Both generations of tools have been resulted in more recent cultural and language validations [48], settings (pediatrics [49]) and populations (MISSCARE–Survey Patients [24]).

According to the systematic review available [25], the validity properties assessed to date have been conducted with good and excellent methodologies, suggesting that the first and second generations of the tool are valid.

4.3.1.2 The Basel Extent of Rationing of Nursing Care

The original Basel Extent of Rationing of Nursing Care (BERNCA) tool was established in Switzerland according to the established conceptual model of implicit rationing of nursing care. The instrument was intended to measure the rationed nursing care and not its reasons, thus the occurrence of the phenomenon and not its underlying reasons [23].

A total of 20 nursing interventions grouped into five dimensions have been included in the tool, namely (1) activities of daily living; (2) caring and support; (3) rehabilitation, instruction, and education; (4) monitoring and safety; and (5) documentation. For each item, nurses are invited to report the frequency of missed care as perceived in the last 7 working shifts: the metrics is based upon a 4-point Likert scale (from "never" to "often"). The first revision of the tool was established (BERNCA-R [50]) by expanding the items and including a response option ("not required"). Then, researchers adapted the tool in different settings, languages, and culture. For example, the Greek version of BERNCA was established [51] and more recent in Poland [52].

Rochefort [53] adapted the tool to the neonatal intensive care setting (Neonatal Extent of Work Rationing Instrument, NEWRI). Alongside other modifications, Rochefort [53] introduced an interesting variation in the structure of the tool by providing three subscales where nurses are asked to (a) report the frequency with which they deliver each intervention during the shift; (b) rank the importance of each activity as personally perceived; and (c) report the frequency with which they rationed the activity (from very rarely to very often).

The abovementioned tools can be considered the first generation of BERNCA tools; more recently, the second generation have been validated. Specifically, Jones [21, 36] has developed the Perceived Implicit Rationing of Nursing Care (PIRNCA) by adapting the BERNCA instrument to the medical and surgical settings in the USA. In this context, variations in the item composition of the tool have been introduced regarding the potential participants: (a) for example, when administered to licensed nurse practitioners, an item was removed, while in the case of nurse

managers, the items were adapted in their prompts; moreover, (b) the metric was changed and the option "not needed" was included. More recently, the BERNCA-Nursing Homes was developed by retaining only 19 items [34].

According to the systematic review available [25], the validity properties assessed to date have been conducted with good and excellent methodologies, suggesting that the first and second generations of the tool are valid.

4.3.1.3 Task Undone Tool

The Task Undone (TU) is recognized to be the first tool established in the missed nursing care field. It has been developed following a variety of conceptual models, as that regarding the quality of care established by Donabedian's [54], the missed nursing care model [20], and the implicit rationing of nursing care [55]. Firstly, it has been established the Task Undone scale (TU-7) [56] where seven nursing actions required but frequently left undone were included. The following tool named TU-12 has included 12 items, while more recently the TU composed by 13 items have been established (TU-13; [57]) by considering some actions included in the BERNCA tool [23]. The tool is featured in the form of checklist with a dichotomous response (undone, yes/no) thus not requiring a judgment regarding the frequency of missed care (for example, rarely or often).

The tool has been documented as capable to measure missed care in a parsimonious manner, given the limited number of items as compared with other instruments [25].

4.3.2 The New Frontiers

4.3.2.1 The Unfinished Nursing Care Survey

Despite the acknowledged similar items and the common conceptual reference connected with the overarching concept of Unfinished Nursing Care [21], no attempts to integrate the abovementioned tools in one single tool capable of reflecting the broader concept of UNC have been performed to date. Moreover, any comparative measure by using different tools have been attempted to date by measuring in the same context the missed care and understanding the capacity of different tools to measure the same phenomenon [25]. This challenge has been undertaken recently [39]: the research group has developed the tool by considering the MISSCARE Survey and critically reviewing other tools available in the field, namely the BERNCA (32 items [23]) and the Italian version of the Caring Behaviours Inventory [58]. The developed Unfinished Nursing Care Survey (UNCS) has been evaluated in its acceptability, construct validity, internal consistency, and criterion validity. The UNCS is divided in part A (=elements of unfinished care, 21 items) and part B (=reasons for unfinished care, 18 items). At this stage of the validation, according to the findings of the validation process undertaken, the tool can be used for measuring the occurrence and the underlying reasons of unfinished care. Its comprehensive nature capable to consider all instruments developed in the field might contribute to the establishment of a common reference measure of the missed care worldwide.

However, more validation studies are required in different cultural contexts, languages, and clinical settings.

4.3.2.2 The Single Global-Item

With the intent to prevent response burden, to increase participation rates, as well as to produce a single generalizable measure, capable of ensuring sensitivity and specificity in detecting the missed care, recently a research group composed by researchers, clinicians, midwives, and work-force experts has developed and tested a single-item, global, measure by using data from a large study regarding the missed care in Australia. The single global-item estimated (SGE) was developed by consensus and stated as following: "To the best of your knowledge what percent of nursing care is MISSED (at least occasionally) by the nursing staff in your workplace? Please provide your estimate as a number in the comment box below." [26]. This simple item measure has been assessed in its validity by reporting good indexes when compared to one list-format measure of missed care; moreover, it has shown higher sensitivity and specificity in detecting situation where the care was poor. Therefore, a single-item measure can assist nurses in identifying areas of improvements and in quickly detect issues in the quality of nursing care [26].

4.3.3 Issues Regarding Missed Care Tools

According to the state of the science, both in the practice and in the research fields, the following aspects should be addressed in order to collect valid measure and to prevent under- or overestimations in the missed care measures:

- Analyzing the consistency of the scope of practice of the target population with the tool used: available tools have been mainly validated among nurses (e.g., Bruyneel et al. [7]; Castner [29]) and nursing aides, technicians, practical or licensed vocational nurses [22, 43–45]. Moreover, in some studies, also midwives [46], head nurses [36] and Public Health Nurse and Community Registered General Nurses [59] have been involved by using the same [46] or tailored tools [47]. Health-care professionals have different scope of practice: therefore, the appropriateness of the tool used should be assessed in the list of items, namely if they reflect the scope of practice or not. Neglecting this point, as in the case of nurses and nurses' aides (e.g., Blackman et al. [60]) might result in differences in the assessment due to their different scope of practice and not to the real occurrence of the phenomenon. In this case, providing an option as "not applicable" for nursing interventions not consistent to the targeted profession as well as to the setting might be helpful.
- Collecting data on care expectations or merely on the missed nursing care: in this context only Rochefort [53] have introduced an interesting modification of tools available by asking to nurses to report the frequency of a given nursing action in the daily practice, its importance as perceived by the same nurse, and the fre-

quency of omission [61]. Therefore, the tool might inform not only regarding the missed care but also regarding the importance of a given nursing action in the context as expected and perceived by each nurse.

- Involving all contexts of care: to date the majority of tools have been validated in acute care settings, mainly medical and surgical units, including neonatal care [53]; however, a few studies have validated tools devoted to nursing homes [34] and community care settings [47]. There is a need to expand knowledge available both in the missed care occurrence and regarding the instruments used to measure it by involving all settings of care.
- Considering the missed care phenomenon as individual vs. in-group decision. The BERNCA and the Task Undone tools ask nurses to consider their own practice; differently, the MISSCARE survey asks to base the assessment on the practices of the staff as perceived by each nurse. In some contexts, nurses are more likely to work alone, as in the community care settings or in Intensive Care Units; in other contexts, instead, as for example in medical and surgical units, nurses work mainly as a group. Increased clarity in the decision-making processes involved in the missed care, as influenced mainly by the nurse or by the group of nurses, might support future researchers in establishing the appropriate angle of the assessment, as individual or collective.
- Considering the right time frame: missed nursing care can be episodic or express as a habit [62]. In the first case it could be important to establish a limited precise period for data reporting as the last shift (e.g., Bruyneel et al. [7]; Sist et al. [46]) or the last 7 working days (e.g., Papastavrou et al. [51]; Phelan et al. [47]). In the second case, when missed care is considered as a habit, the time frame could be unspecified (e.g., Kalisch and Williams [22]). Therefore, tools should reflect in their metrics the underline missed care theoretical foundations in order to be consistent.
- Developing more international studies: to date validations studies have been performed mainly at the national levels with some exceptions where more countries have been involved [7, 27]. In order to reflect cultural issues, differences in the scope of nursing practice, as well as health-care system features, validation studies conducted simultaneously across countries can support in benchmarking validated data and in the following evaluation of implications of different policies across the world regarding nursing care and its failures.
- Preventing response biases: among available studies, a few tools have documented a response rate over 60% [23, 27, 32, 34, 43, 44, 46, 53]. Poor response rates in nursing surveys have been already underlined as an issue [63]; however, in the field of missed care, this might introduce severe bias. Factors implicated in the low response rate, such as the length of the questionnaire or the lack of confidence in disclosing nursing care failures, should be addressed in the future studies [25].

However, in studies available, several missed data have emerged (e.g., the year of data collection and the response rate of participants). Therefore, strategies to standardize the information while reporting studies in this field are recommended.

4.4 The RANCARE Guideline—Strengthening tRansparent Reporting of reseArch on uNfinished Nursing CARE[1]

The first reporting guidelines appeared in the 1990s starting with an initiative to improve the reporting of randomized trials which became later known as the CONSORT (Consolidated Standards of Reporting Trials) Statement [65]. Since then, more than 400 reporting guidelines have been developed and are collected by the EQUATOR network initiative [66], which "seeks to improve the reliability and value of published health research literature by promoting transparent and accurate reporting and wider use of robust reporting guidelines" [67]. A reporting guideline is a "simple, structured tool for health researchers to use while writing manuscripts" to define essential information that is needed to ensure the research paper is useful to readers, such as other researchers and clinicians [67]. Moher et al. [68] provide a working definition for a reporting guideline as a "checklist, flow diagram, or explicit text to guide authors in reporting a specific type of research, developed using explicit methodology."

Most often missed nursing care is assessed with multiple items in nurse-reported questionnaires. Although recently different ways of measuring missed care emerged such as a single-item measure [26] or by extracting missed care activities in the electronic health records [69], multi-item nurse self-report remains the most dominant approach. Although researchers in the field acknowledge that missed care and associated concepts such as rationing of care and unfinished care share a common core, quantitative studies in this domain are methodological and conceptually demanding, which is also reflected in the way they conceptualize, measure, analyze, and report studies on missed nursing care [1]. This diversity in conceptualization and measurement makes the interpretation and integration of research findings in practice, and also for systematic reviewers and other researchers difficult.

4.4.1 The Development of the RANCARE Guidelines

The Strengthening tRansparent reporting of reseArch on uNfinished nursing CARE (RANCARE) guideline was developed following the guidance of the EQUATOR network [68]. A steering group consisting of three experienced researchers in the field and a graduate student was set up to develop and guide the consensus process. The consensus process consisted of an online Delphi survey and an international workshop as part of the RANCARE EU-Cost Action [70] to identify, refine, and agree on relevant items for the guideline. To identify experts for the Delphi survey, we considered all members of the RANCARE 15208 COST Action as eligible. Furthermore, we updated the literature review on studies on unfinished nursing care

[1] This is a shortened version of the publication: Under review. Please refer to the peer-reviewed publication for full reference [64].

from Jones et al. [21] and invited authors if they were listed as first or corresponding authors on any of these papers. Finally, the list of eligible experts was reviewed by members of the steering group and extended by hand with a snowballing approach. Participation of experts in the Delphi study was voluntary with informed consent obtained before participation in the Delphi survey. The study was exempted from ethical approval as participation was anonymous and voluntary in accordance with Swiss law (EKNZ, Req-2018-00399).

Between 2017 and 2019, the steering group organized two online Delphi rounds and one face-to-face workshop. Reviewing existing methodological guidelines and a literature review on unfinished nursing care, an initial list of 61 items was developed. In the first Delphi round, all items were rated by experts with regard to their relevance ("How do you rate the relevance of this item for inclusion in the RANCARE guideline?") and clarity ("How do you rate the clarity of wording of this item?"). Of 126 eligible participants, 62 (return rate: 49%) completed the first Delphi round, with 38 (30%) eventually finishing both rounds. For the face-to-face workshop held along a RANCARE meeting in Porto, Portugal, in 2019, 26 experts joined. Seventy-six percent of participants were female, with 70% having a nursing background, and 30% having more than 20 years of professional experience.

Rating of each item was made on a scale from *1 = extremely irrelevant/unclear* to *9 = extremely relevant/clear*, with a given middle of *5 = uncertain*. Using the RAND/UCLA Appropriateness Method [71] we assessed all items with the median, interpercentile range, asymmetry index, and the interpercentile range adjusted for asymmetry. Participants were also invited to leave comments or suggestions for improvement of items, with 50% of participants using this opportunity. The initial item list of n = 61 items reached consensus regarding relevance and clarity on 98% of the items. Based on the received comments and based on the discussion the workshop, the number of items was reduced and wording further revised. For round 2 of the Delphi study, a list of 38 revised guideline items were rated on relevance (1–9), clarity (19), and we added the self-developed item, whether the item should be included (yes/no), to allow for a clear decision. The median rating was ≥7 without disagreement on either relevance or clarity confirming all items for inclusion. As 17 items were rated by 90% and 21 items by more than 75% of experts to be included the Delphi survey was closed after the second round. Substantial qualitative feedback in the second round on further clarification of wording and splitting two items resulted in the final version of the guideline (Table 4.2). In addition to the items of the guideline itself, Table 4.3 provides additional clarification on the reporting on the setting regarding the health-care system, organizational and individual level.

4.4.2 The RANCARE Guideline Implications

The RANCARE guideline aims at supporting the comparison of studies in the field and addresses essential areas of research in unfinished care including its conceptualization, measurement, data analysis, and presentation of study findings. As it focuses on the substantive domain of this field, it is recommended to use the

Table 4.2 The RANCARE guidelines

RANCARE guidelines—Strengthening tRansparent reporting of reseArch on uNfinished nursing CARE
Please consider the following points when using the RANCARE guideline: • RANCARE guideline provides guidance for transparent reporting of quantitative research and measuring unfinished nursing care • Unfinished nursing care is used as a linking term throughout this guideline for all commonly used concepts related to the topic (e.g., missed care, implicit rationing, task undone, care left undone, care omitted, etc.). This will assure that literature searches on related topics will be all-inclusive • The guideline addresses issues commonly encountered in communicating quantitative research on the topic—however, some aspects may be pertinent for qualitative or mixed-methods research • Please use the RANCARE in addition to the reporting guideline relevant to your study's design (e.g., STROBE or CONSORT) • All items are offered as points to consider—they may not be applicable to every study or need to be left out due to limited space for publications
Title/Introduction/Background
1. Title (a) Indicate the term for the concept used in the study to represent the phenomenon of unfinished nursing care
2. Keywords (a) In addition to the term of your key concept, additionally include "unfinished nursing care" as keyword
3. Background (a) Provide a comprehensive literature review about your chosen term and its relationship to the broader field of unfinished nursing care (b) Explain how your study findings will advance the state of science on unfinished nursing care
4. Conceptual model/Theoretical consideration (a) Describe the theoretical perspective / paradigm concerning unfinished nursing care underlying your study (b) Where appropriate, include a figure describing the relationships between unfinished nursing care and other concepts to be studied
5. Objectives (a) Study aims related to unfinished nursing care are clearly stated
Methodology
6. Study design (a) Specify the study design in relation to the measurement of unfinished nursing care
7. Setting/ Context (a) Provide relevant information about the context in which you are studying unfinished nursing care
8. Sample/ Respondents/ Participants (a) Describe characteristics of study participants (e.g., nurses, patients, or other). (b) Specify inclusion and exclusion criteria of participants and/or data sources
9. Sample/ Data (a) State the purpose of data collection (b) Acknowledge if the data described in the paper were analyzed and reported in previous publications. If so, describe

Table 4.2 (continued)

10.	**Ethical and legal considerations**
	(a) Describe relevant ethical issues and how they were addressed (e.g., confidentiality for patients, respondents, records, and institutions)
	(b) Include statement about ethical board review and approval
11.	**Measurement of unfinished nursing care**
	(a) Indicate the method(s) for data collection (e.g., online survey, paper collection, existing records)
	(b) State the instrument or item(s) for measuring unfinished nursing care
	(c) Report all other methods or sources used (e.g., observation, electronic health records)
	(d) *If multiple data sources were used*: clearly specify which data were used to answer which research question(s)
12.	**Modification of a survey instrument *(if applicable)***
	(a) Describe any modification on the original instrument that has been made (e.g., number and content of items, answer options) including the rationale for the modifications (e.g., setting, cultural and/or language adaption, skill level or other)
	(b) Report any evidence on validity and reliability of the original and modified versions
13.	**Time period/reference**
	(a) *For surveys:* Report the recall period for the self-report of unfinished nursing care (e.g., last 7 working days, last shift, not specified, other)
	(b) Clearly state the time frame referred to by the unfinished nursing care measure and other outcomes under study (e.g., unfinished nursing care measured per week and outcome data per month)
14.	**Scoring**
	(a) Report how the scoring was made (e.g., mean score, sum score, percentage) for descriptive and inferential analyses and if any item weighting was made
	(b) *If applicable:* specify at what level data were aggregated (e.g., individual nurse/patient, unit, or facility level) and provide (statistical) justification for aggregation
15.	**Statistical methods**
	(a) Explicitly link each statistical analysis to the relevant study aim
	(b) Describe, in detail, statistical methods applied to analyze and model unfinished nursing care
	(c) Describe adjustments for hierarchical data structure/clustering
	(d) Specify any sensitivity or subgroup analysis
	(e) State how missing data have been handled (e.g., was the case omitted from further analyses, missing values imputed, etc.)
Results	
16.	**Descriptive results**
	(a) Provide relevant descriptive results on setting and context (topic 7) as well as sample/respondents (topic 8)
17.	**Unfinished nursing care**
	(a) Report descriptive data for unfinished nursing care on the item level and aggregated for the overall score
	(b) *If applicable*: Report unfinished nursing care for subgroups that are of interest for the study (e.g., nurses' educational/leadership level)
	(c) Report rates of missing data per item/subgroup/source
	(d) *If applicable:* report hospital/facility and/or unit variability with a commonly used measurement (e.g., Intraclass correlations)

(continued)

Table 4.2 (continued)

Discussion	
18.	**Interpretation & Implications** (a) Relate your results back to the original conceptual model and the theory used (b) Discuss your results in the context of the larger body of knowledge on unfinished nursing care (c) Discuss the implications for clinical practice, further research, education, and policy (depending on the journals' focus and scope)
19.	**Strengths & Limitations** (a) Report steps taken to reduce bias and confounding related to your study on unfinished nursing care (a) Discuss limitations linked to your study on unfinished nursing care

Table 4.3 Contextual elements to describe the setting in studies on unfinished nursing care

Level	Examples
System level	Country including cultural traditions City including population size Health-care system within country (e.g., funding system, for profit)
Organizational/Provider level	Setting (e.g., hospital, nursing home, home care) and specific area within setting (e.g., ICU, dementia care units) Size/volume of the facilities/units (no. of beds), classifications (e.g., Magnet® status), ownership (e.g., public) Model of care (e.g., patient allocation, primary nursing, team nursing, lean management) or describe task allocation between (nursing) staff
Individual level[a]	Scope of practice of nursing staff (e.g., registered nurses, licensed practical nurses) Nursing staff (e.g., age, gender, level of education) and skill/grade mix on unit Patient population (e.g., age, gender, primary and relevant ancillary diagnosis) Information on shift, weekday (weekends), months of data collection

[a]This information should be included independently from the sample description

guideline in unison with generic reporting guidelines targeting research designs such as STROBE or CONSORT.

As of now quantitative studies on unfinished nursing care have applied cross-sectional designs and often followed STROBE reporting guidelines. The RANCARE guideline adds to this design-based guideline by addressing the conceptualization, corresponding measurement, and data analyses of unfinished nursing care. Indeed, not all items may be relevant for each study, but we believe that the guideline supports the reporting of information needed for a better understanding of the key features of studies as well as the study quality.

Transparent and complete reporting of research results are required to gain a deeper understanding of drivers of unfinished nursing care and patient and/or nurse outcomes [1, 72]. We hope that researchers following the RANCARE reporting

guideline will communicate clearer and more comprehensive results of their studies. This will facilitate meaningful comparisons across studies, settings, and countries, while at the same time empirical findings can be used more efficiently. We do hope that the RANCARE guideline will not only be utilized but also is commented on for further refinement.

4.5 Summary

The chapter reports on three elements in the design, instruments, and reporting of studying missed care. At this moment, 90% of the research designs are observational making use of cross-sectional surveys. But first studies are appearing in which longitudinal designs are used, making inferences about cause–effect relationships more easily to establish. So far, no experiments have been conducted. Most surveys are using self-reported questionnaires. Three main instruments are being used: the MISSCARE Survey tool, the Basel Extent of Nursing Care (BERNCA tool), and the Task undone scale. All three instruments are available in a wide range of languages and have been used in different countries and settings. All three have several modifications being developed. All three have been tested and validated widely. Only recently, there have been an attempt via the Unfinished Nursing Care Survey to collapse the abovementioned tools in a single tool capable to grasp the broader concept. Secondly, a single-item measure has been developed that can assist nurses in quickly detect issues in the quality of nursing care. Next to self-reporting, first attempts have been made to extract missed care activities from the electronic health records, what could be a promising next step.

Publications on missed care research has been mainly based sofar on STROBE reporting guidelines that are used in reporting cross-sectional designs. But the quality of the reporting may be highly variable. The "Strengthening tRansparent reporting of reseArch on uNfinished nursing CARE (RANCARE) guideline" aims to fix this issue. The guideline consists of 19 elements to be reported. Additionally, three contextual elements have been formulated to describe the setting in missed care studies take place.

We have seen in last years a lot of progress in studying missed care by using better and more advanced designs, the availability of a wider range of validated and more specific instruments. And the RANCARE reporting guideline should improve the quality and replicability of the research.

References

1. Vincelette C, Thivierge-Southidara M, Rochefort CM. Conceptual and methodological challenges of studies examining the determinants and outcomes of omitted nursing care: a narrative review of the literature. Int J Nurs Stud. 2019;100:103403.
2. Pearl J.. Theoretical impediments to machine learning with seven sparks from the causal revolution. arXiv preprint. 2018 arXiv,1801.04016.

3. Hill AB. The environment and disease: association or causation? Proc R Soc Med. 1965;58(5):295–300.
4. Poots AJ, Reed JE, Woodcock T, Bell D, Goldmannet D. How to attribute causality in quality improvement: lessons from epidemiology. BMJ Qual Saf. 2017;26(11):933–7.
5. Griffiths P, et al. Nurses' shift length and overtime working in 12 European countries: the association with perceived quality of care and patient safety. Med Care. 2014;52(11):975.
6. Chen H, Cohen P, Chen S. How big is a big odds ratio? Interpreting the magnitudes of odds ratios in epidemiological studies. Commun Stat Simul Comput. 2010;39(4):860–4.
7. Bruyneel L, et al. Organization of hospital nursing, provision of nursing care, and patient experiences with care in Europe. Med Care Res Rev. 2015;72(6):643–64.
8. Simms AD, et al. Mortality and missed opportunities along the pathway of care for ST-elevation myocardial infarction: a national cohort study. Eur Heart J Acute Cardiovasc Care. 2015;4(3):241–53.
9. Tubbs-Cooley HL, Mara CA, Carle AC, Mark BA, Pickler RH. Association of nurse workload with missed nursing care in the neonatal intensive care unit. J Am Med Assoc Pediatr. 2019;173(1):44–51.
10. Dhaini SR, et al. Trends and variability of implicit rationing of care across time and shifts in an acute care hospital: a longitudinal study. J Nurs Manag. 2020;28(8):1861–72.
11. Ball JE, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5.
12. Zhu X, Zheng J, Liu K, You L. Rationing of nursing care and its relationship with nurse staffing and patient outcomes: the mediation effect tested by structural equation modeling. Int J Environ Res Public Health. 2019;16(10):1672.
13. Cho SH, Mark BA, Knafl G, Chang HE, Yoon HJ. Relationships between nurse staffing and patients' experiences, and the mediating effects of missed nursing care. J Nurs Scholarsh. 2017;49(3):347–55.
14. Kalisch BJ, Xie B. Errors of omission: missed nursing care. West J Nurs Res. 2014;36(7):875–90.
15. Liu J, Zheng J, Liu K, You L. Relationship between work environments, nurse outcomes, and quality of care in ICUs: mediating role of nursing care left undone. J Nurs Care Qual. 2019;34(3):250–5.
16. Rusá Š, Komárek A, Lesaffre E, Bruyneel L. Multilevel moderated mediation model with ordinal outcome. Stat Med. 2018;37(10):1650–70.
17. McGlynn EA, et al. The quality of health care delivered to adults in the United States. N Engl J Med. 2003;348(26):2635–45.
18. Seys D, et al. Better organized care via care pathways: a multicenter study. PLoS One. 2017;12(7):e0180398.
19. van Zelm R, et al. Variation in care for surgical patients with colorectal cancer: protocol adherence in 12 European hospitals. Int J Color Dis. 2017;32(10):1471–8.
20. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. J Adv Nurs. 2009;65(7):1509–17.
21. Jones TL, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52(6):1121–37.
22. Kalisch BJ, Williams RA. Development and psychometric testing of a tool to measure missed nursing care. JONA. 2009;39(5):211–9.
23. Schubert M, Glass TR, Clarke SP, Schaffert-Witvliet B, De Geest S. Validation of the Basel extent of rationing of nursing care instrument. Nurs Res. 2007;56(6):416–24.
24. Kalisch BJ, Xie B, Dabney BW. Patient-reported missed nursing care correlated with adverse events. Am J Med Qual. 2014;29(5):415–22.
25. Palese A, et al. Measurement tools used to assess unfinished nursing care: a systematic review of psychometric properties. J Adv Nurs. 2021;77(2):565–82. https://doi.org/10.1111/jan.14603.
26. Hamilton P, et al. Evaluating the performance of a single-item, global, estimate of missed nursing care. J Nurs Meas. 2017;25(1):121–41.

27. Kalisch BJ, Terzioglu F, Duygulu S. The MISSCARE survey-Turkish: psychometric properties and findings. Nurs Econ. 2012;30(1):29–37.
28. Kalisch BJ, Lee KH, Zein JE, Doumit M. Missed nursing care, level of staffing and job satisfaction Lebanon versus the United States. J Nurs Adm. 2013;43(5):274–9.
29. Castner J. A multi-level model of missed nursing care in the context of hospital merger. Doctorate thesis, The University of Wisconsin-Milwaukee; 2012.
30. Castner J, Dean-Baar S. Measuring nursing error: psychometrics of MISSCARE and practice and professional issues items. J Nurs Meas. 2014;22(3):421–37.
31. Castner J, Wu YW, Dean-Baar S. Multi-level model of missed nursing care in the context of hospital merger. West J Nurs Res. 2015;37(4):441–61.
32. Papastavrou E, Charalambous A, Vryonides S, Eleftheriou C, Merkouris A. To what extent are patients' needs met on oncology units? The phenomenon of care rationing. Eur J Oncol Nurs. 2016;21:48–56.
33. Dabney BW, Kalisch BJ, Clark M. A revised MISSCARE survey: results from pilot testing. Appl Nurs Res. 2019;50:151202.
34. Zúñiga F, et al. Evidence on the validity and reliability of the German, French and Italian nursing home version of the Basel extent of rationing of nursing care instrument. J Adv Stud. 2016;72(8):1948–63.
35. Norman RM, Sjetne IS. Adaptation, modification, and psychometric assessment of a Norwegian version of the Basel extent of rationing of nursing care for nursing homes instrument (BERNCA-NH). BMC Health Serv Res. 2019;19(1):969.
36. Jones TL. Validation of the perceived implicit rationing of nursing care (PIRNCA) instrument. Nurs Forum. 2014;49(2):77–87.
37. Gurková E, et al. Factor analysis, validity of the perceived implicit rationing of nursing care instrument and prevalence and patterns of unfinished nursing care in Slovakia. J Nurs Manag. 2020;28(8):2036–47.
38. Lucero RJ, Lake ET, Aiken LH. Variations in nursing care quality across hospitals. J Adv Nurs. 2009;65(11):2299–310.
39. Bassi E, Tartaglini D, Valpiani G, Grassetti L, Palese A. Unfinished nursing care survey: a development and validation study. J Nurs Manag. 2020;28(8):2061–71.
40. Uchmanowicz I, et al. Polish adaptation and validation of the perceived implicit rationing of nursing care (PIRNCA) questionnaire: a cross-sectional validation study. BMJ Open. 2020;10(4):e031994.
41. Hübsch C, Müller M, Spirig R, Kleinknecht-Dolf M. Performed and missed nursing care in Swiss acute care hospitals: conceptual considerations and psychometric evaluation of the German MISSCARE questionnaire. J Nurs Manag. 2020;28(8):2048–60.
42. Kalánková D, et al. Psychometric testing of perceived implicit rationing of nursing care (PIRNCA). J Adv Nurs. 2020;76(6):1469–82.
43. Siqueira LDC, Caliri MHL, Kalisch BJ, Dantas RAS. Cultural adaptation and internal consistency analysis of the MISSCARE survey for use in Brazil. Rev Lat Am Enfermagem. 2013;21:610–7.
44. Siqueira LDC, Caliri MHL, Haas VJ, Kalisch BJ, Dantas RAS. Validation of the MISSCARE-BRASIL survey—a tool to assess missed nursing care. Rev Lat Am Enfermagem. 2017;25:e2975.
45. Bragadóttir H, Kalisch BJ, Smáradóttir SB, Jónsdóttir HH. Translation and psychometric testing of the Icelandic version of the MISSCARE survey. Scand J Caring Sci. 2015;29(3):563–72.
46. Sist L, et al. MISSCARE survey—Italian version: findings from an Italian validation study. Ig Sanita Pubbl. 2017;73(1):29–45.
47. Phelan A, McCarthy S, Adams E. Examining missed care in community nursing: a cross section survey design. J Adv Nurs. 2018;74(3):626–36.
48. Zeleníková R, Gurková E, Jarošová D. Missed nursing care measured by MISSCARE survey–the first pilot study in the Czech Republic and Slovakia. Central Eur J Nurs Midwifery. 2019;10(1):958–66.

49. Bagnasco A, et al. Missed care in children's nursing-an emergent concern. J Adv Nurs. 2019;75(5):921–3.
50. Schubert M, et al. Levels and correlates of implicit rationing of nursing care in Swiss acute care hospitals—a cross sectional study. Int J Nurs Stud. 2013;50(2):230–9.
51. Papastavrou E, Andreou P, Tsangari H, Schubert M, De Geest S. Rationing of nursing care within professional environmental constraints: a correlational study. Clin Nurs Res. 2014;23(3):314–35.
52. Uchmanowicz I, et al. Validation of polish version of the Basel extent of rationing of nursing care revised questionnaire. PLoS One. 2019;14:e0212918.
53. Rochefort C. Structure et fonctionnement des services Québécois de néonatologie et leurs relations avec la qualité des soins et des indicateurs de santé au travail chez les infirmières. Doctoral Dissertation, University of Montreal; 2008.
54. Donabedian A. The quality of care: how can it be assessed? J Am Med Assoc. 1988;260(12):1743–8.
55. Schubert M, et al. Rationing of nursing care and its relationship to patient outcomes: the Swiss extension of the international hospital outcomes study. Int J Qual Healthc. 2008;20(4):227–37.
56. Aiken LH, et al. Nurses' reports on hospital care in five countries. Health Aff. 2001;20(3):43–53.
57. Ball JE, Murrells T, Rafferty AM, Morrow E, Griffiths P. 'Care left undone' during nursing shifts: associations with workload and perceived quality of care. BMJ Qual Saf. 2014;23(2):116–25.
58. Tomietto M, Papastavrou E, Efstathiou G, Palese A. Measuring the perception of caring in patients and in nurses: Italian validation of the caring behaviors inventory (CBIta). G Ital Med Lav Ergon. 2014;36(1):38–44.
59. Phelan A, McCarty S. Missed care: community nursing in Ireland. Dublin: University College Dublin and the Irish Nurses and Midwives Organization; 2016. https://www.inmo.ie/tempDocs/MissedCareReportweb.pdf. Accessed 24 Nov 2020.
60. Blackman I, et al. Factors influencing why nursing care is missed. J Clin Nurs. 2015;24(1–2):47–56.
61. Rochefort CM, Clarke SP. Nurses' work environments, care rationing, job outcomes, and quality of care on neonatal units. J Adv Nurs. 2010;66(10):2213–24.
62. Saiani L, Di Giulio P. The measurement of missed care: problems and pitfalls. Assist Inferm Ric. 2018;37(3):144–8.
63. Cooper AL, Brown J. Maximising nurses' and midwives' response rates to surveys. Nurse Res. 2017;25(3):31–5.
64. Blatter C, Hamilton P, Bachnick S, Zúñiga F, Ausserhofer D, Simon M. Strengthening tRansparent reporting of reseArch on uNfinished nursing CARE: the RANCARE guideline. Res Nurs Health. 2021;44(2):344–52.
65. The Standards of Reporting Trials Group. A proposal for structured reporting of randomized controlled trials. J Am Med Assoc. 1994;272(24):1926–31.
66. EQUATOR Network. (n.d.). About us. https://www.equator-network.org/about-us/. Accessed 12 Sept 2020.
67. EQUATOR Network. (n.d.). What is a reporting guideline? https://www.equator-network.org/about-us/what-is-a-reporting-guideline/. Accessed 10 Oct 2020.
68. Moher D, Schulz KF, Simera I, Altman DG. Guidance for developers of health research reporting guidelines. PLoS Med. 2010;7(2):e1000217.
69. Dall'Ora C, et al. Nurses' 12-hour shifts and missed or delayed vital signs observations on hospital wards: retrospective observational study. BMJ Open. 2019;9(1):e024778.
70. RANCARE EU-Cost action (2019). https://www.rancare-action.eu. Accessed 12 Sept 2020.
71. Fitch, K. et al. (2001). The RAND/UCLA appropriateness method user's manual. (no. RAND/MR-1269-DG-XII/RE). Santa Monica: RAND Corporation. https://www.rand.org/pubs/monograph_reports/MR1269.html. Accessed 12 Sept 2020.
72. Recio-Saucedo A, et al. What impact does nursing care left undone have on patient outcomes? Review of the literature. J Clin Nurs. 2018;27(11–12):2248–59.

An Ethical Perspective of Nursing Care Rationing and Missed Care

5

Riitta Suhonen, P. Anne Scott, and Michael Igoumenidis

5.1 Introduction

Over the past 5 years or so, there is evidence of increased interest and discussion of issues which are on occasion called 'missed nursing care', 'nursing care left undone', 'covert rationing of nursing care' and, less commonly, 'unfinished care'. Currently in the nursing literature, these terms tend to be used interchangeably [1]. Ultimately these terms may indeed refer to the same thing or they may in fact refer to slightly different things. At present we simply do not know as the required empirical and analytical work has not been done as yet. However, we do know that missed care/care left undone/covert rationing of care are salient issues in nursing care contexts internationally [2]. There is also an increasing recognition in the patient's safety literature that incidents of care missed/left undone/rationed is associated with poorer patient outcomes [3, 4], i.e. we do know that less than optimal care provision is not good, therefore, is at best neutral and at worst bad, even dangerous, for patients.

R. Suhonen (✉)
Department of Nursing Science, University of Turku, Turku, Finland

Turku University Hospital and City of Turku, Welfare Division, Turku, Finland
e-mail: riisuh@utu.fi

P. A. Scott
Office of the Vice President for Equality and Diversity, National University of Ireland Galway, Galway, Ireland
e-mail: anne.scott@nuigalway.ie

M. Igoumenidis
Department of Nursing, University of Patras, Patras, Greece
e-mail: igoum@upatras.gr

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_5

This reality (i.e. that less than optional levels of nursing care can be damaging or dangerous for patients, in other words can do patients harm) provides some insight as to why it may be both useful and important to consider missed care/care left undone/covert rationing of nursing care from an ethical perspective. Many authors have argued that the provision of nursing care is inextricably linked with the ethical dimension of practice [4–6]. It seems likely this is the case also in situations of missed care/care left undone/covert rationing of care.

Considering issues of missed care/care left undone/covert rationing of care from an ethics perspective enables, indeed requires, us to engage in a number of different activities including the following:

1. A focus on core concepts in use and what they mean—for example what do we mean by missed care/care left undone/covert rationing of care. What is resource allocation or rationing in nursing? Do these two concepts refer to or mean the same thing? Does this matter?
2. An identification and elucidation of some of our underlying assumptions regarding matters of missed care/care left undone/covert rationing of care—such as what assumptions (overt or covert) we make regarding the causes or underlying factors which lead to missed care/care left undone/covert rationing of care.
3. Is there relevant evidence or empirical work, perhaps from a descriptive ethics perspective, that can be brought to bear as we try to work though and consider these matters?

In this chapter, we will introduce the reader to some of the philosophical and descriptive ethics work relevant to missed care/care left undone/covert rationing of care that may be relevant and important to consider in the context of the provision of nursing care in the health service of the twenty-first century. Henceforth the term missed care will be used to refer to all three terms—i.e. missed care, care left undone and covert rationing of care.

5.2 The Nursing Workforce and Access to the Resource of Nursing Care

Discussions regarding the nursing workforce, the largest group of health professionals [7] tend to focus on one of two key issues. At the same time as the cost of nursing personnel is identified as a very significant cost to the healthcare budget and for society [8, 9], it is increasingly being recognised that this same nursing workforce has the most relevant competence in providing comprehensive care, services and health promotion, and in responding to individuals' and populations' health needs. Therefore, it is important to ensure that nursing care and nursing time are treated as significant and important healthcare resources [1]. Access to such resources should be governed by explicit discussion, principles and guidance on prioritisation, including an overt recognition that allocation of nursing care and nursing time is **an ethical issue**, in addition to being a matter of financial, professional and patient safety concern [10–16].

In many countries health, and health healthcare services (including nursing services) to support health have been considered as a citizen's right, with explicit quality standards [17] driven by the country's Gross Domestic Product [18] and health expenditure per capita giving the frame for services. Thus, in healthcare one is faced with trying to balance the resources available on the one hand with the need to provide high-quality, ethically sensitive care to diverse populations and groups on the other. At some level all resources, economic and others in society are scarce and limited, while at the same time expectations regarding health (for both individuals and groups) are continuing to increase. The demands for access to new, more effective treatments, better, more comprehensive care, health promotion and activities to maintain health are limitless [19]. Given the current development trends in care technology, treatment modalities, new digital services, and existing knowledge and information, the possibilities for care and treatment are increasing exponentially. However, the limits on available resources make it impossible to offer all possibilities to everyone in need [20]. This imbalance makes it important that a shared understanding be reached regarding how to deal with scarce resources, at both the societal and organisational levels and also at the individual level in the clinical practice setting.

In many countries, national principles may exist for sharing resources ethically (e.g. [21, 22]). Basic principles for sharing resources include equality, need, effectiveness and many others. In resource allocation the decision-maker faces questions related to principles for distribution/allocation of resources—such as principles of justice, fairness, equity and equality. Such questions speak to the ethical dimension of resource allocation decision-making. Resource allocation principles, such as those listed above, should be applied to access nursing time and nursing care, as to other treatment and care provision. It is also the case that ever-increasing expectation of the population in most western countries continues to put very significant pressure on the health budget in those countries. This inevitably leads to questions about how to best use the available resources and the identified need to ration elements of access to and provision of healthcare. This is either a very new discussion in some countries in terms of allocating the nursing resource nationally, or has not yet begun. This type of discussion is also quite new in the nursing literature.

To assist clarity of thinking on these matters, it is helpful to distinguish between the concept of resource allocation and that of rationing (see [10]). These two concepts are related but distinct terms. Resource allocation refers to the distribution of resources to a service, unit or project. Rationing indicates that the resources to be allocated are so limited that they are not sufficient to meet the need in the particular context, thus forcing the decision-maker to decide who should get the resources available, or how much of the particular resource each person in need should receive (and on the basis of what criteria). Both resource allocation and rationing imply the use of specific criteria to distribute the available resources—usually with the goal of optimizing utility or meeting the demands of procedural fairness. Resource allocation is a morally neutral term. Rationing, including decisions not to provide the particular resource, or decisions prioritising access to the particular resource, is a morally loaded term.

With regard to rationing in the context of nursing care, three important distinctions have to be made (see [10]). Firstly, the originator of rationing needs to be identified: Rationing implemented by an institution (for example via policies/operational practices) or rationing implemented at the level of the individual practitioner (through their actions in practice context). Secondly, the existence, or not, of an identifiable framework available in the particular context, which is guiding explicit or implicit rationing decisions. In other words is rationing based on explicit (shared and open) principles or policies, or is rationing based on implicit (covert) practices; in this case the individual nurse(s) at the bedside. Finally there is the important 'distinction between rationing of the nursing resource per se (i.e. rationing the number of nurses available to provide the required care—this may be at societal and/or organizational level) and the rationing of actual nursing care at the bedside' [10].

5.3 Nursing Care Rationing and Missed Care from a Societal and Organisational Perspective

Crudely put, healthcare is about the provision of health services to the public. Despite its different meanings and definitions, health is a priceless commodity in all human societies. Therefore, the ways in which healthcare is organised and provided are of fundamental interest, reflecting some of the most basic values at both a societal and an institutional level. Nursing care is a vital aspect of healthcare provision. Through exploring its allocation and rationing decisions, we can expect to understand several values and priorities set by society and its institutions. We shall first discuss these issues from a more general, societal perspective, and we shall then focus on the institutional level from an organisational perspective.

5.3.1 Nursing Care as a Reflection of Society's Values

Modern societies are founded on ethical concepts, such as autonomy, liberty, equality and justice. At a theoretical level, these concepts are evident in every aspect of healthcare provision, and, as a profession, nursing has always embraced these ideals within its holistic approach. However, real-world challenges often necessitate the compromising of guiding principles and values. If we have a principle or a value that we consider to be good, then evil is to be defined as the lack of this principle or value, the failure to meet it. In his influential work *Against Ethics*, John Caputo states that, as a society we are not 'beyond' Good and Evil, but stuck between them, being unable to get as far as either one [23, p. 33]. We have too many competing ethical concepts—autonomy vs. justice; public morality vs. freedom of expression; individual freedom vs. the good of all—so many candidates for guiding ethical principles, that no one can agree on their relative importance. Therefore, when it comes to society's goals in the real world, a lowering of expectations seems as the natural state of affairs. Practical ethics is not about the pursuit of unattainable ideals, but the

achieving of a satisfactory balance between them. This is evident in nursing care, within the context of limited resources.

Nursing ethics can be seen as a reflection of society's ideal principles. Theoretically, nurses should always act in the best interests of their individual patients. They should respect their autonomous choices, benefit them without inducing any harm, and provide just care, according to each one's needs. In the real world, many different and competing considerations come into play. Neither autonomy nor beneficence or justice are overarching principles. Idealistic nursing ethics is potentially necessarily reduced to situationism. The context of nursing care is different every time; there are different patients with different needs, different nursing professionals with different abilities, and different kinds and amounts of resources. Rationing of these resources is a matter of individual choices, which aim at the best possible and reasonable care. But this cannot be objectively defined. For instance, adequate patient surveillance is a core nursing action to prevent complications—but what does 'adequate' mean for each individual patient, given that the nurse's time is limited and that other patients need surveillance too? This is a matter of scientific evidence and professional opinion, but no certainty as to the fairest allocation or even rationing currently exists. Thus, justice and injustice become situational. The problem of missed care constitutes a manifestation of situational injustice.

The same can be said about any kind of social injustices, and this pursuit lies in the core of the concept of *equity*. Equity is different than the similar term of *equality*. Equality is typically defined as treating everyone the same and giving everyone access to the same opportunities. In contrast, equity involves trying to understand and give people what they need, which is not the same for all. Equality aims to promote fairness and justice, but it can only work if everyone starts from the same place and needs the same things; equity refers to the issue of different starting points and different needs, and aims to compensate for these differences [16]. Therefore, to achieve equity, policies and procedures may result in an unequal distribution of resources. In his seminal *Theory of Justice*, John Rawls advocates this view with his *difference principle* of justice, which holds that inequalities in the distribution of goods are permissible only if they benefit the least well-off members of society [24, p. 266]. There are injustices in health by social class, due to different educational levels and subsequent health literacy, as well as different access to healthcare resources, from both a geographical and an economical point of view. Therefore, people with greater clinical needs, regardless of background or even ability to pay, should have more access to care and treatment than those with lesser needs—that is unequal access for unequal need [25].

Healthcare systems, institutions and professions are societal structures. Among other things, they should strive to achieve greater justice and equity, as expected by societies and manifested in their scopes of practice, however imperfect the outcome may be. Systems' organisational structure constitutes an important aspect of this effort. As noted above, there is a clear distinction between rationing of the nursing care at the bedside level and rationing of the nursing resource per se at the organisational level [10]. However, this distinction does not mean that these two levels of

rationing are not intertwined. It is natural to expect that health systems' organisational structure should have important implications, both for the nursing profession as a societal organisation and for the daily individual decisions that nurses make regarding resources distribution as discussed in the following.

5.3.2 The Organisational Basis for Nursing Care Resource Allocation and Rationing

As noted above, *rationing* should be differentiated from resource *allocation*. Rationing has a negative meaning, in the sense that it results in exclusion from resources, or less than optimal benefits for some potential resource recipients [10]. Also, rationing at the organisational level, such as rationing performed by policymakers, should be differentiated from rationing at an individual level, such as rationing performed by nurses. In order to fulfil the daily demands of nursing work, nurses are frequently obliged to ration the care they give. This rationing of care is for a variety of reasons—some completely legitimate and supportable, some less so [1]. In any case, patients' needs can be irregular and unpredictable [26] and thus rationing can be necessary even within the most adequate and carefully designed healthcare systems.

Having this in mind, it needs to be noted that, in many cases, resource allocation and rationing of nursing care, at the organisational level and below, is largely a covert activity [1, 10]. There is a definite and constant need to discuss these issues in greater detail and achieve better organisational insight, understanding and coordination, by establishing more direct contacts between policymakers, nurses, other health professionals, as well as nurse educators and researchers. Levels at which healthcare services are rationed and clarity of the rationing criteria/process are important structural considerations in the development of an equitable, appropriate, and ethical healthcare system; notwithstanding the fact that individual nurses' values, attitudes and beliefs determine their behaviours and practices, such as complete care provision or delaying and even eliminating some care duties [27]. In all its aspects, the procedure and criteria used in rationing decisions are critical as they not only influence people's lives but also reflect the values that dominate in the society [28]. There are instances where rationing may be an inevitable process, but its negative consequences can be minimised with proper interventions at the structural level of healthcare systems. Better organisational and institutional rationing can create the framework for better rationing decisions on an individual basis.

As an example, we can briefly refer to the notion of *ethical climate*. Ethical climate is a part of any work environment. It can be described as a sub-climate of the whole organisational climate that refers to the employees' collective perception of what is ethically acceptable within the context of an organisation [29]. It is largely shaped by the organisational structure of any institution, and it exercises influence of varying degrees to all individuals coexisting within the institution. Nurses may

work in various institutions, in the community or in hospitals, but they all share the same ethical foundations as evidenced by common elements in nursing codes of ethics and codes of professional conduct worldwide. For instance, the International Council of Nursing (ICN) code of ethics is frequently revised to be better fitted for the current needs of nurses all around the globe [30]. However, the prevailing ethical climate within their working environment may either facilitate or constrain nurses' work. In the latter case, it may limit the ability for nurses to sustain their moral identity [31, 32]. This in turn will reduce their ability to allocate their time and skills in a manner that is consistent with values such as equity and justice, and, consequently, it will result in augmenting the problem of missed care/covert rationing of care, and may lead to discrimination and infringement of patient rights. Various studies confirm this remark, as nurses who perceive a caring ethical climate, or one that is guided by respect of rules, laws, standards and codes of conduct, also report less care omissions (i.e. less covert rationing of care) occurring in their units [33–35]. Therefore, when nurses need to prioritise certain elements of care or certain patients, and leave other elements of care undone or particular patients' needs unmet, they should conform to a highly regulated environment and the necessity to adhere to certain rules and procedures [32, 33].

Structure plays an important role, but the essence of any professional organisation or institution lies in its professionals and the way they interact with service users. In the following section, our attention is drawn mainly to the professionals' and the patients' viewpoints on missed care.

5.4 Empirical Descriptive Ethics Perspective

Empirical descriptive ethics literature has increased during the last 10 years. Such literature includes many reviews to collect ideas, approaches, topics, concepts, methods used and existing evidence, and it has illustrated the need for empirical investigation of this topic, the circumstances under which this missed nursing care appears, and its preconditions and consequences. This empirical evidence on ethical issues in the area of covert rationing and missed nursing care is gathered from three different perspectives: (1) societal and organisational levels, (2) professional nursing staff and (3) the patient or service users. In empirical literature, the term prioritisation and priority setting are much used in addition to resource allocation and rationing.

As highlighted below, not all prioritisation is a resource issue but rather the result of deciding that work duties and nursing activities are done in a certain order. However, in terms of prioritisation that is linked to less than optimum care, clear evidence exists that some examples of missed care is not linked to scarce resources or any need for rationing, but is due to poor professional practice leading to poor care or negligence, especially based on age, representing also a form of discrimination, violating human rights.

5.4.1 Priorities in Society Meet Nursing

Priority setting and ethical guidelines for healthcare provision exists in many countries [21, 22, 36] and are of ongoing political concern worldwide [37]. In many countries, such guidelines exist overarching the healthcare services and all professional care providers. In nursing, the question arises whether such visible principles and guidelines exist, and if so, what are they, and is nursing visible in such guidelines or policy papers [22]. Although prioritisation in healthcare has been on the political agenda for many years, prioritisation in nursing seems to be obscure in policy documents [22]. For example the Nordic countries share similar approaches for ensuring equality and justice in access to healthcare. In Norway, work has also been done to produce nursing-sensitive guidelines for priority setting to help nurses in allocation of resources in practice, bedside. According to Tonnessen et al. [22], 'the lack of explicit principles in nursing practice is particularly problematic as it may result in, firstly, nurses rationing care without recognizing that they are doing so (implying lack of careful analysis and consideration of the 'bigger picture') and actual impacts on patients. Secondly, the situation is problematic as the burden of morally difficult rationing decisions falls directly on individual nurses without any responsibility or accountability resting at the door of the managers and decision makers who allocate the nursing resource to the particular clinical ward/unit.

The need for standards is clear, and the role of nurse leaders and managers in developing, setting and making the standards visible is evident. Prioritisation takes place every day, and research shows how difficult it is to ensure a minimum standard of nursing care and provide for fundamental needs if prioritisation remains implicit [22]. Therefore, priority setting, not least from the explicit guiding point of view, is very important. The articulation of nursing priorities can start with nursing management explicitly describing nursing needs and consequences of provision of care according to setting, needs and context. It is especially important for healthcare policymakers to consider making explicit their reasoning behind the prioritisation of nursing and care in response to patients' fundamental care needs.

Prioritisation of nursing interventions/nursing care in a particular context may be an example of effective organisation of clinical practice, or it may be an example of care rationing—overt or covert rationing, and/or required rationing due to limited resources, or rationing by default due to poor clinical competence, leadership or commitment. It is necessary that both realities (effective organisation of clinical practice or care rationing) and their fundamental distinctions are recognised, identified, described and understood. If these kinds of distinctions are not recognised and explicitly addressed, we are in grave danger of confused thinking and ultimately confused practice, policy, education and guidance.

Nurses at all levels in healthcare organisations set priorities on a daily basis [11] when nursing patients. However, as suggested above we need to clarify the difference between prioritising in terms of a list of duties the nurses plan to complete in sequence (one after another because nurses cannot do all at the one time) and prioritising of scarce resources—i.e. some patients will not get the nursing care they need.

Nurses do both types of prioritisations. With the former, nurses plan the flow of their daily work. However, with the latter that is not necessarily the case. Prioritisation in terms of effective organisation of clinical practice means the nurse chooses to do something (A) instead of something else (B), at a particular time. When a nurse chooses one (A or B), prioritising the need for either A or B, the choice may or may not cause any problem for the patient. For example if all the work is done eventually (i.e. both A and B get done), there may be no problems at all, or any problems that arise from slight delays to care may not be significant. More significant problems arise in situations where the nursing work force does not have the capacity to provide effective and safe care appropriate to patient need, based on a skilled clinical (as different from a financial) assessment [4].

Missed care can be considered as an outcome of 'prioritisation-as-rationing' (either covert or overt rationing, necessary or unnecessary rationing). 'Prioritisation—as—rationing' can be the consequence of inadequate staffing, skill mix, competence and unclear care processes [38]. However, there is a need to distinguish missed care resulting from rationing, i.e. due to the limited resources (let us call this necessary rationing), from other type of missed nursing care resulting from unnecessary rationing/poor practice/poor clinical leadership. An example of the latter type of missed care may be negligence that can happen both in higher level decision-making and/or at the bedside. Missed care-as-negligence, occurring at the society level was illustrated in recent literature. Hopkins Walsh and Dillard-Wright [39] introduced the concept of structural missingness, where a group of people or an entire section of a population do not have access, or will not be able to access the services, although the need has been recognised. Structural missingness can also be connected to fundamental human rights.

At the bedside level some nursing contexts are very well resourced, and there is little need to prioritise in terms of deciding to exclude some patients from receiving nursing care or time. However, in some care contexts that are relatively well resourced, but perhaps not well led, it has been found that if nurses have any spare time they do not use that time for patient care [40]. Nursing interventions such as responding to patients' needs for counselling, education and emotional and psychological support to patient or family have frequently been left undone or missed (e.g. [41]).

5.4.2 Priorities in the Delivery of Nursing Care

Research shows how nurses at the bedside, due to an inadequate nursing resource to meet patient needs, are frequently forced to prioritise, deciding which nursing services and interventions to provide and which to leave out (e.g. [2, 42]). Furthermore, the evidence also indicates that nurses experience such prioritisation (i.e. the prioritisation of scarce resources) as difficult choices, and some priorities seem to infringe on fundamental values of nursing [43, 44]. Suhonen et al. [11] describe prioritisation in nursing as complex decisions made by different professionals, in diverse positions, on several different levels, in all parts of a healthcare organisation. Nurses

set priorities at the bedside, on the ward and at the organisational and society levels. These decisions concern which patients should receive nursing care, what resources are allocated to care services and how care is delivered [11].

Prioritisation of scarce resources such as nursing time or skills has existed historically in nursing care. A review by Suhonen and colleagues [11] revealed that nurses set these priorities in nursing care based on a number of different, both explicit and implicit, criteria. These criteria originate from care guidelines, professional code of conduct and similar. However, such criteria seem not to be consistently used by nurse professionals. Firstly, nurses have been found to prioritise based on patient groups. For example patients with acute conditions were prioritised compared to those with chronic health problems and conditions, patients who underwent on surgical operations were prioritised compared to patients with chronic wounds (e.g. [45, 46]). Secondly, nurses prioritised according to individual patients' ill-health situation. Individuals with acute issues were prioritised over individuals with long-term care needs. Thirdly, the severity of a patient's condition including vital signs and patients who were deemed to be at high risk were prioritised over others (e.g. [29, 47]). Fourthly, the literature also revealed prioritising younger individuals over older individuals. Examples of prioritisation based on age have also been found, and may be appropriate when benefits and quality of life are considered to large extent [46] and a shared, mutual understanding exists about objectives of care and quality of life in the end of life. However, ideas of ageism have also been found to be present and would mean discrimination by age without expressed reasons and justifications (e.g. [46]). Finally, priorities were set based on expected benefits for the patients.

5.4.3 Professional Ethics—Professional Roles, Responsibilities, and Role Conflicts

Nurses are aware of professional standards, such as ethical codes (such as ICN 2012) [48] and human rights and patients' rights [17], and the aim for provision of care accordingly. According to Tonnessen and colleagues ([4], citing WHO [17]), 'human rights entail the right to a universal minimum standard of health and healthcare, including a minimum standard of nursing care'. Common understanding and large awareness of such ethical guidelines have a central role in nursing education and nursing practice. Thus, being taught to make decisions to leave some necessary nursing activities undone challenges nurses' ethical decision-making, skills, ethical knowledge and their roles and responsibilities.

Nurses' roles and responsibilities should be considered within the discussion of prioritisation, rationing and missed care in clinical nursing care. A wealth of empirical studies has provided an opportunity to begin the discussion about minimum standards in nursing care [4], safe staffing [49] and similar issues. This discussion together with discussion of missed care is necessary, whether or not such standards need to be defined, on what basis such standards can be defined and what is the responsibility of nurses at bedside. This leads us to think about the quality of

nursing care, the fundamental needs, and nursing care needs of individual patients, comprehensive care and professionals' competence. Efforts to find the appropriate standard for staffing in various clinical practice contexts have been the focus in different European countries [1], especially during the RANCARE COST Action. However, it is difficult to determine such standards in units and organisations as patients' needs vary. Nursing care, within the missed care context, has been measured with nursing/ nurses' tasks (e.g. [50]), which may also be different from the actual understanding and definitions of comprehensive nursing care. This may raise further questions of professional ethics.

Rationing (due to limited nursing resource) and resulting missed care have caused concerns for nurses. In empirical studies, it has been found that nurses face moral challenges and their decisions may jeopardise professional values [51], leading to role conflict, feelings of guilt, distress and difficulty in fulfilling a morally acceptable role [28, 32, 45]. Especially, decisions to omit or delay care can cause significant moral distress to the nurses involved [50, 52]. As moral distress and other consequences have been found to be reasons for nurses leaving the profession, this is a serious concern for the profession, organisation and especially those in leadership roles.

Can professional nurses be considered as responsible for the consequences of missed nursing care, covertly rationed care and omissions? Kearns [53] argues that 'ought' implies 'can'. He notes that 'ethically speaking, it is generally accepted that if a person has a moral obligation to do something, s/he needs to have the capacity to do it. If a person does not have the capacity to fulfil a moral obligation, then s/he cannot be held responsible for failing to do so', (p. 1). Therefore, it is necessary to differentiate the situation where scarce resources lead to missed care or rationing, and when other causes of missed care are relevant.

5.5 Missed Nursing Care from the Patient Perspective

Missed nursing care has largely been considered as a professional nursing issue, not being able to meet the assessed care needs of patients and consequences from such situations within the context of scarce resources. However, as important as nurse professionals' views are the approach and analysis from the patients' point of views—whether the care is comprehensive based on assessment and corresponds to the needs of individual patients [54, 55]. More serious concern has been raised about missed care as patient outcome, from the patient's point of view. For example patient safety and quality of care have been found to be significantly affected by the incidence of missed care [56].

The concepts of missed care, unfinished care and care left undone are relevant to patients, clients or users of healthcare as well. However, difficulties in defining what nursing care should include exist. Missed care has been regarded as an error of omission, meaning failure to do the right thing, which potentially leads to adverse outcomes to patients, impacting the quality of care negatively [54, 57, 58]. The question appears, do patients witness missed care through negative outcomes or can

they have a role in determining the care based on needs assessment or other ways. There is also growing evidence that incidents of care left undone or missed care is associated with poorer quality of care, patient safety issues and increased patient morbidity and 30-day mortality [3, 8, 59, 60] raising strong ethical issues from both the patients' and nurses' point of views, and violation of patients' or human rights [17]. Whilst it is difficult to capture what is missing, plenty of literature exists, for example, about reported unmet care needs [55], (dis)satisfaction [58, 61, 62] and complaints, to approach and frame the possibly missed care. However, literature is very limited, especially scientific empirical evidence on missed care from the patients' point of views [54], ethical issues within the priority setting [11] or unmet care needs [55].

Raising the perspectives of patients in discussions about missed care is necessary for many reasons. Today, patients are recognised as partners in healthcare and as experts on their situation, working alongside professionals, with their own rights as well as responsibilities [63]. This view is associated with the empowerment philosophy to health, which aims to increase patient autonomy and freedom of choice, encouraging patients to oversee their own health values, needs and goals [64, 65]. Furthermore, as pointed out earlier in this chapter, evidence exists on the rationing and priority setting in healthcare [10, 11, 38] leading to possible situation where patient outcomes are not necessarily all positive. Concerns of missed care have been pointed out especially in the care settings for older people [55]. Several official reports have shown many shortcomings in nursing care of older people including poor quality of care [66, 67], poor communication and leadership [67], lack of dignity [66, 68] and responding to the fundamental care needs [11, 55]. However, there is a lack of interventions to intervene in such circumstances. For example nurse to patient ratios have been legislated (in Finland), but such legislation does not prevent negligence. Missed fundamental care was actualised in reports of unmet care needs of older people by themselves, their family members, close ones and also professionals [55, 66–68]. Finally, some evidence also suggests that elder abuse in the form of neglect or negligence in care settings [11, 55] exists.

Studies on different types of negligence focus on several concepts, such as maltreatment, mistreatment, abuse and neglect reflecting age discrimination [69] violating equality, justice and fundamental human rights [17]. Such actions are due and present based on both the omissions and commissions of nursing care [70]. Yon and colleagues [71] in their systematic review and meta-analysis of recent studies on elder abuse, based on self-report by older adults, suggest that the rates of abuse are much higher in institutions than in community settings [71]. According to Clarke and Pierson [72, p. 632], in general, 'neglect is thought of as including the refusal or failure of a caregiver to fulfil one's obligations or duties to an older person, including … providing any food, clothing, medicine, shelter, supervision, and medical care and services that a prudent person would deem essential for the well-being of another'. This type of missed care is not due to rationing and available resources. As missed care may be unintentional, due to some circumstances or in some situations, the most serious type, negligence usually is not.

5.6 Conclusions

Discussion of missed care/care left undone/covert rationing of care begins at the societal level, continuing at the organisational and professional levels, encompassing patients' points of view and culminating once again in the societal level. The emerging issues and questions are all intertwined, but it is important to lay emphasis on the link between patients and society in particular as it is largely overlooked. As healthcare service users, patients represent society. Healthcare systems, nurses and other healthcare professionals represent society's commitment to safe and effective care for all, according to their needs. If patients are not satisfied with the care they receive, they can blame individual professionals or health organisations, express their concerns or make negligence claims, but, in essence, their claims go against society at large—and the imbalance between societal expectations and the resources allocated to meet these expectations. It is true that not every aspect of missed care can be linked to limited resources, and that individual professionals may ration their time and expertise in an inconsistent, unfair, or negligent manner. However, this should not blind us to the fact that these professionals are also part of the wider system, and that bedside decision-making, despite individual differences, also reflects society's values and the ways in which these values are applied within ever-changing healthcare services. In our effort to provide the best possible care, the ethical dimensions of missed care should constantly be explored at every level, and especially from the patients' perspective. Throughout this exploration, which this entire book is all about, it is expected that clear messages can emerge, aiming to improve the quality of nursing care, ameliorate healthcare services, ease nursing professionals' moral distress, and renew patients' and society's confidence in healthcare systems in terms of justice, equity and respect.

References

1. Scott PA, Suhonen R, Leino-Kilpi H, Schwanda M, Halvorsen K, Tonnessen S, Christiansen K, Harvey C, Habermann M, Hjaltadóttir I, Papastavrou E. Missed care, care left undone, covert rationing of care and allocation of the nursing resource—through an ethics lens. RANCARE Consortium COST—CA15208. 2020. https://cyna.org/wp-content/uploads/2020/06/Briefing-paper-Missed-care.ASCOTT.pdf. Accessed 4 Jan 2021.
2. Jones T, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52(6):1121–37. https://doi.org/10.1016/j.ijnurstu.2015.02.012.
3. Ball JE, Bruyneel L, Aiken LH, Sermeus W, Sloane DM, Rafferty AM, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5. https://doi.org/10.1016/j.ijnurstu.2017.08.004.
4. Tønnessen S, Scott A, Nortvedt P. Safe and competent nursing care: an argument for a minimum standard? Nurs Ethics. 2020;27(6):1396–407.
5. Nortvedt P. Clinical sensitivity: the inseparability of ethical perceptiveness and clinical knowledge. Sch Inq Nurs Pract. 2001;15(1):25–43; discussion 45–8.
6. Scott PA. Nursing and the ethical dimension of practice. In: Scott PA, editor. Key concepts and issues in nursing ethics. Cham: Springer; 2017. p. 1–13.

7. Eurostat 2020. Healthcare personnel statistics—nursing and caring professionals. https://ec.europa.eu/eurostat/statistics-explained/index.php/Healthcare_personnel_statistics_-_nursing_and_caring_professionals. Accessed 4 Jan 2021.
8. Aiken LH, Sloane DM, Bruyneel L, Van den Heede K, Griffiths P, Busse R, Diomidous M, Kinnunen J, Kózka M, Lesaffre E, McHugh MD, Moreno-Casbas MT, Rafferty AM, Schwendimann R, Scott PA, Tishelman C, van Achterberg T, Sermeus W, RN4CAST Consortium. Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. Lancet. 2014;383(9931):1824–30. https://doi.org/10.1016/S0140-6736(13)62631-8.
9. Lee IC, Chang CS, Du PL. Do healthier lifestyles lead to less utilization of healthcare resources? BMC Health Serv Res. 2017;17(1):243. https://doi.org/10.1186/s12913-017-2185-4.
10. Scott PA, Harvey C, Felzmann H, Suhonen R, Habermann M, Halvorsen K, Christiansen K, Toffoli L, Papastavrou E. Resource allocation and rationing in nursing care: a discussion paper. Nurs Ethics. 2019;26(5):1528–39. https://doi.org/10.1177/0969733018759831.
11. Suhonen R, Stolt M, Habermann M, Hjaltadottir I, Vryonides S, Tonnesen S, Halvorsen K, Harvey C, Toffoli L, Scott A. Ethical elements in priority setting in nursing care—A scoping review. Int J Nurs Stud. 2018;88:25–42. https://doi.org/10.1016/j.ijnurstu.2018.08.006.
12. Suhonen R, Scott PA. Missed care—A need for careful ethical discussion. Editorial. Nurs Ethics. 2018;25(5):549–51. https://doi.org/10.1177/0969733018790837.
13. Evripidou M, Charalambous A, Merkouris A, Papastavrou E. Implementation of a training program to increase knowledge, improve attitudes and reduce nursing care omissions towards patients with dementia in hospital settings: a mixed-method study protocol. BMJ Open. 2019;9(7):e030459. https://doi.org/10.1136/bmjopen-2019-030459.
14. Scott PA, Suhonen R, Kirwan M. Editorial: missed care, care left undone: organisation ethics and the appropriate use of the nursing resource. Nurs Philos. 2020;21(1):e12288. https://doi.org/10.1111/nup.12288.
15. Igoumenidis M, Kiekkas P, Papastavrou E. The gap between macroeconomic and microeconomic health resources allocation decisions: the case of nurses. Nurs Philos. 2020;21(1):e12283. https://doi.org/10.1111/nup.12283.
16. Papastavrou E, Igoumenidis M, Lemonidou C. Equality as an ethical concept within the context of nursing care rationing. Nurs Philos. 2020;21(1):e12284. https://doi.org/10.1111/nup.12284.
17. WHO. Human rights and health. 2017. https://www.who.int/news-room/fact-sheets/detail/human-rights-and-health. Accessed 4 Jan 2021.
18. OECD. Health expenditure in relation to GDP. In: Health at a glance 2019: OECD indicators. Paris: OECD Publishing; 2019. https://doi.org/10.1787/592ed0e4-en.
19. Daniels N. Just health care. In: Studies in philosophy and health policy. Cambridge: Cambridge University Press; 1985.
20. Phelan A, McCarthy S, Adams E. Examining the context of community nursing in Ireland and the impact of missed care. Br J Commun Nurs. 2018;23(1):34–41. https://doi.org/10.12968/bjcn.2018.23.1.34.
21. Hofmann B. Priority setting in health care: trends and models from Scandinavian experiences. Med Health Care Philos. 2013;16(3):349–56. https://doi.org/10.1007/s11019-012-9414-8.
22. Tønnessen S, Christiansen K, Hjaltadóttir I, Leino-Kilpi H, Scott A, Suhonen R, Öhlen J, Halvorsen K. Visibility of nursing in policy documents related to health care priorities. J Nurs Manag. 2020;28(8):2081–90. https://doi.org/10.1111/jonm.12977.
23. Caputo J. Against ethics. Bloomington: Indiana University Press; 1993.
24. Rawls J. A theory of justice. Cambridge: Belknap Press of Harvard University Press; 1971.
25. Raine R, Or Z, Prady S, Bevan G. Evaluating health-care equity. In Raine, R., Fitzpatrick, R., Barratt, H., Bevan, G., Black, N., Boaden, R., et al. Challenges, solutions and future directions in the evaluation of service innovations in health care and public health. Health Service Deliv Res. 2016;4(16):69–84. https://doi.org/10.3310/hsdr04160-69.
26. Arrow K. Uncertainty and the welfare economics of medical care. Am Econ Rev. 1963;53(5):941–73.

27. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. J Adv Nurs. 2009;65:1509–17. https://doi.org/10.1111/j.1365-2648.2009.05027.x.
28. Rooddehghan Z, Yekta ZP, Nasrabadi AN. Ethics of rationing of nursing care. Nurs Ethics. 2018;25(5):591–600. https://doi.org/10.1177/0969733016664973.
29. Malloy DC, Hadjistavropoulos T, McCarthy EF, Evans RJ, Zakus DH, Park I, Lee Y, Williams J. Culture and organizational climate: nurses' insights into their relationship with physicians. Nurs Ethics. 2009;16(6):719–33. https://doi.org/10.1177/0969733009342636.
30. Stievano A, Tschudin V. The ICN code of ethics for nurses: a time for revision. Int Nurs Rev. 2019;66(2):154–6. https://doi.org/10.1111/inr.12525.
31. Vryonides S, Papastavrou E, Charalambous A, Andreou P, Eleftheriou C, Merkouris A. Ethical climate and missed nursing care in cancer care units. Nurs Ethics. 2018;25(6):707–23. https://doi.org/10.1177/0969733016664979.
32. Vryonides S, Papastavrou E, Charalambous A, Andreou P, Merkouris A. The ethical dimension of nursing care rationing: a thematic synthesis of qualitative studies. Nurs Ethics. 2015;22(8):881–900. https://doi.org/10.1177/0969733014551377.
33. Papastavrou E, Acaroglu R, Sendir M, et al. The relationship between individualized care and the practice environment: an international study. Int J Nurs Stud. 2015;52(1):121–33. https://doi.org/10.1016/j.ijnurstu.2014.05.008.
34. Papastavrou E, Andreou P, Tsangari H, Schubert M, De Geest S. Rationing of nursing care within professional environmental constraints: a correlational study. Clin Nurs Res. 2014;23(3):314–35. https://doi.org/10.1177/1054773812469543.
35. Suhonen R, Stolt M, Gustafsson ML, Katajisto J, Charalambous A. The associations among the ethical climate, the professional practice environment and individualized care in care settings for older people. J Adv Nurs. 2014;70(6):1356–68. https://doi.org/10.1111/jan.12297.
36. Norwegian Ministry of Health and Care Services. Principles for priority setting in health care—Summary of a white paper on priority setting in the Norwegian health care sector. Meld. St. 2015;34 (2015–2016).
37. World Health Organization. Making fair choices on the path to universal health coverage. Final report of the WHO Consultative Group on Equity and Universal Health Coverage; 2014. isbn: 978-92-4-150715-8. https://www.who.int/choice/documents/making_fair_choices/en/. Accessed 4 Jan 2021.
38. Schubert M, Glass TR, Clarke SP, et al. Rationing of nursing care and its relationship to patient outcomes: the Swiss extension of the international hospital outcomes study. Int J Qual Health Care. 2008;20(4):227–37. https://doi.org/10.1093/intqhc/mzn017.
39. Hopkins Walsh J, Dillard-Wright J. The case for "structural missingness"; a critical discourse of missed care. Nurs Philos. 2020;21(1):e12279. https://doi.org/10.1111/nup.12279.
40. Milton-Wildey K, O'Brien L. Care of acutely ill older patients in hospital: clinical decision-making. J Clin Nurs. 2010;19(9–10):1252–60. https://doi.org/10.1111/j.1365-2702.2009.03141.x.
41. Zeleníková R, Gurková E, Friganovic A, Uchmanowicz I, Jarošová D, Žiaková K, Plevová I, Papastavrou E. Unfinished nursing care in four central European countries. J Nurs Manag. 2020;28(8):1888–900. https://doi.org/10.1111/jonm.12896.
42. Ausserhofer D, Zander B, Busse R, Schubert M, De Geest S, Rafferty AM, et al. Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. BMJ Qual Saf. 2014;23(2):126–35.
43. Halvorsen K. The ethics of bedside priorities in intensive care: value choices and considerations. A qualitative study. Doctoral thesis. Oslo, Unipub; 2009.
44. Tønnessen S. The challenge to provide sound services and diligent care a qualitative study of nurses prioritization and patients experiences of the home nursing service. Doctoral thesis. Oslo, Unipub; 2011.
45. Bentzen G, Harsvik A, Brinchmann BS. "Values that vanish into thin air": nurses' experience of ethical values in their daily work. Nurs Res Pract. 2013;2013:939153. https://doi.org/10.1155/2013/939153.

46. Skirbekk H, Nortvedt P. Inadequate treatment for elderly patients: professional norms and tight budgets could cause "ageism" in hospitals. Health Care Anal. 2014;22(2):192–201. https://doi.org/10.1007/s10728-012-0207-2.
47. Barra M, Broqvist M, Gustavsson E, Henriksson M, Juth N, Sandman L, Solberg CT. Severity as a priority setting criterion: setting a challenging research agenda. Health Care Anal. 2020;28(1):25–44. https://doi.org/10.1007/s10728-019-00371-z.
48. International Council of Nurses. Codes of ethics for nurses. Geneva: ICN; 2012. https://www.icn.ch/sites/default/files/inline-files/2012_ICN_Codeofethicsfornurses_%20eng.pdf. Accessed 4 Jan 2021
49. Van den Heede K, Cornelis J, Bouckaert N, Bruyneel L, Van de Voorde C, Sermeus W. Safe nurse staffing policies for hospitals in England, Ireland, California, Victoria and Queensland: a discussion paper. Health Policy. 2020;124(10):1064–73. https://doi.org/10.1016/j.healthpol.2020.08.003.
50. Kalisch BJ. Missed nursing care: a qualitative study. J Nurs Care Qual. 2006;21(4):306–15.
51. Harvey C, Thompson S, Otis E, Willis E. Nurses' views on workload, care rationing and work environments. J Nurs Manag. 2020;28(4):912–8. https://doi.org/10.1111/jonm.13019.
52. Choe K, Kang Y, Park Y. Moral distress in critical care nurses: a phenomenological study. J Adv Nurs. 2015;71(7):1684–93. https://doi.org/10.1111/jan.12638.
53. Kearns AJ. "Ought implies can" & missed care. Nurs Philos. 2020;21(1):e12272. https://doi.org/10.1111/nup.12272.
54. Gustafsson N, Leino-Kilpi H, Prga I, Suhonen R, Stolt M. Missed care from the patient's perspective—a scoping review. Patient Prefer Adherence. 2020;14:383–400. https://doi.org/10.2147/PPA.S238024.
55. Kalánková D, Stolt M, Scott A, Papastavrou E, Suhonen R. Unmet care needs of older people: a scoping review. Nurs Ethics. 2020. https://doi.org/10.1177/0969733020948112.
56. Kalánková D, Kirwan M, Bartoníčková D, Cubelo F, Žiaková K, Kurucová R. Missed, rationed or unfinished nursing care: a scoping review of patient outcomes. J Nurs Manag. 2020;28(8):1783–97. https://doi.org/10.1111/jonm.12978.
57. Papastavrou E, Andreou P, Vryonides S. The hidden ethical element of nursing care rationing. Nurs Ethics. 2014;21(5):583–93. https://doi.org/10.1177/0969733013513210.
58. Papastavrou E, Andreou P, Tsangari H, et al. Linking patient satisfaction with nursing care: the case of care rationing—a correlational study. BMC Nurs. 2014;13:26. https://doi.org/10.1186/1472-6955-13-26.
59. Griffiths P, Recio-Saucedo A, Dall'Ora C, Briggs J, Maruotti A, Meredith P, Smith GB, Ball J, Missed Care Study Group. The association between nurse staffing and omissions in nursing care: a systematic review. J Adv Nurs. 2018;74(7):1474–87. https://doi.org/10.1111/jan.13564.
60. DoH. Framework for safe nurse staffing and skills mix in general and specialist medical and surgical care settings in adult hospitals in Ireland. Dublin: Department of Health; 2018. https://www.gov.ie/en/publication/2d1198-framework-for-safe-nurse-staffing-and-skill-mix-in-general-and-speci/. Accessed 14 Jun 2020.
61. Schubert M, Clarke S, Glass T, et al. Identifying thresholds for relationships between impacts of rationing of nursing care and nurse- and patients-reported outcomes on Swiss hospitals: a correlational study. Int J Nurs Stud. 2009;46(7):884–93. https://doi.org/10.1016/j.inurstu.2008.10.008.
62. Lake E, Germack H, Viscardi K. Missed nursing care is linked to patient satisfaction: a cross-sectional study of US hospitals. BMJ Qual Saf. 2016;25(7):535–43. https://doi.org/10.1136/bmjqs-2015-003961.
63. Coulter A. Paternalism or partnership? Patients have grown up- and there's no going back. Br Med J. 1999;319:719–20. https://doi.org/10.1136/bmj.319.7212.719.
64. Feste C, Anderson RM. Empowerment: from philosophy to practice. Patient Educ Counsel. 1995;26:139–44. https://doi.org/10.1016/0738-3991(95)00730-N.
65. Orique S, Patty C, Sandidge A, et al. Quantifying missed nursing care using the hospital consumer assessment of healthcare providers and systems (HCAHPS) survey. J Nurs Admin. 2017;47(12):616–62. https://doi.org/10.1097/NNA.0000000000000556.

66. Care Quality Commission. Dignity and nutrition inspection programme: national overview; 2011. https://www.cqc.org.uk/files/dignity-nutrition-inspection-programme-national-overview. Accessed 4 Jan 2021.
67. Francis report. 2013. https://www.gov.uk/government/publications/report-of-the-mid-staffordshire-nhs-foundation-trust-public-inquiry. Accessed 4 Jan 2021.
68. Parliamentary and Health Service Ombudsman. Dying without dignity. Investigations by the Parliamentary and Health Service Ombudsman into complaints about end of life care. 2017. https://www.ombudsman.org.uk/sites/default/files/Dying_without_dignity.pdf. Accessed 4 Jan 2021.
69. Slettebø A, Kirkevold M, Andersen B, et al. Clinical prioritizations and contextual constraints in nursing homes—a qualitative study. Scand J Caring Sci. 2010;24(3):533–40. https://doi.org/10.1111/j.1471-6712.2009.00745.x.
70. Hirst SP. Defining resident abuse within the culture of long-term care institutions. Clin Nurs Res. 2002;11(3):267–84. https://doi.org/10.1177/10573802011003004.
71. Yon Y, Mikton CR, Gassoumis ZD, Wilber KH. Elder abuse prevalence in community settings: a systematic review and meta-analysis. Lancet Glob Health. 2017;5(2):e147–56. https://www.ncbi.nlm.nih.gov/pubmed/28104184.
72. Clarke ME, Pierson W. Management of elder abuse in the emergency department. Emerg Med Clin North Am. 1999;17(3):631–44. https://doi.org/10.1016/s0733-8627(05)70087-0.

Research Ethical Reflections in Researching Missed Nursing Care

6

Kristin Halvorsen, Clare Harvey, Hans-Peter de Ruiter, and Heidi Jerpseth

6.1 Introduction

This chapter aims to discuss the issues and challenges of missed nursing care (MNC) research. The chapter will start with a short overview of what MNC entails. This is followed by a summary of current empirical studies on MNC. Finally, a brief presentation in which research ethics theory is explained will be presented before reflecting and discussing research issues regarding MNC.

Missed nursing care means any aspects of nursing care, either partially or totally delayed [1]. It encompasses acts of omission, errors leading to adverse outcomes, and tasks not performed, poorly performed, or performed only partially. It may occur both intentionally or unintentionally by nurses or other health-care professionals [1–4]. In this chapter, missed nursing care relates to resource constraints.

Research into care that is missed has increased in the last decade. Current research shows that missed nursing care is prevalent in most European countries and other continents [5–7]. Additionally, it spreads across different contexts from

K. Halvorsen (✉) · H. Jerpseth
Facutly of Health Sciences, Department of Nursing and health Promotion, Oslo Metropolitan University, Oslo, Norway
e-mail: kristin.halvorsen@oslomet.no; heidi.jerpseth@oslomet.no

C. Harvey
Health Workforce Academy School of Nursing, Midwifery and Social Sciences, Tertiary Education Division, Mackay, QLD, Australia
e-mail: c.l.harvey@cqu.edu.au

H.-P. de Ruiter
University of Applied Sciences, St Pölten, Austria

Minnesota State University, Mankato, MN, USA
e-mail: Hans-peter.de-ruiter@mnsu.edu

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_6

neonatal care, hospital care, elderly care in nursing homes and home care. It is now known that missed nursing care is directly related to poor patient outcomes, regardless of age or demographics [8–13]. The most common areas of missed nursing care are as follows [6, 14–19]:

1. Communication, such as comforting and talking to patients
2. Educating and counseling patients and families
3. Assuring patient autonomy
4. Essential physical care such as mouth care, assisting in feeding, bed bath, going to toilets and bell answering
5. Planning and coordinating care
6. Documentation of care.

Complications of MNC include delayed rehabilitation, patient falls, and increased mortality [20–22]. The most common MNC occur at change of shift, in complex caring situations, and during weekend and night shifts [1, 21, 23–28]. When care is rationed due to resource constraints, the patients and families with the strongest voice get the most attention and care [29]; this has the potential for inequities and ethical issues such as violating the principle of justice [29, 30].

Missed nursing care also correlates to burnout and job dissatisfaction in nurses [7, 31]. When nurses are faced with situations where their roles are rationed, a loss of professional values can occur [5]. On the contrary, hospitals committed to having competent nurses and have a higher nurse to patient staffing ratio report less MNC or problems arising from care left undone [3, 32]. An area in which research is still limited is understanding the perspectives of patients and family members when it comes to MNC. Preliminary findings in the research that focuses on patients' perspectives when it comes to MNC show that the reported issues patients encounter are similar to those of nurses [14]. In two scoping reviews, the findings highlight that patients encounter frequent patients' missed primary care experiences, missed communication with staff, and waiting for help [14, 33]. The lack of research from a patient perspective might focus on health-care institutions rather than patients in real-time and space and also be caused by methodological research challenges.

As the above illustrates, current research focuses primarily on the (unwanted) implications of missed nursing care. However, a deficit in discussing ethical or moral issues might have resulted from interventions used to address MNC. This is problematic as to improve care delivery systems, a clear insight into the ethical dimensions of MNC or interventions is essential to develop solutions for the encountered problems.

6.2 Research Ethics—Regulations and Principles

The following section will briefly introduce research ethics and the ethical principles guiding research involving human subjects and health care. The understanding of research ethics is imperative to help develop new and creative solutions to MNC.

The history of research ethics has been a long and treacherous road. Around the world, the most vulnerable members of societies have been victims of unethical research. The Nuremberg Trials of 1947, the most highly reported trial in history, brought these issues into the public forefront. During the trial, the extent to which unethical and reprehensible research occurred during World War II was made known to the world. As a result, an international agreement was reached to create standards of practice for research that would protect all research subjects from unnecessary harm. This resulted in 1964 in the signing of the Helsinki Declaration, established by the World Medical Association [34]; the declaration outlines ethical standards for human subject research in medicine and health sciences. Since its inception, the Helsinki Declaration has been updated and renewed several times, latest in 2013. The Helsinki Declaration ensures a constant revision of the principles in protecting individuals participating in health-related research [34]. The Helsinki Declaration is the overarching ethical document protecting medical and health-care research, and in Europe, it is used in conjunction with the European Union (EU) directive [35]. In 2018, the General Data Protection Regulation (GDPR) was introduced, which strongly influences research ethics and sensitive data [36]. The above has led to most countries developing their regulations based on these documents. This has resulted in the development of ethical committees worldwide that aim to protect research subjects and secure the overarching regulations. Regardless of these documents, it is essential to remember that ultimately protecting the individuals' rights in research remains the researcher's responsibility [37, 38].

6.2.1 Research Ethical Principles

The most common medical ethical principles are as follows:

1. Beneficence
2. Non-maleficence
3. Respect for autonomy and
4. Justice.

These principles are reflected in both the Nuremberg Code and the Helsinki Declaration [37]. More recently, Beauchamp and Childress further developed these principles to include research issues in bioethics. Beauchamp and Childress update their work every few years to ensure the latest research advancements are addressed to follow the international standards [39]. When considering the principles, autonomy is relatively new, yet it adds substantial value to health research ethics. This can be explained by rising educational levels and, simultaneously, the increased

societal orientation on the market economy, particularly in health care. More so than before, the right to self-determination becomes more important [39]. An additional reason for the increasing importance of autonomy as a principle can be traced to the Nuremberg trials. The trials showcased that research subjects' beneficence and autonomy, and dignity could not be taken for granted. This led to emphasizing autonomy as a key principle to protect individuals' right to be permitted to make their own choices [40]. Thus, the autonomy principle refers to personal self-governance and having the right to be free from controlling interferences by others (Beauchamp and Childress, 2019). In health ethics, respect for competent patient autonomy is regarded as a universal and an absolute moral principle. To make an autonomous decision, research subjects must be informed and understand the implications and consequences of their decision, and participation in research must be voluntary and free from pressure. Examples of implementing the principle of autonomy are the requirement to obtain informed consent from potential participants or give sustainable reasons for not having consent.

The principles of beneficence and non-maleficence are the other principles that should be considered in health research ethics. These principles are closely aligned [37]. Beneficence reflects a moral obligation to act for others' benefit and mitigate the risk within the research process. The benefit must be larger than the obvious or potential risks for participants, groups of participants, and societies. Non-maleficence means avoiding harm to the research participants on the individual, group, and societal level [39].

Finally, the principle of justice is a moral requirement when performing health research. The principle of justice has its roots in ancient philosophy. However, the principle is still of interest and highly actual worldwide. Common to all theories is the primary principle "Equals have to be treated equally, and unequals must be treated unequally." This principle is based on international human rights that reflect equality in distributing welfare goods [39]. John Rawls's theory on "reflective equilibrium" substantially impacts the understanding of justice both in human rights and health care. A cornerstone in this theory is that equitable distribution of goods and burdens should be placed under a "veil of ignorance," meaning that no characteristics of persons (e.g., success, lifestyle, position) should make them more or less eligible for receiving goods, such as health care or research benefits [39, 41]. There is a particular responsibility toward those who are the most in need or vulnerable [37, 39]. Thus, the principle of justice is highly relevant when it comes to researching missed nursing care.

6.3 Discussion

It is crucial to start by understanding how the research principles are at risk of being violated when researching MNC. This should be followed by comprehending the researchers' ethical responsibilities, especially when the practice is continuously in a state of change. Only then can one understand the ethical implications of MNC and what should be considered in the research hereof.

6.3.1 Research Ethical Principles at Risk

Research that focuses on the impact on patients and MNC and rationing of care offers ethical challenges. As described in the research and theory sections above, the ethical principles are pertinent and at risk of being violated when performing this research.

One of the cornerstones in research is "Informed consent" as it reflects how the research subjects' autonomy is provided. An argument can be made that respecting the research subjects' autonomy and informed consent may be a challenge. While autonomy is typically well understood as a principle, informed consent is a moral action that justifies the practice of autonomy [39]. In the literature on research ethics, respect for human dignity is described as interrelated with autonomy and is drawn from Kantian ethics, meaning that the person is no bet meant to be treated as a "means for an end," instead as means in itself. This implies that the well-being of research subjects in research autonomy should have precedence over the quest for knowledge and science [37, 39, 42]. Researchers are responsible for securing the participants' autonomy, safety, and dignity before and throughout the research process and presenting the study results and findings. Findings from MNC well-being can offer various issues that may include increased mortality, missed essential daily care, and issues about the patients' well-being and safety (i.e., [11, 20, 21, 43]). When performing studies on MNC, ethical research considerations are most likely considered. However, should the researcher consider ethical issues go beyond this? What should be the researcher's responsibility when a study focuses on missed care in which harm to the patient is observed? Are there special considerations toward the study participant when the findings elucidate missed care? According to the established moral obligations described above, researchers should not view it as a means to an end. Thus, would researchers be culpable for harmful impact on the participant when missed care results in harm they could have prevented by intervening?

Deciding to participate in research should be the decision of the participant, thus respecting their autonomy. Only when a research participant fully understands the study's purpose and the associated risks and benefits they should participate. It is also essential that participants only participate without external pressure or coercion [39]. For patients participating in research on missed care, fear of not receiving adequate care due to not participating may be an example of not being free from pressure. The risk that the participant will feel pressured can occur unintentionally. If nurses or professional caregivers are participants, fear of giving information that may disadvantage their workplace may be perceived as unwelcome pressure. This may lead to not participating in the study or not giving an accurate picture of their actual practice, e.g., nurses might be fearful that they will be penalized for participating and being honest.

An additional aspect to consider when researching MNC is what conditions may limit the understanding of and ability to make autonomous decisions over time. These may include illness, pain, depression, cognitive resources, socioeconomic situations, and educational level. These issues limit a person's full understanding of

the information being provided; thus, researchers must clearly understand the issues listed above to understand their implications fully. Additionally, researchers should regularly review their proposal and research protocol to ensure an ethical approach in participant–researcher relationships. Extra caution should be used in situations where there are important cases where unequal power relations could influence obtaining truly voluntary and fully informed consent [39, 44]. In research on MNC, particularly in qualitative research, the relations between the researcher and the participants have to be carefully approached, and effort should be made to developing a trusting relationship. Negative power-relations could negatively impact the participant's autonomy and jeopardize the findings' validity [44]. It can be argued that when researching MNC, power relations are a particular risk invoking dishonest responses out of fear that negative consequences could follow truthfully describing the experiences of MNC.

To achieve a trusting relationship with the participant, the researchers must respect participant confidentiality, anonymity, and integrity and robust regulated data storing to protect personal and sensitive information. The degree to which data are at risk of being breached warrants careful consideration; researchers must ensure that data are handled according to the latest legal standards and be familiar with the latest regulations that occurred after implementing the General Data Protection Regulation [34–36, 45]. The qualitative researcher should take additional precautions to assure participant autonomy and integrity, i.e., fewer participants, context descriptions, and quotes [44]. Research on MNC is sensitive as negative aspects of patient care and well-being are discussed. Careful consideration should be given regarding the presentation and dissemination of results as protecting the participants is critical.

Beneficence and non-maleficence are also important principles in research ethics [37, 39]. There is always imperative to weigh non-maleficence against beneficence in research to get a clear insight into the research's moral implications. Considering non-maleficence and the concept of "no harm" must always be the priority in research studies [39]. When dealing with highly vulnerable individuals or populations, researchers should consider and decide whether the participation of the vulnerable individual or population is warranted by weighing the research findings' benefits with the risks associated with the harm the research might cause [37]. Researchers must demonstrate that the research will benefit a participant or, at the very least, be able to indicate that their contribution will support future positive change. Ethical approval for research proposals requires the researcher to demonstrates collaboration with the stakeholders and identify how the research will be translated into actual change [37, 39, 44], e.g., if MNC is uncovered, there is an obligation to recommend practice changes that could lessen or eliminate the negative effects of MNC. Findings from MNC research may also harm the nurse participants by placing them at risk of professional discipline for the omission of care. Little attention is given to research ethics in MNC studies in which findings reveal serious consequences for research subjects, yet the researcher's responsibility takes limited responsibility for promoting practice changes that would address the consequences. Currently, severe findings resulting from MNC have not to lead to changes in

priorities and caring for patients. This holds for all contexts and of MNC and across all ages [14, 22, 24, 28, 46, 47], the trend of increasing MNC moves across borders as it is increasing in studies done worldwide. The points should be made that this does not conform with the principle of beneficence.

In MNC research, the principle of justice has become even more critical. John Rawls's theory on "reflective equilibrium" suggests that interactions should be moral and fair and that all persons should choose to agree or decline participation in research, and their decision should be respected [39]. This theory's cornerstone is that the equitable distribution of goods/services and burdens/obligations should be placed under a "veil of ignorance." This means that any person's characteristics (e.g., success, lifestyle, position) should not make them more or less eligible for receiving goods/services, such as health-care or research benefits. According to this understanding of justice, there is a higher level of responsibility toward the neediest and vulnerable [37, 39]. Research on MNC has borne out that this definition of justice is at stake. Research uncovers that MNC often affects the most vulnerable, the elderly, the least verbal, and those with limited family support [17, 29, 30]. Essential questions should be raised: "what is not discussed in this research?" and "what is the researchers' responsibility when uncovering findings that expose patients suffering resulting from injustice?" Koepsell [37] links the understanding of justice to the notion of dignity and argues that fairness results in people being treated with the most dignity.

He emphasizes that the current notion of justice balances autonomy against the provision of certain goods/services arguing that there is a tension between individual liberty and the principle of equal distribution of essential goods/services, giving priority to the most vulnerable. The research on missed care supports this tension's observation since it uncovers that the most vulnerable suffer most from resource constraints and are disproportionately impacted by MNC regardless of age and patient condition or diagnosis [29, 46, 47]. Research has shown that both nurses and doctors categorize patients according to diagnosis [48, 49]. Researchers in MNC should strongly consider including the exposure of these inequities as part of their studies.

6.3.2 Research Ethical Responsibilities and Implications

Missed nursing care is a result of financial allocation brought about by resource constraints. Limited initiatives have been instigated to mitigating the impacts and associated risks resulting from MNC, which can be considered a moral and ethical problem. Both patients and nurses are the casualties of the MNC resulting from budgetary constraints. The literature focused on MNC is not comprehensive when addressing nurses' professional responsibility while performing their caring work. It is also not the responsibility of the researchers who identify problems resulting from MNC to implement solutions. The question remains who has the responsibility for changes when the negative MNC are uncovered? Globally, nurses perform their caring work, knowing that they have organized and prioritized their work in a

manner that considers the institutional resource constraints, knowing that this might result in negative consequences for their patients. These consequences might include patient falls, malnutrition, lack of daily care, reduced well-being, and safety, and even increased patient mortality (i.e. [5, 14, 17, 18, 28]). Regardless of the cause, missing essential care can be considered an act of omission and regrettably impacts patients negatively. Nurses have a moral responsibility to report MNC and inform themselves regarding the consequences of MNC and how to respond when the patients are negatively impacted. However, responsibility also lies with the researchers of MNC as they publish the findings of MNC. To address issues, researchers must do more than solely publishing in professional journals and communicate pertinent findings to the nurses who are impacted by MNC and inform the public and policymakers. This would allow the ethical principles and research findings to be disseminated in a more comprehensive and impactful manner.

Additionally, beneficence's ethical principle is respected by having their work support the well-being of both the study participants and the community [37, 39, 44]. In this way, the researcher of MNC would enact their moral obligation to communicate the results to provide a change in practice. Scientific articles are not enough; findings must inform policymakers and society, using various media forms and strategies. Distribution of findings should additionally include hospital and nursing administration and nursing schools.

Nurses' challenge to remain safe at work has become a balancing act between complying with institutional priorities such as working with budget containment on one side and moral and ethical practice on the other. Creating an ethical work climate among staff has shown to be a key feature in improving health care; this is true, particularly in sensitive areas of clinical practice [50]. Building ethical climates require a commitment to ethical codes and the ethical principles of justice, equality, and quality of care. This commitment should be across the board from administrators to the clinicians who perform the care work [51], which may help avoid preventing MNC [50]. As the population ages, budgets get tighter, and nursing care rationing becomes inevitable, continuous research into aspects that will prevent MNC is essential.

6.4 Summary

In summary, irrespective of the regulations and policies imposed upon research ethics, the researcher's moral conscience and ethical discernment should always be the decisive factor in deciding how research is undertaken in clinical settings. This is true for all areas of research but particularly pertinent to the research of MNC. Only with a genuine sense of responsibility are researchers able to prevent harm to patients, research participants, and society. Using Henry Beecher words from 1966 [38]:

> The only truly effective way of protection for the safety and well-being of human subjects in research, namely a committed and caring investigator with intelligence and good judgment, unselfishness enough to put the interest of the subject ahead of the interest of science. (pp. 119)

Web Links World Medical Association. The Declaration of Helsinki. https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/. Accessed 16 Oct 2020.

General Data Protection Regulation (2018). https://gdpr-info.eu/.

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679. Accessed 16 Oct 2020.

References

1. Suhonen R, Scott PA. Missed care: a need for careful ethical discussion. Nurs Ethics. 2018;25(5):549–51.
2. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. J Adv Nurs. 2009;65(7):1509–17.
3. Kalisch BJ, Xie B. Errors of omission: missed nursing care. West J Nurs Res. 2014;36(7):875–90.
4. Scott PA, Harvey C, Felzmann H, Suhonen R, Habermann M, Halvorsen K, et al. Resource allocation and rationing in nursing care: a discussion paper. Nurs Ethics. 2019;26(5):1528–39.
5. Harvey C, Thompson S, Otis E, Willis E. Nurses' views on workload, care rationing and work environments. J Nurs Manag. 2020;28(4):912–8.
6. Jones TL, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52(6):1121–37.
7. Ausserhofer D, Zander B, Busse R, Schubert M, De Geest S, Rafferty AM, et al. Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. BMJ Qual Saf. 2014;23(2):126–35.
8. Recio-Saucedo A, Dall'Ora C, Maruotti A, Ball J, Briggs J, Meredith P, et al. What impact does nursing care left undone have on patient outcomes? Review of the literature. J Clin Nurs. 2018;27(11–12):2248–59.
9. Blackman I, Papastavrou E, Palese A, Vryonides S, Henderson J, Willis E. Predicting variations to missed nursing care: A three-nation comparison. J Clin Nurs. 2018;26(1):33–41.
10. Amiri A, Vehviläinen-Julkunen K, Solankallio-Vahteri T, Tuomi S. Impact of nurse staffing on reducing infant, neonatal and perinatal mortality rates: evidence from panel data analysis in 35 OECD countries. Int J Nurs Sci. 2020;7(2):161–9.
11. Tønnessen S, Nortvedt P, Førde R. Rationing home-based nursing care: professional ethical implications. Nurs Ethics. 2011;18(3):386–96.
12. Halvorsen K, Førde R, Nortvedt P. Professional challenges of bedside rationing in intensive care. Nurs Ethics. 2008;15(6):715–28.
13. Halvorsen K, Forde R, Nortvedt P. Value choices and considerations when limiting intensive care treatment: a qualitative study. Acta Anaesthesiol Scand. 2009;53(1):10–7.
14. Bagnasco A, Dasso N, Rossi S, Galanti C, Varone G, Catania G, et al. Unmet nursing care needs on medical and surgical wards: a scoping review of patients' perspectives. J Clin Nurs. 2020;29(3/4):347–69.

15. Griffiths P, Recio-Saucedo A, Dall'Ora C, Briggs J, Maruotti A, Meredith P, et al. The association between nurse staffing and omissions in nursing care: a systematic review. J Adv Nurs. 2018;74(7):1474–87.
16. Brooks Carthon JM, Lasater KB, Sloane DM, Kutney-Lee A. The quality of hospital work environments and missed nursing care is linked to heart failure readmissions: a cross-sectional study of US hospitals. BMJ Qual Saf. 2015;24(4):255–63.
17. Eide HD, Halvorsen K, Almendingen K. Barriers to nutritional care for the undernourished hospitalised older people. J Clin Nurs. 2015;24(5–6):696–706.
18. Slettebø Å, Kirkevold M, Andersen B, Pedersen R, Halvorsen K, Nordhaug M, et al. Clinical prioritizations and contextual constraints in nursing homes—a qualitative study. Scand J Caring Sci. 2010;24(3):533–40.
19. Halvorsen K, Slettebø Å, Nortvedt P, Pedersen R, Kirkevold M, Nordhaug M, et al. Priority dilemmas in dialysis: the impact of old age. J Med Ethics. 2008;34(8):585–9.
20. Ball JE, Bruyneel L, Aiken LH, Sermeus W, Sloane DM, Rafferty AM, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5.
21. Ball JE, Griffiths P, Rafferty AM, Lindqvist R, Murrells T, Tishelman C. A cross-sectional study of 'care left undone' on nursing shifts in hospitals. J Adv Nurs. 2016;72(9):2086–97.
22. Kalisch BJ, Xie B, Dabney BW. Patient-reported missed nursing care correlated with adverse events. Am J Med Qual. 2014;29(5):415–22.
23. Henderson J, Willis E, Xiao L, Blackman I. Missed care in residential aged care in Australia: an exploratory study. Collegian. 2017;24(5):411–6.
24. Ludlow K, Churruca K, Mumford V, Ellis LA, Braithwaite J. Staff members' prioritisation of care in residential aged care facilities: a Q methodology study. BMC Health Serv Res. 2020;20(1):1–14.
25. Ball JE, Murrells T, Rafferty AM, Morrow E, Griffiths P. 'Care left undone' during nursing shifts: associations with workload and perceived quality of care. BMJ Qual Saf. 2014;23(2):116–25.
26. Blackman I, Lye CY, Darmawan IGN, Henderson J, Giles T, Willis E, et al. Modeling missed care: implications for evidence-based practice. Worldviews Evid-Based Nurs. 2018;15(3):178–88.
27. Friese CR, Kalisch BJ, Lee KH. Patterns and correlates of missed nursing Care in Inpatient Oncology Units. Cancer Nurs. 2013;36(6):E51–E7.
28. Papastavrou E, Andreou P, Efstathiou G. Rationing of nursing care and nurse-patient outcomes: a systematic review of quantitative studies. Int J Health Plann Manag. 2014;29(1):3–25.
29. Halvorsen K, Førde R, Nortvedt P. The principle of justice in patient priorities in the intensive care unit: the role of significant others. J Med Ethics. 2009;35(8):483–7.
30. Pedersen R, Nortvedt P, Nordhaug M, Slettebø Å, Grøthe KH, Kirkevold M, et al. In quest of justice? Clinical prioritisation in healthcare for the aged. J Med Ethics. 2008;34(4):230–5.
31. White EM, Aiken LH, McHugh MD. Registered nurse burnout, job dissatisfaction, and missed care in nursing homes. J Am Geriatr Soc. 2019;67(10):2065–71.
32. Bruyneel L, Li B, Ausserhofer D, Lesaffre E, Dumitrescu I, Smith HL, et al. Organization of hospital nursing, provision of nursing care, and patient experiences with care in Europe. Med Care Res Rev. 2015;72(6):643–64.
33. Gustafsson N, Leino-Kilpi H, Prga I, Suhonen R, Stolt M. Missed care from the patient's perspective—a scoping review. Patient Prefer Adherence. 2020;14:383–400.
34. World Medical Association (WMA). Declaration of Helsinki—Ethical principles for medical research involving human subjects. 1964/2013.
35. EU. Ethics and integrity in academic research. 2019.
36. General Data Protection Regulation, 2016.
37. Koepsell DR. Scientific integrity and research ethics: an approach from the ethos of science. Cham: Springer; 2017.
38. Beecher H. Ethics and clinical research. N Engl J Med. 1966;274(24):1354–60.
39. Beauchamp C. In: Beauchamp TL, Childress J, eds. Principles of biomedical ethics. 7th ed. New York: Oxford University Press 2019.

40. Kristvik E. For whom and for what? Exploring the question of 'informed consent in treatment decision making processes. Medische Antropologie. 2011;23:9–43.
41. Rawls J. A theory of justice. Oxford: Oxford University Press; 1973. XV, 607s p.
42. Aközer M, Aközer M, Aközer E, Aközer E. Basing science ethics on respect for human dignity. Sci Eng Ethics. 2016;22(6):1627–47.
43. Kalisch BJ, McLaughlin M, Dabney BW. Patient perceptions of missed nursing care. Joint Commission J Qual Patient Saf. 2012;38(4):161–7.
44. Miller T, Birch M, Mauthner M, Jessop J. Ethics in qualitative research. London: SAGE Publications; 2012.
45. NEM. General guidelines for research ethics https://www.forskningsetikk.no/en/guidelines/general-guidelines/: The Norwegian National Research Ethics Committees. https://www.forskningsetikk.no/en/guidelines/general-guidelines/.
46. Bagnasco A, Dasso N, Rossi S, Timmins F, Aleo G, Catania G, et al. Missed care in children's nursing—An emergent concern. J Adv Nurs. 2019;75(5):921–3.
47. Bagnasco A, Timmins F, Aleo G, Sasso L. Double Jeopardy—Missed care for the vulnerable in community settings. J Clin Nurs. 2018;27(21–22):3827–9.
48. Album D, Johannessen LEF, Rasmussen EB. Stability and change in disease prestige: a comparative analysis of three surveys spanning a quarter of a century. Soc Sci Med. 2017;180:45–51.
49. Johannessen LEF, Album D, Rasmussen EB. Do nurses rate diseases according to prestige? A survey study. J Adv Nurs. 2020;76(7):1691–7.
50. Winsett RP, Rottet K, Schmitt A, Wathen E, Wilson D. Medical surgical nurses describe missed nursing care tasks—evaluating our work environment. Appl Nurs Res. 2016;32:128–33.
51. Vryonides S, Papastavrou E, Charalambous A, Andreou P, Eleftheriou C, Merkouris A. Ethical climate and missed nursing care in cancer care units. Nurs Ethics. 2018;25(6):707–23.

7 Interventions to Reduce and Limit Rationed and Missed Nursing Care: State of the Art and Future Perspectives

Dietmar Ausserhofer, Helga Bragadóttir, Suzanne Dhaini, Clare Harvey, Fedor Lehocki, and Maria Schubert

7.1 Introduction

As outlined in the previous chapters, rationed and missed nursing care is a common and complex problem worldwide. Internationally, between 55 and 98% of nurses report leaving at least one necessary nursing element undone in their most recent shift [1]. The nursing care activities most frequently missed in hospital settings are ambulation, turning and positioning of patients, mouth care, documentation,

D. Ausserhofer (✉)
College of Health Care-Professions Claudiana, Bolzano-Bozen, Italy
e-mail: dietmar.ausserhofer@claudiana.bz.it

H. Bragadóttir
Faculty of Nursing, School of Health Sciences, University of Iceland, Reykjavík, Iceland
e-mail: helgabra@hi.is

S. Dhaini
University of Basel, Basel, Switzerland
e-mail: suzanne.dhaini@unibas.ch

C. Harvey
College of Health, Massey University, New Zealand and Central Queensland University, Townsville, QLD, Australia
e-mail: c.harvey1@massey.ac.nz

F. Lehocki
Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Bratislava, Slovakia
e-mail: fedor.lehocki@stuba.sk

M. Schubert
ZHAW—Zurich University of Applied Science, School of Health Professions, Institute of Nursing, Winterthur, Switzerland
e-mail: maria.schubert@zhaw.ch

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_7

nursing care planning, and emotional or psychological support [1]. Less frequently missed care activities are enteral nutrition, adhering to infection control guidelines, wound care, changing dressings, monitoring physiological status such as blood glucose, changing soiled linen, changing intravenous sites or tubing, responding to call lights and patient assessments [1–3].

Basic or less visible care elements are more frequently missed than those either directly or indirectly involving other health-care professionals [4]. Findings from a qualitative study confirm that nurses give technical activities which are addressing patients' instability a higher priority than relational ones [5]. For example, a body wash, emotional support, or necessary conversation are care elements more frequently missed than administration of a prescribed medication, preparation of patients for test or therapies. Thus, nurses may use a hierarchical system that allocates a higher priority to care involving medically orientated treatments and monitoring linked more directly with patient safety [6–8].

Higher levels of rationed and missed nursing care are associated with negative outcomes at the patient, the nurse and the institutional level [9–13]. This can be explained by the fact that rationed and missed care occur during the process of care at the nurse-to-patient interface with a more direct effect on outcomes than for example the nurse work environment, i.e., nurses unable to monitor their patients adequately may miss early changes in their clinical conditions, which can lead to failure-to-rescue scenarios [14–16]. Similarly, when nurses are unable to mobilize or turn patients, provide mouth care, bathing/skin care or toileting, or perform regular clinical assessments, hospital-acquired pressure ulcers, falls, or nosocomial pneumonia can develop [12, 17, 18]. In addition, the stress associated with such omissions can also affect the nurses themselves. Particularly, if time pressure continues over extended periods, it can lead to lower job and occupational satisfaction, increasing the likelihood of staff burnout and turnover [1, 4, 19, 20].

Given its demonstrated relevance to patient safety, quality of care, and both patient and nurse outcomes, it is crucial to develop counter measures in order to limit and reduce rationed and missed care. While our knowledge of the occurrence of rationed and missed nursing care and its associations with patient and nurse outcomes has increased, we still know very little on how we can effectively limit and reduce the level of rationed and missed nursing care. Thus, the following questions remain mostly unanswered from nursing researchers, managers and educators:

- What can we really do to reduce and limit rationed and missed nursing care?
- What is the best approach to tackle this complex problem?
- What interventions are effective to reduce or limit rationed and missed nursing care in various health-care settings?

While we are trying to figure out how we can study, measure and provide evidence for improvements, we have to recognize at least two factors. First, while preventing rationed or missed nursing care might be the ultimate goal and possible in an ideal world with ideal conditions (e.g., sufficient and available resources such as nurses), under real-world conditions it might simply not be achievable. With this

presumption in mind, we therefore consider using the terms "reducing and limiting" rationed and missed nursing care more appropriate as "preventing or avoiding." Second, the lack of evidence does not necessarily imply that nurses do not already do something about it and to tackle this challenge in their daily clinical work. Recently, in a qualitative study nurses reported to apply various strategies to balance out deficiencies in their work environment to limit the levels of rationed and missed nursing care, such as reducing quality before quantity, postponing and working overtime, and working together as a team [5].

In this chapter we provide a synthesis on studies reporting on interventions to reduce or limit rationed and missed nursing care and outline more in depth current and future directions for promising interventions. These interventions are categorized and summarized in three main categories: teamwork and staffing, care reminders and improving the quality of nursing care process, and technological solutions. Moreover, we report on methodological challenges that need to be tackled when studying such "complex interventions" to reduce or limit rationed and missed nursing care. Finally, we provide conclusions based on the current state of evidence and provide future perspectives.

7.2 Teamwork and Staffing: Two Major Matters in Nursing

As pointed out by Kalisch and Schoville [21], no nurse can provide all the care that a hospitalized patient needs because it requires the input from a team of nurses all contributing to a person's care. Efficient teamwork and appropriate nurse staffing are identified as major premises for safety in health care, and it is without any doubt that teamwork and staffing are two of the main concerns in nursing globally. Evidence show that teamwork and staffing, together with other factors such as the quality of nurses' work environment, safety climate, and nurse-related factors are crucial for both patient and staff outcomes and associated with rationed and missed nursing care [1, 22, 23]. The association of staffing, teamwork and missed nursing care with patient and staff outcomes has been demonstrated, e.g., in the Missed Nursing Care Model [24], indicating the contribution of staffing and teamwork among other factors, on missed nursing care which again leads to staff and patient outcomes (see Fig. 7.1). Research has shown that with better staffing and higher skill mix of

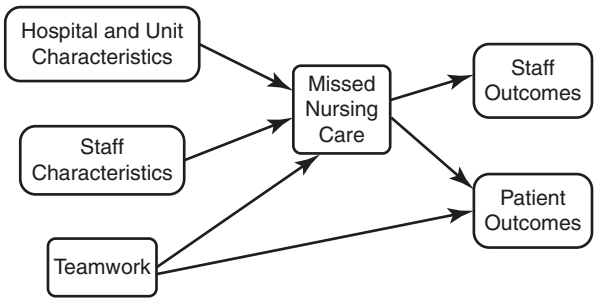

Fig. 7.1 The missed nursing care model (adapted from Kalisch and Lee) [24]

registered nurses (RN) as well as better nursing teamwork, missed nursing care is reduced and better patient outcomes and improved job satisfaction among nursing staff can be achieved [1, 25, 26].

7.2.1 Teamwork

The importance of teamwork in health care has now been recognized and highlighted for years by respected organizations such as the World Health Organization (WHO) and the National Academy of Medicine (previously the Institute of Medicine). The WHO for instance identifies teams or workgroups as one of the four main organizational and human factors categories in their conceptual framework for patient safety, the other categories being organization or managerial factors, individual worker factors and work environment factors [27]. The importance of teamwork in health care is further highlighted by WHO in their drive to build on patient safety education and ensure that patient safety issues are included in the education of future health-care professionals. WHO identifies "being an effective team player" as one of the key concepts in its *Patient safety curriculum guide* [28]. For effective team members in high functioning teams in health care, five personal values are characteristic: honesty, discipline, creativity, humility, and curiosity [29]. As identified by WHO [28], everyone benefits from effective teamwork: the team members, the patients, the team, and the organization. For the team members, effective teamwork enhances greater role clarity and increased well-being and job satisfaction. For the patients, effective teamwork leads to better acceptance of treatment, improved health outcomes and quality of care, less medical errors, and increased patient satisfaction. The service or department benefits from effective teamwork with enhanced communication and professional diversity, improved coordination of care, and efficient use of health-care services. The organization benefits from effective teamwork with better accessibility for patients, reduced unanticipated admissions, and reduced hospitalization time and cost [28].

Nursing teamwork may be seen as one part of a more complex microsystem within a health-care organization, where collaboration and communication are at the core of the teamwork performance [30, 31]. Teamwork has been identified as an essential component for high reliability within organizations such as health-care services [32]. Effective teamwork is essential in all areas of health service delivery, including acute, community, and long-term care arrangements. The findings of a cross-sectional study from Switzerland, including 4311 care workers from 402 units in 155 nursing homes, revealed more quality care in instances of better teamwork and higher safety climate [33]. This study demonstrated how important teamwork is in creating a safe environment in which the quality of patient care is central to the team, and how important it is to train and prepare staff for such an activity. In the past decade interventions to improve teamwork in health-care organizations have multiplied including a variety of training, tools, organizational redesign, and programs [34]. Indications are that the most common and effective interventions to strengthen teamwork in health care are simulation-based training, principle-based training such

as Crew Resource Management adapted from aviation, and TeamSTEPPS®, an evidence-based tool kit on teamwork developed in the United States of America aiming for optimizing patient outcomes by improving communication and teamwork skills of health-care professionals (see https://www.ahrq.gov/teamstepps/index.html for further information on TeamSTEPPS®). General team training, tool implementation such as structured communication using the patient handover approach of situation, background, assessment and recommendation (SBAR), briefing and debriefing sessions, and facilitating and triggering tools are also common as well as organizational redesign, to support effective teamwork. In some cases a combination or programs of two or more methods are used at once to enhance teamwork in health care [34].

Teamwork between as well as within professions is equally important to ensure safe patient care. Several publications from the National Academy of Medicine identify teamwork and safe communication as key factor in quality care [35, 36] and underline the crucial role nurses play in assuring patient safety [37, 38]. Study findings suggest that better nursing teamwork is linked with less missed nursing care. When comparing hospital units with high versus low missed nursing care, Kalisch and colleagues [39] identified teamwork as the primary factor determining between the units. Nursing staff in units with low missed nursing care described better teamwork than did nursing staff in units with high missed nursing care. Findings from exploratory descriptive studies carried out in hospitals in Australia, Iceland, and the USA show that teamwork alone explains a substantial amount of missed nursing care when controlling for other hospital and staff characteristics [24, 40, 41]. These findings indicate the importance of nursing teamwork for optimizing patient care and the urgent need to secure teamwork competences among nursing staff.

Based on Salas' model on teamwork [42], Kalisch et al. described five core components of nursing teamwork: trust, team orientation, backup, shared mental model, and team leadership [24]. These components need to be in place so that the team can provide effective patient care. To improve nursing teamwork and quality of nursing care, Kalisch with colleagues developed successful interactive training interventions leading to improved nursing teamwork [23, 43, 44]. For the purpose of improving nursing teamwork in hospital units and decreasing missed nursing care, Kalisch et al. (2013) developed a train-the-trainer intervention based on the TeamSTEPPS® intervention, a modified crew resource management intervention [45] (see https://www.ahrq.gov/teamstepps/index.html for further information on TeamSTEPPS®). The intervention included a short podcast (i.e., a digital audio file) on team behavior, real nursing care scenarios role playing (simulation), group discussions, and debriefing. In their study conducted to identify the impact of the train-the-trainer intervention on nursing staff satisfaction with teamwork, the level of teamwork and the amount of missed nursing care, eight elements or competencies of team behavior were practiced: team leadership, collective orientation, mutual performance monitoring, backup behavior, adaptability, shared mental models, closed-loop communication, and mutual trust [23, 32, 42] (see Table 7.1). A group of three staff nurses came from each of three participating medical-surgical units for a 2-day training program. These nurses served as trainers on their units providing 3-h teaching and training

Table 7.1 Elements of effective team behavior in providing nursing care [23, 32, 42]

Team behavior	Description
Team leadership	• The formal or informal leader and other team members provide coordination and support • Team leadership is seen as a key role in nursing teams as team leaders need to be a good example for other team members and their role is to ensure support to the work and objectives of the team and the coordination of the team members work
Collective orientation	• The objectives and needs of the team are more important and prioritized over needs of individual team members • Collective orientation is the noble approach of true prioritization of the team objectives over the needs of individual team members, moving the focus from each staff member's assignment to the collective assignment of the team
Mutual performance monitoring	• Team members pay attention to each other's work and issues • Mutual performance monitoring refers to the element of striving for safety by monitoring each other's work and responding instantly to whatever needs to be supported, carried out, or corrected
Backup behavior	• Team members help each other if needed • Backup behavior is when team members help each other if needed and show respect to each other's responsibilities
Adaptability	• Team members are flexible when needed • Team adaptability refers to how easily the team can readjust to changes and deviations from what was expected
Shared mental models	• Team members share a common view on their work • A shared mental model refers to a common understanding of the work process and goal where each team member is knowledgeable about everyone's role and responsibility
Closed-loop communication	• Team members practice active information exchange where both or all parties ensure a common understanding of what was communicated • Closed-loop communication is essential for safe communication where the sender of a message ensures with a follow-up request that the recipient received and understood the message as intended
Mutual trust	• Team members act in the interest of the team to reach the teams' common goals • Mutual trust is the core element of perceiving and believing that other team members will work in the best interest of the team and its common goal, as well as the interest of each team member

sessions for each nursing staff member. Three measures were done on teamwork and missed nursing care, one pre- and two post-intervention. Findings showed a significant improvement in teamwork and satisfaction with teamwork as well as decreased missed nursing care. A more recent study, using the intervention, method, and measures from Kalisch and colleagues, reported clinically significant improvements in both teamwork and missed nursing care although they did not reach statistical significance [46]. These studies on the impact of nursing teamwork on missed nursing care corroborate that nursing teamwork can and should be taught and trained for optimizing nursing care and increasing safety in health care.

7.2.2 Staffing

Staffing is the other major concern in missed nursing care, and which may be even more difficult to manage due to the global shortage of nursing staff and cost constrained budgets in many hospitals. Staffing and teamwork are closely related to each other. Whether measured as hours per patient day [47, 48], number of patients cared for [49] or perceived staffing adequacy [41, 44, 49], better staffing is shown to associate with better teamwork. Healthcare professional staff shortage is a global issue, not least the nursing shortage [50]. Nurse staffing is a serious matter as extensive studies show that staffing levels, skill mix, and education of nurses are related to patient outcomes. With less workload, better educated nurses, and higher skill mix of RNs, survival of patients is improved significantly [9, 25, 51]. Study findings also indicate that better nurse staffing with higher skill mix of bachelor's prepared RNs decreases missed nursing care [9, 22, 23]. The findings of a study carried out in 110 hospital units in the USA showed that better staffing, more hours per patient day and fewer patients cared for were significantly associated with less missed nursing care and staffing adequacy and number of patients cared for by each nurse during a shift, were both significant predictors of missed nursing care [23]. The contribution of nurse staffing to the quality of nursing care is further confirmed in the study of Cho et al. [52], a natural experiment in Korean hospitals where missed nursing care was studied in high versus low staffed units following policy changes requiring increasing nurse staffing. Comparisons were made between four well-staffed units where each RN was responsible for 7 patient per shift and 9 low staffed units where each RN was responsible for 17 patients per shift. Nurses in the low staffed units reported RNs missing significantly more nursing care in their units than did their counterparts in the high staffed units [52]. These results are in line with those of several observational studies, in which better nurse staffing and skill mix levels or teamwork were significantly associated with lower rationed and missed nursing care [24, 33, 53–58]. As in various countries and health-care settings, increasing nurse staffing levels in reducing and limiting rationed and missed nursing care will be extremely challenging or impossible for various reasons, including economic constraints. For this reason, improving nursing teamwork might offer a more promising structural intervention to reduce and limit the rationed and missed nursing care.

7.3 Improving the Quality of Nursing Care Processes and Care Reminders

Several interventions are reported in the literature that aimed to improve the quality of specific nursing care processes [59–64]. Although these studies were not primarily designed to reduce and limit the rationed and missed nursing care, they entail interventions (or some intervention components) that are relevant to consider in the context of "rationed and missed care." For instance, several studies aimed at optimizing, standardizing, or otherwise changing care processes to reduce missed

medication doses [59–64]. Goldstein et al. (1982) investigated a decentralized unit dose system and educational program implemented on eight units of a US acute care hospital regarding their effects on medication omission rates. Five months after the implementation, the number of missed medication doses in the post-intervention group had fallen significantly, from 0.048 doses omitted per patient day to 0.011 doses [61]. In 11 Australian hospitals, Graudins et al. (2015) tested the effect of a medication safety package, involving reducing the number of preventable omitted medication doses and related complications. After the implementation of a medication list and an audit tool, 4.3% of total doses were omitted, compared to 25% in the pre-implementation phase, showing a reduction in the omission rates (Graudins et al. 2015). Ballie et al. (2015) evaluated the effect of a multifaceted venous thromboembolism prophylaxis intervention on missed and/or refused thromboprophylaxis in one USA acute care hospital. The intervention consisted of a standardized nursing response to patient refusal, daily assessment of venous thromboembolism prophylaxis usage and regular feedback on refusal rate. It was implemented on six nursing units with the highest levels of non-administration and patient refusal rates for injectable thromboembolism prophylaxis. Compared to the five control units, the intervention units showed a significant immediate and sustained decrease in the rates of missed doses (24.7–14.7%) and refused prophylaxis (from 18.3 to 9.4%). In the control group, no significant change was observed [59].

These studies focused on changing nursing behavior in regard to a specific care activity. Prioritizing a care activity and overtly monitoring and measuring, it will necessarily change behavior in that regard. However, how prioritizing specific care activities to reduce rationed and missing of these activities will affect the rationed and missing of non-prioritized but necessary nursing activities remains unclear.

The effects of care reminders, either in general or in relation to specific nursing care activities on rationed and missed nursing care have been tested in various forms [65–68]. In two studies conducted in a USA acute care hospital, the use of electronic nursing care reminders resulted in a statistically significant decrease in rationed and missed nursing care across the measured activities, i.e., a more frequent use of reminders was significantly linked with lower rationed and missed nursing care [66]. The impact of verbal reminders delivered by authorized nurses was also tested in two studies [65, 67]. In a surgical intensive care unit in a US hospital, Harmon et al. (2016) examined the effect of the "turn team cueing assignment" and pre-intervention pressure ulcer prevention training for nurses on pressure ulcer prevention and rates. After its implementation, 93% of the nurses were able to complete the 2-h turning of patients at risk of pressure ulcers. Staff perceived the pre-intervention education (64.3%) and cueing (78.6%) as effective for completing patient turning. Yap et al. (2013) evaluated the effectiveness of a pressure ulcer prevention intervention with educational and musical components in 10 US long-term care facilities. After the implementation of the intervention, 31–69% of the intervention facilities' residents were either repositioned or reminded to move every 2 h, compared to 21–54% in the comparison group. Compared with residents in the two comparison facilities, those in intervention facilities were significantly (45%) less likely to develop new pressure ulcers [67].

Although care reminders seem to be a promising intervention, the feasibility (e.g., electronic reminders) and acceptability (e.g., verbal reminders) might differ between countries and/or settings. For instance, electronic reminders require the availability of an electronic health record. While the use of electronic health records has markedly increased in recent years, many hospitals or nursing homes do not yet use such systems.

7.4 Technological Solutions for a Human Problem

The year 2020 was designated as the International Year of the Nurse and Midwife by the WHO World Health Assembly. It was motivated by the non-substitutable role of these health-care workers in meeting everyday essential health needs. To achieve universal health coverage by 2030, the world would need 9 million more nurses and midwives (https://www.who.int/campaigns/year-of-the-nurse-and-the-midwife-2020). Studies show that nursing care is often missed, i.e., it is delayed, partially completed or not completed [17]. This results in undesirable patient outcomes, worse patient care experiences and nurse's feeling of powerlessness and reduced self-esteem from not providing high-quality nursing care. In a qualitative study on missed nursing care, seven topics on the causes of missed nursing care were raised by nursing staff [69, 70]. These topics were identified as lack of staff, underutilization of existing human resources, time required for nurse intervention, poor teamwork, ineffective delegation, habit, and rejection. A recent study investigated and documented how changes in the hospital work environment and nurse staffing over time affect missed nursing care [71]. Results showed that in hospitals with improved work environments or nurse staffing, the prevalence and frequency of missed care decreased significantly.

Technology can be a supportive factor in improving nurses' work environment and process of care. For instance, technological solutions for remote patient's data acquisition, visualization, and processing might help improve the processes of nursing care by reducing workload and information burden on health-care workers. Continuous remote monitoring of vital signs of patients can reduce workload on nurses related to manual periodical measurements and checkups (temperature, blood pressure, ECG, etc.). This can be especially of benefit in case of work environments with understaffed number of educated nurses. Data visualization provides graphical representation of information using charts, graphs, or maps. It can therefore support nurses in making data-driven decisions by provision of accessible way to see and understand trends and outliers in the patient's data. Intelligent processing based on acquired data can predict development of patient's health status and generate alarms before its deterioration thus further support of providing timely care.

This section will focus on existing technical advancements, such as telehealth and telemonitoring, wearable devices, unobtrusive sensing, and robotics, that offer potential solutions to support nurses in patient management and to improve their effectiveness and efficiency, especially in understaffed conditions. These solutions can be used in hospitals, as well as home or ambulatory settings.

7.4.1 Telehealth and Telemonitoring

Telehealth is defined as provision of health care on distance by means of information and communication technology [72]. Historically telehealth was used to deliver care at geographically distant, rural areas with limited access to health-care services. Today this kind of emerging services can be also found between health-care provider and patients' home in urban areas, among wards or within single ward in a hospital. Moreover, the miniaturization of electronics, reduction in power consumption, availability of broadband internet, penetration of mobile technologies result in advances in mobile health (mHealth). Wearable health sensing and monitoring technologies are just some of the technologies emerging for use in managing patient care. Beyond video visits (teleconferencing) and virtual assistants, these new device technologies allow for monitoring and evaluating a range of physiological parameters to provide accurate alerts or reminders of potentially hazardous changes, deteriorating health or onset of serious health conditions. Continuous telemonitoring of patients' personal health located with the patient in a ward allows nurses to save time for assessing vital signs and health conditions and to devote time to other care activities, thus lowering the occurrence of missed care. It also provides a means to make regular check-ups and facilitate assessment of vital signs across a wider range of patients at any one time. All relevant physiological data from each patient in ward are displayed (visualized) on nurse's station computer screen. It is also useful in situations such as the recent COVID-19 pandemic, where reduced person-to-person contact is advised while still being able to effectively monitor patients [73].

7.4.2 Wearable Devices

Wearable devices acquire data about patients' health and can be integral part of telemonitoring and telehealth. These devices can play an important role in providing early warning to anomalous changes in patient's health conditions by combination of vital signs and clinical symptoms. These devices are able to monitor a wide range of physiological parameters for cardiovascular assessment (ECG, pulse rate, blood pressure), respiratory evaluation (SpO_2, respiratory rate, lung sounds, cough sounds), metabolic diseases (sensor for glucose monitoring), and other clinical symptoms like temperature. Other parameters that can be monitored relate to lifestyle of a patient—physical activity, nutrition habits, weight, stress, and psychological status including emotional state. This is not intended to be an exhaustive list of all possible parameters that can be assessed by wearables but can provide a basic orientation in existing solutions and motivate to look further in research papers databases. More comprehensive overview of technologies can be found, for example, in Zheng et al. [74].

Figure 7.2 represents one of the possible architectures for a telehealth management system in hospital that consists of the following components: personal wearable health devices, gateway device, remote patient monitoring server, nurse's telemonitoring station.

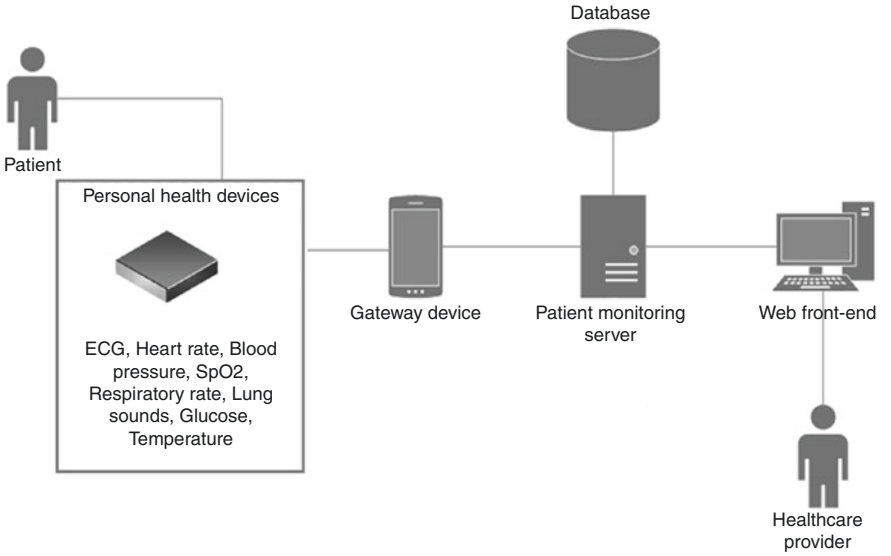

Fig. 7.2 Architecture of a telehealth system with wearable devices (adapted from Lehocki et al. [75])

Personal wearable health devices (PHD) enable point-of-care diagnostics and real-time data acquisition, using Bluetooth or other wireless communication interfaces to enable transfer of measured vital signs to gateway devices or ventral monitoring locations. These devices can be implemented as watches, glasses, patches (including designs of printable, flexible, and stretchable devices), armbands, or integrated into clothes [74]. Absence of cable connection between PHD and gateway provides greater mobility to patient during movement in and between wards or in the home care setting. It is less consuming to a nurse's time as there is no need for the traditional detaching and reattaching of the device when patient returns to bed. Gateway Device (GD) is a central communication point responsible for collecting data from PHDs and forwarding them to a patient monitoring server (PMS) [75]. This provides uploading and storing all relevant patient data acquired by PHD in a secure and accessible manner. PMS can share data with hospital database through Electronic Health Records (EHR), or it can be integrated as an additional telehealth module. A designated nurse station provides user interface to view, analyze, and manage patient data. It enables nurses to select a patient, edit and view his personal data and measurements, view the history of measurements in tabular and graphical form, view an alarm list and displaying alerts for all patients in a ward. Alerts are created in case of development of negative trends in patient's physiological data based on continuous physiological measurements. This can help nurses to detect and react preventively before a patient start feeling discomfort or initiate the call light to attract a nurse's attention. Data analytics can range from basic alarm generation, based on evaluation of each measured parameter according to preset thresholds, to complex clinical decision support system based on computer interpretable guidelines.

Recording parameters to EHR supports full documentation of all necessary data related to vital signs. For instance, telehealth provides a means to assess a patient's emotional state and thus enabling nurse to better evaluate need and create emotional support to a patient. To assess patients' emotional state, different wearable devices can be used for collection data about heart rate, skin conductivity, pulse oximetry, and respiration rate.

Graphical visualization of measured data enables assessment of effectiveness of medications. On their screen, nurses can directly monitor impact of administered medication to specific physiological parameters, e.g., drop of blood pressure in patient with hypertension [75]. Figure 7.2 shows a web user interface for cardiologist of telehealth system for patients with hypertension that can be used also in hospital environment, for example, through integration with hospital information systems. However, integration between patient devices and a health system is highly dependent on the software provided with the system and therefore monitoring has to be planned according to the electronic system's capabilities. In Fig. 7.3, a snapshot of a patient's trending can be seen. In this example, the effects of changes in medication therapy after March 13th can be seen through the lowering of the systolic blood pressure. This data was acquired during daily measurements using a cuff-based blood pressure meter and transferred through Bluetooth interface to a mobile phone application that communicated with the web server which was running the application through to a cardiologist and a nurse (Fig. 7.3).

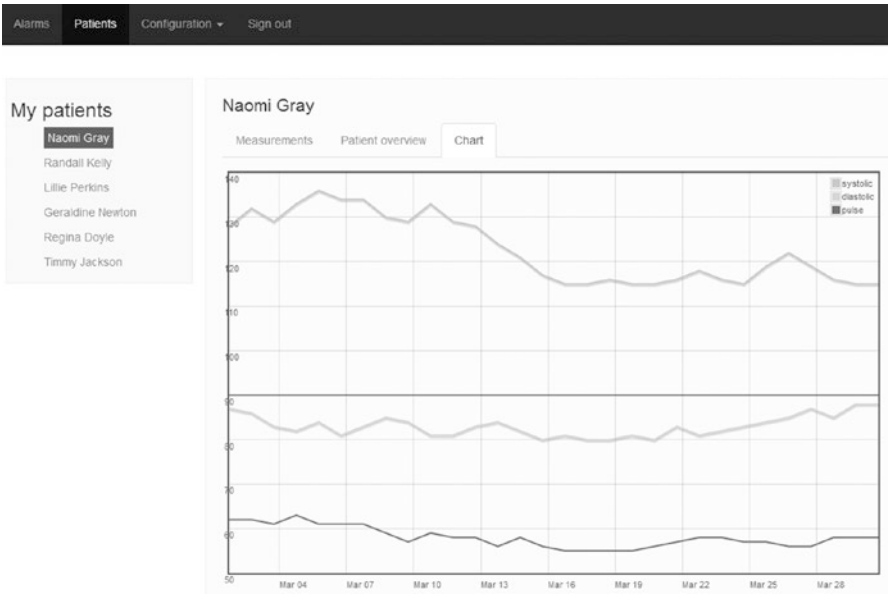

Fig. 7.3 Example for a web user interface for nurses to assess changes in health status of patient with hypertension after administration of new medication therapy (The names of patients have been changed and do not relate to any specific person.)

In the following section, we provide several examples of the application of wearable devices for monitoring specific patient parameters (see Table 7.2).

The electrocardiogram (ECG) and pulse rate provide important information about patients with cardiovascular diseases, for example, in cases of atrial fibrillation, myocardial ischemia, and hypertension. The most common designs of wearable ECG devices come in the form of adhesive patches that are lightweight, small in size, with a wireless interface for transfer of measured physiological parameters. Devices enable one or three channel ECG monitoring with different available sampling rates ranging from 125 to 1000 Hz. Some of the ECG patches are designed as disposable devices and therefore higher prices might be expected compared to overall monitoring price in ECG devices where only electrodes are changed for each patient. Wearable ECG monitors based on capacitive sensing can be integrated into smart materials like e-textiles that are washable and stretchable [76].

Blood pressure is usually measured by cuff-based sphygmomanometers. Continuous measurements can be obtained through invasive arterial lines in intensive care units. In 2014, the Standards Committee of the IEEE Engineering in Medicine and Biology Society approved the practice standard for wearable, cuffless, blood pressure measuring devices [77]. This kind of wearable device enables continuous, noninvasive, and unobtrusive, for real-time monitoring of this physiological parameter. The methodology for this kind of measurement is commonly based on pulse transmit time (PTT) and uses ECG as the proximal and PPG as the distal timing reference [78]. Other methodologies are based on machine learning to develop regression models between signal feature and blood pressure [79]. Disadvantages of cuffless blood pressure methodologies are related to lower measurement accuracy during dynamic situations and the need for calibration by cuff-based blood pressure meter for each patient.

Pulse oximeters measures oxygen saturation (SpO_2) in hemoglobin and provide an indication of overall function of human body. Devices may be worn on the fingertip, earlobe, wrist, or chest as patches. Devices for respiratory rate monitoring enable assessment of illness progression and early indication of hypercapnia or acute events such as cardiac arrest. Most common ways to perform wearable respiratory rate monitoring are by (1) detecting respiratory airflow, (2) chest or abdominal movements, and (3) extracting it from other physiological signals such as ECG and PPG using fusion algorithms [79]. Various cardiac and respiratory sounds such as crackles or wheezes can be monitored by wearable digital stethoscope. Compared to analog stethoscope, it enables a nurse to check patients' health status continuously and remotely without physical contact. Cough monitoring might provide indication about more serious illness symptoms other than cold or flu. Cough signals can be recorded by audio or mechanical sensor, like a microphone, that can be placed near the user. Machine learning algorithms for audio signal processing and recognition can be used for cough detection [80].

Monitoring of body temperature can detect if patient has fever or indicate effectiveness of a therapy. For continuous measurement, temperature sensors can be attached to the skin. Some designs include battery-free solutions based on resistance thermometer detection and near-field communication interface [81].

Table 7.2 The use of wearable devices for patient monitoring

Diseases/indication	Parameters, Indicator	Device	Technical details	Advantages/disadvantages
Cardiovascular diseases	ECG and derived pulse rate	Wearable ECG devices • Small in size adhesive patches with wireless interface for transfer of measured physiological parameters • Monitors integrated into smart materials like e-textiles that are washable and stretchable	Three-channel ECG monitoring, sampling rates ranging from 125 to 1000 Hz. Some of the ECG patches are designed as disposable devices and therefore higher prices should be expected	Unobtrusiveness, comfort, some devices can be worn during normal daily activities—exercise, showering, sleep One lead device provides limited diagnostics compared to multi-lead holter solutions, high costs of disposable devices
Cardiovascular and cerebrovascular diseases	Blood pressure	Cuff-based sphygmomanometers		
	Blood pressure continuously	Invasive arterial line in intensive care units		
	Blood pressure continuous	Wearable, cuffless, blood pressure measuring devices Noninvasive, and unobtrusive method for real-time monitoring	Pulse transmit time (PTT) and uses ECG as the proximal and PPG as the distal timing reference	Continuous noninvasive monitoring Lower measurement accuracy during dynamic situations and need for calibration by cuff-based blood pressure meter for each patient
Illness progression, early indication of hypercapnia, acute events, e.g., cardiac arrest	Oxygen saturation (SpO_2) in hemoglobin	Fingertip, earlobe, wrist or chest (as patches)	Measurement of SpO_2: (1) Detecting respiratory airflow, (2) chest or abdominal movements, and (3) extracting it from other physiological signals such as ECG and PPG using fusion algorithms	Novel sensing materials and device miniaturization will enable monitoring from any place of the body Motion artifacts decrease precision of measurement, high power consumption

Respiratory distress, diseases	Respiratory rates cardiac and respiratory sounds (crackles or wheezes)	Digital stethoscope	Common ways to perform wearable respiratory rate monitoring: (1) respiratory airflow, (2) chest or abdominal movements, (3) extracting it from other physiological signals such as ECG and PPG using fusion algorithm	Real-time, continuous monitoring Motion artifacts
Viral illnesses (cough, flu, COVID-19)	Cough monitoring	Cough signals recorded by audio or mechanical sensor, like microphone	Machine learning algorithms for audio signal processing and recognition for cough detection	Smartphone microphone can be used for monitoring Reliability of AI methods for audio signal processing need to be further evaluated
Fever, therapy effectiveness	Core body temperature, skin temperature	Wearable patch	Thermal-sensitive materials, resistance thermometer detector	Real-time, continuous monitoring Not many products available on the market that can be easily integrated with third party telemedical information systems
Diabetes	Blood glucose level (blood sugar), interstitial glucose level	Finger-stick (glucometers), continuous glucose monitoring devices (CGM)	Disposable test strips that are read by glucometer and used to calculate blood glucose level. Each test strip contains glucose oxidase—enzyme that reacts to glucose in the blood droplet CGM measures glucose in the fluid surrounding cells inside body through easily removable sensor under the skin	CGM provides data every 1–15 min Needs calibration by finger-stick glucose measurements, price of CGM

(continued)

Table 7.2 (continued)

Diseases/indication	Parameters, Indicator	Device	Technical details	Advantages/disadvantages
Chronical diseases, obesity	Physical activity	Smart watches, fitness trackers, smartphone applications	Three-axis accelerometer	Quantification of balance in food intake/energy expenditure Battery run time, accuracy
Chronical diseases, obesity	Food recording, dietary assessment	Journaling applications on smartphones	Manual entry, food recognition based on image processing using AI methods	Food images taken by smartphone camera, tracking nutrition habits, support healthy living Might be time-consuming, sometimes cumbersome manual entry, risk of losing user interest
Chronical diseases, obesity, congestive heart failure	Weight monitoring, calculation of fat percentage	Weight scales	Body composition is measured by sending a low electrical current through one foot and reading the current with a sensor on the scale beneath the other foot. Because current passes slower through body fat, scale calculates the amount of resistance and provides data on the body composition	Longitudinal overview of your weight data Needs battery, calibration
Stress-related physical or mental imbalance	Heart rate variability (HRV)	Finger (rings) or wrist-based wearable devices	Derived from ECG	Established methods for calculation of HRV values from ECG Accuracy of wearable devices
Age-related changes of physical conditions	Fall detection	Pendants, wrist-based wearable devices, belt sensors	Sensors—accelerometer, gyroscope, and magnetometer, measured signals (acceleration, velocity, and displacement), and direction components (vertical and non-vertical)	Existing many commercially available solutions suitable for different settings (home, hospital, nursing homes) Solutions need to be carefully checked against frequency of false alarms generation; pendant can cause additional harm to elderly during fall as it might get attached to nearby objects such as chair

Integration of data streamed from sensor-based systems and electronic health records combined with data analytics methods and user-centered approaches enable the shift toward preventive, predictive, personalized, and participatory diabetes care [82]. The most widely used method for measuring blood glucose levels is finger stick procedure that uses small amount of capillary blood (e.g., 0.5 μL). For continuous measurements there are continuous glucose monitoring (CGM) devices that provide information about blood glucose every few minutes (1–5 min). The system consists of invasive sensor with transmitter that communicates results of glucose measurements with dedicated receiver worn on the belt or a smartphone. CGM needs to be calibrated several times per day with glucometers using capillary blood [82].

Although it might be more suitable for home monitoring than hospital scenarios, for the sake of completeness, we briefly introduce solutions for lifestyle monitoring. Physical activity can be quantified through energy expenditure and monitored using smart watches or fitness trackers. For monitoring of nutrition habits and dietary assessment, food journaling applications exist both for Android and for iOS platforms. To ease food recording and dietary assessment, there have been active research on methods based on artificial intelligence for processing and recognition of food images taken by smartphone camera [83]. Smart weight scales provide scan of the body parameters like fat percentage and weight. Weights can be used to track incremental weight changes that indicate negative health trends, for example, in patients with congestive heart failure.

Physical or mental imbalance caused by harmful stimuli can induce stress. Chronic stress can cause physical, psychological, and behavioral abnormalities. Stress can be detected using heart rate variability (HRV) that can be derived from ECG [84]. Finger or wrist-based wearable solutions can monitor stress from heart rate. At the moment there are no authorities responsible for regulating these devices. Due to this lack of regulation, it must be assumed that these devices may not measure the indicated parameters as accurately as stated by the company. Assessment of emotional states can be done through understanding of facial expressions.

Fall detection is mainly associated with fall prevention related to support independent living of elderly in their homes. Devices can detect fast falls, gradual falls, falls behind objects and furniture, falling from a bed, falling on the back, side, and stomach. Such monitoring might be of great significance during night shifts when such notification can alert nurse, and help can be provided sooner. Different sensors (accelerometer, gyroscope, and magnetometer), signals (acceleration, velocity, and displacement), and direction components (vertical and non-vertical) were combined together with application of a comprehensive set of threshold-based and machine learning methods in order to define the best approach and automatic fall detection [85]. The most common solutions include personal emergency response system with pendant or wrist-based devices. Both provide an emergency button that patient can press and contact a call center or emergency services.

7.4.3 Unobtrusive Sensing for Patient Monitoring

The difference between unobtrusive sensing and wearable devices is that, while in the latter sensor is attached to the body, the former approach enables a contactless approach to capture health information. It enables monitoring during the night when wearable devices might cause discomfort to a patient's sleep. It also provides pervasive monitoring by eliminating the cases when user forgets to use wearables.

Unobtrusive sensing can be achieved by integrating sensors into the living space of a patient or objects he regularly uses such as a bed, chair, and mirror [74]. Another approach is to use ambient sensors such as cameras, radar, or laser-based devices to detect vital signs in non-contact way. In case of fall detection contactless solution is based on wall mounted device that uses radar-based 3D imaging, a radio waves weaker than a cell phone mobile network. Similar to a wi-fi network device sends out signals that scan the environment and in case of fall detection calls emergency contact. Infrared camera can be used to monitor patient body temperature and recognize fever. Such contactless monitoring can be used for simultaneous monitoring of multiple patients in case of understaffed clinical teams.

7.4.4 Robots

Social assistive robots (SARs), like care robots, service robots, or social robots, are available for the use in health-care institutions or the home care setting. However, at the present these robots are rarely used in these settings. An exception is the robotic seal PARO, which is frequently used in nursing homes in dementia care. Reasons for these are the scarce evidence. So far conducted studies are currently labor tests executed by manufacturers and/or scientists. Only in a very few studies these robots are tested in the field like health-care institutions. Other reasons are the development status of the robots with reference to the artificial intelligence and the related restrictions in the range of applications. Furthermore, safety and practical issue related to the robot design and movement of the robots, which can cause unintentional injuries as well as for the use of some of these robots, required knowledge [86–89].

In the future, an increasing use of care robots is expected to be the answer to the nursing shortage. Robots seems to be a promising possibility to reducing the amount of rationed and missed nursing care, due to scarce resources. In this context, robots today and even more in the future can be attribute to three of the following main functions, roles, and tasks: (1) robots as a member of a team, who can support, assist, and relieve the nursing personnel by taking over or assisting them with tasks such as clarifying why the patient rang the call bell, by delivering food, offering drinks, changing the patient positions, mobilize patients or inhabitants, delivering medications, and monitoring the patients and inhabitants (e.g., restless patients/inhabitants, instable patients by performing measurement of the blood pressure, fluid balance—intake of fluid), performing physiological measurements (e.g., temperature, oxygen saturation), answering question, providing information; (2) robots as therapists, who, instead of a human therapist can activate and

entertain patients/residents (activating exercise, singing, music, reading newspaper, telling stories, and having conversations), (3) robots as private assistant, who supports the elderly persons in need of assistance, e.g., in the activities of daily livings (e.g., personal hygiene, food intake, movement, exercise) [90]. With this support, robots can enable people to stay in their own home and gives them more autonomy, for example, by supporting them in personal hygiene and allows them to plan and conduct these activities according to their own needs. In addition, these robots can support and relieve the burden of outpatient care services.

Questions, which from scientific and/or ethical perspectives, need to be answered are if and to what extend original nursing activities such as establishing a personal trust-building relationship, offering emotional support can be supported or improved by a robot or should be completely or partially replaced.

7.5 Tackling Methodological Challenges—Implementation Science

In their review, Mandal and colleagues [91] conclude that rationed and missed nursing care are a threat to the professional health and philosophical base of the nursing practice in addition to having serious implications on patient safety. Up until the time of writing this chapter, most existing studies have either analyzed rationed and missed nursing care from a conceptual perspective or determined predicting factors and its impact on patients and nursing outcomes. Yet, interventions to reframe and reconsider organizational factors and policies are needed to reduce rationed and missed care and allow nurses to provide a holistic nursing care [91]. Accordingly, existing empirical research highlights the necessity for hospital managers and leaders to intervene on the potentially modifiable predictors of rationed and missed care, namely poor staffing resources, poor work environment (including teamwork), and lack of resources and support for nursing care [92]. Relevant gaps in the research are the lack of intervention studies with a strong experimental design and insufficient evidence regarding the sustainability of the effects of interventions [93].

When studying interventions to reduce rationed and missed care, there are certainly many methodological challenges researchers need to address. For instance, decision needs to be made upon the selection of the study design (e.g., experimental or non-experimental designs, controlled vs. pragmatic trials), the sampling procedure (e.g., randomization of individuals or clusters, convenience sampling), the implementation strategy (e.g., single strategy, bundle of strategies), and the evaluation strategy (e.g., process- and/or outcome variables, measurements, follow-up). Often the most rigorous methodological approach might not be feasible or appropriate. For example, key differences between clinical research and implementation research exist at the unit of randomization [94]. Highly controlled clinical efficacy research is concerned with validity and reducing threats to causal inference of the treatment under study, hence the randomization. In contrast, implementation research is focused on the adoption or the uptake of the clinical intervention by provider and the system of care [94].

As reported in the introduction of this chapter, interventions to reduce rationed and missed nursing care described in the scientific literature are limited. In relation to rationing of care, the research questions in implementation include the following [95]:

1. What knowledge from existing research needs to be translated and what is the best approach to do so?
2. What are existing knowledge-practice gaps and their determinants?
3. Which strategies to enhance knowledge utilization are effective?
4. How can sustainable implementation of interventions to limit / reduce rationed and missed care be achieved?

These questions set the ground for future research using implementation science methodologies to reduce the extent of this phenomena and ultimately improve patient care. Implementation science refers to the scientific study of the methods to promote the uptake of research findings into routine in clinical and organizational contexts [96]. In other words, it concerns the translation of research knowledge into practice [95]. Best practice is to develop interventions systematically, using the best approach available and appropriate theory, to then test them using a carefully phased approach [97].

Interventions for enhancing uptake of identified clinical interventions are complex as they often contain several interacting components, including but not limited to, a wide range of outcomes, and variability in the targeted population [98]. Some dimensions of complexity were listed as having implications on the development, implementation, and evaluation of the intervention, including the following: (1) number of difficulty of reducing the behavior of rationed of care required by health-care providers delivery or receiving the intervention; (2) number of groups or organizational levels targeted by the intervention; (3) number of variability of outcomes; and (4) degree of flexibility or tailoring of the intervention allowed [98]. In 2000, the Medical Research Council published a Framework for the Development and Evaluation of RCTs for Complex Interventions to Improve Health [97], to help researchers and research funders to recognize and adopt appropriate methods [98]. The process from development through to implementation of a complex intervention takes a wide range of different stages [98], which include the following: (1) development of intervention (identifying the evidence-based, the theory, and modeling the processes and outcomes); (2) assessment of feasibility (testing procedures, estimating recruitment and retention, and determining the sample size); (3) evaluation (assessing effectiveness, understanding change process, and assessing cost-effectiveness); (4) implementation (disseminating, surveillance, and long-term follow-up) [97].

A top priority for implementing research is to understand why an innovation is successfully applied in one setting versus another [99]. Without a theoretical framework, conducting implementation research will hinder a foundational scientific goal of being able to generalize interventions across contexts [99]. The Consolidated Framework for Implementation Research (CFIR) is a meta-theoretical framework

that provides a repository of standardized implementation-related constructs that can be applied across spectrum of implementation research [100]. The CFIR serves as a roadmap for the journey of implementation research, and it comprises 39 constructs organized across five domains. These domains interact to influence implementation effectiveness of the intervention, and they include the following [100]: intervention characteristics, outer setting, inner setting, characteristics of the participants involved, and the process implementation.

7.5.1 Developing Complex Interventions

In practice, various sources help generating ideas for complex interventions including past practice, existing evidence, theory, policy makers and practitioners, and technology [98]. Yet, the challenge is to develop a complex intervention that is contextually adapted [101]. Complexity refers to the perceived difficulty of implementation, reflected by the duration, scope, and intricacy and number of steps required to implement [100]. In fact, sources may have a great impact on the modification of the intervention and its implementation approach. For example, in designing and implementing a complex intervention to reduce rationed and missed nursing care, researchers need to consider carefully exchange between the clinical significance of the designed intervention and the evidence of its effectiveness in light of above-listed challenges [98]. Furthermore, the consideration of mechanisms of action, including the development, implementation, and evaluation of the selected intervention, is highly recommended [96]. Consequently, the neglect of adequate development and piloting work, or proper consideration of the practical issues of implementation, will result in weaker interventions, that are harder to evaluate [98]. Logic models are commonly used in evaluations to represent processes though which interventions produce outcomes [102]. They can be useful to develop understanding of exactly how interventions produce outcomes, to organize empirical data and specify processes and outcome measures for the purposes of evaluation [102].

7.5.2 Implementing Interventions

One of the most common findings from health services and clinical research is the failure to translate research into practice and policy [96]. As a result, patients fail to benefit from advances in health care due to evidence practice and policy gaps [96]. Consequently, there has been an increase in policy and research attention on how to reduce those gaps. Studies have suggested that translation of existing knowledge is more likely to be successful if an assessment of the barriers and facilitators informs the choice of implementation of intervention strategy [96]. Common barriers relate to knowledge management, including the mounting volume of research evidence being produced, the access to evidence sources, or the screening and appraisal of research evidence [96]. Despite the availability of systematic reviews for better knowledge management, the evidence on the effectiveness of used strategies to

overcome specific barriers to implementation of intervention remains incomplete. In choosing the intervention for the target population, researchers need to identify modifiable and non-modifiable barriers relating to the behavior or clinical problem, identify potential adopters (e.g., nurses) and practice environment (e.g., hospital units), and prioritize which barrier to target first [96].

Implementation of interventions designed to improve the quality of patient care often develops differently than what is planned [103]. Several challenges to implementing existing-proven interventions contribute to a gap between actual and expected findings [103]. Successful implementation in the field of rationed and missing nursing care depends on supporting nurses' rationed behavior and reducing missed care, or modifying human behavior like nurses' priority setting [98]. This requires not only the understanding of the significance of rationed in terms of clinical patient outcomes but also the barriers and facilitators to change [104].

7.5.3 Evaluating Interventions

The challenge is to develop a complex intervention that is contextually adapted and to test its effectiveness while simultaneously using and evaluating effective implementation strategies [101]. The conceptualization of implementation outcomes is distinct from service system outcomes and clinical treatment outcomes [105]. The major functions of implementation outcomes include their role as indicator of implementation success, their function as proximal indicators of implementation processes, and their role as intermediate outcomes in relation to service system or clinical outcomes in effectiveness research [105]. Proctor and colleagues propose eight conceptually distinct implementation outcomes including the following: (1) acceptability, (2) adoption, (3) appropriateness of fit, (4) costs, (5) feasibility, (6) fidelity, (7) penetration, and (8) sustainability [105].

Another challenge to implementing complex intervention to limit the occurrence of rationed and missed nursing care is the monitoring and long-term follow-up. Long-term surveillance is needed to ensure that the desired outcomes persist over time. Yet, it is crucial to plan a priori how to measure long-term impact, using electronic health records, for example, routine data, or through contacting early study participants. Hence data collection plans of appropriate outcome data should be designed in the study at the outset [104].

7.6 Conclusion

There are several interventions reported in the literature (e.g., staffing, teamwork) that have the potential to reduce and limit rationed and missed nursing care, as well as positively influence the performance of selected nursing care activity, e.g., medication administration. Yet, the number of studies and the level of evidence is low.

Teamwork and staffing, the two major matters in nursing, are significant contributors to rationed and missed nursing care and therefore require the full attention

of those managing and providing health-care services. Teamwork can and should be taught and trained as it evidently improves clinical performance [106, 107] and without adequate staffing and skill mix, safety in health care is threatened [50]. For enhancing teamwork and thereby making the best use of the human resources available, several strategies besides team training need to be addressed such as team culture, leadership style of administrators, team size, physical layout where teams work, model of nursing care, protocols, and handovers [23]. Ever reaching optimal and adequate staffing may be irrational but striving for improvement by supporting nurses to practice to their full potential and optimizing teamwork in health care [37, 38] may be the options of today and the future for minimizing missed nursing care. The small but distinct evidence on the contribution of teamwork and staffing to missed nursing care provides a valid foundation for further developing and implementing interventions that support efficient nursing teamwork and attract well-educated nurses to the bedside. In this regard, further research is needed also on the effects of frequently used interventions or strategies to improve care quality, optimize care processes, or reduce waste, e.g., productive ward or lean management [108, 109] on rationed and missed nursing care. Considering the popularity of quality improvement systems such as lean and Six Sigma, further insights and knowledge regarding the possible effects of these interventions on rationed and missed nursing care will be tremendously useful.

Technology has the potential to transform the provision of nursing care and to support nursing care processes, especially in work environments with understaffed nursing teams. However, there is a lack of studies in which technology (e.g., telehealth, robotics) is used to support nurses, e.g., in their decision-making process and priority setting, to reduce and limit rationed and missed nursing care. For instance, telehealth and telemonitoring, wearable devices and robots could provide solutions that assist nurses in caring for multiple patients simultaneously, to reduce and limit rationed and missed nursing care and improve clinical outcomes. For instance, clinical decision support systems can assist nurses in timely identification of worsening health conditions, reducing burden of information overload and provide recommendations for adequate intervention. However, every technology that needs to provide maximum benefits has to be accepted by the users. This acceptance is demanding because it requires extra time and mental effort to learn how to use it in daily practice. Introduction of disruptive technology might require redesign of existing both clinical and administrative processes on a ward. None of it will be perceived as benefit by nurses if there is no clear statement of improvements—e.g., less time consuming and decreased workload compared to existing care processes. Challenges in application of sensing technologies relate to user acceptance, motion artifacts, and power consumption. Further development will focus on sensor materials, improved sensing, energy harvesting, data transfer, and analytics. Critical aspects are the personalized, private data collected with this technology and the accessibility of this data to third parties. Patients and/or elderly persons as well as the health professionals are often unaware of this. Accordingly, these data are often not protected as required. This raises questions regarding the management and handling of this data and its secure storage and protection from hackers or other person, who should not have access to this information. The

(cost-)effectiveness of technology needs to be evaluated also with respect to financial and social burden caused by rationed and missed nursing care, as well as outcoming liability and legal issues for health-care providers.

Finally, more research on the implementation and evaluation of the impact of technology on rationed and missed nursing care is needed to provide sound evidence that can be transformed into guidelines supporting standardization and quality of care. The development, implementation, and evaluation of interventions to reduce and/or limit rationed and missed nursing care is a challenging endeavor, given the multiple complexities. Implementation science can provide guidance and the theoretical and conceptual frameworks on how to tackle and overcome some of the methodological challenges and to generate evidence that helps to understand, when, why, and how interventions work.

References

1. Jones TL, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52(6):1121–37. https://doi.org/10.1016/j.ijnurstu.2015.02.012.
2. Higgs M, Fernandez R, Polis S, Manning V. Similarities and differences in nurse-reported care rationing between critical care, surgical, and medical specialties. J Patient Saf. 2020;16(3):e162–8. https://doi.org/10.1097/pts.0000000000000295.
3. Blackman I, Papastavrou E, Palese A, Vryonides S, Henderson J, Willis E. Predicting variations to missed nursing care: a three-nation comparison. J Nurs Manag. 2018;26(1):33–41. https://doi.org/10.1111/jonm.12514.
4. Vryonides S, Papastavrou E, Charalambous A, Andreou P, Merkouris A. The ethical dimension of nursing care rationing: a thematic synthesis of qualitative studies. Nurs Ethics. 2015;22(8):881–900. https://doi.org/10.1177/0969733014551377.
5. Mantovan F, Muzzana C, Schubert M, Ausserhofer D. "It's about how we do it, not if we do it". Nurses' experiences with implicit rationing of nursing care in acute care hospitals: a descriptive qualitative study. Int J Nurs Stud. 2020;109:103688. https://doi.org/10.1016/j.ijnurstu.2020.103688.
6. Huebsch C, Spirig R, Schubert M. Was mache ich als Erstes? Prioritätensetzung im Pflegealltag aus der Sicht kürzlich diplomierter Pflegender—eine qualitative Studie [What shall I do first? Priority setting in clinical practice from the perspective of newly graduated nurses—a qualitative study]. QuPuG. 2017;4(1):33–40.
7. Winters R, Neville S. Registered nurse perspectives on delayed or missed nursing cares in a New Zealand hospital. Nurs Prax N Z. 2012;28(1):19–28.
8. Papastavrou E, Andreou P, Efstathiou G. Rationing of nursing care and nurse-patient outcomes: a systematic review of quantitative studies. Int J Health Plann Manag. 2014;29(1):3–25. https://doi.org/10.1002/hpm.2160.
9. Ball JE, Bruyneel L, Aiken LH, Sermeus W, Sloane DM, Rafferty AM, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5. https://doi.org/10.1016/j.ijnurstu.2017.08.004.
10. Schubert M, Clarke SP, Aiken LH, de Geest S. Associations between rationing of nursing care and inpatient mortality in Swiss hospitals. Int J Qual Health Care. 2012;24(3):230–8. mzs009 [pii]. https://doi.org/10.1093/intqhc/mzs009.
11. Kalisch BJ, Xie B, Dabney BW. Patient-reported missed nursing care correlated with adverse events. Am J Med Qual. 2014;29(5):415–22. https://doi.org/10.1177/1062860613501715.

12. Ausserhofer D, Schubert M, Desmedt M, Blegen MA, De Geest S, Schwendimann R. The association of patient safety climate and nurse-related organizational factors with selected patient outcomes: a cross-sectional survey. Int J Nurs Stud. 2013;50(2):240–52. https://doi.org/10.1016/j.ijnurstu.2012.04.007.
13. Lake ET, Germack HD, Viscardi MK. Missed nursing care is linked to patient satisfaction: a cross-sectional study of US hospitals. BMJ Qual Saf. 2016;25(7):535–43. https://doi.org/10.1136/bmjqs-2015-003961.
14. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. JAMA. 2002;288(16):1987–93. https://doi.org/10.1001/jama.288.16.1987.
15. Clarke SP, Aiken LH. Failure to rescue. Am J Nurs. 2003;103(1):42–7. https://doi.org/10.1097/00000446-200301000-00020.
16. Manojlovich M, Talsma A. Identifying nursing processes to reduce failure to rescue. J Nurs Adm. 2007;37(11):504–9. https://doi.org/10.1097/01.NNA.0000295608.94699.3f.
17. Recio-Saucedo A, Dall'Ora C, Maruotti A, Ball J, Briggs J, Meredith P, et al. What impact does nursing care left undone have on patient outcomes? Review of the literature. J Clin Nurs. 2018;27(11–12):2248–59. https://doi.org/10.1111/jocn.14058.
18. Lucero RJ, Lake ET, Aiken LH. Nursing care quality and adverse events in US hospitals. J Clin Nurs. 2010;19(15–16):2185–95. JCN3250 [pii]. https://doi.org/10.1111/j.1365-2702.2010.03250.x.
19. Kalisch B, Tschanen D, Lee H. Does missed nursing care predict job satisfaction? J Healthc Manag. 2011;56(2):117–31; discussion 32–3.
20. Tschannen D, Kalisch BJ, Lee KH. Missed nursing care: the impact on intention to leave and turnover. Can J Nurs Res. 2010;42(4):22–39.
21. Kalisch B, Schoville R. It takes a team. Am J Nurs. 2012;112(10):50–4. https://doi.org/10.1097/01.NAJ.0000421024.08037.0d.
22. Griffiths P, Recio-Saucedo A, Dall'Ora C, Briggs J, Maruotti A, Meredith P, et al. The association between nurse staffing and omissions in nursing care: a systematic review. J Adv Nurs. 2018;74(7):1474–87. https://doi.org/10.1111/jan.13564.
23. Kalisch BJ, Aebersold M, McLaughlin M, Tschannen D, Lane S. An intervention to improve nursing teamwork using virtual simulation. West J Nurs Res. 2015;37(2):164–79. https://doi.org/10.1177/0193945914531458.
24. Kalisch BJ, Lee KH. The impact of teamwork on missed nursing care. Nurs Outlook. 2010;58(5):233–41. https://doi.org/10.1016/j.outlook.2010.06.004.
25. Griffiths P, Maruotti A, Recio Saucedo A, Redfern OC, Ball JE, Briggs J, et al. Nurse staffing, nursing assistants and hospital mortality: retrospective longitudinal cohort study. BMJ Qual Saf. 2019;28(8):609–17. https://doi.org/10.1136/bmjqs-2018-008043.
26. Kalisch BJ, Xie B. Errors of omission: missed nursing care. West J Nurs Res. 2014;36(7):875–90. https://doi.org/10.1177/0193945914531859.
27. World Health Organization (WHO). Human factors in patient safety: review of topics and tools. Geneva: World Health Organization; 2009.
28. WHO. WHO patient safety curriculum gide: multi-professional edition. Geneva: World Health Organization; 2011.
29. Mitchell P, Wynia M, Golden R, McNellis B, Okun S, Webb CE, et al. Core principles & values of effective team-based health care. Institute of Medicine; 2012.
30. Avallin T, Muntlin Athlin Å, Björck M, Jangland E. Using communication to manage missed care: a case study applying the fundamentals of care framework. J Nurs Manag. 2020;28:2091–102. https://doi.org/10.1111/jonm.12963.
31. O'Leary KJ, Johnson JK, Manojlovich M, Goldstein JD, Lee J, Williams MV. Redesigning systems to improve teamwork and quality for hospitalized patients (RESET): study protocol evaluating the effect of mentored implementation to redesign clinical microsystems. BMC Health Serv Res. 2019;19(1):293. https://doi.org/10.1186/s12913-019-4116-z.

32. Baker DP, Day R, Salas E. Teamwork as an essential component of high-reliability organizations. Health Serv Res. 2006;41(4 Pt 2):1576–98. https://doi.org/10.1111/j.1475-6773.2006.00566.x.
33. Zuniga F, Ausserhofer D, Hamers JP, Engberg S, Simon M, Schwendimann R. The relationship of staffing and work environment with implicit rationing of nursing care in Swiss nursing homes—a cross-sectional study. Int J Nurs Stud. 2015;52(9):1463–74. https://doi.org/10.1016/j.ijnurstu.2015.05.005.
34. Buljac-Samardzic M, Doekhie KD, van Wijngaarden JDH. Interventions to improve team effectiveness within health care: a systematic review of the past decade. Hum Resour Health. 2020;18(1):2. https://doi.org/10.1186/s12960-019-0411-3.
35. Kohn LT, Corrigan JM, Doran DM. To err is human: building a safer health system. Washington, DC: National Academy Press; 2000.
36. Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington, DC: Institute of Medicine, National Academy Press; 2001.
37. Page A, Institute of Medicine. Board on Health Care Services. Committee on the Work Environment for N, Patient S. Keeping patients safe: transforming the work environment of nurses/Committee on the Work Environment for Nurses and Patient Safety, Board on Health Care Services; Ann Page, editor, Institute of Medicine. Quality chasm series. Washington, DC: The National Academies Press; 2004.
38. Institute of Medicine (US) Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing atIoM. The future of nursing: leading change, advancing health. Washington, DC: The National Academies Press; 2011.
39. Kalisch BJ, Gosselin K, Choi SH. A comparison of patient care units with high versus low levels of missed nursing care. Health Care Manag Rev. 2012;37(4):320–8. https://doi.org/10.1097/HMR.0b013e318249727e.
40. Chapman R, Rahman A, Courtney M, Chalmers C. Impact of teamwork on missed care in four Australian hospitals. J Clin Nurs. 2016;26:170–81. https://doi.org/10.1111/jocn.13433.
41. Bragadottir H, Kalisch BJ, Tryggvadottir GB. Correlates and predictors of missed nursing care in hospitals. J Clin Nurs. 2017;26(11–12):1524–34. https://doi.org/10.1111/jocn.13449.
42. Salas E, Sims DE, Burke CS. Is there a "big five" in teamwork? Small Group Res. 2005;36(5):555–99. https://doi.org/10.1177/1046496405277134.
43. Kalisch BJ, Curley M, Stefanov S. An intervention to enhance nursing staff teamwork and engagement. J Nurs Adm. 2007;37(2):77–84.
44. Kalisch BJ, Xie B, Ronis DL. Train-the-trainer intervention to increase nursing teamwork and decrease missed nursing care in acute care patient units. Nurs Res. 2013;62(6):405–13. https://doi.org/10.1097/NNR.0b013e3182a7a15d.
45. King HB, Battles J, Baker DP, Alonso A, Salas E, Webster J, et al. TeamSTEPPSTM: Team strategies and tools to enhance perfomance and patient safety. In: Henriksen K, Battles JB, Keyes MA, Grady ML, editors. Advances in patient safety: new directions and alternative approaches. Rockwille: Agency for Healthcare Research and Quality; 2008.
46. Marguet MA, Ogaz V. The effect of a teamwork intervention on staff perception of teamwork and patient care on a medical surgical unit. Nurs Forum. 2019;54(2):171–82. https://doi.org/10.1111/nuf.12311.
47. Kalisch BJ. Errors of omission: how missed nursing care imperils patients. American Nurses Association; 2015.
48. Kalisch BJ, Lee KH. Nurse staffing levels and teamwork: a cross-sectional study of patient care units in acute care hospitals. J Nurs Scholarsh. 2011;43(1):82–8. https://doi.org/10.1111/j.1547-5069.2010.01375.x.
49. Kalisch BJ, Lee H. Nursing teamwork, staff characteristics, work schedules, and staffing. Health Care Manag Rev. 2009;34(4):323–33. https://doi.org/10.1097/HMR.0b013e3181aaa920.
50. WHO. State of the world's nursing 2020: investing in education, jobs and leadership. Geneva; 2020.

51. Aiken LH, Sloane DM, Bruyneel L, Van den Heede K, Griffiths P, Busse R, et al. Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. Lancet. 2014;383(9931):1824–30. https://doi.org/10.1016/s0140-6736(13)62631-8.
52. Cho SH, Kim YS, Yeon KN, You SJ, Lee ID. Effects of increasing nurse staffing on missed nursing care. Int Nurs Rev. 2015;62(2):267–74. https://doi.org/10.1111/inr.12173.
53. Schubert M, Ausserhofer D, Desmedt M, Schwendimann R, Lesaffre E, Li B, et al. Levels and correlates of implicit rationing of nursing care in Swiss acute care hospitals—a cross sectional study. Int J Nurs Stud. 2013;50(2):230–9. https://doi.org/10.1016/j.ijnurstu.2012.09.016.
54. Bragadóttir H, Kalisch BJ, Tryggvadóttir GB. The extent to which adequacy of staffing predicts nursing teamwork in hospitals. J Clin Nurs. 2019;28(23–24):4298–309. https://pubmed.ncbi.nlm.nih.gov/31241808/.
55. Papastavrou E, Andreou P, Tsangari H, Schubert M, De Geest S. Rationing of nursing care within professional environmental constraints: a correlational study. Clin Nurs Res. 2014;23(3):314–35. https://doi.org/10.1177/1054773812469543.
56. Zander B, Dobler L, Busse R. The introduction of DRG funding and hospital nurses' changing perceptions of their practice environment, quality of care and satisfaction: comparison of cross-sectional surveys over a 10-year period. Int J Nurs Stud. 2013;50(2):219–29. 11p. https://doi.org/10.1016/j.ijnurstu.2012.07.008.
57. Zuniga F, Ausserhofer D, Hamers JP, Engberg S, Simon M, Schwendimann R. Are staffing, work environment, work stressors, and rationing of care related to care workers' perception of quality of care? A cross-sectional study. J Am Med Dir Assoc. 2015;16(10):860–6. https://doi.org/10.1016/j.jamda.2015.04.012.
58. Ball JE, Murrells T, Rafferty AM, Morrow E, Griffiths P. 'Care left undone' during nursing shifts: associations with workload and perceived quality of care. BMJ Qual Saf. 2014;23(2):116–25. https://doi.org/10.1136/bmjqs-2012-001767.
59. Baillie CA, Guevara JP, Boston RC, Hecht TE. A unit-based intervention aimed at improving patient adherence to pharmacological thromboprophylaxis. BMJ Qual Saf. 2015;24(10):654–60. https://doi.org/10.1136/bmjqs-2015-003992.
60. Gittner LS, Husaini BA, Hull PC, Emerson JS, Tropez-Sims S, Reece MC, et al. Use of six sigma for eliminating missed opportunities for prevention services. J Nurs Care Qual. 2015;30(3):254–60. https://doi.org/10.1097/ncq.0000000000000113.
61. Goldstein MS, Cohen MR, Black M. A method for monitoring medication omission error rates. Hosp Pharm. 1982;17(6):310–2.
62. Graudins LV, Ingram C, Smith BT, Ewing WJ, Vandevreede M. Multicentre study to develop a medication safety package for decreasing inpatient harm from omission of time-critical medications. Int J Qual Health Care. 2015;27(1):67–74. https://doi.org/10.1093/intqhc/mzu099.
63. Lytle KS, Short NM, Richesson RL, Horvath MM. Clinical decision support for nurses: a fall risk and prevention example. Comput Inform Nurs. 2015;33(12):530–7; quiz E1. https://doi.org/10.1097/cin.0000000000000192.
64. Terrell KM, Brizendine EJ, Bean WF, Giles BK, Davidson JR, Evers S, et al. An extended care facility-to-emergency department transfer form improves communication. Acad Emerg Med. 2005;12(2):114–8. https://doi.org/10.1197/j.aem.2004.10.013.
65. Harmon LC, Grobbel C, Palleschi M. Reducing pressure injury incidence using a turn team assignment: analysis of a quality improvement project. J Wound Ostomy Continence Nurs. 2016;43(5):477–82. https://doi.org/10.1097/won.0000000000000258.
66. Piscotty RJ, Kalisch B. The relationship between electronic nursing care reminders and missed nursing care. Comput Inform Nurs. 2014;32(10):475–81. https://doi.org/10.1097/CIN.0000000000000092.
67. Yap TL, Kennerly SM, Simmons MR, Buncher CR, Miller E, Kim J, et al. Multidimensional team-based intervention using musical cues to reduce odds of facility-acquired pressure ulcers in long-term care: a paired randomized intervention study. J Am Geriatr Soc. 2013;61(9):1552–9. https://doi.org/10.1111/jgs.12422.

68. Piscotty RJ, Kalisch B, Gracey-Thomas A, Yarandi H. Electronic nursing care reminders: implications for nursing leaders. J Nurs Adm. 2015;45(5):239–42. https://doi.org/10.1097/NNA.0000000000000192.
69. Kalisch BJ. Missed nursing care: a qualitative study. J Nurs Care Qual. 2006;21(4):306–13.; ; quiz 14–5. https://doi.org/10.1097/00001786-200610000-00006.
70. Puteková S. Prevention in nursing and role of nurses in support of health (Prevencia v ošetrovateľstve a úloha sestry pri podpore zdravia). In: Vybrané témy z ošetrovateľskej problematiky. Trnava: Faculty of Health Care and Social Work of Trnava University in Trnava, 2018. isbn:978-80-568-0170-3. S174–S193.
71. Lake ET, Riman KA, Sloane DM. Improved work environments and staffing lead to less missed nursing care: a panel study. J Nurs Manag. 2020;28(8):2157–65. https://doi.org/10.1111/jonm.12970.
72. The American Telemedicine Association. Telemedicine, telehealth, and health information technology. 2006.
73. Moazzami B, Razavi-Khorasani N, Dooghaie Moghadam A, Farokhi E, Rezaei N. COVID-19 and telemedicine: immediate action required for maintaining healthcare providers well-being. J Clin Virol. 2020;126:104345. https://doi.org/10.1016/j.jcv.2020.104345.
74. Zheng Y, Ding X, Poon CCY, Lo BPL, Zhang H, Zhou X, et al. Unobtrusive sensing and wearable devices for health informatics. IEEE Trans Biomed Eng. 2014;61(5):1538–54. https://doi.org/10.1109/TBME.2014.2309951.
75. Lehocki F, Kossaczky I, Homola M, Mydliar M. Computational infrastructure for telehealth. In: Xu D, Wang M, Zhou F, Cai Y, editors. Health informatics data analysis. Cham: Health Information Science. Springer; 2017. https://doi.org/10.1007/978-3-319-44981-4_12.
76. Tao X, Huang T-H, Shen C-L, Ko Y-C, Jou G-T, Koncar V. Bluetooth low energy-based washable wearable activity motion and electrocardiogram textronic monitoring and communicating system. Adv Mater Technol. 2018;3(10):1700309. https://doi.org/10.1002/admt.201700309.
77. IEEE. Standard for wearable cuffless blood pressure measuring devices. IEEE Std. 1708–2014;2014:1–38. https://doi.org/10.1109/IEEESTD.2014.6882122.
78. Poon CC, Zhang YT. Cuff-less and noninvasive measurements of arterial blood pressure by pulse transit time. Conf Proc IEEE Eng Med Biol Soc. 2005;2005:5877–80. https://doi.org/10.1109/iembs.2005.1615827.
79. Chen S, Ji Z, Wu H, Xu Y. A non-invasive continuous blood pressure estimation approach based on machine learning. Sensors (Basel). 2019;19(11):2585. https://doi.org/10.3390/s19112585.
80. Imran A, Posokhova I, Qureshi HN, Masood U, Riaz MS, Ali K, et al. AI4COVID-19: AI enabled preliminary diagnosis for COVID-19 from cough samples via an app. Inform Med Unlocked. 2020;20:100378. https://doi.org/10.1016/j.imu.2020.100378.
81. Han S, Kim J, Won SM, Ma Y, Kang D, Xie Z, et al. Battery-free, wireless sensors for full-body pressure and temperature mapping. Sci Transl Med. 2018;10(435):eaan4950. https://doi.org/10.1126/scitranslmed.aan4950.
82. Zarkogianni K, Litsa E, Mitsis K, Wu PY, Kaddi CD, Cheng CW, et al. A review of emerging technologies for the management of diabetes mellitus. IEEE Trans Biomed Eng. 2015;62(12):2735–49. https://doi.org/10.1109/tbme.2015.2470521.
83. Christodoulidis S, Anthimopoulos M, Mougiakakou S. Food recognition for dietary assessment using deep convolutional neural networks. Cham: Springer International Publishing; 2015. p. 458–65.
84. Kim H-G, Cheon E-J, Bai D-S, Lee YH, Koo B-H. Stress and heart rate variability: a meta-analysis and review of the literature. Psychiatr Investig. 2018;15(3):235–45. https://doi.org/10.30773/pi.2017.08.17.
85. Quadros TD, Lazzaretti AE, Schneider FK. A movement decomposition and machine learning-based fall detection system using wrist wearable device. IEEE Sensors J. 2018;18(12):5082–9. https://doi.org/10.1109/JSEN.2018.2829815.

86. Niemeyer G, Preusche C, Stramigioli S, Lee D. Telerobotics. In: Siciliano B, Khatib O, editors. Springer handbook of robotics. Cham: Springer International Publishing; 2016. p. 1085–108.
87. Bendel O. Pflegeroboter. Springer Fachmedien: Wiesbaden; 2018.
88. Gisinger C. Pflegeroboter aus Sicht der Geriatrie. In: Bendel O, editor. Pflegeroboter. Wiesbaden: Springer Fachmedien; 2018. p. 113–24.
89. Remmers H. Pflegeroboter: Analyse und Bewertung aus Sicht pflegerischen Handelns und ethischer Anforderungen. In: Bendel O, editor. Pflegeroboter. Wiesbaden: Springer Fachmedien; 2010. p. 161–80.
90. Jokinen K, Nishimura S, Fukuda K, Nishimura T. Dialogues with IoT companions: enabling human interaction with intelligent service items. 2017 international conference on companion technology (ICCT) 2017. p. 1–3.
91. Mandal L, Seethalakshmi A, Rajendrababu A. Rationing of nursing care, a deviation from holistic nursing: a systematic review. Nurs Philos. 2020;21(1):e12257. https://doi.org/10.1111/nup.12257.
92. Rochefort CM, Rathwell BA, Clarke SP. Rationing of nursing care interventions and its association with nurse-reported outcomes in the neonatal intensive care unit: a cross-sectional survey. BMC Nurs. 2016;15:46. https://doi.org/10.1186/s12912-016-0169-z.
93. Schubert M, Ausserhofer D, Bragadottir H, Rochefort CM, Bruyneel L, Stemmer R, et al. Interventions to prevent or reduce rationing or missed nursing care: a scoping review. J Adv Nurs. 2021;77(2):550–64. https://doi.org/10.1111/jan.14596.
94. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. Med Care. 2012;50(3):217–26. https://doi.org/10.1097/MLR.0b013e3182408812.
95. Wensing M. Implementation science in healthcare: introduction and perspective. Z Evid Fortbild Qual Gesundhwes. 2015;109(2):97–102. https://doi.org/10.1016/j.zefq.2015.02.014.
96. Grimshaw JM, Eccles MP, Lavis JN, Hill SJ, Squires JE. Knowledge translation of research findings. Implement Sci. 2012;7:50. https://doi.org/10.1186/1748-5908-7-50.
97. MRC. A framework for the development and evaluation of RCTs for complex interventions to improve health. London: Medical Research Council; 2000.
98. Craig P, Diieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: new guidance. Medical Research Council: London; 2019.
99. Kirk MA, Kelley C, Yankey N, Birken SA, Abadie B, Damschroder L. A systematic review of the use of the consolidated framework for implementation research. Implement Sci. 2016;11:72. https://doi.org/10.1186/s13012-016-0437-z.
100. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci. 2009;4:50. https://doi.org/10.1186/1748-5908-4-50.
101. Zúñiga F, De Geest S, Guerbaai RA, Basinska K, Nicca D, Kressig RW, et al. Strengthening geriatric expertise in Swiss nursing homes: INTERCARE implementation study protocol. J Am Geriatr Soc. 2019;67(10):2145–50. https://doi.org/10.1111/jgs.16074.
102. Mills T, Lawton R, Sheard L. Advancing complexity science in healthcare research: the logic of logic models. BMC Med Res Methodol. 2019;19(1):55. https://doi.org/10.1186/s12874-019-0701-4.
103. McAlearney AS, Walker DM, Livaudais-Toman J, Parides M, Bickell NA. Challenges of implementation and implementation research: learning from an intervention study designed to improve tumor registry reporting. SAGE Open Med. 2016;4:2050312116666215. https://doi.org/10.1177/2050312116666215.
104. Eccles M, Johnston M, Hrisos S, Francis J, Grimshaw J, Steer N, et al. Translating clinicians' beliefs into implementation interventions (TRACII): a protocol for an intervention

modeling experiment to change clinicians' intentions to implement evidence-based practice. Implement Sci. 2007;2:27. https://doi.org/10.1186/1748-5908-2-27.
105. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. Admin Pol Ment Health. 2011;38(2):65–76. https://doi.org/10.1007/s10488-010-0319-7.
106. Schmutz J, Manser T. Do team processes really have an effect on clinical performance? A systematic literature review. Br J Anaesth. 2013;110(4):529–44. https://doi.org/10.1093/bja/aes513.
107. Weaver SJ, Dy SM, Rosen MA. Team-training in healthcare: a narrative synthesis of the literature. BMJ Qual Saf. 2014;23(5):359–72. https://doi.org/10.1136/bmjqs-2013-001848.
108. White M, Waldron M. Effects and impacts of productive ward from a nursing perspective. Br J Nurs. 2014;23(8):419–26. https://doi.org/10.12968/bjon.2014.23.8.419.
109. Radnor ZJ, Holweg M, Waring J. Lean in healthcare: the unfilled promise? Soc Sci Med (1982). 2012;74(3):364–71. https://doi.org/10.1016/j.socscimed.2011.02.011.

Patient Safety in Nurse Education

8

Marcia Kirwan and Olga Riklikiene

8.1 Introduction

Advancement in patient safety continues to be a priority for healthcare providers globally. Missed or rationed nursing care is generally examined within a patient safety context as it is clear that where care is missed, less favourable patient outcomes are likely to result [1]. The acknowledged increase in research focused on this contemporary issue [2] is reflective of the challenge it poses to nurses and to the patient safety agenda across all countries. Previous studies outline organisational predictors of missed care such as nurse staffing levels, leadership skills and the quality of the work environment [3–8]. Other studies [9–11] demonstrate that adverse patient safety outcomes can occur when nursing care is missed (e.g. falls, medication errors, increased mortality, reported lower levels of quality of care and lower patient satisfaction). Minimising levels of missed nursing care across health systems should be a priority for all those concerned with patient safety.

In this chapter we will exam how an explicit focus on patient safety in nurse education, which would equip nurses with the knowledge, skills and attitudes required to advance the safety agenda, would ultimately help address the challenge of missed care.

M. Kirwan (✉)
School of Nursing, Psychotherapy and Community Health, Dublin City University, Dublin, Ireland
e-mail: marcia.kirwan@dcu.ie

O. Riklikiene
Faculty of Nursing, Lithuanian University of Health Sciences, Kaunas, Lithuania

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_8

8.2 Evolution of Patient Safety as an Important Discipline in Healthcare

In the 1990s, the Harvard Medical Practice Study [12] and the Quality in Australian Healthcare Study [13] started an important discussion within healthcare circles. For the first time serious consideration was given to the idea that, despite the remarkable advances in modern medicine, hospitals were not actually safe places to be. When the Institute of Medicine (IoM) in the United States suggested that between 44,000 and 98,000 people were dying annually in US hospitals as a result of clinical errors, at least half of which were deemed preventable [14], the floodgates opened on what would become an 'era of patient safety'. Nonetheless it should be noted, that despite this relatively recent upsurge in attention, patient safety as a concept, is not new to those working in the provision of healthcare, as it has always formed an essential part of the healthcare ethos.

Traditionally it has been accepted, that those who work in healthcare endeavour to provide high-quality care and to work in the best interests of the patient at all times. Stories about healthcare workers who deliberately do harm are rare, and are understood by all to be exceptional cases associated with 'bad apples'. In the past when harm occurred to patients it was viewed as rare collateral damage within an industry where people mostly get things right. The IoM statistics refuted this assertion and essentially re-wrote previous assumptions. They made clear that errors in healthcare settings occur with alarming frequency (4% and 16% of patients admitted to hospital experience adverse event), sometimes with very serious consequences, and sometimes involving very experienced and competent staff. More recent research has suggested that the IoM was conservative in its early estimates, and asserts that premature patient deaths associated with preventable harm can be estimated at >400,000 per year [15], while in the United States (US), preventable hospital errors have been identified as the third leading cause of death [16].

Patient safety has developed from its origins as the aspiration of all who work in, and are consumers of healthcare, to its current status as a recognised discipline in contemporary healthcare systems. This discipline recognises that healthcare organisations are complex, dynamic and ever-changing. Success within these organisations is dependent on technology, and on many different professions working together to achieve goals that could not otherwise be achieved. The World Health Assembly first recognised the enormous challenge of patient safety in 2002. Resolutions developed during the assembly brought the issue of patient safety to a wider audience and encouraged all countries to pay attention to the previously unacknowledged fact that healthcare is a risky business. The World Health Organisation's World Health Alliance, launched in 2004, for the first time brought together heads of agencies, health policy-makers, healthcare professionals and patients' groups to advance patient safety goals and recommendations, and to reduce the adverse health and social consequences of unsafe healthcare.

Contemporary patient safety thinking has moved away from the idea that those who make mistakes in healthcare are incompetent or careless, recognising the toxic impact of this approach where mistakes remain hidden, and learning from error impossible. Reason's error theory (1990) recognises that errors at the sharp end, where staff

members interact with patients or equipment, are often caused by latent errors far removed from the point of care [17]. Human factors thinking and team function are integral facets of modern patient safety, along with transparency around events and subsequent learning. Nonetheless despite this recognition as a discipline, patient safety faces challenges around its meaning and definition. The term *patient safety* is used loosely in many contexts as a 'catch-all' for healthcare concerns [18] and has become ubiquitous in healthcare documentation and policy. Its execution therefore can be problematic, as its meaning in these contexts is variable and often open to interpretation.

8.3 Missed Nursing Care as a Patient Safety Issue

Another unique feature of contemporary patient safety thinking is a recognition that where healthcare professionals fail to provide the correct intervention for a patient, this error of omission causes harm to the patient in the same way as more direct harmful actions can. Missed or rationed nursing care is care which is necessary but which is not provided due to constrained resources, and therefore has been termed an error of omission within the missed nursing care model [19]. According to this model, features of healthcare organisations, including inadequate nurse staffing levels, interfere with care processes and nursing work, resulting in the omission of necessary patient care.

All healthcare workers are expected to be safety minded at all times, and to work collaboratively in their efforts to maintain patient safety [20]. They are expected to practice safely in complex systems, work effectively in teams, be personally and professionally accountable, show leadership on patient safety issues, report adverse events and near misses, and be truly open about things that go wrong. However, when industries other than healthcare experience funding or staff shortages, scaling down of that industry activity is a realistic option. This option is not available in healthcare. Healthcare is influenced by socio-economic conditions and is susceptible to fluctuations in funding or staffing levels, but activity levels remain the same or continue to grow. This increases risks to patients, staff and organisations when the conditions have changed, but the goal remains the same. Phelan and Kirwan [1] offer an adapted socioecological model to explain the phenomenon of missed care within interconnected layers of systems. They suggest that in understanding the interconnected nature of the system-level approach, we can further trace episodes of missed care to origins far removed from the nurse–patient interface. This is in keeping with the idea of latent errors, which form part of the systems approach to patient safety put forward by Reason and others [17]. Local staffing levels or environmental inadequacies in healthcare, while contributing to levels of missed nursing care, may be the result of government funding decisions, beyond the control of healthcare organisations.

Emanuel et al. [20] agree that the locus of patient safety is the point at which care occurs, emphasising the interaction between the patient and healthcare worker. It is at this point, where safety can be maintained or compromised as a result of localised error or systemic failures. In all healthcare settings, the nurse is most often found at

this pivotal patient safety point [18] and therefore is key to patient safety efforts globally. Nursing care can be missed or rationed when resources are unavailable, with resultant compromises in patient safety and possible adverse outcomes for patients and staff. Findings from a recent review suggest that nurses' knowledge, perceptions and attitudes are influential in how they adhere to patient safety guidelines. In relation to levels of adherence, the nurses' professional and personal values are important, along with leadership and collaborative teamwork [21]. The review emphasises the role of patient safety education, which can link all these factors together and empower nurses to intervene or give voice to their concerns.

8.4 Nurses Role in Patient Safety

Recent estimates by the World Health Organisation (WHO) suggest that 19.3 million professional nurses work in healthcare globally [22], accounting for 59% of the health professional workforce. Compared with other healthcare professionals, nurses tend to be in closer proximity to patients [23], and have been described as the first line of defence [24] in patient safety. Nurses are widely acknowledged in healthcare to be the professionals most likely to recognise, intercept and correct potential risk or harm to patients [25–28].

Nurses, at the forefront of patient care across all settings, practice in line with professional values and standards, with patient safety as a core value. However, with a current global shortage of nurses estimated to be 5.9 million by the WHO (2020), it stands to reason that the nurse's role as gate keeper for patient safety will be compromised [22]. It has been previously acknowledged that some adverse events experienced by patients are associated with nursing care provision [26]. Equally, certain organisational or systemic nursing factors such as staffing levels or skill mix, organisation of nursing work, burnout levels, and the environment in which nurses practice can impact nursing care delivery, and are identified as important factors in determining patient outcomes [3–8, 26]. Poor clinical outcomes for patients such as patient falls, medication errors and pressure injuries have been frequently associated with nursing work [9–11, 26]. Without doubt, nurses' adherence to patient safety principles in clinical practice is not always perfect, and is associated with patients' participation in care, nurses' knowledge, perceptions, and attitudes, the effect of equipment and workplace conditions, the type of nursing task, collaboration between nurses and nurse and organisational leadership [21]. In other words, the intersection of complex individual and systemic factors has implications for nursing care as both influence adherence to patient safety principles.

The education of nurses in patient safety matters has become a focus for those interested in enhancing patient safety globally, as nurses are key players in implementing effective patient safety strategies across all healthcare settings [29, 30].

Nurses are at the sharp end of patient care, in large numbers, and play an important role in coordination of interprofessional care provision. Therefore is without doubt that they have a most important role in affecting change, increasing momentum for the patient safety agenda, and strengthening of associated best practice in all care settings [31, 32]. Inclusion of effective patient safety education in the nurse curriculum has the potential to greatly enhance and support the patient safety agenda in health system internationally [33, 34] and would enable empowerment of nurses to fulfil their safety obligations by voicing concerns and intervening where necessary [21].

8.5 Recommendations for Patient Safety Content in Nurse Education

An important focus for the future direction of nursing policy as identified by WHO (2020) states that: 'Curricula must be aligned with national health priorities as well as emerging global issues to prepare nurses to work effectively in interprofessional teams and maximize graduate competencies ….' [22, xix]. Health policy globally prioritises patient safety with emphasis on the complexities of healthcare systems and adverse event prevention and management, therefore nurse educators should respond to this challenge through curriculum adjustments or otherwise.

In 1999, the Institute of Medicine recommended that patient safety education should be included in the curriculum of all healthcare professionals. Guidelines for patient safety education [35, 36] highlight a requirement for health professionals to be able to demonstrate the relevant knowledge, skills, behaviour, and attitudes to practice patient safety in their respective roles. This should include inter- and intra-professional communication and effective teamwork skills [35, 36] as these areas are linked to patient safety failures across healthcare settings [37]. The extent to which the health professions have responded to these recommendations is inconsistent, although several recommendations on curriculum content and structure are available, e.g. EUNetPas, 2010 [36], European Federation of Nurses (EFN) Competency Framework [38], World Health Organisation (WHO) 2009 [39] and 2011 [35], International Council of Nurses (2012) [40], American Quality and Safety Education for Nurses (QSEN) competencies [41], Canadian Patient Safety Institute (2020) [42], Australian Commission on Safety and Quality in Health Care (2005) [43]. To date a number of factors appear to have delayed or prevented the integration of patient safety into nurse education programmes. These include a reluctance for further expansion of an already full professional curriculum, a disconnection between education and the systems or technological advances evident in a clinical environment, or a general lack of teaching expertise in this new healthcare discipline of patient safety science.

8.6 Evidence from the Literature Regarding Patient Safety Content in Nurse Curriculum

While many medical schools have adopted patient safety teaching into the undergraduate curriculum across countries, the approach taken by nurse educators has been less than uniform. In 2008 an early study suggested that nursing curricula lack sufficient emphasis on patient safety to address its growing global focus, and this remains the case [44]. In a review of patient safety in nurse education by Tella et al. [45], it is clear that a gap exists between what students learn about patient safety at university and what they learn in the clinical environment [31, 44]. Separately researchers examined nursing curricula across four UK universities and identified tensions between and across academic, organisational and practice contexts, with resultant implications for patient safety [46]. Remarkably, the topic of patient safety was largely invisible in curriculum documents other than instances where it was associated with infection prevention and control or hand washing techniques. Patient safety content in undergraduate nursing programmes is often implicit, rather than explicit [18, 34, 45], and it is believed that this approach may leave newly graduated nurses unprepared for patient safety in practice [47]. Tella et al. [45] highlighted the risk to nurse education where an implicit approach rather than an explicit approach is taken to patient safety teaching—it is likely that it is taught everywhere and nowhere, and is at risk of disappearing completely [31, 48] or being rendered invisible. Steven et al. [46] contends that when patient safety teaching is implicit, students are not aware of it or do not remember it. Therefore it is recommended that nursing curricula contain clear and explicit patient safety content with effective and consistent teaching methods and materials across both academic and clinical settings [45].

8.7 Patient Safety Skills for Nurses

A survey conducted as part of the RANCARE COST Action which examined patient safety teaching in nurse education across 27 countries [18] found that mention of patient safety in the nursing curriculum is often unspecific or linked to certain skills such as infection control, medication or blood transfusions. Particular deficits in the sociocultural aspects of patient safety education and in communication and teamwork have also been identified [49]. These skills where risks are identified, responded to, reported and where learning takes place are key ingredients for an organisational culture of safety [50]. Ginsburg et al. [49] examined patient safety competence of newly graduated health professionals in Canada. In the study all professional groups reported greater patient safety confidence in clinical settings rather than educational settings, except for nurses. Nurses, in contrast, reported a decrease in their teamwork skills when they moved from university to clinical settings. This suggests that classroom preparation on the nursing programme was insufficient preparation for the realities of clinical practice. Similarly, in a study of Australian undergraduate nursing students, it was found that the students were confident around clinical safety skills but less so about their ability to work in teams or to speak up around safety issues in the face of unsafe

practice, particular in the face of authority [50]. Fear of repercussions seemed to prevent them from speaking out. In another study it found that nurses were confident about their skills associated with safe practice, in more tangible tasks, rather than around less tangible skills such as effective communication or teamwork [51]. Robb et al. [52] also reported difficulties for healthcare students in speaking up during clinical placements due to power imbalance, which suggests early difficulties around a core patient safety skill. Another study noted confidence around safety reduced as nursing students moved through the education programme—possibly due to enhanced insight into the potential for error that comes with experience [50]. However this may also be accounted for by students becoming increasingly aware of the theory practice gap [46, 49, 53].

8.8 Voicing Concerns

Usher et al. [50] suggested that nurses are not prepared to voice concerns around patient safety because they are not educated to do so. In order to be empowered to speak out, they need to be sure of a blame-free environment, which supports reporting and engagement on safety issues [50]. Hierarchical environments where blame is the likely outcome, tend to undermine nurses who voice concerns. Therefore, despite global concerns for patient safety, in these environments if students and newly graduate nurses are not equipped to speak out through adequate educational preparation, they are likely to stay silent, rather than challenge poor practice [50, 54]. Teaching assertiveness skills, and enabling speaking-up behaviours as a critical behaviour of patient safety, early-on in nurse education programmes, can have important psychosocial implications for their confidence, empowerment and success [55]. Nursing curricula solutions for patient safety must address these deficits. Accountability is a core tenet of professional nursing practice, and one which is addressed throughout the nursing curriculum. However just as nurse educators have a responsibility to foster students learning around professional accountability [56], they also have a responsibility to help students find their ‘safety voice’ as part of their duty to be accountable practitioners. Nonetheless, newly graduated nurses frequently lack an ability to demonstrate accountability in practice, despite accountable practice being identified as essential to patient safety and quality of care provision [56].

Usher et al. [50] recommend that patient safety education becomes a core facet of undergraduate nurse education both in the classroom and in the clinical setting. In order to do this, nursing curricula should be examined to ensure that reference to patient safety includes both skills teaching and less tangible aspects of patient safety such as communication around adverse events and near missed, teamwork, voicing concerns, reporting and transparency around events. It is imperative that nursing students are adequately prepared to contribute to safe clinical environments and provide safe care [49, 50]. Assessment opportunities to demonstrate accountability, competence and confidence should be included. Explicit patient safety teaching should occur throughout the education programme, building on previous knowledge and integrating relevant student experience which is appropriate to the students’ stage in the programme and clinical expertise. Emphasis should be placed on nurse

accountability, on errors made or witnessed in practice placements as teaching examples, with appropriate reflection and examination [46], and on developing confidence around communicating with others to improve safety and around recognising, responding to and disclosing near misses or adverse events [50].

8.9 Clinical Training for Patient Safety

Student learning about patient safety in clinical settings often depends on the organisational culture of patient safety, and has an important role in preparing future nurses to advance the patient safety agenda [45]. Overall this clinical training is one of the most important elements of student nurses' preparation to become a professional nurse [57–59]. In order to affect positive change and enhanced patient safety, it is important that nurse educators and clinical staff work together to ensure students receive a common patient safety education both in university and during clinical placements [60]. Gropelli et al. [61] note that newly graduated nurses have difficulties communicating around patient safety concerns and are not sufficiently prepared for the contemporary practice environment with its emphasis on patient safety culture enhancement [61]. A New Zealand study on the state of quality and patient safety teaching across the healthcare disciplines showed that despite the priority given to patient safety for most professional groups, approaches to its teaching and learning were mixed [52]. It is recognised that frequently nursing students learn patient safety behaviours from leaders and mentors in practice settings [46, 50]. It is therefore important that all teaching at university and in clinical settings around patient safety is consistent, on message and relevant to real-world issues. It is incumbent on academic staff to foster patient safety role-modelling behaviours in clinical staff who will be supporting students in placement [50]. This will enable the nursing students to practice good patient safety behaviours as students, which can be built on following graduation, thus advancing the patient safety agenda.

8.10 The Role of Nurse Educators

Steven et al. [46] found that nurse educators had difficulty identifying and defining patient safety as a discrete entity within the curriculum. They were reluctant to treat patient safety as a topic in itself, suggesting that students might believe they had 'covered' patient safety. Overall, educators believed that patient safety should be taught across all areas of the curriculum. Compartmentalisation of the topic within the curriculum, it was suggested, could result in a 'de-contextualisation' of patient safety from real-world practice [46, p. 282]. This way of thinking is based in the work of Harden [62], who, when promoting the spiral approach to curriculum development, warned against a silo approach to big topics which transcend many areas of professional practice such as patient safety. However, if spiralling of patient safety content within the nurse curriculum is to be effective, it has to be assumed that all teaching staff are fully aware and up to date on patient safety theory and

practice. Cronenwatt et al. [47] contends in fact, that nurse educators are not clear on how to teach patient safety, or may in fact lack the required expertise [63].

Usher et al. [50] point to variation in both content and approach around patient safety teaching for undergraduate nursing students. While some evidence of patient safety teaching which includes teamwork, error reporting, and clinical skills exists [45] and methods including simulation, lectures and assignments are noted, it has to be acknowledged that there is a lack of consistency across academic programmes. Where patient safety teaching is implicit and taught across subjects, rather than explicit, this may account for inconsistent approaches across programmes [50]. Evidence would suggest that the teaching of accountable nursing practice is often equally implicit within the nurse curricula [56]. These important aspects of professional nursing practice, although challenging to teach, must become part of the explicit nurse curriculum. Frequently nurse educators prioritise skills such as infection control practices, falls prevention or medication management as the most important patient safety teaching for students. These skills are generally linked to national standards or guidelines and unfortunately are prioritised above the less tangible human factors which are core to patient safety. Similar findings were reported in a recent study across 27 countries [18]. It should be recognised that there needs to be a re-focus on patient safety content in undergraduate nursing curricula to include the influence of human sociocultural factors [50, 64] rather than simply clinical safety. It would appear that the traditional approach to the nursing curriculum does not address fully the complexities of a contemporary healthcare system—where professional accountability, interprofessional education and team communication are key to patient safety, and where openness and transparency are core requirements and where learning, rather than blaming, is the order of the day.

8.11 Curriculum Regulation

A UK report which examined patient safety education in undergraduate curricula found that the fact that patient safety content and approach is not mandated, limits its inclusion [65]. In a study across 27 countries it was found that reference to patient safety in curriculum or syllabus documents remains scant. While a national syllabus for nurse education may exist, fewer national curriculum documents exist for nurse education across the countries studied [18]. This may be a missed opportunity for patient safety advancement. In curriculum documents, oblique reference to competencies in specific skills may be present, or recommendations around ‘an awareness of patient safety’ that are vague and unmeasurable. Steven et al. [46] suggested that curriculum documents serve only to meet the needs of programme validation or accreditation, and that little attention is paid to them after that [46]. They suggested that the curriculum documents bore no relation to overall programme delivery. The experience in many countries is that in core education documents, such as the curriculum or syllabus, patient safety appears as a series of statements without measurable outcomes. Academic accreditation of a nursing programme is an important achievement for an institution and the programme team. In order to achieve accreditation, the team

must ensure that the programme contains all necessary components for nurse education as outlined by regulatory bodies, and that they can demonstrate rigour in programme quality and delivery. Professional and academic regulators are therfore in a position to strengthen patient safety education for nurses by inclusion of recommendations for content and delivery, beyond token references or vague statements. Recommendations around the inclusion of one of the existing frameworks could be seen as an indication of intent around patient safety in nurse education, with the stipulation that all materials be adapted for context and culture [66].

International decision-making around nurse syllabus and curriculum development and implementation varies, with oversight from many different bodies including ministries of education, ministries of health, accreditation bodies or professional regulators [18]. In general, although some guidelines exist nationally or regionally, universities or nursing colleges retain the autonomy to set and monitor educational standards and curriculum design. European and national influence to achieve change in how patient safety is incorporated in nurse education is vital, as currently how this occurs is open to interpretation by faculty members who may not be cognisant of the implications of not paying sufficient attention to the topic. Such influence is required to ensure that patient safety core competencies are part of regulatory requirements for all health professionals, not only nurses.

8.12 Recognised Frameworks for Teaching Patient Safety to Nurses

While a clear need exists to teach patient safety theory and practice to nursing students, in order to adequately prepare them for contemporary healthcare settings, the most effective means of achieving this has yet to be established. A small number of frameworks exist internationally, which provide guidelines for educators. The Quality and Safety Education for Nurses (QSEN) was developed in the USA as an initiative to support nurse educators to ensure the essential knowledge, skills and attitudes could be developed in student nurses to enable improved patient outcomes and reduce preventable adverse events [47]. While this has been well evaluated over the years [23, 48, 67], and clearly addresses some aspects of non-technical skills teaching, such as teamwork and the interdisciplinary communication, it has been recognised that other non-technical skills appear to be largely missing from the framework [68]. Similarly, a review of American nursing school curricula noted the absence of dedicated patient safety components, including human factor training [69]. The review argued that the intersection between nurse education and practice should be supported through strong and explicit patient safety education content, and should outline the potential for error or omissions within the systems–human interface. The review suggests that although the QSEN is implemented across many nurse programmes, certain vital elements of patient safety education remain to be fully addressed in nursing curricula.

In contrast to the QSEN initiative, the World Health Organization (WHO) Multiprofessional Patient Safety Curriculum Guide [35] incorporates a more explicit

understanding of human factors, and of the systems approach to patient safety. Unfortunately, the WHO guide is less clear around innovative teaching methods. It does however include guidelines on content, which should form the basis for any plans by nurse educators to teach patient safety to undergraduate nurses. It has been well evaluated by both students and educators alike, and can be easily adapted across countries, cultures and systems [66]. The guide outlines 11 patient safety topics for inclusion in the curriculum of health professionals; however, to date these topics are more likely to be integrated across the curriculum rather than treated as individual subject areas [18]. This implicit approach to patient safety remains problematic, and it would appear to be an example of underuse or misuse of the WHO guidelines.

While these frameworks offer a roadmap for patient safety education for nursing students and other healthcare workers, ongoing measurement of competence around patient safety would seem necessary for nurses and students working in contemporary healthcare systems. Ginsburg et al. [49] used the HP Education in PS Survey (H-PEPSS), an instrument which measure self-reported competence around patient safety and which can be used to examine gaps between classroom teaching and clinical practice [23]. They demonstrated that nurses lose confidence around patient safety as they move from the classroom to the clinical area. This underlines that patient safety education must be conducted in a collaborative basis between academia and clinical areas as there is a strong contextual influence on how nurses perceive their competence. The gap between theory and practice impedes the development of patient safety skills, attitudes and behaviours. The H-PEPSS is recommended for use with students towards the end of their training or with recent graduates [23], and has a lot to offer nurse educators when planning a way forward in teaching patient safety to nursing students. Universities and nursing colleges are responsible for student safety during their clinical experience and for their competencies around patient safety [53]. Therefore, collecting data about the perception of safety in the clinical environments attended by students, as well as monitoring the student experience of patient safety issues, may help educators around placement accreditation and curriculum planning.

Chenot and Daniel [48] suggest that challenges arise for educators as change occurs more rapidly in clinical settings than in education due in part to the lengthy processes involved in curriculum development, review and approval, followed by implementation of proposed changes. While change is occurring slowly in education settings, further change is happening in clinical settings, making catch-up impossible. It appears that patient safety education of healthcare professionals has fallen behind advances in patient safety as a discipline in itself, and behind workplace requirements [66]. For nurse education to effectively respond to the growing patient safety agenda and to further a culture of safety around future nursing professionals, it must incorporate relevant patient safety content explicitly throughout the curriculum beginning at the earliest educational opportunity [23]. Such training should take place at undergraduate level, ensuring the development of a common vocabulary and effective safety practices within the development of the students' professional identity development [70]. Evidence suggests that early engagement of

nursing students with patient safety principles has an important impact on developing and shaping their long-term patient safety knowledge, skills and behaviours [66].

The challenge of delivery is further complicated by a lack of expertise in patient safety science amongst nurse educators. Patient safety has advanced beyond the 'general' to become a specific discipline in its own right and therefore must be treated as such within nurse education. Just as experts from other disciplines may teach 'into' nurse programmes (such as psychologists, physiotherapists and doctors), it may be time to bring patient safety experts to teach patient safety, rather than expect generalist nurse educators to teach this important topic.

8.13 Conclusion

Missed or rationed nursing care remains a challenge to contemporary healthcare systems. This challenge sits firmly within the patient safety realm and can be addressed using a patient safety approach. Nurse educators must play their part and ensure that nursing students and graduates are equipped with the knowledge, skills, attitudes and behaviours to challenge inadequacy in patient care and prevent adverse patient outcomes.

European and national regulators can support nurse educators by linking registration of nurses and accreditation of education programmes to high levels of patient safety competence and to measurable outcomes, rather than vague recommendations. Curriculum planners should include explicit content on patient safety, which includes human factors training and adverse event debriefing for all undergraduate nurse programmes. Where expertise is lacking, help should be sought from qualified patient safety experts. These measures listed above will have a positive impact on patient safety generally, and more specifically on curbing levels of missed or rationed care.

References

1. Phelan A, Kirwan M. Contextualising missed care in two healthcare inquiries using a socio-ecological systems approach. J Clin Nurs. 2020;29(17–18):3527–40.
2. Suhonen R, Scott P. Missed care: a need for careful ethical discussion. Nurs Ethics. 2018;25(5):549–51.
3. Aiken L, Sermeus W, Van den Heede K, Sloane D, Busse R, McKee M, et al. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. BMJ. 2012;344:e1717.
4. Aiken L, Sloane D, Bruyneel L, Van den Heede K, Griffiths P, Busse R, et al. Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. Lancet. 2014;383(9931):1824–30.
5. Aiken L, Sloane D, Griffiths P, Rafferty A, Bruyneel L, McHugh M, et al. Nursing skill mix in European hospitals: cross-sectional study of the association with mortality, patient ratings, and quality of care. BMJ Qual Saf. 2016;26(7):559–68.
6. Kirwan M, Matthews A, Scott P. The impact of the work environment of nurses on patient safety outcomes: a multi-level modelling approach. Int J Nurs Stud. 2013;50(2):253–63.

7. Ball J, Murrells T, Rafferty A, Morrow E, Griffiths P. 'Care left undone' during nursing shifts: associations with workload and perceived quality of care. BMJ Qual Saf. 2013;23(2):116–25.
8. MacPhee M, Dahinten V, Havaei F. The impact of heavy perceived nurse workloads on patient and nurse outcomes. Admin Sci. 2017;7(1):7.
9. Papastavrou E, Andreou P, Tsangari H, Merkouris A. Linking patient satisfaction with nursing care: the case of care rationing—a correlational study. BMC Nurs. 2014;13(1):26.
10. Bail K, Grealish L. 'Failure to maintain': a theoretical proposition for a new quality indicator of nurse care rationing for complex older people in hospital. Int J Nurs Stud. 2016;63:146–61.
11. Ball J, Bruyneel L, Aiken L, Sermeus W, Sloane D, Rafferty A, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5.
12. Brennan T, Leape L, Laird N, Hebert L, Localio A, Lawthers A, et al. Incidence of adverse events and negligence in hospitalized patients. N Engl J Med. 1991;324(6):370–6.
13. Wilson R, Runciman W, Gibberd R, Harrison B, Newby L, Hamilton J. The quality in Australian health care study. Med J Aust. 1995;163(9):458–71.
14. Institute of Medicine (US) Committee on Quality of Health Care in America, Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. Washington, DC: National Academies Press; 2000.
15. James J. A new, evidence-based estimate of patient harms associated with hospital care. J Patient Saf. 2013;9(3):122–8.
16. Makary M, Daniel M. Medical error—the third leading cause of death in the US. BMJ. 2016;353:i2139.
17. Reason J. Human error. Cambridge: Cambridge University Press; 1990.
18. Kirwan M, Riklikiene O, Gotlib J, Fuster P, Borta M. Regulation and current status of patient safety content in pre-registration nurse education in 27 countries: findings from the rationing—missed nursing care (RANCARE) COST action project. Nurse Educ Pract. 2019;37:132–40.
19. Kalisch B, Landstrom G, Hinshaw A. Missed nursing care: a concept analysis. J Adv Nurs. 2009;65(7):1509–17.
20. Emanuel L, Berwick D, Conway J, Combes J, Hatlie M, Leape L, et al. What exactly is patient safety? J Med Regul. 2009;95(1):13–24.
21. Vaismoradi M, Tella SA, Logan P, Khakurel J, Vizcaya-Moreno F. Nurses' adherence to patient safety principles: a systematic review. Int J Environ Res Public Health. 2020;17(6):2028.
22. State of the world's nursing 2020: investing in education, jobs and leadership [Internet]. Who.int. 2020 [cited 18 December 2020]. https://www.who.int/publications/i/item/9789240007017.
23. Chen L, Huang F, Yuan X, Song J, Chen L. An assessment of the reliability and factorial validity of the Chinese version of the health professional education in patient safety survey (H-PEPSS). Front Psychol. 2019;10:2183.
24. DeBourgh G. Synergy for patient safety and quality: academic and service partnerships to promote effective nurse education and clinical practice. J Prof Nurs. 2012;28(1):48–61.
25. Hallmarks of quality and patient safety. J Prof Nurs. 2006;22(6):329–30.
26. Dubois C, D'Amour D, Tchouaket E, Clarke S, Rivard M, Blais R. Associations of patient safety outcomes with models of nursing care organization at unit level in hospitals. Int J Qual Health Care. 2013;25(2):110–7.
27. Hwang J, Yoon T, Jin H, Park Y, Park J, Lee B. Patient safety competence for final-year health professional students: perceptions of effectiveness of an interprofessional education course. J Interprof Care. 2016;30(6):732–8.
28. Rothschild J, Hurley A, Landrigan C, Cronin J, Martell-Waldrop K, Foskett C, et al. Recovery from medical errors: the critical care nursing safety net. Jt Comm J Qual Patient Saf. 2006;32(2):63–72.
29. Alfredsdottir H, Bjornsdottir K. Nursing and patient safety in the operating room. J Adv Nurs. 2007;61(1):29–37.
30. Slater B, Lawton R, Armitage G, Bibby J, Wright J. Training and action for patient safety: embedding interprofessional education for patient safety within an improvement methodology. J Contin Educ Health Prof. 2012;32(2):80–9.

31. Vaismoradi M, Salsali M, Marck P. Patient safety: nursing students' perspectives and the role of nursing education to provide safe care. Int Nurs Rev. 2011;58(4):434–42.
32. Jones A. The impact of integrating quality and safety education for nurses' safety competency in first-year associate degree nursing students. Teach Learn Nurs. 2013;8(4):140–6.
33. Sherwood G. Integrating quality and safety science in nursing education and practice. J Res Nurs. 2011;16(3):226–40.
34. Mansour M, Skull A, Parker M. Evaluation of World Health Organization multi-professional patient safety curriculum topics in nursing education: pre-test, post-test, none-experimental study. J Prof Nurs. 2015;31(5):432–9.
35. WHO multi-professional patient safety curriculum guide [Internet]. World Health Organization. 2011 [cited 18 December 2020]. https://www.who.int/patientsafety/education/mp_curriculum_guide/en/.
36. [Internet]. Eu-patient.eu. 2010 [cited 18 December 2020]. https://www.eu-patient.eu/globalassets/projects/eunetpas/guidelines_final_22-06-2010.pdf.
37. Tella S, Liukka M, Jamookeeah D, Smith N, Partanen P, Turunen H. What do nursing students learn about patient safety? An integrative literature review. J Nurs Educ. 2013;53(1):7–13.
38. EFN—European Federation of Nurses Associations|EFN competency framework for mutual recognition of professional qualifications directive 2005/36/EC, amended by directive 2013/55/EU [Internet]. Efnweb.be. 2020 [cited 18 December 2020]. http://www.efnweb.be/?page_id=6897.
39. Patient Safety Curriculum Guide for Medical Schools [Internet]. World Health Organization. 2009 [cited 18 December 2020]. https://www.who.int/patientsafety/education/curriculum_guide_medical_schools/en/.
40. Position statements [Internet]. ICN—International Council of Nurses. 2012 [cited 18 December 2020]. https://www.icn.ch/nursing-policy/position-statements.
41. Cronenwett L, Sherwood G, Pohl J, Barnsteiner J, Moore S, Sullivan D, et al. Quality and safety education for advanced nursing practice. Nurs Outlook. 2009;57(6):338–48.
42. Canadian Patient Safety Institute. The safety competencies: enhancing patient safety across the health professions. 2nd ed. Edmonton: Alberta; 2020. [cited 18 December 2020]. https://www.patientsafetyinstitute.ca/en/toolsResources/safetyCompetencies/Documents/CPSI-SafetyCompetencies_EN_Digital.pdf.
43. National Patient Safety Education Framework, 2005. Australian Commission on Safety and Quality in Health Care, Commonwealth of Australia, Canberra. isbn:0-642-82674-9. [cited 18 December 2020]. https://www.safetyandquality.gov.au/sites/default/files/migrated/National-Patient-Safety-Education-Framework-2005.pdf.
44. Attree M, Cooke H, Wakefield A. Patient safety in an English pre-registration nursing curriculum. Nurse Educ Pract. 2008;8(4):239–48.
45. Tella S, Smith N, Partanen P, Jamookeeah D, Lamidi M, Turunen H. Learning to ensure patient safety in clinical settings: comparing Finnish and British nursing students' perceptions. J Clin Nurs. 2015;24(19–20):2954–64.
46. Steven A, Magnusson C, Smith P, Pearson P. Patient safety in nursing education: contexts, tensions and feeling safe to learn. Nurse Educ Today. 2014;34(2):277–84.
47. Cronenwett L, Sherwood G, Barnsteiner J, Disch J, Johnson J, Mitchell P, et al. Quality and safety education for nurses. Nurs Outlook. 2007;55(3):122–31.
48. Chenot T, Daniel L. Frameworks for patient safety in the nursing curriculum. J Nurs Educ. 2010;49(10):559–68.
49. Ginsburg L, Castel E, Tregunno D, Norton P. The H-PEPSS: an instrument to measure health professionals' perceptions of patient safety competence at entry into practice. BMJ Qual Saf. 2012;21(8):676–84.
50. Usher K, Woods C, Conway J, Lea J, Parker V, Barrett F, et al. Patient safety content and delivery in pre-registration nursing curricula: a national cross-sectional survey study. Nurse Educ Today. 2018;66:82–9.
51. Duhn L, Karp S, Oni O, Edge D, Ginsburg L, VanDenKerkhof E. Perspectives on patient safety among undergraduate nursing students. J Nurs Educ. 2012;51(9):526–31.

52. Robb G, Stolarek I, Wells S, Bohm G. The state of quality improvement and patient safety teaching in health professional education in New Zealand. N Z Med J. 2017;130(1464):13–24.
53. Stevanin S, Bressan V, Bulfone G, Zanini A, Dante A, Palese A. Knowledge and competence with patient safety as perceived by nursing students: the findings of a cross-sectional study. Nurse Educ Today. 2015;35(8):926–34.
54. Levett-Jones T, Lathlean J. 'Don't rock the boat': nursing students' experiences of conformity and compliance. Nurse Educ Today. 2009;29(3):342–9.
55. Hanson J, Walsh S, Mason M, Wadsworth D, Framp A, Watson K. 'Speaking up for safety': a graded assertiveness intervention for first year nursing students in preparation for clinical placement: thematic analysis. Nurse Educ Today. 2020;84:104252.
56. Krautscheid L. Defining professional nursing accountability: a literature review. J Prof Nurs. 2014;30(1):43–7.
57. Dadge J, Casey D. Supporting mentors in clinical practice. Paediatr Nurs. 2009;21(10):35–7.
58. Dimitriadou M, Papastavrou E, Efstathiou G, Theodorou M. Baccalaureate nursing students' perceptions of learning and supervision in the clinical environment. Nurs Health Sci. 2014;17(2):236–42.
59. Warne T, Johansson U, Papastavrou E, Tichelaar E, Tomietto M, den Bossche K, et al. An exploration of the clinical learning experience of nursing students in nine European countries. Nurse Educ Today. 2010;30(8):809–15.
60. Rebeschi L. Perceived patient safety competence of baccalaureate nursing students: a descriptive comparative study. SAGE Open Nurs. 2020;6:237796082093013.
61. Gropelli T, Shanty JA. Nursing students' perceptions of safety and communication issues in the clinical setting. J Nurs Educ. 2018;57(5):287–90. https://doi.org/10.3928/01484834-20180420-06. PMID: 29718518.
62. Harden R. What is a spiral curriculum? Med Teach. 1999;21(2):141–3.
63. Lee NJ, Jang H, Park SY. Patient safety education and baccalaureate nursing students' patient safety competency: a cross-sectional study. Nurs Health Sci. 2016;18(2):163–71. https://doi.org/10.1111/nhs.12237. Epub 2015 Aug 26. PMID: 26306563.
64. Robson W, Clark D, Pinnock D, White N, Baxendale B. Teaching patient safety and human factors in undergraduate nursing curricula in England: a pilot survey. Br J Nurs. 2013;22(17):1001–5.
65. Yu A, Fontana G, Darzi A. Evaluation of education and training interventions for patient safety. London: Centre for Health Policy at Imperial College; 2016.
66. Mansour M, Al Shadafan S, Abu-Sneineh F, AlAmer M. Integrating patient safety education in the undergraduate nursing curriculum: a discussion paper. Open Nurs J. 2018;12(1):125–32.
67. Miller C, LaFramboise L. Student learning outcomes after integration of quality and safety education competencies into a senior-level critical care course. J Nurs Educ. 2009;48(12):678–85.
68. Mansour M. Examining patient safety education in pre-registration nursing curriculum: qualitative study. J Nurs Educ Pract. 2013;3(12).
69. Howard J. The missing link. J Patient Saf. 2010;6(3):165–71.
70. Flin R, Patey R. Improving patient safety through training in non-technical skills. BMJ. 2009;339:b3595.

9 Good Management and Clinical Leadership: Supporting Quality Patient Care

Raul Cordeiro, Cristobal Rengel-Diaz, and Clare Harvey

9.1 Concepts of Leadership and Management

Numerous theories describe leadership, suggesting that it is a difficult term to define [1]. Leaders are forward thinking and are not necessarily located within a defined role of leadership. They look at ways to change, to develop, to create new ways of doing and thinking. Managers, on the other hand, have a defined job description and clear performance indicators related to planning, organization, and controlling a department, service, or team. Management and leadership are often used synonymously; however, one of the key areas of difference is that management is about the "how" and leadership is about the "what" and the "why" of an activity. Management focuses on maintaining order within an organization, whereas leadership seeks out change through innovative thinking and improvement. Both are important for organizations to exist [1, 2]. Some authors [2] argues that to be a leader is to be collaborative, and leadership is an essential element in all relationships and across all levels of organization. If an organization wants leaders, then managers and people of influence within it, must be the role model that they want others to follow.

R. Cordeiro (✉)
Comprehensive Health Research Centre (CHRC), Portalegre, Portugal
e-mail: raulcordeiro@ipportalegre.pt

C. Rengel-Diaz
Departamento de Enfermeria, Universidad de Malaga, Hospital Universitario Virgen de la Victoria, Malaga, Spain

Servicio Andaluz de Salud, Universidad de Malaga, Malaga, Spain

C. Harvey
School of Nursing, Midwifery and Social Sciences, Central Queensland University, Townsville, QLD, Australia

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_9

Leadership is about being inclusive, ensuring that everyone in the team is heard and understood, in a way that is motivating and not demeaning.

A leader "is the frame for the organization" because they represent the values and the direction of a service [3]. The authors also identify that it is the leaders who provide the vision and then help to transform that into the direction for the organization. They are the creators who motivate the team. Leaders question the status-quo and ask the difficult question about what matters, and what needs to change. Therefore, leaders must possess the courage to make the hard calls because people do not always embrace change [1]. In some research [4], leaders identified barriers to change that included the organization's lack of preparedness for change to take place. Although the leaders acknowledged the benefits of change in relation to patient outcomes, they also identified a lack of funding to support change. The authors identify that managers play a key role in change and suggest that pre-planning and collaboration between leaders and managers is essential.

9.2 Clinical Governance and its Accountability in Nursing

Clinical Governance describes the systematic approach to maintaining and improving the quality of care that is provided to patients, supports evidence-based practice and continually seeks improvement in the way things are done. Clinical governance also includes studying of practice and clinical activities and reporting on errors of omission and clinical misdemeanor [5]. The International Council of Nurses states that "Nurses are both responsible and accountable for their nursing practice" [6]. Leaders in nursing are pivotal in maintaining a standard of care that is effective and evidence-based, while managers of nursing are accountable for ensuring these standards of care are maintained. Leaders of nursing are very often the advanced clinical nurses who work in senior clinical positions, and their managers are the directors of nursing. Together these senior nurses ensure good practice standards. An example of the ramifications of not maintaining high standards of care can be seen in the Mid Staffordshire Inquiry where the Executive Director of Nursing lost her position and her registration as a nurse, as a result of not ensuring a high standard of care in the hospital's nursing workforce [7].

Clinical governance is defined as a corporate accountability for clinical quality, leadership, and management of organizations [8]. It provides the oversight of all clinical activities with the service and set the standards for the organizational culture and activities. Whereas clinical management deals with the processes and procedures that occur within the service, and clinical practice is the delivery of care that is undertaken within the standards and processes set out by the organization. Each level of manager is accountable for the work that is done, or, in the case of missed nursing care, not done [9]. It is now well known that missed nursing care is the result of work intensification, brought about by cost constraints directed by financial management, which do not meet the required care delivery needs, nor does it address the ethical element associated with such omissions in care [10–14]. Moreover, very little addresses the responsibilities and resultant accountability for omissions of

nurses or their nursing managers in this situation, although the negative impact missing care has on patient outcomes has been raised [15, 16], particularly in relation to role substitution and lower staffing levels [17].

Some authors [18] emphasize that the nurse manager is responsible for planning, organization, leading and controlling human resource, budget and the quality of care, and thus is charged with the successful running of a health service, the performance indicators for which are couched in organizational success. This is a tall order, given the financial control over nursing work, which nurse managers seldom have any influence over [19, 20]. Nurse managers are potentially caught in the middle of a perfect ethical storm in their attempts at reconciling their role between patient and nurse advocacy and meeting budget targets because they are accountable for any omissions in patient care delivery [7]. The work of nurse managers had been "progressively (re)constructed around budget and performance management, key performance indicators, benchmarking and business planning…" [21], identified by others [22] as "the fractured self" because nurse managers had to let go of their nursing identify in favor of a business persona. In more recent work [23], nurse managers expressed high levels of anxiety, knowing that they had to prioritize budget over nursing concerns because of the targets that have to be met within their position. These participants verbalized concerns over the fact that managers had already asked nurses to extend themselves above and beyond the normal workload, and that there was no more to give. Staff satisfaction and burnout were acknowledged as a reality.

9.3 Leading Through Caring for the Nursing Workforce

Nursing work is emotional work, making nurses particularly vulnerable to burnout [24, 25]. Emotional work is also called the art of nursing, described by many as essential work for nurses, which is also ideologically aligned to the traditional view of the "good nurse" who is always calm, considerate, and kind, in the face of difficult work and long hours [26, 27]. Although nursing has been described as an art and a science, even in today's world, nurses and patients still revert to the art of nursing when describing nursing work [28]. Nursing leaders are key to supporting nurses through emotionally difficult times. While the death of patients or trauma situations elicit feelings of sadness and feelings of ineffectiveness, nurses come to manage these emotions through a pragmatic approach to death and dying, supported by effective nursing leaders who provide opportunity for debriefing, discussion, and reflection [29]. However, more recently, missed nursing care has been raised as a factor that creates unresolved emotional conflict because there is no end to it. Everyday, nurses are going to work knowing that they cannot complete the patients' needs because they do not have the time, or the material resources to complete their work [30]. Nor are managers and leaders equipped to deal with long-term emotional conflict in the workplace because they too are struggling with it.

Considerable work has been undertaken on factors leading to compassion fatigue and how nurses maintain their capacity to continue with their work [25, 31, 32].

Burnout is characterized by a prolonged response to sustained emotional and interpersonal stressors, and when nurses become too tired to care, this results in what is known as cognitive dissonance [33, 34]. Cognitive dissonance refers to a situation where a person cannot deal with conflict relating to value activities that are not fulfilled, such as caring for patients. When, for example, nurses continually face ongoing unresolved personal emotional conflict resulting from not being able to successfully conclude all the care for a patient, then they seek ways to restore emotional balance, and this is often seen as no longer caring [33, 35].

The default emotional view of nursing work has created a situation where nurses will work unpaid overtime to get the work done, a situation that has been demonstrated in research around missed nursing care [10, 36, 37]. The problem for managers is to balance work intensification with meeting budget targets, which we now know to be frequently insufficient for the patient care needs. Nurse managers chose budgets over nurse advocacy [38], a matter that has been endorsed in a study [39] surveying the resilience of nurses, where resilience is the capacity to overcome emotional hardship and to continue working effectively without nursing out [40]. Although Hegney's study [39] was not searching for links between resilience and missed nursing care, the findings supported many of the missed nursing care-focused studies identifying consistent references to nurses' inability to complete work. Importantly, this work corroborated with missed nursing care research identifying that there was seldom enough staff or the appropriate skills mix of staff on a shift for the amount of work, or the acuity of work required. Consistent with Cooke's work [38], Hegney and colleagues [39] found that nurses raising concerns about the staffing inadequacies to their managers was not regarded or actioned. Thus, despite not really understanding the nurse manger's perceptions of missed care and the control of budgets over nursing work, current research apportions blame of the situation on the nurse managers.

Further work needs to be undertaken, focusing on nurses as leaders of change, in looking for ways to support nurses when there is unresolved emotional conflict resulting from care left undone, and some of the concepts to mitigate burnout and support care are discussed in the next section.

9.4 Managing the Circumstances Resulting from Rationed Care

Research into how nursing leaders can support the nursing workforce within cost constraint budgets is important. This section explores some of the ideas and concepts that may assist in supporting nurses working in cost-constrained environments. Nurses are the largest group within a health-care workforce, yet they are the least heard [41]. Nurse managers need to become change agents and leaders of care delivery reform. Urgent research is required to fully understand the position of nursing managers and their response to missed nursing care within what can only be an untenable position that they find themselves in so that we as a profession can better equip them in leading change.

Some researchers suggest that education remains the key to making changes, targeting our future nurses in developing leadership skills [42]. Although this is a good idea, there is enough information to suggest that the less experienced nurses' views are not considered in the health-care system, and a significant number leave because of the inherent bullying culture [43]. Other authors [42] advocate for building the capacity for strong leadership so that leadership later in life is not an "add-on" (p. 78). Clinical coaching is also encouraged in many organizations where managers encourage evidence-based practice and role modelling of best practice [44]. The key to all of these strategies is for managers of nursing to be adaptive and responsive to change, and to create a team that works together to face problems such as care being missed, looking for ways to overcome the issues through a problem-based approach [45]. Nurse managers need to understand what data to collect that enable them to provide sufficient evidence to argue the nursing shortages.

9.5 Building a Good Practice Guide for Nurse Managers, Regarding the Promotion of Patient Safety Through Minimizing Missed Nursing Care

The development of a guide for nurse managers was identified as a Working Group task in the RANCARE Memorandum of Understanding [46]. The primary goal of developing the guide was to assist nurse managers and other senior nurses delegated to manage staffing, in selecting the best management strategies to mitigate the effects of nursing care rationing.

The guide has the following objectives:

1. To stimulate awareness among nurse managers about patient safety, missed care, and its impacts.
2. To provide a framework for reducing episodes of missed care which includes a set of indicators.
3. To stimulate ideas and priorities for quality improvement and research.

The guide aims to be a challenging and inspiring document, but ultimately to be a realistic and practical instrument for nurse managers in all settings and across all health services.

It is anticipated that the guide will facilitate appropriate and accurate decision-making of nurse managers in minimizing the extent of missed care to encourage patient safety in daily practice. The guide is addressed for national nursing associations, regulatory bodies on nursing and health, nurse managers at different levels, nurses, and other health professionals, hospital managers, quality assurance, and audit departments, finally for nurse educators, students, and even patients. The document provides some orientations related to organizational policies that may help prevent or minimize missed care events within their authority. The recommendations provided include information on staffing levels and skill mix, audit, and quality measurement tools, and education and training interventions.

This guide also provides ideas and suggestions that will assist nurses in leadership and management positions in gathering data that supports the development of policies and other interventions that ultimately will allow nurses to make informed and effective decisions when faced with challenges or shortages in the workplace. The guide is purposely not prescriptive because it allows for the application of principals to varying nursing contexts.

9.5.1 Information Informing the Guide

As a legal and normative foundation for the guide, the research team adopted World Health Organization (WHO) recommendation and guides. One of the WHO's functions is to articulate ethical and evidence-based health policy options in Member States. Thus, the representation of different countries in the development of the WHO documents and recommendations respond to the international vision of this guideline.

In 2004 the WHO created the "World Alliance for patient safety" [47], for the purpose of promoting and developing international evidence-based actions, tools, and recommendations to improve patient safety and promote a culture of safety within health-care organizations. Safety was considered as a fundamental principle of patient care in all health systems, and a critical component of quality management. In this context, different strategies were developed to enhance patient safety involving performance improvement, environmental safety and risk management. To reach this improvement, patient safety was considered as a complex and multifactorial concept where all actors and health disciplines were included. According with this, three complementary actions were described to enhance safety of the patient: 1—preventing adverse events, 2—making these events visible, and 3—mitigating the effects of these events when they occur. With the acceptance of these concepts and strategy, the WHO publications try to guide all Member States in their commitment to achieve a safe, sustainable, and high-quality health-care system. These actions and the characteristics of the concept have been considered in this guideline in three different stages: patient outcomes, nurse outcomes, and organizational outcomes, to include in it all actors and levels of care. In this way, the identification and prevention of Missed care, as a concept related to quality care and patient safety, will be aligned to WHO strategies.

9.5.2 The Guide's Structure

For the structural development of the guide, a modified model of quality assurance in health care was used. Avedis Donabedian [48] suggested three approaches to assessing performance: *structure, process*, and *outcome*. Structure determines the conditions under which care is provided (material and human resources, organizational characteristics). Process is taken to mean the activities that constitute health

care and usually carried out by health professionals. Outcome includes desirable and undesirable changes that can be attributed to health care. Structure, process, and outcome are attributed by *indicator/criterion* that is used to draw an inference about rationing. Each indicators/criterion corresponds to the concept of care rationing that it is intended to measure. Building on this approach, most countries now have quality assurance measures that address safety patients and staff, effectiveness in care, patient-centered care, timeliness of that care, efficiency from a material and human perspective, and equity in care [49]. The three-dimensional model helps nurse managers to decide what kinds of information are needed to pass a judgement on missed care, and how easily such information may be obtained. A combination of three approaches allows to obtain a more complete assessment of performance, helps to identify the causes of failure in care rationing and suggest what corrective measures should to be taken to improve the situation.

9.5.3 Process of Guide Development

The research team undertaking the work for developing the guide followed a logic model of information sharing and information gathering. The process used to develop the framework was as follows:

Feb 2017	**RANCARE Conference, Limassol, Cyprus** Presentation of an idea regarding the development of a guide for nurse managers to support them in their work to address the problem of missed care. This followed a discussion about the value of good leadership with regard to minimizing missed nursing care		
		RANCARE Working Group Meetings, Prague, Czech Republic The writing group representing WG4 was agreed upon—Prof. Raul Cordeiro (Portugal) and including Olga Riklikiene (Lithuania), Marcia Kirwan (Ireland), Cristóbal Rengel Diaz, and Maria Pilar Fuster (Spain) A review of the literature was commenced	**Oct 2017**
Jan 2018	**Meeting of the writing group, Barcelona, Spain** Proposed outline and structure for the guide Draft sections developed by group through first half of 2018	**RANCARE WG4 workshop, Malaga, Spain** The draft guide was presented to the working group and nurses from industry, with discussion from members of the workshop	**Sep 2018**

Oct 2018	**RANCARE Training School, Dublin, Ireland** The draft guide was presented and discussed with nurses and educators from university and industry attending the school	**RANCARE Management Committee and Core Group Meeting, Porto, Portugal** The guide was presented and ratified by RANCARE Management Committee	**Oct 2018**
Feb 2019	**RANCARE Local Workshop, Paphos, Cyprus (2019)** The updated guide was presented to academic and nursing representatives for discussion Development of a validation questionnaire given to professionals attending the workshop (n = 15)	**RANCARE Management Committee and Core Group Meeting, Verona, Italy (2018)** Final feedback and contributions from all members of RANCARE Feedback from external reviewers	**Oct 2019**
Mar 2020	**FINAL VERSION** Final version presented to RANCARE and published This document is available at RANCARE website https://www.rancare-action.eu/—isbn:978-9955-15-648-2; eisbn:978-9955-15-647-5		

9.6 Conclusion

This chapter provided an introduction to the importance of nursing leaders in supporting a nursing workforce in constrained environments. It provided some ideas for nursing leaders to use when planning strategies to support nurses. More research is needed into how nursing leaders can change the way in which nursing work is conducted. It is hoped that this chapter encourages thought for further research and change.

References

1. Finkelman A. Leadership and management in nursing. Prentice Hall: Pearson; 2006. isbn:0-13-113869-3.
2. Vanvactor JD. Collaborative leadership model in the management of health care. J Bus Res. 2012;65(4):555–61. https://doi.org/10.1016/j.jbusres.2011.02.021.
3. Porter-O'Grady T, Malloch K. Managing for success in health care. St Louis: Mosby; 2007.
4. Baxter P, Cleghorn L, Alvarado K, Cummings G, Kennedy D, McKey C, Pfaff K. Quality-based procedures in Ontario: exploring health-care leaders' responses. J Nurs Manag. 2016;24(1):50–8. https://doi.org/10.1111/jonm.12271.
5. Australian Commission on Safety and Quality in Health Care. National model clinical governance framework. Sydney: ACSQHC; 2017.
6. International Council of Nurses. Scope of nursing practice. 2013. https://www.icn.ch/sites/default/files/inline-files/B07_Scope_Nsg_Practice.pdf.

7. Francis R. Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry; Executive summary. London. 2013. http://www.midstaffspublicinquiry.com/sites/default/files/report/Executive%20summary.pdf.
8. Brennan NM, Flynn MA. Differentiating clinical governance, clinical management and clinical practice. Clin Govern. 2013;18(2):114–31. https://doi.org/10.1108/14777271311317909.
9. Cox C. Legal responsibility and accountability. Nurs Manag. 2010;17(3):18–20. http://search.proquest.com/docview/365382287?accountid=10910.
10. Papastavrou E, Andreou P, Tsanari H, Merkouris A. Linking patient satisfaction with nursing care: the case of care rationing—a correlational study. BMC Nurs. 2014;13:26. https://doi.org/10.1186/1472-6955-13-26.
11. Schubert M, Glass TR, Clarke SP, Aiken LH, Schaffert-Witvliet B, Sloane DM, De Geest S. Rationing of nursing care and its relationship to patient outcomes: the Swiss extension of the international hospital outcomes study. Int J Qual Health Care. 2008;20(4):227–37. https://doi.org/10.1093/intqhc/mzn017.
12. Suhonen R, Stolt M, Habermann M, Hjaltadottir I, Vryonides S, Tonnessen S, et al. Ethical elements in priority setting in nursing care: a scoping review. Int J Nurs Stud. 2018;88:25–42. https://doi.org/10.1016/j.ijnurstu.2018.08.006.
13. Willis E, Harvey C, Thompson S, Pearson M, Meyer A. Work intensification and quality assurance: missed nursing care. J Nurs Care Qual. 2018;33(2):E10–6. https://doi.org/10.1097/NCQ.0000000000000277.
14. Willis E, Henderson J, Hamilton P, Toffoli L, Blackman I, Couzner L, Verrall C. Work intensification as missed care. Labour Industry. 2015;25(2):118–33. https://doi.org/10.1080/10301763.2015.1060811.
15. Bail K, Grealish L. 'Failure to maintain': a theoretical proposition for a new quality indicator of nurse care rationing for complex older people in hospital. Int J Nurs Stud. 2016;63:146–61. https://doi.org/10.1016/j.ijnurstu.2016.08.001.
16. Ball JE, Bruyneel L, Aiken LH, Sermeus W, Sloane DM, Rafferty AM, et al. Post-operative mortality, missed care and nurse staffing in nine countries: a cross-sectional study. Int J Nurs Stud. 2018;78:10–5. https://doi.org/10.1016/j.ijnurstu.2017.08.004.
17. Griffiths P, Recio-Saucedo A, Dall'Ora C, Briggs J, Maruotti A, Meredith P, et al. The association between nurse staffing and omissions in nursing care: a systematic review. J Adv Nurs. 2018;74(7):1474–87. https://doi.org/10.1111/jan.13564.
18. Fitriyanti P, Basilius Yosepfus W, Febrina Secsaria H, Heryyanoor H. The role of the nurse unit manager function on nursing work performance: a systematic review. J Ners (Surabaya). 2020;14(3):231–5. https://doi.org/10.20473/jn.v14i3.17108.
19. Harvey C, Willis E, Henderson J, Verrall C, Blackman I, Abery L, Toffoli L. Priced to care: factors underpinning missed care. J Ind Relat. 2016;58(4):510–26. https://doi.org/10.1177/0022185616638096.
20. Ljungblom M. Ethics and lean management—a paradox? Int J Qual Serv Sci. 2014;6(2/3):191–202. https://doi.org/10.1108/IJQSS-02-2014-0009.
21. Newman S, Lawler J. Managing health care under new public management: a Sisyphean challenge for nursing. J Sociol. 2009;45(4):419–32. https://doi.org/10.1177/1440783309346477.
22. Orrock M, Lawler J. The fractured self: deconstruction of role identity as a consequence of health care reform. Int J Interdiscip Soc Sci. 2008;3(7):25–30.
23. Harvey C, Thompson S, Otis E, Willis E. Nurses' views on workload, care rationing and work environments. J Nurs Manag. 2020;28(4):912–8. https://doi.org/10.1111/jonm.13019.
24. Badolamenti S, Sili A, Caruso R, Fidafida R. What do we know about emotional labour in nursing? A narrative review. Br J Nurs. 2017;26(1):48–55. https://doi.org/10.12968/bjon.2017.26.1.48.
25. White EM, Aiken LH, McHugh MD. Registered nurse burnout, job dissatisfaction, and missed care in nursing homes. J Am Geriatr Soc. 2019;67(10):2065–71. https://doi.org/10.1111/jgs.16051.

26. Bolton S. Who cares? Offering emotion work as a 'gift' in the nursing labour process. J Adv Nurs. 2000;32(3):580–6. https://doi.org/10.1046/j.1365-2648.2000.01516.x; https://doi.org/10.1046/j.1365-2648.2000.01516.x.
27. Gordon S. Nursing against all odds. New York: Cornell University Press; 2005.
28. Harvey C, Thompson S, Pearson M, Willis E, Toffoli L. Missed nursing care as an 'art form': the contradictions of nurses as carers. Nurs Inq. 2017;24(3). https://doi.org/10.1111/nin.12180.
29. Keene E, Hutton N, Hall B, Rushton C. Bereavement debriefing sessions: an intervention to support health care professionals in managing their grief after the death of a patient. Pediatr Nurs. 2010;36(4):185–9.
30. Jones TL, Hamilton P, Murry N. Unfinished nursing care, missed care, and implicitly rationed care: state of the science review. Int J Nurs Stud. 2015;52(6):1121–37. https://doi.org/10.1016/j.ijnurstu.2015.02.012.
31. Rees CS, Breen LJ, Cusack L, Hegney D. Understanding individual resilience in the workplace: the international collaboration of workforce resilience (ICWR) model. Front Psychol. 2015;6:73. https://doi.org/10.3389/fpsyg.2015.00073.
32. Yeatts DE, Seckin G, Shen Y, Thompson M, Auden D, Cready CM. Burnout among direct-care workers in nursing homes: influences of organisational, workplace, interpersonal and personal characteristics. J Clin Nurs. 2018;27(19–20):3652–65. https://doi.org/10.1111/jocn.14267.
33. de Vries J, Timmins F. Care erosion in hospitals: problems in reflective nursing practice and the role of cognitive dissonance. Nurse Educ Today. 2016;38:5.
34. Woodhead EL, Northrop L, Edelstein B. Stress, social support, and burnout among long-term care nursing staff. J Appl Gerontol. 2016;35(1):84–105. https://doi.org/10.1177/0733464814542465.
35. Festinger L. A theory of cognitive dissonance. Evanston: Row Peterson; 1957.
36. Blackman I, Lye CY, Darmawan IGN, Henderson J, Giles T, Willis E, et al. Modeling missed care: implications for evidence-based practice. Worldviews Evid-Based Nurs. 2018;15(3):178–88. https://doi.org/10.1111/wvn.12285.
37. Kalisch B, Tschanen D, Lee H. Does missed nursing care predict job satisfaction? J Healthc Manag. 2011;56(2):117. https://doi.org/10.1097/00115514-201103000-00007.
38. Cooke H. Seagull management and the control of nursing work. Work Employ Soc. 2006;20(2):223–43.
39. Hegney D, Rees C, Osseiran-Moisson R, Eley L, Winsor C, Harvey C. Perceptions of nursing workloads and contributing factors, and their impact on implicit care rationing: a Queensland, Australia study. J Nurs Manag. 2019;27(2):371–80. https://doi.org/10.1111/jonm.12693.
40. Delgado C, Upton D, Ranse K, Furness T, Foster K. Nurses' resilience and the emotional labour of nursing work: an integrative review of empirical literature. Int J Nurs Stud. 2017;70:71.
41. Strech S, Wyatt DA. Partnering to Lead change: nurses' role in the redesign of health care. AORN J. 2013;98(3):260–6. https://doi.org/10.1016/j.aorn.2013.07.006.
42. Paterson K, Henderson A, Trivella A. Educating for leadership: a programme designed to build a responsive health care culture. J Nurs Manag. 2010;18(1):78–83. https://doi.org/10.1111/j.1365-2834.2009.01065.x.
43. Vie TL, Glasø L, Einarsen S. Health outcomes and self-labeling as a victim of workplace bullying. J Psychosom Res. 2011;70(1):37–43. https://doi.org/10.1016/j.jpsychores.2010.06.007.
44. Andreasson J, Eriksson A, Dellve L. Health care managers' views on and approaches to implementing models for improving care processes. J Nurs Manag. 2016;24(2):219. https://doi.org/10.1111/jonm.12303.
45. Kendall-Gallagher D, Breslin E. Developing DNP students as adaptive leaders: a key strategy in transforming health care. J Prof Nurs. 2013;29(5):259–63. https://doi.org/10.1016/j.profnurs.2013.06.009.
46. Papastavrou E. Rationing-missed nursing care: an international and multidimensional problem (RANCARE) COST Acton CA15208. Brussels: European Cooperation in Science and Technology; 2016.
47. World Health Organization. World alliance for patient safety. 2004. https://www.who.int/patientsafety/worldalliance/en/.

48. Donabedian A. Introduction to quality assurance in health care. Cary: Oxford University Press; 2002.
49. de Jonge V, Nicolaas JS, van Leerdam ME, Kuipers EJ. Overview of the quality assurance movement in health care. Baillière's best practice & research. Clin Gastroenterol. 2011;25(3):337–47. https://doi.org/10.1016/j.bpg.2011.05.001.

Synergies During the RANCARE Project: Opportunities for Networking and Establishment of Collaborations

10

Georgios Efstathiou and Evridiki Papastavrou

10.1 Introduction

Networking and collaborations are fundamental when researching issues in health. This is even more important when dealing with topics that have not been examined widely, and there is limited knowledge on their context. Such collaborations bring close researchers, scholars, academicians, policy makers, and other influential people to join forces in investigating. Although missed nursing care had been studied worldwide, prior to RANCARE there was no attempt to explore its content from different angles systematically and in a unite manner. Therefore, RANCARE provided the opportunity, mainly to nurses and also to other professionals with particular interest on the topic, to meet and discuss on the phenomenon of missed nursing care. It provided the chance for establishing new collaborations and networks, working closely on achieving the objectives on RANCARE. Many of these collaborations already working on specific areas of the Action will remain active in the future. This chapter describes the experience and the benefits from an important tool of the COST association, the Short-Term Scientific Missions (STSM), as well as the research collaborations established during RANCARE. The structure of the chapter is based on the thematic outline of the aims of the RANCARE Action, and describes the collaborations, the synergies, the partnerships, and the relationships that have been developed during the RANCARE. Some of them have led to the creation of strong coalitions and the submission of new proposals at a local or European level that have contributed to the sustainability of the Action.

G. Efstathiou (✉)
Nursing Services, Ministry of Health, Nicosia, Cyprus
e-mail: george.efstathiou@cytanet.com.cy

E. Papastavrou
Department of Nursing, Cyprus University of Technology, Limassol, Cyprus

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6_10

10.2 Short-Term Scientific Missions (STSM)

A very popular and successful scheme within COST Actions, which meets the aim of promoting collaborations and synergies, as well as developing new researchers in the area, is the STSM. They provide the opportunity to Early Career Investigators (ECI), PhD students, and other professionals, to visit institutions in various countries for exchange of knowledge, working together with experienced researchers, academics, clinicians, and experts in the field [1]. Following a specific process, based on explicit selection criteria, successful applicants for an STSM may pursue an STSM of a minimum duration of 5 days, with a financial contribution against total expenses from the Action's budget. Upon completion of the STSM, a scientific report on the outcomes of the meeting must be applied for consideration to the Management Committee of the Action.

The Management Committee of RANCARE, during Grant Periods 2, 3, and 4, received many applications for financing an STSM. In total, 25 individuals from various European countries were approved and financially supported for an STSM. Many of them were ECI and PhD students, allowing them to meet and collaborate with important and highly prestigious researchers across Europe, offering them the opportunity to gain important experience during their early stages of research career. Many of the hosts of the approved STSM were also members of the RANCARE consortium. In addition, researchers not directly involved with the consortium, but with considerable experience related to RANCARE's objectives, served as hosts of an STSM.

As the topic examined by RANCARE (missed nursing care) is of considerable interest involving patient safety, not only across Europe but also across the world, the STSM took place in many different European countries and in the United States of America. Although all STSM were relevant to the main objectives of RANCARE, they additionally considered missed nursing care from different angles, covering the methodological, ethical, managerial, conceptual, and educational dimensions of the problem. Everyday nursing care was seen from various perspectives, i.e., infection control, safe staffing, as factors that may contribute to missed nursing care. In many cases, following the missions, problem-solving solutions were suggested and implemented.

10.2.1 Research Methodological Approaches on Understanding the Conceptual Dimensions of Missed Nursing Care

As the concept and dimensions of missed nursing care were not clear during the initial phase of RANCARE, an attempt was made through STSM to understand the underpinning content of the phenomenon. In addition, as various terms were used to describe the same phenomenon, but not always having the same content and meaning, attempts were made to explore the different meaning and interpretations in the various languages and cultures of the participating countries and to decide on a

single term that would capture the concept of missed nursing care and better explain its content.

As part of the attempt to address the issue of various terminologies, i.e., missed nursing care, rationing, omitted nursing care, a researcher from the Czech Republic visited Cyprus for a 5-day STSM at the Department of Nursing, Cyprus University of Technology. During her stay in Cyprus, she had the chance to meet with academics, researchers, nurse educators, and also nurse managers both at ministerial and at hospital level. In all meetings, she had fruitful discussions on how research, management, training, and audit can be part of the attempt of RANCARE to address the problem of missed nursing care. In addition, during the mission, two research protocols were prepared one to be used in large-scale surveys across Europe on cross-cultural understanding of the meaning, the concept and terminology of rationing of nursing care by employing both quantitative and qualitative techniques, and a second one to explore missed nursing care within the Central European countries. As described in the researcher's scientific report, collaborations with researchers of the Cyprus University of Technology were established.

An ECI from Greece pursued an STSM at the Department of Nursing, Cyprus University of Technology, aiming to enhance the understanding of the concept of missed nursing care. Through expanding research on the topic (either via literature review or discussion with nursing students and academics), the investigator increased his knowledge on missed nursing care, acknowledging that the concept was still vague and under-studied. Since the investigators main interest was the phenomenon of missed nursing care from the ethical and the philosophical point of view, the concept was studied under this focus. As acknowledged by the investigator himself, this STSM has led to networking purities with academics of the Cyprus University of Technology, with further expansion of opportunities for collaboration. Furthermore, the outcome of this STSM was the writing and submitting of a proposal for funding in the EU, with the subject focusing on developing the "morally competent nurses" and with the collaboration of Cyprus, Greece, Finland, the United Kingdom, and Estonia.

An additional researcher from Slovakia performed an STSM at the University of Turku in Finland. The aim of this mission was the application of a tool in the assessment of the phenomenon of missed nursing care in addition to studying its conceptual framework. With the collaboration of the STSM host, the investigator performed a literature review on the phenomenon of missed nursing care (as part of her PhD thesis) and had fruitful discussions with members of the academic staff of the University. She was also able to give some lectures on the phenomenon of missed care and attend research courses. The preparation of scientific papers (literature review, missed care related to the elderly) also started during her visit in Finland, later published in scientific journals.

Following the above successful STSM, the same investigator from Slovakia was approved for a second grant for an STSM, hosted in Dublin City University, in Ireland. This STSM also had as main scope the investigation of the phenomenon of missed nursing care and, in addition, its implications on patient outcome, i.e.,

adverse events. The investigator had the chance to visit hospitals and discuss the phenomenon of missed nursing care with clinicians as well as academics. She described this experience as very fruitful and successful as she had the chance to have a more in-depth understanding of the phenomenon and become familiar with how this is addressed in another country. Research papers were also prepared during this mission, and collaboration for future studies was established.

To further understand the phenomenon of missed nursing care and to better understand the findings of her PhD study, an Italian PhD student visited the Virginia Commonwealth University, in the United States of America. As the USA already had a long, well-established tradition on addressing issues that could jeopardize patient safety and satisfaction (especially in Magnet hospitals), this STSM was a great opportunity for the student to observe on how her colleagues dealt with the phenomenon of missed nursing care. She had fruitful discussions with experts on missed nursing care, allowing her to have a more in-depth interpretation of the findings of her qualitative study. She concluded on themes, reflecting the context in which nurses need to set priorities, the system that guides them to set priorities and the strategies nurses use to cope their time to minimize missed nursing care. An exchange of visit was also established to have a seminar program in Italy.

As leadership is considered crucial, a Polish researcher was allocated a grant to pursue an STSM at the Maastricht University, in the Netherlands. The main scope of this STSM was to examine how efficient leadership may address the phenomenon of missed nursing care. In addition, it examined what teaching methods could be implemented to introduce leadership competences in nursing. Many factors were recognized as contributing to missed nursing care, i.e., shortage of nurses, aging of nurses, job dissatisfaction burnout. The STSM also led to the identification of tools that measure leadership, especially in Nursing, and suggested ways of teaching leadership in Nursing as part of making managers capable of understanding their role. It was anticipated that effective leadership will lead to effective management of resources available, leading to less missed nursing care.

Management, seen from a different perspective, was the subject of a Cypriot PhD student. This STSM's topic, which took place at the University of Eastern Finland, in Finland, was errors during the administration of medication. During his mission, the researcher collaborated with academics of the Faculty of Health Sciences of the University to address medication safety and how could medication errors, on behalf of nurses, be prevented. Following discussion with the hosts of the STSM, the observational method was chosen as a means for pursuing a study in Cyprus to examine the relationship between missed nursing care and medication errors and which factors may contribute on this. The investigator had also the chance to visit an Information and Technology Company, where he became familiar with a virtual reality educational program on avoiding medication errors and to attend research methodology seminars at the University. As acknowledged by the researcher himself, he was able to establish a network of collaborators sharing common research interests and become familiar with tools that detect medication errors and methods of collecting data on medication errors in hospitals, all of which would assist him during his own study.

As research is fundamental part of any science, a Cypriot PhD candidate was financed for an STSM at the University of Turku, in Finland. The topic of her PhD program was on missed nursing care; therefore, she had the chance to tailor this visit to allow her to develop her research skills in relation to the phenomenon.

To further adapt a research instrument on missed nursing care, a Turkish researcher pursued an STSM in ZHAW School of Health Professions of Nursing, in Switzerland. More specifically, the researcher discussed with colleagues in Switzerland on data collection and analysis and interpretation of the findings as well as on the preparation of a research paper. She also had the opportunity to become familiar with teaching methods related to nursing and to establish collaboration for future research on missed nursing care.

To further elaborate on missed nursing care, a Cypriot ECI visited the University of Udine, in Italy. This STSM included a systematic review on the antecedents of the missed nursing care, development of an interview guide to be used on a study among nurse managers regarding missed nursing care and the development of a path analysis to determine the strength of relationship of various factors and their outcome. She was also able to give a lecture on the findings and the implications of her PhD work and to visit a ward simulator at the University Hospital of Udine where she discussed the benefits of simulations to both students and clinical nurses. Finally, collaborations with Italian researchers were established by further working on data from other projects and cooperating in an Erasmus+ program on nurse managers.

10.2.2 Managerial Approaches—Leadership Interventions

Nurse managers, especially at ward level, often need to take decision on how to allocate resources. These resources like nurses, equipment, or medication may not be of sufficient numbers or quantities, leading to the need of hard decisions, prioritization of interventions, and leaving certain tasks left undone. On the other hand, although resources may be sufficient in terms of quality and quantity, insufficient managerial skill may also lead to missed care. Several STSM applications were relevant to the managerial aspect of missed nursing care, to facilitate decision-making and assist nurse managers to address this phenomenon.

The examination of the factors influencing the phenomenon of missed care was the topic of an STSM pursued at the College of Health-care Professions Claudiana in Bozen, in Italy, by a researcher from Switzerland. More specifically, the researcher collaborated with the host academician, to identify the system and human factors that may contribute to missed care in addition to examining interventions that would allow to prevent missed care.

Guidelines that may assist nurse managers in their daily practice and managerial duties are important. The development of such guidelines and manuals requires extensive literature review and collaboration across institutions and countries, to gain a more in-depth idea of the different working environments. Therefore, a researcher from Portugal was allocated a grant to visit Cyprus University of

Technology, Department of Nursing, for a 5-day STSM. The scope of the mission was to discuss patient safety related to missed nursing care in addition to developing good practice guidelines for nurse managers. During the mission, a literature review was initiated, and a validation tool for the guidelines was developed. Furthermore, a workshop was held to test the above tool and to provide material for adding to the tool. As indicated by the researcher, further test of the tool would be applied in four other European countries through local nursing associations.

Sufficient staffing of hospitals with nurses has been shown to decrease missed nursing care and enhance patient safety and patient satisfaction. As Cyprus was at that time, in the beginning of reforming its health-care system, a manager working at the nursing services of the Ministry of Health (MoH) of Cyprus was approved to pursue an STSM at the University College Cork, in Ireland, and collaborate with a researcher who specialized in safe staffing. In addition to safe staffing, skill mix and audit were also considered as factors that could address the phenomenon of missed nursing care. During the mission, the Cypriot manager had fruitful discussions with members of the academic staff of the University, having also the opportunity to visit and discuss with the Chief Nursing Officer of Ireland. This STSM was described by the Cypriot manager as successful one as she had the opportunity to transfer new practices and recommendations back to her country in addition to establishing collaboration between the two institutions. This is important because the Cypriot manager works at the policy-making organization (MoH), and the knowledge and experience gained as well as the collaboration with Ireland facilitated the development of new strategies related to safe staffing and work allocation systems.

Missed nursing care may lead to several adverse events, one of which are the heath-care-associated infections. As several nursing interventions (for example, proper hand hygiene or use of personal protective equipment) may be omitted or influenced due to several factors, i.e., insufficient staffing or lack of resources, infections may be transmitted from one patient to another or from nurses to patients and vice versa. The exploration of missed care related to infection control was the topic of the STSM of a Greek researcher, carried out at the Katholieke Universiteit Leuven, in Belgium. This STSM took place during the initial phase of the COVID-19 pandemic, making it for the Greek researcher even more interesting and challenging, as she was able to examine the phenomenon of missed nursing care related to infection control during very difficult and demanding circumstances. She was able to participate in the decision-making process on how the infection control-related problems that occurred, i.e., missed care due to shortage of personal protective equipment (PPE) or insufficient knowledge on SARS-CoV-2, could be addressed. She participated in educational courses on COVID-19 regarding PPE and hand hygiene in addition to establishing future collaboration with the above university.

As policy makers are crucial in establishing a successful health-care system, a visit of a Portuguese researcher to the European Nursing Research Foundation (ENRF) in Belgium, through an STSM, was approved. The aim of this mission was to engage with policymakers and make awareness about missed nursing care as well as its impact. The researcher had the chance to meet with stakeholders, Members of

the European Parliament, and survey them in relation to missed nursing care. As a result, a draft of a policy paper, outlining the phenomenon of missed nursing care, was prepared, finalized later. The ENRF expressed a strong wish to continue collaborating on the topic as it believed that it dealt with a very important aspect of nursing care.

10.2.3 Education

Nursing students may come across with missed nursing care during their clinical placements in health-care settings. They may find themselves between the so-called gap of theory and practice as they realize that clinical settings may differ from what they had been taught in classrooms. Therefore, bridging this gap early in their studies is essential, to allow them to become familiar with real world and also to address and overcome missed nursing care. This is also important for nursing staff, already working in clinical settings as it may allow them to understand missed nursing care and how to deal with it.

As part of an STSM, a researcher from Spain visited the University of Plymouth in the United Kingdom. The aim of this mission was to develop an international set of competences and education resources for advanced level critical care nurses. More specifically, the researcher attended different simulations carried out in Royal Devon and Exeter Hospital's simulation center. These simulations are held to identify safety issues regarding patients, related, among others, to missed interventions; suggestions are then made to avoid such occurrences from happening in real settings. Simulation, as described by the researcher, allow to understand what may go wrong and make alterations in clinical practice. The researcher had the chance to make new contacts with the University as well as with the hospital and start a systematic review on simulations related to missed nursing care.

A similar mission was carried out by a Lithuanian ECI at the University of Oulu, in Finland. In this mission, the investigator participated in simulation scenarios to understand how to monitor vital signs functions and how to evaluate real-life scenarios of different situations, i.e., trauma. The main scope was to discuss with colleagues in Finland on how simulation can be used as teaching technique for nursing students and how they can advance patient safety competences by overcoming missed nursing care. In addition, the investigator had the chance to develop research skills and transfer the new knowledge gained back to Lithuania.

Like the above STSM, a Croatian researcher visited the University of Turku, in Finland, to pursue a two parts project: research and educational oriented. The researcher had the chance to discuss with experienced researchers of the University and to develop his research and teaching skills. He was also able to broaden his research network and to start the preparation of a literature review on moral injury and how this may affect nurses' decision to leave the profession and the provision of nursing care.

Palliative care was the topic of an STSM, performed by a Greek professor at The Royal Marsden NHS Foundation Trust, in the United Kingdom. The aim of this

STSM was to allow the Greek researcher to gain access to instruments, data, and methods on palliative care, not available in Greece and also to discuss on future research collaborations. She was able to attend on meetings with colleagues, meet clinical nurse specialists, and attend educational sessions. The researcher described this mission as fruitful and interesting since she had the opportunity to gain a more in-depth knowledge and understanding on how the phenomenon of missed nursing care may affect cancer patients. She described this STSM as an opportunity to feed the ground of palliative care strategy development in Greece.

A further STSM on education was carried out at the Polytechnic Institute of Portalegre, in Portugal, by a Turkish researcher. The aim of this STSM was to address the absence of enough coverage of the topic of missed nursing care within nursing curricula. During the visit, the researcher made contacts with the host academician as well as clinical nurses, discussing the phenomenon of missed nursing care related to nursing education. She also gave lectures on the health-care system in Turkey and pursued research on missed nursing care.

Communication is seen as fundamental part of nurses' performance. Effective communication enhances patient satisfaction and also minimizes errors and increases nurses' satisfaction. To address this, a Polish investigator was approved to pursue an STSM in the University of Murcia, in Spain. The constraints of efficient communications were examined, leading to suggestions on how to improve communication, starting from the nursing curriculum of nursing schools and also in clinical settings.

10.2.4 Ethical Aspects of Missed Nursing Care

Missed nursing care is also explored from its ethical point of view as it deals with human and patient rights, dignity, and autonomy as well as clinical judgment. Organizations, health-care professionals, and families need to take decisions on how to allocate resources, especially in the era of limitations, i.e., during the pandemic COVID-19 era. Nurses find themselves in the middle of having to struggle to provide nursing care with limited resources, of having to decide what level of care can be provided, prioritized, and, even worse, decided on who gets nursing care and who does not.

A 9-day STSM at the University of Turku, in Finland, of a Croatian researcher focused on the ethical perspectives of the patient regarding missed nursing care. In collaboration with the host academicians, the researcher worked on preparing a manuscript focusing on ethics in relation to missed nursing care giving emphasis on patients' rights. Collaboration between the home and host institutions were also established through this STSM.

A further 5-day STSM explored the issue of the use of robots as a solution to the phenomenon of lack of resources and qualified nurses and to the problem of cost containment in health care. In addition, this STSM addressed the challenge of task shifting from higher paid and better qualified to lower paid and less qualified staff as a challenge to optimize the use of health-care resources. During this STSM, an

Irish investigator collaborated with experts at the University of Tiburg, in the Netherlands, to explore the above, considering any ethical concerns as well. During the mission, the investigator has numerous discussions and progressed on planning two manuscripts. The investigator noted that this STSM was an opportunity for further collaboration and exchange of visits between institutions.

10.3 Research Collaborations/Studies on Missed Nursing Care

The RANCARE project gave the opportunity to a large number of researchers from various countries worldwide, to meet and establish collaborations. The phenomenon of missed nursing care was seen from different angles, covering a great number of factors that contribute to its occurrence, prevention, or minimizing.

Patients, the recipients of nursing care, are often the "victims" of the phenomenon of missed nursing care. To understand the patient's perspective to missed nursing care, researchers from Finland and Croatia collaborated in performing a scoping review of the literature [2]. The findings of the review revealed, from the patients' point of view, aspects of nursing care missed, for example, basic care as communication as well as a clear association between patient-reported adverse events and sufficient staffing. The review concluded that patients are capable of identifying missed nursing care. In addition, Australian investigators studied the types and frequencies of missed nursing care in the Australian residential aged care sector [3], indicating that the phenomenon may affect people's life potential or distress relieving, and this phenomenon can be quantified and measured. Another study conducted by researchers from the Slovak Republic, Finland, and the Czech Republic evaluated the psychometric properties of the Perceived Implicit Rationing of Nursing Care (PIRNCA) instrument in addition to measuring the level of missed nursing care in hospital in the Slovak Republic [4]. As this was the first study on missed nursing care ever carried out in the Slovak Republic, a base for further studies to explore the phenomenon within different settings was established. The Slovakian version of PIRNCA instrument was found to be valid and reliable. Similarly, a study conducted in Cyprus, Australia, and Italy [5] measured nurses' beliefs about missed nursing care additionally to measuring its frequency of occurrence and making cross-country comparisons. Their findings demonstrated the existence of predictors on missed nursing care frequencies, suggesting they can be utilized to better understand the phenomenon from different contexts, i.e., policy and practice.

Allocation of resources was the topic of a team of collaborators from Ireland, Australia, Finland, Germany, Norway, Denmark, and Cyprus who published a discussion paper on the allocation of resources [6]. As the ethical context of missed nursing care was unexplored, the topic of this paper was to examine the source of allocation with health-care context, from the ethical point of view, as ethics may influence on how nurses prioritize their interventions, leading to missed nursing care. Similarly, a large group of investigators from Finland, Germany, Iceland, Cyprus, Norway, Australia, and Ireland collaborated to the ethical components of

the prioritization in care as well as its consequences [7]. From this perspective, the investigators concluded that making priorities seem to cause difficulties to nurses, suggesting measures regarding education and support for them and further study of the underlying factors regarding the occurrence of missed nursing care. Another study, carried out by Irish, Lithuanian, Polish, and Spanish researchers [8], investigated the inclusion of the patient safety topic within the nursing teaching curriculum in nursing departments/schools, across 27 European countries, concluding that this aspect is not well taught to nursing students especially due to lack of European Union guidelines on how this should be taught. From the macroeconomics and microeconomic perspective of the phenomenon of missed nursing care related to justice, researchers from Cyprus and Greece examined the impact of the health resources allocation decision [9, 10]. The study especially concentrated on the nurses as they have a unique role within the health-care systems, and they form the largest group among health-care professionals. They concluded that a number of allocation criteria exist, which influence nurses and sometimes cause conflicts among them as they make come against moral and personal beliefs. They suggested further exploration to address this and assist nurses on decision-making. Additionally, scholars from the United States of America, Australia, Portugal, and Israel [11] concluded that the phenomenon of missed care is a transdisciplinary issue and that a strategy that would include all those concerned would be advisable to be implemented. They also suggested that a better understanding of the structure of a health-care system and its interactions within in should also be taken into account when trying to address missed nursing care [12].

Policy makers need to address the phenomenon of missed nursing care as it is fundamental for patient safety. To explore the existence of policy documents regarding missed nursing care, researchers from Norway, Denmark, Iceland, Finland, Ireland, Sweden collaborated, searching relevant documents in their own countries [13]. The findings of the study revealed a scarcity of published policy documents on priorities of nursing care. The researchers suggested that policy papers, explicitly on the topic of missed nursing care, should be developed as they are important for patient safety. In an attempt to develop policies and actions regarding missed nursing care to address the phenomenon, researchers and collaborators from Italy, Cyprus, and Australia conducted a consensus development study in Italy [14]. As a result, the phenomenon was explained within the Italian nursing culture in addition to producing acceptable consensus statements that may be used to guide nurse managers and policy makers on implementing actions to prevent missed nursing care. Relevant to the previous study was another one, conducted by researchers from Australia, the Czech Republic, and Cyprus, in which an attempt to determine the different understandings of the various terms used to describe missed nursing care [15]. The findings from the analysis of a distribution of questionnaires to 26 countries revealed a congruence in the meaning and description of the term. However, it was acknowledged that the participants in the study were nurse researchers with good knowledge of the phenomenon, concluding that clinical or nurse managers may have different approaches or understanding. In a similar study, researchers from the Czech Republic, Israel, and Cyprus investigated how nursing experts and

experts from other health professions understand the term missed nursing care in addition to comparing this understanding at a cross-country level [16]. It was found that missed nursing care is understood differently across different countries and cultures, drawing the attention to researchers when interpreting the findings from different cultures but more importantly when attempting to implement interventions across countries. Other researchers from the Czech Republic, Croatia, Poland, Slovakia, and Cyprus attempted to compare missed nursing care in four European countries [17]. The findings of this cross-sectional study, in which the PIRNCA instrument was used, revealed a high prevalence of missed nursing care which was associated with the type of hospital and the quality of nursing care.

An important adverse event of missed nursing care is health care-associated infections. As inadequate staffing or heavy workload may negatively influence the implementation of precautions and guidelines related to infection control, i.e., missed hand hygiene, researchers from Lithuania and Australia collaborated to validate the Missed Nursing Care in Infection Prevention and Control Survey in the Lithuanian language, to be used in a study in Lithuania. In this context, the Lithuanian version, a 46-item research instrument, can be used by nurse managers (at ward or hospital level), to identify sources of missed care related to infection control and accordingly take appropriate corrective measures [18].

To examine the association between missed nursing care as a determinant of satisfaction with current position, researchers from Iceland, Australia, Turkey, and the United States of America carried out a research study among nurses in four countries [19]. Similarly, polish researchers [20] explored if job and life satisfaction are contributing factors to missed nursing care. Both concluded that the more satisfied from their job nurses are, the less the phenomenon of missed nursing care may appear. The attention of policy makers and ward managers was drawn as level of staffing, work experience, and strong personal competences play an important role in addressing missed nursing care.

10.4 Other Projects/Visits

As part of the collaborations established during the RANCARE project, partners of the consortium formed additional research teams to explore topic related to or affecting missed nursing care. The ERASMUS+ program Nurse Managers for Safety (NM4Safety) is an attempt of partners from Italy, Switzerland, Germany, and Cyprus to strengthen the knowledge and competences of nurse managers for a safe care environment by introducing an online platform and online teaching program (blended learning program). Additionally, other researchers received scholarships (e.g., from the Leventis foundation and the European Social Fund), to further pursue their studies and collaboration internationally. Furthermore, a group of researchers collaborated by forming consortiums leading to applications for grants from the Erasmus+ or Horizon programs. Although, some of these applications were not successful in receiving a grant, they further strengthened the collaborations among individuals, especially at an international level. Finally, a great number of

academicians participating in RANCARE received invitations to visit other universities and give lectures on the topic on missed nursing care, further expanding the collaboration among universities.

10.5 Conclusions

RANCARE has been the platform for the establishment of new collaborations, adding to the sustainability of the Action. Researchers, scholars, academicians, policy makers, nurse managers, and clinical nurses, unknown in many cases to each other before, met and discussed on the topic of missed nursing care. Through RANCARE, people worldwide collaborated in research projects and STSM, producing new knowledge in a way that was never done before. This exchange of knowledge and expertise has been fruitful on addressing the phenomenon of missed nursing care. It is expected that further studies will be carried out, and new findings and conclusions on missed nursing care will be available in the coming years as a result of the RANCARE project and the work of the partners who formed the consortium.

References

1. COST. Documents and guidelines. Brussels: COST; 2020. https://www.cost.eu/funding/how-to-get-funding/documents-and-guidelines/. Accessed 21 Aug 2020.
2. Gustafsson N, Leino-Kilpi H, Prga I, Suhonen R, Stolt M, RANCARE Consortium COST Action—CA15208. Missed care from the patient's perspective—a scoping review. Patient Prefer Adherence. 2020;25(14):383–400.
3. Blackman I, Henderson J, Weger K, Willis E. Causal links associated with missed residential aged care. J Nurs Manag. 2020;28(8):1909–17. https://doi.org/10.1111/jonm.12889.
4. Kalánková D, Suhonen R, Stolt M, Kurucová R, Katajisto J, Žiaková K, Gurková E. Psychometric testing of perceived implicit rationing of nursing care (PIRNCA). J Adv Nurs. 2020;76(6):1469–82.
5. Blackman I, Papastavrou E, Palese A, Vryonides S, Henderson J, Willis E. Predicting variations to missed nursing care: a three-nation comparison. J Nurs Manag. 2018;26(1):33–41.
6. Scott PA, Harvey C, Felzmann H, Suhonen R, Habermann M, Halvorsen K, Christiansen K, Toffoli L, Papastavrou E. Resource allocation and rationing in nursing care: a discussion paper. Nurs Ethics. 2019;26(5):1528–39.
7. Suhonen R, Stolt M, Habermann M, Hjaltadottir I, Vryonides S, Tonnessen S, Halvorsen K, Harvey C, Toffoli L, Scott PA, RANCARE Consortium COST Action—CA 15208. Ethical elements in priority setting in nursing care: a scoping review. Int J Nurs Pract. 2018;88:25–42.
8. Kirwan M, Riklikiene O, Gotlib J, Fuster P, Borta M. Regulation and current status of patient safety content in pre-registration nurse education in 27 countries: findings from the rationing—missed nursing care (RANCARE) COST action project. Nurse Educ Pract. 2019;37:132–40.
9. Igoumenidis M, Kiekkas P, Papastavrou E. The gap between macroeconomic and microeconomic health resources allocation decisions: the case of nurses. Nurs Philos. 2020;21(1):e12283.
10. Papastavrou E, Igoumenidis M, Lemonidou C. Equality as an ethical concept within the context of nursing care rationing. Nurs Philos. 2020;21(1):e12284.
11. Jones T, Willis E, Amorim-Lopes M, Drach-Zahavy A, RANCARE Consortium COST—CA 15208. Advancing the science of unfinished nursing care: exploring the benefits of

cross-disciplinary knowledge exchange, knowledge integration and transdisciplinarity. J Adv Nurs. 2019;75(4):905–17.
12. Jones T, Drach-Zahavy A, Amorim-Lopes M, Willis E. Systems, economics, and neoliberal politics: theories to understand missed nursing care. Nurs Health Sci. 2020;22:586–92. https://doi.org/10.1111/nhs.12700.
13. Tønnessen S, Christiansen K, Hjaltadóttir I, Leino-Kilpi H, Scott PA, Suhonen R, Öhlén J, Halvorsen K. Visibility of nursing in policy documents related to health care priorities. J Nurs Manag. 2020;28(8):2081–90. https://doi.org/10.1111/jonm.12977.
14. Palese A, Bassi E, Tommasini C, Vesca R, Di Falco A, De Lucia P, Mulloni G, Paoletti F, Rissolo R, Sist L, Sanson G, Guardini I, Bressan V, Mesaglio M, Papastavrou E, Blackman I. Developing policies and actions in response to missed nursing care: a consensus process. J Nurs Manag. 2019;27(7):1492–504.
15. Willis E, Zelenikova R, Bail K, Papastavrou E. The globalization of missed nursing care terminology. Int J Nurs Prac. 2020;27:e12859. https://doi.org/10.1111/ijn.12859.
16. Zeleníková R, Drach-Zahavy A, Gurková E, Papastavrou E, RANCARE Consortium COST. Understanding the concept of missed nursing care from a cross-cultural perspective. J Adv Nurs. 2019;75(11):2995–3005.
17. Zeleníková R, Gurková E, Friganovic A, Uchmanowicz I, Jarošová D, Žiaková K, Plevová I, Papastavrou E. Unfinished nursing care in four central European countries. J Nurs Manag. 2019;28(8):1888–900. https://doi.org/10.1111/jonm.12896.
18. Riklikiene O, Blackman I, Bendinskaite I, Henderson J, Willis E. Measuring the validity and reliability of the Lithuanian missed nursing care in infection prevention and control scales using Rasch analysis. J Nurs Manag. 2019;28:2025–35. https://doi.org/10.1111/jonm.12918.
19. Bragadóttir H, Burmeister EA, Terzioglu F, Kalisch BJ. The association of missed nursing care and determinants of satisfaction with current position for direct care nurses—an international study. J Nurs Manag. 2020;28(8):1851–60. https://doi.org/10.1111/jonm.13051.
20. Jaworski M, Iwanow L, Grochans E, Młynarska A, Gurowiec PJ, Uchmanowicz I, Gotlib J, Panczyk M. Optimistic thinking, satisfaction with life and job and nursing care rationing: multicentre study in Poland. J Nurs Manag. 2020;28(8):1948–59. https://doi.org/10.1111/jonm.12974.

Conclusions and the Way Forward

Evridiki Papastavrou and Riitta Suhonen

This book aimed at summarizing an overview of most of the intellectual outputs produced by the participants of the RANCARE-COST Action. The content of the book is looking on rationing and missed nursing care from several different perspectives, hoping to enrich the scientific literature with a collection of chapters that all give a unique contribution to the study of missed care. The COST-RANCARE Action during the last 5 years made a significant contribution in raising discussions around the issue, trying to unify understanding of the underlying concepts, their dimensions and some preconditions and consequences. The substantial scientific literature produced during the Action has triggered the interest into the subject area and the proliferation of related publications throughout the world, indicating the need to investigate the problem more globally and more systematically. Rationing and missed nursing care is a universal phenomenon imposed by the economic constraints and limitations of all health-care systems, irrespective of the counties' budget or financial system. Especially during periods of monetary and economic crises, the target of austerity measures includes the nursing workforce, being the largest professional group in health care, and consequently has increased nurses' workloads, raising serious concerns about caring such as care omissions, delays, and their outcomes on patients.

Although there is considerable consensus and relative agreement in the meaning of the concepts described in the book, the definitions and the use of terms may vary in different cultures, and it also may change in time. For example, initially the term rationing of health care was widely used in the medical literature, but now there is clear tendency to abandon this term as it is emotionally charged. In nursing there are

E. Papastavrou
Department of Nursing, Cyprus University of Technology, Limassol, Cyprus
e-mail: e.papastavrou@cut.ac.cy

R. Suhonen
Department of Nursing Science, University of Turku, Turku, Finland

Turku University Hospital and City of Turku, Welfare Division, Turku, Finland
e-mail: riisuh@utu.fi

E. Papastavrou, R. Suhonen (eds.), *Impacts of Rationing and Missed Nursing Care: Challenges and Solutions*, https://doi.org/10.1007/978-3-030-71073-6

arguments supporting that missed care and the related terms used refer to the outcome of a decision-making process on how nurses allocate their time that is limited, especially in cases of understaffing. Although the intention is always to the benefit of the patient focusing on safety and care quality, this process always incorporates an ethical dimension that entails the risk of discrimination and is influenced by individual biases. However, it is important to note that the allocation of resources starts from a higher macroeconomic level, and it is both a policy, organizational, and also a political issue. Any restrictions decided at these levels are experienced differently by health-care professionals who have a direct contact with people and influence their decisions on how to prioritize their care within the limitations imposed. Therefore, the assumption that nurses will continue to provide full care despite the reductions in staffing and the dramatic changes in health care entails strong ethical connotations that are not confined to the professionals only, but it is a responsibility of all.

The wealth of literature that is produced during the 5 years of the Action facilitated better understanding of the phenomenon under study and its multidimensional nature, but at the same time it created more conceptual, theoretical, and methodological challenges and more questions that will need to be explored through further research and scientific inquiry. Although leaders in the field recognize that the ongoing lack of consensus around concepts, terms and definitions is problematic and may impede scientific advancement, the search for shared meaning through the process of concept development must continue. It is also vital to acknowledge that the provision of care is a team effort by many health-care providers and is not confined to the nursing personnel; therefore, the issue needs to be examined from this perspective as well. To strengthen the evidence, there is additionally a strong need for research at a patient level, how they describe and how they experience omissions of care, as well as how they define and report their individual and unmet needs. The increasing research concerning missed nursing care is not simply observational, and its ultimate goal lies in ameliorating patient outcomes, by gathering evidence that will guide structural changes in the provision of health care.

A highly important issue that remains unexplored is the development of evidence-based interventions and solutions that could support both policy makers as well as clinicians to overcome the problem, prevent care omissions, and minimize the risks for negative patient outcomes. Improvements and innovations regarding the interventions are probably delayed because of the multiple complexities of the health-care provision at several levels and the multidimensionality of the phenomenon. An essential element is leadership both at top management levels and at bedside level, to ensure patient safety and prevent care omissions through new innovative approaches, and readiness to lead interprofessional teams and health-care systems.

The importance of looking into the problem of rationing and missed nursing care emerged from the need and the right of people to have a proper, fair, and respectful care and consequently the society to ensure and protect this right. Although it is obvious that not every aspect of missed care can be linked to the limited resources but also on the professional's discretion, the responsibility similarly lies on those who decide on the distribution of resources, policy makers, politicians, and

managers at higher levels who provide the means to the professionals to deliver care respecting the rights of the consumers.

Closing this conclusion, it is interesting to note that in the clinical settings nurses often define their practice in terms of tasks and time, and this task orientation may lead to devaluation of the extent of nurses' knowledge and practice capabilities as well as their critical thinking and the evidence-base of the profession. This means that the assumption that missed care is all about tasks, is flawed, and there is a need to look deeper on the essence of nursing care, its multiple elements, and its' dynamic nature, especially in educating the future generation of nurses. Therefore, the scope of practice is an aspect that needs to be reviewed according to the changing health-care needs and care demands, as well as the overlapping responsibilities within the health-care team in order to be responding to the society's expectations for a proper, safe, and dignified care.