

Role of drug adherence in Tuberculosis (TB) treatment and Health Belief Model.

Tuberculosis (TB) is one of the preventable and curable documented infectious diseases and remains as a major public health problem today. In controlling of TB disease, not only it is important to take the measures to prevent the infection but also it is necessarily need to take the treatment correctly and completely in order to avoid resistance to anti-TB drugs in TB patients because drug resistant TB is much more difficult and costly to control and can convey large impacts on the society. The World Health Organization (WHO), in 1993, declared TB as a “Global Emergency” due to a remarkably increase in prevalence and rose in multi-drug resistant infectious cases all over the world.

During 1948 to 1963, due to the fact that people discovered effective chemotherapeutic agents, many TB control programs were established in developed countries, which contributed to a substantially drop in the prevalence of the disease occurrence. Likewise, in 1970s, Directly-observed-treatment-short course (DOTS therapy) was very affective in TB disease controlling and intervention with its five distinct components. Furthermore, thanks to the commitment of WHO and its partners, the whole course of DOTS treatment is properly delivered to the patients with free of charge in the public sector with the intentions of ascertaining that all patients receive complete treatment, and to stop drug resistance and its sequel in high prevalence community (Gwatkin, 2000).

However, in spite of substantially noticeable improvements in therapeutic measures for TB with DOTs strategy, the epidemiological pattern of TB incidence showed unequal distribution throughout the world. The greatest amount of active TB cases and drug resistance were found in developing countries especially in Southeast Asia, accounted for 41% of the world's total number and in the African where there were 1.6 million new TB cases each year, in contrast with nations having privileged backgrounds witnessed roughly 100,000 cases (WHO, 2001). Thus, what is the reasons behind them?

Similarly, nowadays, issues of health-related behaviors like drug compliance and its determinants are at the center of the heated debate under the titles of both communicable and non-communicable diseases all over the world. Osterberg & Blaschke (2005) projected that the extent of the people following the medical advice and prescription is a primary concern in success of controlling to their diseases. Hence, there is a great deal of health behaviors studies done in various health-related fields including TB with divergent perspectives and different scopes of studies resulting in colorful corollaries.

Among them, efficient and relative findings are attained by applying the psychosocial Health Belief Model (HBM) in the study of drug compliance of the patients. This model is one of the social cognition models which was firstly developed in 1950s by a team of

social psychologists to explain the reason why people could not take part in activities to prevent or to test diseases (Hochnaum, 1958; Rosenstock, 1960, 1966, 1974). After time passed, the model was modified to apply in people's response to symptoms Kirscht (1974) as well as to their behaviors in response to diagnosed illness, especially for drug compliance in long term therapy (Becker, 1974). Three decades later, the model has become one of the most wide spread psychological models in explaining health related behaviors.

In the model, behavior is critical of the subjective value of an outcome. Such mental process: thinking, reasoning, expecting are essential contributions of all cognitive theories. However, despite the fact that both cognitive theorists and behaviorists were convinced that rewards or benefits of behavior are crucial, it is true for cognitive theorists that such rewards are conveyed by the influencing expectations from situation rather than by direct dominant behavior which are based on an individual's perception of their social environment and motivation. (Bandura, 1977a).

Significantly, the range of behaviors in the model are later classified into three broad areas as preventive health behaviors, sick role behaviors and illness behaviors (Kirscht, 1974; Becker, 1974; Becker and Maimam, 1980; Janz and Becker, 1984).

Generally, it is sensible to say that different people will take the different actions to resist, to find out, or to face their unwell-beings if they assume themselves as susceptible to the surrounding happenings, if they were convinced that there is a tendency to avoid serious results in them, if they take a specific change in behavior will be a benefit by resulting in a valued outcomes (i.e. the disease will be effectively prevented or cured by taking action), and if they are certain that the supposed barriers (e.g. cost, inconvenience, pain, embarrassment-impeding) to take the action are outweighed by its benefits (Rosenstock et al., 1988). The following definitions and mentions generalize the key variables in broaden views.

Perceived susceptibility: The scope of perceived susceptibility refers to individual's subjective belief of the tendency of contracting to a certain illness (how susceptible am I to this illness?). Relating with medical illnesses, the dimension encompass the agreement with the diagnosis and susceptibility to illness in common.

Perceived severity: Being aware of the severity of an illness if no action is taken (How severe would the outcome be if I had this disease?) including not only medical and clinical consequences (pain, deformity, death) but also potential social impacts likes job loss.

Perceived Threat: a combination of perceived susceptibility and perceived severity of illness.

Perceived barriers: In order to take the recommended behavior for health action by a person may be hindered by means of less consciousness, or cost-benefit reasoning or

out-balances an effectiveness against perception that it may be harmful, notorious (having unwilling results or reaction), repulsive, inconvenient, time-wasting and so on.

Perceived benefits: the belief in effectiveness of strategies. This assumption relies on beliefs regarding the effectiveness of the available actions in lowering the risk of disease, or the perceived benefits of doing action. Hence, the degree of belief in susceptibility and severity of an individual would not be estimated to accept or reject no matter if this action was perceived as reasonable and formally effective.

Therefore, “The combination of susceptibility and severity contributed the strength to act and the sum of benefits and barriers provided a better way to act” (Rosenstock, 1974, p.332). In spite of the fact that these factors are the essential components of the model, researches based on it have indicated that other factors are involved to a certain extent as well.

As an instance, in the model, one’s behavior is likely to be influenced by cues that can trigger to take action. It may be internal (e.g., symptoms) or external (e.g., mass media, illness experience of others, already educated about illness). Moreover, although all these factors are major components of the model, many researches based on it have proved that other factors need to be taken into consideration as well. They called those are demographic variables (e.g., sex, age, race, ethnicity), social psychological factor (social class, group pressure) and structural variables like poverty and religious norms. These variables, especially socio-demographic factors of levels of education, can impact indirectly on perceived threat and benefit (Becker & Maiman, 1975).

In 1977, Marshall Becker and his colleagues (Becker, Maiman, Kirscht, Haefner, & Drachman, 1977) found that by correlating the measures of perceived vulnerability, benefits or barriers, and motivation, the model conveyed the accurate predicting whether people keep taking appointments throughout the treatment period and followed the prescription till to attain the result.

However, the HBM does not take into consideration determinants such as past experiences of the people, complications of mal-practiced action, and perceived control etc., As an instance, AIDS which is associated with particular people such as drug addicts, in this case, persons who do not consider themselves into these groups will be difficult to think themselves as vulnerable to this disease. Likewise, studies in the diarrhea outbreak areas found that people in this area accepted the diarrhea as a way of “body cleansing” and vomiting was perceived as “a signal of relief” instead of severity of the disease (Hausmann-Muela et al., 2002 and Nyamongo, 2000).

Hence, by applying the HBM in disease controlling especially for infectious diseases like Tuberculosis, it can highly likely to predict that people will be ready to take action when they come to realize that they are at risk of contracting or suffering from the disease and when they believe that the disease has serious affects. On the other hand,

people are highly unlikely to take action when the likeliness of the disease is perceived to be less or it has only impact minor affects.

To sum up, by doing so, such perceptions lead the individuals to avoid or counteract the disease by selecting the best alternatives, balancing between advantages and disadvantages, and barriers or cost of specific alternatives with taking into consideration of demographic and psychosocial factors in their treatment taking with a better way or preventive measures for their potential diseases.

P.S. Use Roselia's Synthesis for the best effect.

Thanks!



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