Analysis of the Concept of Self-Care in Multidrug Resistance Tuberculosis (MDR-TB) Patients

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Abstract. Multidrug resistance tuberculosis (MDR-TB) is a form of tuberculosis bacterial resistance to at least two first-line anti-TB treatments, isoniazid and rifampicin, the two most effective TB medications. Treatment of Drug Resistant TB is set to be part of the national TB Control program. MDR-TB cases continue to rise. Clinical management of MDR-TB is more complicated than sensitive TB because it uses line I and line II anti-TB drugs, causing tolerance problems and side effects. Tuberculosis Multidrug Resistance (MDR TB) is a tuberculosis (TB) disease that has experienced resistance to isoniazid (INH) and rifampicin as well as one or more anti-tuberculosis drugs (OAT). One of the things that affect the decline in body power is the influence of self-care patterns where it is influenced by internal and external factors. The purpose of this article is to identify internal and external factors that influence self-care patterns in MDR-TB clients. A concept analysis approach is used to analyze the concept of self-care. The four definitions of self-care are diet, regular physical exercise, regular medication monitoring, and self-care to prevent complications from poor self-care. The antecedent of self-care of MDR-TB patients has two factors, namely internal and external. Internal factors include; age, gender, knowledge, and attitude. External factors include; education, economic level, family support, and the role of health workers. The consequences of self-care can increase the success of recovery and improve quality of life. The conclusion of this concept is to increase nurses' knowledge about self-care in MDR-TB patients who carry out treatment so that it is expected to develop evidence-based nursing.

Keywords: self-care, Multidrug Resistance, Tuberculosis.

1. Introduction

Data from the World Health Organization shows that there are several infectious diseases that cause death, one of which is Tuberculosis. The number of deaths recorded due to tuberculosis was 1.5 million people in 2020 and is a common infectious disease today alongside COVID-19 [1]. Around 10 million people were diagnosed with Tuberculosis worldwide in 2020, with detailed prevalence by sex consisting of 5.6 million men, and 3.3

million women [2]. There are eight countries with the highest prevalence of tuberculosis sufferers in the world, namely India, China, Indonesia, the Philippines, Pakistan, Nigeria, Bangladesh, and South Africa [1]. Tuberculosis (TB) cases in Indonesia are suspected to be 824 thousand people [3]. The TB problem is exacerbated by the emergence of MDR-TB (Multi Drugs Resistant [4]. Multi Drug Resistant Tuberculosis (MDR-TB) is a term used to describe a strain of micro bacterium tuberculosis resistant to at least isoniazid (INH) or rifampicin (Rif) simultaneously using or without another first-line anti-tuberculosis drug (OAT). these two drugs are the main drugs that were previously very effective in killing micro bacterium tuberculosis germs [5]. MDR or RR TB cases in 2021 were 28,000 or 10 per 100,000; When compared to 2020, there was an increase of 17% from 24,000 and the rate per 100,000 population was 15%; 8,296 RO TB case innovations using 33. five percent coverage [6]. The occurrence of Multi Drug Resistance TB is caused by influencing factors such as low knowledge of Tuberculosis patients about MDR Tuberculosis, resulting in non-compliance in treatment [7] The organism that causes tuberculosis is an opportunistic pathogen. People infected with Tuberculosis bacteria and have a history of HIV disease have enormous potential for the development of Tuberculosis bacteria in their bodies into active diseases [8] One of the important things that support the success of treatment in tuberculosis patients is good self-care practices [9] Self-care practices are a form of independence carried out by tuberculosis patients during their treatment period [10]. Self-care of TB patients such as adherence to taking prescribed medications, implementing healthy behaviors, consuming healthy nutritional intake, and coping management [11] Self-care practices carried out by patients undergoing TB treatment to achieve successful self-care. Low self-care practices can affect the degree of quality of life [12].

2.   Method

The concept of analysis used in clarifying the meaning of a concept uses Avant & Walker methods [13] which consists of seven steps. The rare steps of concept analysis are as follows: 1) selecting the concept to be analyzed, 2) determining the purpose of the analysis, 3) identifying all uses of the concept used, 4) defining attribute definitions, 5) identifying case models, 6) identifying border, related, contradictory, artificial, and invalid cases, 7) identifying antecedents and consequences [13].

3.   Results and Discussion

3.1.   Concept Analysis

This theory explains the relationship that must occur in order for self-care to be applied. Three systems are implemented to meet patient survival, namely: 1) Wholly compensatory system, this category is a condition where patients cannot do self-care and must rely entirely

on nurses to carry out their care. 2) Partially compensatory system, this category is a condition where patients can do self-care but only partially and are still assisted by nurses. 3) Supportive-educative system, this category is a condition where patients can do self-care completely without the help of nurses, and nurses only help in making decisions and education about the care that patients need to do [14].

The eight propositions of the self-care deficit of nursing theory are: 1) Every individual has the ability to meet his general self-care as his developmental needs. 2) The ability to do self-care is influenced by the age, developmental conditions, experience, and socio-cultural background of the individual. 3) The application of self-care must be balanced between the necessity for self-care and its ability. 4) Self-care depends on the individual's age, developmental stage, life experience, socio-cultural orientation, health, and resources. 5) Self-care that is therapeutic in nature includes the actions of nurses, patients, and others who play a role in regulating and meeting self-care needs. 6) The role of nurses in the application of self-care to patients is to assess the patient's ability to do self-care 7) Nurses provide decisions, choices, and education in fulfilling the patient's self-care. 8) The components of self-care are wholly compensatory, partly compensatory, and supportive-educative [15].

3.2.   Analysis Objectives

The purpose of the analysis is to know the concept of self-care in more detail, clear in depth in multi-drug resistant TB patients, use the attributes used in case models, borderline, related and opposite cases, explain antecedence and consequences, consider empirical references more information expressed as theoretical, operational definitions about self-care in multi-drug resistant TB patients.

3.3.   Self-Care Concept

Literature searches from various fields of science, including language dictionaries, are carried out to determine the characteristics of the use of concepts [13]. By knowing the characteristics, the understanding of the concept will be more complex when viewed from various scientific points of view. Based on the results of literature search, the concept of resilience is used in the fields of health sciences, nursing and psychology. Understanding self-care in the field of health, self-care is an effort to maintain physical and mental health. Self-Care is to maintain oneself so that the body is awake from physical health problems [16]. Understanding self-care in the field of care, self-care theory says that self-care depends on the behavior that has been learned, individuals take the initiative and form themselves to maintain life, health and well-being [17]. Understanding self-care in the field of psychology, self-care is an activity carried out by individuals to maintain and improve physical, emotional, and social well-being, and help individuals develop in a healthy way [18].

3.4.   Attribute Definition

An attribute is to find as many uses of concepts as possible utilizing dictionaries, thesaurus, coworkers, and the available literature [13]. The characteristics of self-care in multi-drug TB Patients who are resistant to self-care have strong personal views about their abilities to engage in self-care activities, efforts, and the ability to control risk factors [19]. Perceived self-ability to engage in self-care activities. demonstrate perceived ability 1) identify changes in key function complications, 2) appropriateness of strategy or activity scores to manage change 3) perform recommended regimen treatment 4) select relevant activities and perform selected activities [20]. Self-care capacity is characterized as efforts in cognitive, psychomotor, and affective forms to manage physical and psychological health while self-functioning [21].

3.5.   Case model

The case model in this phase is to use the concept of self-care in multi-drug TB Resistance patients by showing all the defining attributes of the concept [13]. The case below is a case model using all attributes obtained from the concept of self-care in multi-drug Resistance TB patients.

Mr. A, 40, learned he had MDR-TB three months ago and was given a dose regimen from the hospital. According to Mr. A, he has strong personal beliefs to take care of himself daily such as self-care in diet, self-care in physical exercise, self-care in taking medicine regularly and self-care in doing self-care regularly. Personal beliefs are implemented by engaging in physical activity (regular exercise), taking care of food, controlling emotions, quitting smoking, and taking regular medication. This activity is carried out vigorously. His wife and family support Mr. A to get better. Mr. A when visited said that he went to the hospital to participate in a program of taking medicine simultaneously and consulting about the progress of his health, so that he could recover soon.

3.6.   Borderline cases

Case Example: The one used uses a large subset of attributes that define the concept being examined, but not all [13]. Mr. G is 35 years old; he had a history of TB disease one year ago, but does not take medication regularly. After several weeks of illness accompanied by coughing up blood and shortness of breath, Mr. G went to the hospital. Mr. G and his wife were informed that Mr. G was diagnosed as a Multi Drug Resistance TB patient. Mr. G feels very sorry for not following the advice of the staff to take medication regularly. After taking the medicine regularly according to the dose given, Mr. G felt a lot of changes. Mr. G feels healthier than he has been in the past few months. Mr. G confesses that this is due to his high self-care to heal, as he is able to eat nutritious food, take medication on a regular basis, and conscientiously participate in regular exercise activities, but he has not been able to quit smoking. Mr. G did this because he remembered his wife's beauty and his son, who was still young and required his attention. When confronted, Mr. G stated that he did not

control the risk of his sickness, specifically quitting smoking. The above limit scenario demonstrates how not all attributes are used. The patient is confident that he will recover and can perform self-care at home, but he does not regulate the risk variables since he is satisfied with his current health.

3.7.   Related cases

Related cases are cases that show ideas are almost similar to the main concept but differ from them when examined carefully (Walker &; Avant, 2019)

Mr. R, 55 years old is a fruit trader at a well-known market in S city and has a history of multi-drug Resistance TB about two months ago. Mr. R has active self-care diet, self-care, and exercise. Any form of self-care Mr. R can be executed well, but Mr. R admits to having difficulty taking medication regularly. Mr. R said he was bored and always felt nauseous after taking the medicine. Mr. R then consulted the nurse. Nurses teach her to do stress management, and this she does strictly and regularly. Mr. R admits that his stress management makes him calmer. Mr. R admitted that he was able to take medication regularly, even though during stress management he felt forced. Mr. R tried his best and tried continuously without despair, as the nurse suggested. After all the efforts were made, it finally succeeded and felt that the nausea was not as great as before. Mr. R felt healthier and he began to gain weight. Mr. R now has a good self-care pattern, namely taking medicine regularly, eating nutritious food, and exercising diligently.

The case related above shows the use of all attribute, but the use of the attribute of the ability to perform self-care activities by taking medication regularly is done extra in stress management.
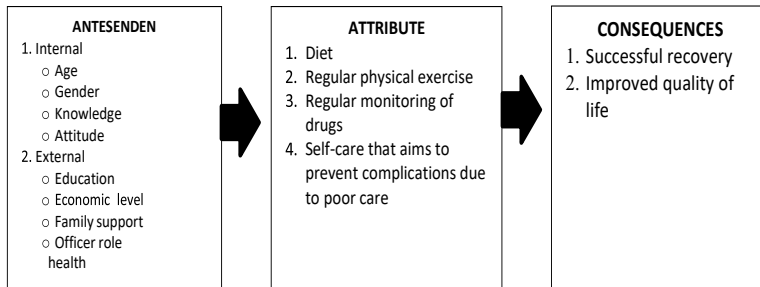
3.8.   Contrary case

The opposite case is the opposite case to the previous case (Walker & Avant, 2019). No vital attributes are indicated in self-care.

Mrs. Z, had a history of multi-drug Resistance TB about two months ago. Mrs. Z when met said that since taking the drug she has no appetite. According to him, if he stops taking medicine, his appetite increases. Mrs. Z thinks that if your appetite increases it means you are healthy. He does not believe that regular taking of medication can cause his pain to be worse. Mrs. Z decided to take medication only when she felt short of breath or her body was not feeling well. Mrs. Z admitted that she rarely exercised and did not control to go to the hospital or health center to take medicine, check her respiratory status, and weigh her weight. When she wanted to be taken by her family to the hospital or health center, Mrs. Z always refused. When questioned by officers, Mrs. Z admitted that sometimes red phlegm comes out when coughing, but she ignores it. This case explains that all four attributes of self-care are not used.

3.9.   Antecedents and Consequences

According to Avant & Walker [13] stating antecedent is an event or occurrence that occurs or has existed before the occurrence of the concept. A consequence is an event or incident that occurs as a result of a concept that occurs in other words, the result of the concept.

ANTESENDEN	ATTRIBUTE	CONSEQUENCES
1. Internal 　○ Age 　○ Gender 　○ Knowledge 　○ Attitude 2. External 　○ Education 　○ Economic level 　○ Family support 　○ Officer role 　 health	1. Diet 2. Regular physical exercise 3. Regular monitoring of drugs 4. Self-care that aims to prevent complications due to poor care	1. Successful recovery 2. Improved quality of life

Fig. 1. The antecedents and their consequences

Antecedent

The antecedents of Self-care in Multidrug Resistance Tuberculosis (MDR-TB) patients are internal factors: 1) age 2) gender 3) knowledge 4) attitude, while external factors: 1) education 2) economic level 3) family support 4) role of officer [22].

One of the factors that influence the incidence of MDR TB is age and sex. At the productive age of <45 years, the risk of MDR TB is at risk because the productive age does more outdoor activities, interacting with others and high mobility. As for gender, women are at higher risk of MDR TB because women have shame about the disease so they come to the hospital in a more severe state [23].

The behavior of MDR TB patients is very influential on the transmission of MDR TB disease, if the patient coughs and sneezes can transmit to people around him through the air from sputum splashes containing germs. The transmission process of MDR TB patients is not only sick with ordinary TB but is directly exposed to MDR TB disease as well [24].

The behavior of taking regular medication is also very important for MDR TB patients. However, many patients feel bored with MDR TB treatment due to the side effects of MDR TB drugs so they decide to stop treatment. This causes patients to be resistant to anti-tuberculosis drugs so that the disease worsens into MDR TB. Not only that, TB patients who do not complete treatment can also be because they feel they have recovered in the middle of the treatment process and decide to stop treatment which should be completed by them. It can also result in drug resistance and become MDR TB [25].

Factors that influence the occurrence of MDR TB are age, sex, body mass index, education level, family history of MDR TB, ease of access to health information, history of suffering from TB, history of diabetes, psychological health, smoking, motivation, irregularity in treatment, medication adherence, history of undergoing TB treatment, occupancy factors,

family income, community stigma, sedative use, history of chronic obstructive pulmonary disease, and living in a household with only one room [22]. Socioeconomics is a direct factor that affects a person's ability to seek treatment independently, patients who have high income will have high self-care compared to patients who have low income. This case is related to the difficulty of accessing health facilities and lifestyle modification [26].

Patients who have low self-care tend to display less health education related to disease. Patients with good education about Multidrug Resistance Tuberculosis (MDR-TB) also understand and know the risk factors so that the ability to control symptoms and maintain functional activity[26]. Positive social support from health workers has an important role in improving Self-care in patients with Multidrug Resistance Tuberculosis (MDR-TB). Family support plays an important role in improving Self-care in patients with Multidrug Resistance Tuberculosis (MDR-TB) in controlling symptoms and maintaining physical function because decisions, suggestions, and suggestions made by families affect the level of independence [26].

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