

Personal Resilience in Patients with Type 2 Diabetes Mellitus: A Concept Analysis

Sukma Wicaturatmashudi^{1,5}, Pradana Soewondo², Debie Dahlia³, Sali Rahadi Asih⁴, Ratna Aryani¹

¹Postgraduate Program, Faculty of Nursing, Universitas Indonesia. email: sukma@poltekkespalembang.ac.id

²Faculty Of Medical, Universitas Indonesia, Depok, West Java, 16424, Indonesia

³Faculty Of Nursing, Universitas Indonesia, Depok, West Java, 16424, Indonesia

⁴Faculty Of Psychology, Universitas Indonesia, Depok, West Java, 16424, Indonesia

⁵Ministry of Health Polytechnic, Palembang, Indonesia

KEYWORDS

Personal Resilience;
Diabetes Mellitus;
Concept Analysis

ABSTRACT

Introduction: The most common kind of diabetes is type 2 diabetes mellitus (T2DM), which accounts for 95% of all DM cases. Microvascular and macrovascular complications burden patients physically, psychologically, socially, and economically. Patients must be resilient to live more affluent lives. Personal resilience in T2DM patients is essential in nursing practice and the development of nursing science. Understanding the concept of personal resilience is important to minimize bias and distortion in using the concept of resilience, especially in T2DM patients.

Objectives: This study aimed to clarify the concept of personal resilience in T2DM patients.

Methods: Walker and Avant's concept analysis approach was applied. A literature search was performed using Google Scholar, ProQuest, ScienceDirect, and PubMed databases. The articles used from the databases were published between 2013 and 2022.

Results: The attributes determining the level of personal resilience of T2DM patients are survival, adaptation, and recoverability. The antecedents include self-esteem, spirituality, culture, self-efficacy, optimism, hope, and age. The consequences include adherence, quality of life, effective coping, equilibrium, and illness perception.

Conclusions: The three attributes, antecedents, and consequences of good personal resilience identified from the concept analysis could improve the researchers' understanding of personal resilience and its implementation in the care of T2DM patients along with the complexity of the problems experienced by patients. The clarity of this concept lies in the reference for treatment that focuses on empowering the personal abilities of T2DM patients to carry out self-management to achieve prosperous quality of life.

1. Introduction

Since the early days of psychiatric health studies, the role of adversity, stress, and unfavorable life events in the development of mental illnesses has been generally acknowledged. The nature and degree of such influences vary greatly, impacting an individual's ability to deal with them. Specifically, a human can deal with specific pressures or unfavorable life situations, but others may fail to do so. This means that not all people who face adversity and unpleasant life events develop mental illnesses and have poor results. In this aspect, resilience can benefit some people [1].

For almost two centuries, the term "resilience" has been defined. Webster in 1824 described resilience as "the ability of a stressed body to recover from or easily adapt to accidents and changes". The term resilience has been used by basic scientists, psychologists, sociologists, and health practitioners for years. In truth, while various fields have employed this notion, most have adopted Webster's definition in their conceptual growth and studies [2]. Ecology initially used resilience to characterize an ecosystem's ability to recover or avoid damage when confronted with perturbations. Today, the term resilience generally refers to a psychological state. At the same time, there is still disagreement about how to define resilience [1]. In several populations, resilience is positively linked to quality of life. A high level of resilience is generally understood to imply that an incident has a lower negative impact, including less load and psychological discomfort [3].

The concept of resilience first emerged in children with psychiatric problems. In the years since, the concept of resilience has expanded to include adults, elderly individuals, and ethnically diverse populations. In the 2000s, it was adults who became the focus of resilience research. De Santis

investigated the topic of resilience in HIV patients in his integrative review [2]. He found that resilience can be applied to HIV-infected individuals based on the idea of resilience as a positive outcome to difficult life circumstances. However, such conceptualization still needs to be clarified. Other studies have concentrated on the resilience of older persons. Resilience was described as the ability to flourish in the face of health-related adversities and psychological stressors [4]. Windle et al. investigated psychological states in old age as personality resources that influence stress management [2]. Besides adults, the literature on resilience centered on families and communities in the 2000s. Greeff and Toit, for instance, investigated family resilience as the ability to adapt constructively in remarried families [2].

Resilience has been used in contemporary research to analyze not only families but also communities in the face of adversity. Several studies investigated resilience application in specific age groups, such as adults [5] and adolescents [6],[7],[8],[9],[10] as well as in communities [11] to express the ability to solve problems within a specific scope. Resilience was also investigated in African-American populations. As the notion of resilience evolves to the present day, it is also related to adaptation, strategies for coping, and protective factors [2].

An overlap of uses of the concept of personal resilience exists in various disciplines. The concept is mainly used to describe a person's or individual's ability to withstand stressful situations over time. It is a concept that has attracted much research and attention globally in recent years. This is due to the emergence of situations that demand the resilience of individuals and larger groups worldwide, such as terror waves, natural disasters, migration, economic and social crises, and pandemic or chronic diseases that require long-term care and risk complications.

Diabetes mellitus, a group of chronic disorders, is currently regarded as a global epidemic and one of the primary causes of morbidity and mortality globally. Diabetes-related hyperglycemia has the potential to produce acute and chronic problems, as well as microvascular and macrovascular attacks [12].

In chronic diseases, especially T2DM, resilience is the hope of every DM patient with all the complex problems that come with them, including the physical, psychological, and social aspects of the disease impact. The resilience of T2DM patients is a broad idea that incorporates individual assets to sufficiently deal with troubles and accomplish positive outcomes in the circumstances they face. Resilience includes idealism in managing circumstances, methodologies for issue-centered goals, self-adequacy, and fearlessness [13].

Objectives

Because the use of the concept of resilience in different aspects and scientific disciplines has the potential to result in different meanings, an analysis is required to provide a more explicit, more directed meaning of resilience to minimize bias and distortion in the use of the concept of resilience in writing scientific nursing articles and in nursing practice. The purpose of analyzing the concept of personal resilience is to distinguish between the varying concepts of resilience used today to clarify the relationship and determine the characteristics of these concepts. Personal resilience concept analysis serves to clarify concepts in a scientific discipline, in this case, nursing science, especially in diabetes mellitus patients. It provides an analytical definition of the concept of personal resilience and emphasizes gaps in information and measures that must be produced in the future while addressing resilience theories [14]. The clarity of the definition of personal resilience, especially in DM patients, will increase nurses' insights and literacy in identifying patients' levels of resilience in relation to the pain they experience, thereby giving positive implications in the development of nursing science and practice in the future.

2. Methodology

Walker and Avant's (2014) concept analysis approach was applied to explore the concept of personal resilience in T2DM patients [15]. A thorough literature review was conducted using four databases:

Google Scholar, PubMed, ScienceDirect, and ProQuest. A search was carried out to select the most current papers published between 2013 and 2022. The search term used was "personal resilience" OR "resilience". Articles meeting specific inclusion and exclusion criteria were selected. The inclusion criteria were that the articles (1) were within the nursing, psychology, social, education, medicine, or health scope, (2) were written in English, (3) had "personal resilience" or "resilience" mentioned in the titles and abstracts, (4) were original articles, (5) provided a definition of "personal resilience" or "resilience", and (6) focused on humans as individuals. The exclusion criterion was that the articles did not use a systematic review, integrative review, meta-synthesis, or meta-analysis design. The authors conducted article selection in three stages. In the first stage, a search was conducted following the predetermined inclusion criteria, resulting in 41,308 articles from four databases. In the second selection stage, duplication and unrelated articles were detected, removing 41,101 articles. In the third selection stage, articles were reviewed based on the use of the term "personal resilience" or "resilience" in the title and abstract. At this stage, 94 articles that did not use the term "personal resilience" or "resilience" were detected. A further 93 articles were eliminated based on the exclusion criterion. Finally, 20 articles were included for analysis using Walker and Avant's approach. The authors summarized the data by integrating comparable findings and presenting the results in tables and figures. Discussions and re-analyses were undertaken to ensure that all authors had the same perspective. From January to June 2022, the selected articles were subjected to peer-reviewing. Walker and Avant's (2014) approach was used to explore the concept of personal resilience in T2DM patients in eight stages.

Step 1: Select a concept

This topic was chosen based on the public's interest in scientific fields, particularly in the context of endocrine nursing science [15]. A dictionary defines resilience as the capacity to recover from or adjust to adversity or change quickly [16]. Resilience is also defined as the ability to cope with stress, recover, and adapt to new situations. Meanwhile, personal resilience refers to an individual's ability to cope with events that threaten the integrity of his or her health and other aspects of his or her life. People with higher resilience have more resources to overcome or change difficulties [17]. Based on selected literature, the authors attempted to determine the concept of personal resilience with a focus on long-term diabetes mellitus patients in need of self-management throughout their lifetimes. Resilience in people with T2DM and other chronic illnesses is closely linked to self-care [18]. Studies show that individuals with lower resilience levels are more susceptible to T2DM than individuals with higher resilience rates [19]. Other research indicates that treatment compliance and resilience are positively correlated. Higher resilience in patients is associated with improved treatment compliance and quality of life [20][21]. Patients with T2DM should prioritize building their resilience as it will enable them to cope with the disease and lead everyday lives. The burden of long-term care can deteriorate self-perception and have consequences for the appearance of unpleasant emotions, affecting self-management and the psychological and physical well-being of patients [22].

Step 2: Determine the aim or purpose of the analysis

The concept analysis of personal resilience was aimed to provide a clear understanding and description. This article intends to clarify the meaning of personal resilience in T2DM patients.

Step 3: Identify all uses of the concept

A literature review was conducted to investigate how this concept was applied. A literature search on various databases, including Google Scholar, ProQuest, ScienceDirect, and PubMed, provided perspective on the concept. The authors also explored dictionaries pertaining to this concept. The articles selected must be published anywhere between 2013 to 2022. The articles discovered were from a variety of scientific subjects. The majority of the articles were from the field of psychology,[23][24][25][26][27][28][1] four were nursing-related article,[29][30][31][32] two were medicine articles,[33][34] and two were education science articles [35][36]. The remaining articles each were from health science,[3] social science,[37] psychiatry and psychosomatic

medicine,[38] medical psychology,[39] and psychiatric and mental health nursing fields [40]. The identified concept could be observed through definitions from various existing sources (**Table 1**).

Table 1 Personal resilience concept definitions

No.	Field	Definition and Author (Year)
1	Psychology	a multi-layered development that incorporates an individual's assurance and capacity to survive, adjust, and recuperate from difficulty; the ability to bounce, bounce back, and have elasticity, flexibility, or recovery; the ability to get back to its unique shape after being stretched, extended, or compacted (material object); the ability to survive or recuperate rapidly from difficulty[23].
2	Nursing	The capacity to recuperate rapidly from disabilities in functioning comes about because of stress appraisal and return to past degrees of functioning. Resilient resources incorporate a positive adjustment to stress, mental and social capacities to adapt successfully, the capacity to track down specific importance regarding the stressor, and the capacity to keep up with patience and faith and bear adverse impacts [29].
3	Psychology	successful recovery or adaptation to severe adversity[25].
4	Social science	the capacity to maintain mental stability notwithstanding stress; a person's capacity to decide to recuperate from miserable and testing life-altering situations[37].
5	Education science	the ability to face challenges and difficult experiences and adapt to them[35].
6	Psychology	an effective process of arranging, adjusting to, or overseeing critical wellsprings of stress or injury; the capacity to endure or recuperate rapidly from troublesome circumstances[26].
7	Psychology	the capacity to bounce back or overcome some misfortune and hence experience positive results notwithstanding an aversive occasion or circumstance[1].
8	Psychology	The process of adjusting well to affliction, injury, misfortune, or dangers like family and relationship issues, severe medical conditions, or working environment and monetary stressors includes the capacity of the person to bounce back from these troublesome encounters or to overcome the changes effectively [27].
9	Nursing	the capacity of a person to adjust to difficulty, maintain balance, feel in command of his or her current circumstance, and continue well; personal characteristics or attributes like optimism, self-confidence, reasonability, hardiness, and being able to be ingenious during seasons of misfortune[30].
10	Nursing	the ability to overcome or become adjusted to profoundly troublesome conditions; the ability as a formative interaction, as much as an individual characteristic, to overcome an infection or a misfortune, and the expertise to make due[31].
11	Psychiatry and psychosomatic medicine	an individual's capacity to keep up with or reestablish generally stable mental and physical functioning when going up against distressing life-altering situations and affliction[38].
12	Medicine	a healthy mental adjustment result across and during openness to an unfavorable, horrible event that causes minimal pain and disturbance in capability over the progression of time[33].
13	Medicine	relatively good adjustment, i.e., the favorable adjustment of a person regardless of the dangers, difficulties, or injuries they experience; the capacity to bounce back or recuperate from stress, to adjust to upsetting conditions, to not turn out to be sick regardless of enormous difficulty, and to work over the standard despite stress or affliction[34].
14	Medical psychology	a personal characteristic that helps a person adjust to or overcome difficulty, stress, and injury and recuperate from these negative experiences[39].
15	Health science	the process of adaptation to stress or trauma, or "bouncing back" from adversity[3]
16	Psychology	the ability to adapt during times of extreme stress and adversity[28].

17	Psychology	the capacity to keep up with or recover psychological (or physical) well-being despite critical pressure or difficulty (for example, present moment/intense or prolonged haul/ongoing, social, or actual stressors)[24].
18	Psychiatric and mental health nursing	the capacity of an individual to survive and adjust to unfriendly circumstances effectively[40].
19	Education	the ability to withstand, adapt, or recover from significant stress and adversity[36].
20	Nursing	the ability to overcome difficulties and cope successfully with stressful events[32].

Table 2 Attributes of personal resilience

Keyword Cluster	Attributes
1. to keep up with patience and faith as well as tolerance for negative influences[29] 2. the ability to face challenges and difficult experiences[35] 3. to have elasticity, flexibility[23] 4. self-confidence[30] 5. hardiness[30] 6. the ability to be resourceful during times of adversity[30] 7. the ability to maintain stable psychological and physical functioning[24]·[38] 8. the ability to withstand or recover quickly from difficult conditions[26]·[36] 9. to overcome some form of adversity stress, trauma condition[32]·[39]·[40]·[1]	Survival
1. the process of arranging, adjusting to, or overseeing critical wellsprings of stress or injury[26] 2. optimism[30] 3. level-headedness[30] 4. healthy adjustment[33] 5. to maintain equilibrium and retain a sense of control over their environment[30] 6. positive adaptation of an individual despite threats, adversities, stress, traumas, and highly difficult circumstances[3]·[28]·[33]·[25]·[34]·[31]	Adaptation
1. to bounce back or recuperate from stress, adversity, difficult experiences, sadness, and challenging life events[3]·[36]·[37]·[25]·[29]·[34]·[23]·[1]·[27] 2. to restore relatively stable psychological and physical functioning[24]·[38] 3. the ability to recover quickly from impairments in functioning[29]	Recoverability

Step 4: Determine the defining attributes

Survival

Survival is the show or reality of living or continuing longer than another person or thing or the continuation of life or presence [41]. It plays a vital role in patients with chronic diseases, especially DM. It also means the ability to withstand and face challenges and difficult experiences, always keep up patience and faith, and overcome some form of adversity, stress, and trauma. Another meaning of survival is to maintain stable psychological and physical functioning. Survival implies self-confidence, hardiness, flexibility, and elasticity to be resourceful during misfortune (e.g., adversity, stress, and trauma) or loss.

Adaptation

The act of modifying something or adjusting behavior to suit a new purpose or environment is known as adaptation [42]. Adaptability for DM patients is an unquestionable necessity. DM is a chronic disease that patients must live with for life. The risk of short-term or long-term acute or chronic complications is very high [43]. Adaptation also describes a person's ability to maintain equilibrium and retain a sense of control over his or her environment, optimism, and level-headedness to achieve a healthy adjustment regardless of experiences with troubles. Adaptation is the positive adjustment to affliction, injury, dangers, and stress and the ability to recuperate from these negative experiences. It also contains the meaning of arranging, adjusting to, or overseeing critical wellsprings of stress or injury.

Recoverability

Recoverability is a return to a normal position or condition [44]. In the context of nursing, especially T2DM nursing, recoverability describes the patient's recovery from adversity and optimizing function to the initial balance or a higher level of balance than the disease he or she experienced to provide successful adaptation in life [45]. Recoverability also describes the patient's ability to bounce back or recuperate from stress, sadness, adversity, difficult experiences, and challenging life events. It also means the capacity to recuperate rapidly from impairments in functioning and restore relatively stable psychological and physical functioning.

Step 5: Construct a model case

A 48-year-old man has been suffering from type 2 diabetes mellitus for the last nine years. The disease he is suffering from causes complications in the form of a wound on the heel of his right foot 3 cm by 3 cm by 1 cm in dimensions. He also experiences complications from chronic kidney disease (CKD). He had high blood sugar levels, but with hard work, he could return to normal limits. When diagnosed with DM, he felt considerable stress but was able to bounce back with a greater worship intensity and support from his family (recoverability). He routinely cares for his wounds, undergoes dialysis according to schedule, and maintains his blood sugar levels. He is currently more compliant in leading a lifestyle that is in accordance with self-management guidelines for T2DM patients. He is always optimistic and diligently monitors symptoms of risk of complications so that the disease remains under control. In everyday life, he always adheres to self-management through diet, physical activity, regular medication, adaptive coping, and learning to find solutions to his problems in managing his disease (adaptation). His enthusiasm to recover and live with his condition is extraordinary. He was able to overcome the stress he experienced when he was first diagnosed. He deals with his illness patiently and carries out his religious duties diligently. He has high self-confidence and is resilient enough to continue carrying out self-management and facing stress and physical and psychological problems due to the disease he is suffering from (survival).

Step 6: Construct contrary and borderline cases

Borderline case

V, female, 41 years old, was diagnosed with type 2 diabetes mellitus. Currently, she is being treated for complications of CKD. During treatment, she sleeps soundly and interacts well with other patients and nurses. She always takes medication and eats on time, as recommended. She always performs worship abed and on time (adaptation). She said it has been seven years since she was first diagnosed with DM. She does not consider her illness as a burden in her life, and she continues to think positively about being able to live with it. She undergoes treatment at the hospital with sincerity and gratitude because her family members are very supportive and caring to her. She accepts the fact that she must undergo haemodialysis twice a week with a smile (survival).

Contrary case

Q, 56 years old, male, was diagnosed with type 2 diabetes mellitus. It has been ten years since the diagnosis was made. Examination results showed that his blood sugar levels were not controlled. There was a wound in the sacral area 3 cm by 2 cm by 2 cm in dimensions. He often screams and expresses dissatisfaction with his treatment. In addition, he does not take medication regularly. He is always restless, saying that it is difficult to rest. He is also frequently enraged by his nurses (no adaptation). The patient expressed disbelief that the disease could be cured, and he believed that the disease would render him useless. He is sometimes seen crying and heard saying that he cannot stand the treatment because he thinks it will go in vain and the disease will get worse (no recoverability). He cannot accept the disease he is suffering from. He is lazy and he never controls nor carries out self-management well. He blames his wife and family and feels that he is not getting the attention he deserves. His wife said that he had intended to commit suicide (no survival).

Step 7: Identify antecedents and consequences

Identify antecedents

The factors influencing personal resilience include spirituality, self-esteem, social support, self-efficacy, and optimism [46],[47],[48]. Self-concept and spirituality have been reported to contribute to forming resilience in patients with T2DM [49]. Hope is an additional factor that contributes to patient resilience. Patients need both optimism and hope to deal with difficulties in self-management throughout their lives and control their blood sugar levels. Optimism is essential to patients' resilience in living their lives [2]. It encourages patients to participate actively and positively in life and is expected to improve patients' adaptability. It is a strong indicator of resilience and has been known to have a strong relationship with levels of resilience. Grote and Bledsoe found that optimism is a protective factor for women at risk of depression [2]. In addition, social support is also needed to increase the resilience of individuals, especially those with illnesses. Support can come from family, friends, religious organizations, schools, and communities [2]. Research conducted in Brazil revealed that most older adults with DM have moderate levels of resilience regarding functional capacity [50].

Identify Consequences

The outcomes of the resilience process have the ultimate goal of helping the patient achieve balance and overcome the stressors that have befallen him or her [51]. Positive outcomes related to resilience include stress reduction, improved adaptability, and the development of practical coping abilities to deal with change and adversity [37]. In individuals with pathological conditions in their physical aspects, especially chronic diseases such as DM, resilience has a relationship with factors of self-management, adherence, medication, health-related quality of life, disease perception, pain perception, and adherence to physical activity [13],[52]. Kugbey et al. (2017) found that illness perception and diabetes knowledge greatly influence total diabetes care [53]. At the same time, research in Saudi Arabia shows that illness perception affects the adherence of T2DM patients [54].

Identify empirical referents

The empirical reference aims to measure the attributes found as opposed to the concept [15]. Empirical references in concept analysis demonstrate how the concept is represented in the phenomenon analyzed and how it is measured. The Connor-Davidson Resilience Scale (CD-RISC) was found to be the most commonly utilized clinical personal resilience evaluation instrument in the literature search [55],[56]. This instrument has 25 items from three dimensions: perseverance, independence, and optimism. The scoring is done using a Likert scale from 0 to 4. The final score is in the range of 0–100. The higher the score, the better the resilience. The Chinese version of the CD-RISC instrument has significant validity and reliability in diabetic patients, with a Cronbach's alpha coefficient of 0.916 [57]. The second instrument used to measure resilience is the Resilience Scale (RS),[56] which evaluates resilience as a personality trait. The third instrument used is the Resilience Scale for Adults,[58] a protective factor assessment tool. The fourth instrument to measure resilience is the Brief Resilience Scale,[59] which assesses resilience outcomes. Details of these scales and their psychometric properties are available [60]. However, measuring instruments for the attributes of the results of personal resilience concept analysis have yet to be found and explained in scientific articles. Two attributes of the personal resilience concept, recoverability and adaptation, are implicitly measured in the personal resilience measuring instrument. Meanwhile the survival attribute is primarily measured by interview or retrospective design to determine the duration of time for which DM patients survive with their disease and the complications they experience. The method used to analyze "time-occurrence" data is the Kaplan-Meier method. The results of KM analysis include not only all causes of death but also data on the times of onset of microvascular and macrovascular complications in patients with DM [61].

3. Results and Discussion

The concept of personal resilience was analyzed in terms of defining attributes, antecedents, and consequences, and empirical references provided information relating to clinical utility following the

steps of concept analysis. The significance of analyzing the concept of personal resilience for appropriate use in further theoretical development, particularly in the case of patients with type 2 diabetes mellitus, was explored. The data extracted from 20 pieces of literature were analyzed. Main attributes including survival, adaptation, and recoverability were analyzed with reference to the identified keywords. From the literature search, five antecedents were found as triggers underlying T2DM patients' levels of personal resilience in dynamic situations. This analysis also unravels the conditions determining the levels of personal resilience of T2DM patients. T2DM patients will determine many conditions that affect their self-management. The consequences identified from the literature were self-esteem, spirituality, culture, self-efficacy, optimism, hope, and age.

Discussion

Implications for nursing knowledge and practice

Personal resilience has consequences for enhancing nursing knowledge and practice, particularly in the nursing care of diabetic patients. Understanding that patients are holistic and unique is a major asset in providing nursing care to patients with DM. This knowledge will enable nurses to explore further the levels of resilience of patients, especially those with DM, while the patients are undergoing treatment [45]. The implication for nursing knowledge is that the patient resilience index describes a dynamic process and includes the patient's ability to adapt positively to life, the environment in which he or she lives, and the impact that occurs due to his or her illness over a long period. The implications of personal resilience in nursing care for DM patients refer to the three attributes found: survival, adaptation, and recoverability. These critical attributes are the basis for nurses to develop and improve nursing care that focuses on the patient's ability to cope with his or her condition in the physical, psychological, and social aspects, as well as the values he or she believes in. Research shows that resilience is an effective index of mental health in chronic patients, and improving it is necessary to achieve optimal patient mental health [45]. In nursing practice, patient resilience helps reduce vulnerability to illnesses and promote better adaptation to the illnesses, so increasing resilience is the right step to improving mental health [62]. Resilience can not only increase an individual's capacity to cope with negative emotional discomfort but also influence patients' quality of life, both psychological and physical, in the long term. T2DM patients with high degrees of resilience can recognize and mobilize available resources to cope with challenging circumstances and adapt more effectively to tolerate bad psychological states and enhance physical and mental health [22][22][63].

4. Conclusion and future scope

Resilience is an aspect that determines a patient's ability to cope with chronic diseases, especially DM. It is a dynamic process that includes the patient's ability to adapt positively to the disease and its effects throughout life. Good personal resilience will help T2DM patients have reasonable glycemic control so that their quality of life will be well-maintained. The concept of personal resilience in T2DM patients can clearly describe the personal ability of T2DM patients to survive and stay alive with their disease, to recover from the deterioration of the conditions they experience, to have a solid resistance to risks and complications that may arise from their disease, and to have good adaptability to achieve a prosperous quality of life.

Acknowledgment

The authors acknowledge Indonesian Health Ministry, Universitas Indonesia and Palembang Health Polytechnic.

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