



Self-Efficacy of Exercise in Elderly Diabetes People: A Concept Analysis



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Abstract

This paper aims to explore the meaning of self-efficacy with regard to exercise in elderly diabetes people. Using concept analysis, it discusses cases showing Thai diabetes people and how they manage their health behavior changes such as exercise. Moreover, analysis of the concept of self-efficacy provides information which is related to clinical usefulness and can assist health care professionals in communicating the same notion when discussing the concept.

Keywords: Concept; Self efficacy; Diabetes; Exercise

Introduction

Diabetes is a chronic disease that is becoming more common, especially among the elderly. The prevalence of diabetes among the elderly in the United States was 23 percent. The global health predicts that in 2030 diabetic patients will be 450 million in the world WHO, 2014. In Thailand, according to the Department of Disease Control 2012 reported the rate of diabetes in the elderly is 2,128.04 per 100,000 populations Aekplakorn et al. [1].

The number of persons living with DM in Asia was about 113 million in 2010 and this number is expected to increase to 180 million by 2030 Chan et al. [2]. The World Health Organization [3] also claims that DM is especially serious and becoming increasingly common in developing countries and among disadvantaged minorities (WHO, 2014). The IDF reported that middle and low-income countries have more people under the age of 60 with DM compared to the world average (IDF, 2014). Thailand was ranked among the top ten countries in Asia with a high prevalence rate of DM Aekplakorn et al. [1]. The Chronic Hyperglycemia is a major concern since it will lead to progression of complications for individual with DM. The complications of DM are the biggest contributing factor to the cost since complications often require more intensive care in the hospital, or even may require surgery Riewpaiboon et al. [4]

Self-efficacy is one of the central concepts of Bandura's theory. He believed that a fundamental requirement to organize and execute a series of actions required to attain expected outcomes is by exploring and utilizing one's own capabilities, it is called "Self-Efficacy". It is an important concept because it predicts human behavior. Self-efficacy concept has been of considerable interest in several disciplines related to human behavior such as nursing, sociology and psychology. There are many authors that misused

this concept. Bandura [5] mentioned that some peoples used the term "Self-Efficacy" and "Self-Esteem" interchangeably however they were different concepts and have different meanings. Although the concept of self-efficacy may still be unclear, I think that it is essential to elucidate its meaning because it helps to understand more about this concept.

The term perceived self-efficacy has been substituted in the literature to represent self-efficacy Bandura [5]. The definition of the word perceive is to attain awareness or understanding of or to become aware of through senses. Self-efficacy is defined as a person's own judgment of capabilities to perform a certain activity in order to attain a certain outcome. The term perceive is implied in the definition of self-efficacy and does not change the meaning. In most dictionaries, the word "Self-Efficacy" was presented as two words which was "Self" and "Efficacy". The term "Self" is quite easily understood, it is an individual person as the object of his or her own reflective consciousness Kristen [6].

Aim

The aim of this paper is to explore the meaning of self-efficacy with regard to dietary control in elderly diabetes people.

Methods

Concept analysis is a formal, linguistic exercise to determine defining attributes of a concept Dugger [7], Walker & Avant [8]. The Walker and Avant's concept analysis methodology was used in this paper. This paper will clarify the meaning of self-efficacy in order to use the concept appropriately in further theoretical developments, particularly in promoting health of individuals. The paper will begin by following the eight methods of Walker and

Avant's concept analysis which are to select a concept, determine the aims or purpose of analysis, identify all uses of the concept, determine the defining attributes, construct a model case, construct (Contrary, related and Borderline) cases, identify (Antecedents, Consequences) and define empirical referents.

Step 1: Select a concept

A concept analysis is a process to explore the meaning, the definition and the attributes of a certain concept. The first step of the process is to select a concept. The concept of self-efficacy of diabetes people was chosen for this paper.

Step 2: Determine the aims or purpose of analysis

The purpose of analyzing a self-efficacy concept is to provide a clear understanding and description of this concept. This can be accomplished by utilizing various analytical methodologies. This paper would like to clarify the meaning of self-efficacy in order to use the concept appropriately in further theoretical developments, particularly in dietary control of diabetes people.

Step 3: Identify all uses of the concept

Exploring for meanings should start by searching from various sources because it helps in getting the result from a great amount of valuable information. The considering of all uses of the term not only one aspect of the concept, is done by searching from various sources. Thus dictionaries, thesauri and available literature from a variety of disciplines such as psychology, sociology, nursing, medicine, and epidemiology, etc. were all employed to identify uses of the concept Walker & Avant [8].

The self-efficacy is defined as a person's belief about their competence to complete tasks and reach goals. Bandura [5] mentions that self-efficacy can be achieved by learning through personal experiences, observing other's behavior and performance, following verbal persuasion, and controlling physiological arousals [9].

There are many authors who have provided definitions of the word "Self-Efficacy" such as Kristen [6] who defined self-efficacy as "A Person's own judgment of capabilities to perform a certain activity in order to attain a certain outcome", Edberg [10] defined self-efficacy as "A person's confidence that he or she can perform a behavior", Glanz et al. [11] defined that "Self-efficacy is a person's beliefs about his or her capacity to influence the quality of functioning and the events that affect their life", and Lowenstein, Foord-May & Romano [12] defined that "Self-efficacy is the degree of confidence a person has that he or she can perform a certain behavior and overcome any barriers that may impede progress". From reviewing available literature, it was found that most studies measure self-efficacy through respondent confidence in their capabilities.

In summary, self-efficacy is commonly defined as the belief in one's capabilities to achieve a goal or an outcome and the word "Efficacy" can be applied to both human beings and objects. The both cases are quite similar. They refer to the inherent attributes,

which is the meanings of "Efficacy". Most dictionaries have a similar definition for the word "Self-Efficacy" as a person's own judgment of capabilities to perform a certain activity in order to attain a certain outcome. The ability to recognize, which include the affirmation and the strength, to produce effects in a particular task, it is a sense of self-efficacy. Furthermore, the definitions as described in this paper help provide useful insights about self-efficacy.

Step 4: Determine the defining attributes

The heart of concept analysis is determining the defining attributes. The configuration or identification about attributes of the self-efficacy concept and make a difference from other related concepts. Through exploring the uses of self-efficacy, critical attributes of self-efficacy should be as follows: a belief in the ability of the individual to perform a particular task, the strength of belief in abilities to actually carry out the required behavior and confirm the confidence to overcome the difficulties inherent in achieving a specified level of behavior.

Step 5: Construct a model case

A model case is an example of the use of the concept that demonstrates all the defining attributes of the concept. That is the model case should be a pure case of the concept, a paradigmatic example, or a pure exemplar Dugger [7], Walker & Avant [8]. To clear the concept, the model case of self-efficacy is illustrated as follows:

Mr. Mo is a 76 year -old man, who exercises every day. He began exercising since he was 70 years old or six years ago. He had diabetes diseases. Meanwhile, he had a right leg limp and was hospitalized once at the age of 71. He has been hospitalized for 3 days. After he came back home, a community nurse visited him and gave some advice and discussed with him about the benefits of exercise and gave him examples of how exercise helped to improve the health of other patients. Despite his old age and his illness, he believes that exercise is the best way for recovering from his disease [13].

Mr. Mo also intends to learn about good exercising experiences from his friends. Finally, he has strong beliefs in his ability and the advantages of exercise, so he decided to participate in an exercise program. He began doing exercise by walking slowly but limited his walking to 50feet. Although sometimes he gets hurt from doing exercise, he still continues to do exercise every day. Every morning when he wakes up, he tells himself, "I have to walk soon, I can do it", and he intends to exercise every morning.

After one month, he said, "Before I began exercising, I was worried about my old age because I think that I cannot exercise and I have pains in nearly every joint, but now I am feeling better". And now, he becomes more active in his local senior citizen's group because he had a positive feeling towards exercise. In addition, he believed that if he intends to exercise, he will succeed in walking one mile like others in his age bracket. His commitment is to go out for a walk every morning and gradually increase the distance that he walks. Eventually, he was able to walk one mile like others in his age bracket. After two years of doing exercise, he walks one mile

every morning and he does not need medication to relieve pains. Mr. Mo demonstrated all of the defining attributes of self-efficacy. He had clear goals and an obvious confidence in his capabilities [14].

These characteristics were illustrated in his decision to participate in the exercise program. The strength, affirmation of his confidence, perseverance, and mastery of experience were seen through his exercise goal and practice. He is persistent in his efforts. Although he was in pain, he overcame the difficulty in walking at the beginning of his exercise program. In addition, he did the task with a strong sense of commitment to himself.

Step 6: Constructing contrary, related and borderline cases

Construct a contrary case: Walker & Avant [8] stated that contrary cases are clear examples of “not the concept”, but they are very helpful to understand the concept easily by excluding all its defining attributes. The following case is undoubtedly an example of a person with very poor self-efficacy expectations, devoid of all critical attributes of self-efficacy Dugger [7].

Mrs. Kik is a 74-year-old woman who was diagnosed as having diabetes with arthritis in both knees. She has been hospitalized for 3 days. After she came home, a community nurse visited her and gave her some advice and discussed with her about the benefits of exercise and examples of how exercise helped improve the health of other patients. Although, a community nurse gave some suggestions about the exercise programs, Mrs. Kik ignored the nurse's suggestions. She said, “At my age, I want to rest, I cannot do anything much, I had pains in both of my knees, and I cannot walk and run like a young woman.

This case does not explain and exhibit defining attributes of self-efficacy. Because she lacks confidence in her own abilities, and she thought that her age was a barrier to doing exercise. She did not persist in her efforts to participate in exercise activities or even show a first attempt to exercise.

Construct a related case: The related cases are similar to the concept of self-efficacy. But do not explain all of the defining attributes. Those terms, which appear to be used often and are related to self-efficacy, are as follows: self-esteem, self-concept, self-control, self-actualization, self-confidence, health locus of control, perceived competence, and perceived self-care agency. The related case of self-confidence described below is clearly distinguishable from self-efficacy.

Mr. Pongsit is a 72-year-old man. He had diabetes with an arthritic limp and has been hospitalized for a week. After coming back home a community nurse visited him and talked to him about exercising benefits. She gave suggestions about an exercise program and she tried to explain that an exercise program will help reduce the severity of his symptoms.

After that, he decided to participate in an exercise program with confidence in his abilities. When he began to exercise by walking slowly, limited his walking to 50 feet. He complained to his

nurse that he was hurting more, and he thinks that it is caused by doing exercise and he did not want to attempt it anymore. He wants to quit exercising. Although, a community nurse has explained about the process of the pain that it was caused by the disease and convinced him to continue exercising, he wants to quit exercising.

This case does not contain all of the defining attributes of self-efficacy. Mr. Pongsit has confidence in his ability however he does not demonstrate an affirmation of confidence in his belief in his ability to overcome the difficulties in order to achieve the goal.

Construct a borderline case: Mrs. Susan who is 72 years old fell from her bed. She was diagnosed diabetes with having fractured her hip. She has been hospitalized for a month. After being discharged from the hospital, the nurse suggested that she rehabilitates herself in a nursing home since her husband may not be able to take care of her due to his deteriorating health. However, the age of her husband is 75-year-old who insists that he will be able to handle it. Although the nurse explains the complexity of care that will be necessary, he believes that he is able to provide care for his wife. He helps his wife to do passive exercise every day, but it is less effective. His ongoing attempt to learn how to rehabilitate her correctly causes further harm to her healing process [15].

This case demonstrates some of the defining attributes of the concept of self-efficacy. The strength of her husband's confidence in his ability to care for his wife is shown by his insistence that he would be able to perform the required tasks. He also illustrated his confirmation of confidence as he tried to master the passive exercise. However, he lacks the capability to learn how to successfully heal his wife through passive exercise.

Step 7: Identifying antecedents and consequences

Identify antecedents: Walker & Avant [8] suggested that antecedents are those events that must occur prior to the occurrence of the concept. The antecedents of self-efficacy Nyi Nyi Htay [13] that arise from the literatures are:

- A. Performing self-efficacy appraisal through self-reflections on personal performance,
- B. Presence of strong self-efficacy expectations (performance accomplishments, vicarious experience, verbal persuasion and physiological cues),
- C. A desire to acquire a new challenging tasks or behaviors,
- D. Having reinforcement to adopt, change, or eliminate the behavior,
- E. Ability to make judgments and decisions,
- F. Proactive thinking,
- G. Having a supportive environment and
- H. Ability and readiness to learn a difficult task or behavior.

Identify consequences: Walker & Avant [8] stated that consequences are those events or incidents that occur as a result of

the occurrence of the concept. According to the result of literature analysis, the consequences of a robust self-efficacy encompass the followings: Views challenging problems as tasks to be mastered, Increased confidence in one's capacity to execute a task or behavior, Increased self-determinism and self-responsibility, Increased reasoning ability, Stronger sense of commitment to one's interests and activities, Develop deeper interest and involvement in the targeted activities, Recover quickly from setbacks and disappointments, Harmonious in a social milieu, Increased tolerance of difficulties and struggles, Increased satisfaction and motivation and Increased ability to control emotional arousals Nyi Nyi Htay [13].

Step 8: Define empirical referents

Determining the empirical referents is extremely useful in instrument development because these are categories of phenomena whose presence demonstrate the occurrence of the concept Dugger [7], Walker & Avant [8]. In a standard way to measure the performance of beliefs, individuals are presented with items of progressively more difficult performance requirements within a certain behavioral domain [5]. The beliefs and commitment of the people are difficult to measure. The items are phrased in terms of whether they can or cannot perform the specific behavior. The strength and affirmation of individual's confidence to overcome difficulties are rated on a 100-point scale, ranging in 10-unit intervals from 0 to 100. Recently, several scales have been developed for health behaviors such as physical activity and have shown to have good reliability and validity Sallis [14].

Nyi Nyi Htay [13] poses to show that various quantitative and qualitative studies are necessary to clarify and validate the empirical referents of self-efficacy. Using structured questionnaires, observations, interviews, focus group discussions and review of the method that it is appropriate to define the concept of self-efficacy. The study and analysis of literary evidence is needed to confirm the reliability and accuracy of these referents.

Analysis of the concept of self-efficacy in terms of its defining attributes, antecedents, consequences, and empirical referents provides information related to clinical usefulness. It helps health care professionals communicate the same notion when discussing self-efficacy and can distinguish this concept from other related concepts.

Discussion

Self-efficacy is basic idea to develop a healthy and productive society. It is one of the best strategies to a challenging task or behavior with the ability to recognize the people and to learn through observation. Self-efficacy refers to an individual's perception of his or her ability to conduct certain acts without other people's help. Strong desire, motivation, and ability are a few aspects of self-efficacy. Patients' confidence in their ability to modify their behavior and perform self-management and self-monitoring will impact the outcome of the self-management including maintaining those changed behaviors Urmimala et al. While self-efficacy is more

emphasized in the West, family support is more common in the East Wanitkun et al. 2011. In Asia including Thailand, patients will rely on their family members to "take care" of them when they are ill or getting old. Parents expect their adult children to take care of them when they are in need Wattanakul.

Even though more individuals with DM participated in or started "Regular Exercise" (definition varied in different studies) after being diagnosed with having DM Kongsap & Methakanjanasak 2012, Mosnier-Pudar et al. 2009, not every individual with DM realizes the importance of physical activity (PA) for their self-management of the disease. It is reported by Houle et al. that completely stopping any exercise or PA after being physically active in their base study was associated with a rise in their HbA1c level at 6-month follow-up Houle et al. 2015.

People must have a sense of efficacy in the maintenance of the perseverant effort needed to succeed. This paper is an attempt to explain the concept of self-efficacy. by examining its meanings, antecedent, consequences, usages and empirical referents, including an illustration of the model case and the contrary case. Based on the results of analysis, an operation of self-efficacy was developed. However, it is important to note that this is only a preliminary stage of analysis in self-efficacy concept.

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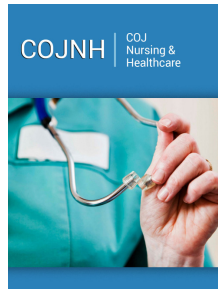
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