



Diabetes self-management: A concept analysis

Dong Thi Thuy Dieu¹, Le Thanh Ha¹, Pham Thanh Huyen¹,
Nguyen Thi Kieu Trinh¹, Nguyen Thi Hai¹, Nguyen Bich Huong²

¹108 Military Central Hospital; ²National Otolaryngology Hospital of Vietnam

ABSTRACT

Objectives: To analyze the concept of diabetes self-management. **Methods:** A systematic concept-analysis approach based on Walker and Avant's eight-step model was utilized. Relevant literature was synthesized through searches across PubMed, Google Scholar, Cochrane databases, and professional guidelines without time restrictions. **Results:** Based on the literature review, the defining attributes of diabetes self-management include: proactiveness and awareness responsibility; glycemic control and adjustment of daily disease management behaviors; and problem-solving and decision-making capacities. The primary antecedents comprise disease knowledge, self-efficacy in disease management, social support, and access to necessary resources. The consequences of effective self-management include improved health behaviors, enhanced self-confidence, and superior clinical outcomes. **Conclusion:** Diabetes self-management extends beyond merely performing care behaviors or adhering to treatment regimens; it encompasses proactiveness, problem-solving, decision-making, and continuous adaptation to changes in the disease state and living conditions. Clarifying this concept establishes a foundation for nurses to evaluate self-management capacity and develop tailored interventions for patients with diabetes.

Keywords: Self-management; diabetes mellitus; concept analysis; self-care; adherence to treatment

INTRODUCTION

Diabetes mellitus (DM) is one of the fastest-growing chronic diseases worldwide, creating substantial pressure on public health systems and causing significant socio-economic losses. This emphasizes the urgent importance of implementing comprehensive prevention and control measures through multi-sectoral coordination and effective interventions¹.

Unlike acute diseases, the effectiveness of diabetes treatment depends largely on behaviors performed every day outside the hospital. As healthcare shifts from a provider-centered model toward patient-centered care, the term "self-management" has emerged as a key concept. Previous studies have demonstrated that optimizing diabetes self-management is the key to improving health outcomes and preventing complications^{2,3}.

However, in clinical practice and research in Vietnam, this concept is often confused with or treated as equivalent to “self-care” or “treatment adherence.” This lack of consistency creates difficulties for nurses in designing assessment tools and health-education intervention programs. The purpose of this article is to apply Walker and Avant’s (2019) eight-step process to analyze and clarify the distinct nature, core attributes, and empirical referents of the concept of “diabetes self-management.”

METHODS

The study used a systematic concept-analysis approach based on the Walker and Avant (2019) model, which comprises eight sequential steps. Data for the analysis were synthesized from relevant literature identified through searches of reputable medical databases, including PubMed, Google Scholar, and Cochrane, as well as professional guidelines, including those of the American Diabetes Association (ADA), Metabolism and Diabetes of South Africa (SEMDSA). The search used the following keywords: “self-management”, “diabetes mellitus”, “concept analysis,” and “self-care”.

The search strategy had no starting time restriction to ensure the inclusion of both foundational, landmark studies defining the core concepts and the latest contemporary research.

Inclusion criteria: The selected sources included scientific research articles, review articles, and professional guidelines that were directly relevant to the concept of diabetes self-management, and providing a definition of “self-management” among patients with diabetes mellitus.

Exclusion criteria: Sources that were not directly relevant to the concept under study,

duplicate sources, or sources that did not provide sufficient information for concept analysis were excluded.

The search process ultimately identified and selected 26 most relevant articles for this review

According to Walker and Avant ⁴, the approach to concept analysis includes the following steps:

1. Select the concept
2. Determine the aims or purposes of the analysis
3. Identify definitions and uses of the concept
4. Determine the defining attributes of the concept
5. Construct specific clinical cases
6. Construct related, borderline, contrary, and other variant cases of the concept
7. Identify antecedents and consequences
8. Define empirical referents

RESULTS

Selection of the concept

Diabetes mellitus is one of the most common chronic diseases worldwide and is becoming a major challenge to healthcare systems because of its increasing prevalence, high risk of complications, and considerable economic burden. Unlike acute diseases, diabetes treatment does not rely solely on medical interventions but requires continuous, long-term management in which the patient plays a central role. Therefore, patients’ self-management capacity becomes a decisive factor in maintaining glycemic control and achieving long-term treatment outcomes. Accordingly, selecting the concept of “self-management”

for analysis in this population is necessary.

Objective: To analyze the concept of “diabetes self-management”.

Identification and synthesis of definitions of the concept

Schilling et al.(2002) analyzed the concept of type 1 diabetes self-management in children and adolescents and defined it as an active, daily, and flexible process. In this process, adolescents and their parents share responsibility and decision-making authority to achieve goals related to disease control, health, and a wide range of illness-related activities⁵.

According to Shah et al. (2015), diabetes self-management is defined as an ongoing process in which patients actively integrate healthcare behaviors into daily life to achieve optimal control of their condition ⁶.

Pranata and Wulandari (2021) defined diabetes self-management as the patient's capacity to self-regulate and exercise self-control through a learning process, manifested through internal and external behaviors related to glycemic control, problem-solving, and proactive healthcare-seeking ⁷.

Another study found that self-management and self-care are both indispensable but distinct components of diabetes care. Self-management includes patient behaviors guided by healthcare professionals, including goal setting, behavior modification, and collaborative action planning, whereas self-care refers to autonomous actions undertaken by patients to maintain health and prevent complications. These include adherence to a prescribed diet, regular physical activity, and monitoring blood glucose

levels. Self-care reflects patients' daily experiences and choices in managing their condition⁸. For both type 1 and type 2 diabetes mellitus, this adherence involves a series of demanding and routine tasks such as taking daily medications or insulin injections, self-monitoring blood glucose levels (daily or multiple times a day), following a strict diet, undergoing regular eye examinations, and maintaining daily physical exercise ⁹. While adherence leans toward passive compliance with medical instructions, self-management and self-care require patients' own proactiveness, cognitive capacity, problem-solving skills, and flexible adaptation in daily life. A clear distinction among these three concepts helps researchers and healthcare providers avoid confusion, thereby designing assessment tools and practical intervention strategies for optimal effectiveness

Identification of defining attributes

Based on information collected from the literature, the core attributes of diabetes self-management were identified as follows:

- Proactiveness and awareness of responsibility

There are three main elements of diabetes self-management: the process and activities of glycemic control, self-monitoring to detect diabetes-related problems early, and proactive healthcare-seeking ⁷. For people with diabetes, the patient holds a central role and actively participates in care and disease control. Rather than relying entirely on healthcare professionals, patients actively seek and acquire necessary knowledge about the disease, recognize factors affecting their health status, and make choices appropriate to their own needs. At the same time, patients recognize that diabetes control is not solely

the responsibility of healthcare professionals but is also their own ongoing responsibility. Thus, the core of this attribute lies not merely in performing care behaviors, but in the transition from being a passive recipient of care to becoming an active participant who assumes responsibility for managing his or her own disease.

- Glycemic control and adjustment of daily disease-management behaviors

Diabetes self-management involves patients actively maintaining the behaviors necessary to control the disease in daily life in accordance with their treatment plan and health status. According to the American Diabetes Association (ADA), daily disease-management behaviors include maintaining an appropriate diet, engaging in physical activity, taking medications as prescribed, monitoring blood glucose, reducing the risk of complications, and maintaining healthy coping with the disease ¹⁰. These behaviors provide the foundation for diabetes care and control. However, self-management is not simply the performance of care behaviors or adherence to a treatment plan. Patients need to actively maintain and adjust these behaviors according to their health status and living circumstances. Therefore, in this analysis, self-care behaviors are considered a component of self-management, whereas the abilities to monitor, recognize changes, solve problems, make decisions, and adjust behaviors are features that distinguish self-management from merely performing routine care behaviors.

The Society for Endocrinology, SEMDSA also provides guidance on the management of type 2 diabetes, with a focus on self-management. According to SEMDSA, self-management centers on patient education, including education

on basic diabetes knowledge; self-monitoring of blood glucose; recognition and management of both chronic and acute diabetes complications; risk-factor modification behaviors such as smoking cessation, physical activity, diet, and minimizing alcohol consumption; and coping mechanisms such as psychosocial support ¹¹.

According to Shah et al. (2015), diabetes self-management includes the following core components: following a healthy diet, self-monitoring blood glucose, adhering to prescribed medications, and proactively engaging in behaviors aimed at reducing the risk of diabetes complications. By actively and consistently implementing these components, patients can not only improve glycemic control but also reduce the risk of complications and improve long-term quality of life ⁶. The influence of the treatment plan on the effectiveness of self-management is mainly reflected in self-management of taking oral medications or injecting insulin as prescribed and monitoring blood glucose ¹². In addition, patients need to recognize and control negative emotions and adapt to difficulties encountered while living with the disease.

- Problem-solving and decision-making capacity

In the self-management process, patients can proactively detect abnormal signs early by monitoring HbA1c, blood glucose levels, and symptoms of hyperglycemia or hypoglycemia, thereby actively participating in their own healthcare ⁷. The ability to independently detect, analyze, and manage abnormalities is reflected in the patient's capacity to recognize unusual bodily changes, identify or analyze possible causes related to the disease, and proactively

select appropriate management actions in daily life. Patients not only recognize signs such as hand tremors, sweating, hunger, dizziness, or fatigue that may suggest hypoglycemia, but also know how to relate these manifestations to factors such as skipped meals, inadequate food intake, increased physical activity, or medication use. On this basis, patients can proactively take appropriate measures, such as eating candy or drinking sugar-containing water when symptoms of hypoglycemia occur and then reassessing their condition. Similarly, when engaging in physical activity, patients can recognize the risk of blood glucose changes and proactively adjust meal timing or other necessary care activities. Thus, this attribute reflects the patient's ability to observe and assess his or her condition, link it to possible causes, and translate that understanding into appropriate, safe, and timely management actions in real-life situations.

Antecedents and consequences

Antecedents:

Several studies have identified factors that may act as antecedents or facilitate the process of diabetes self-management. These factors include disease knowledge, self-confidence in one's own ability, social support, communication between patients and healthcare professionals, and supportive resources. Self-efficacy is a person's confidence in his or her ability to perform goal-directed behavior, and self-efficacy in diabetes self-management has been shown to be associated with better self-care behaviors and glycemic control among people with diabetes ^{13, 14}.

According to a 2011 multidimensional analysis of self-management in chronic

illness, the term self-management is widely used in the literature as an approach to improving outcomes in chronic disease. Antecedent factors leading to self-management derived from the research literature include information, confidence, support, intention, and mutual investment between patients and healthcare providers¹⁵.

A study by Gunggu et al. (2016) identified five factors that may influence self-management capacity in people with type 2 diabetes: belief in treatment effectiveness, self-efficacy, family support, communication between healthcare providers and patients, and diabetes-related knowledge ¹⁶. Family is an important source of support for people with chronic diseases¹⁷. Patients who have a spouse perform disease self-management significantly better than those who are single, widowed, or divorced¹⁸.

Diabetes education and counseling programs, particularly interventions aimed at increasing self-efficacy, providing knowledge, and building self-care skills, are important factors that facilitate disease self-management. In addition, behavioral counseling and skills-development interventions can help patients improve the confidence and competencies needed to actively manage diabetes in daily life ¹⁹.

Socioeconomic factors and access to technology may also be antecedents of diabetes self-management. Technology not only supports better disease self-management but also facilitates access to diabetes self-management education and support. The use of technology should be expanded because it can help detect problems early, promote timely adjustments in management/treatment, and contribute to continuous improvement in care ^{20, 21}. Patients with stable financial resources

and access to modern technologies (such as health-monitoring applications and continuous glucose-monitoring devices) have a substantial advantage in acquiring information, maintaining appropriate nutrition and physical activity, and closely monitoring blood glucose, thereby enabling more proactive and effective disease self-management.

Consequences:

Previous studies have shown that diabetes self-management can produce many positive outcomes, concentrated in three main groups: behavioral change, increased self-confidence, and improved health outcomes ^{7, 15}. Effective self-management helps minimize acute symptoms and the risk of chronic complications, thereby improving physical and mental health. Favorable glycemic-control outcomes reinforce patients' confidence and sense of mastery over the disease. Patients may become more confident in their own self-care ability, creating motivation to sustain positive health behaviors over the long term.

Several studies have shown that improving diabetes self-management capacity is important for achieving better health outcomes and reducing the incidence of complications^{3,19}. The effectiveness of diabetes self-management has been shown to be closely associated with glycemic control ²². Another chronic disease self-management program intervention was designed for 952 patients aged 40 years or older with physician-confirmed chronic diseases; the study demonstrated that the program was feasible and provided greater benefits than usual care in improving health behaviors and health status. It also resulted in fewer hospital admissions and fewer days of hospitalization ²³.

One important consequence of effective diabetes self-management is improvement in clinical and paraclinical indicators. These outcomes can be assessed through HbA1c, blood glucose, blood pressure, BMI, blood lipid indices, fatigue levels, and the occurrence of complications. Therefore, improved clinical outcomes can be considered an important criterion reflecting the effectiveness of diabetes self-management. Evidence indicates that chronic disease self-management programs are useful and appropriate for reducing HbA1c levels in people with poorly controlled type 2 diabetes.

Construction of a model case

Mr. A, aged 55 years, was diagnosed with type 2 diabetes five years ago. After receiving guidance from healthcare professionals, he actively learned more about the disease, diet, physical activity, medication use, and blood glucose monitoring. He maintains medication use according to the treatment plan, self-monitors his blood glucose, and adjusts his diet to suit his health status. He recognizes that disease control is his own responsibility and actively participates in decisions related to his healthcare. When he notices that his blood glucose is higher than usual, he reviews his diet, medication timing, and level of physical activity over the preceding days. When symptoms suggestive of hypoglycemia occur, he recognizes the condition, takes appropriate management measures as instructed, and subsequently rechecks his blood glucose. When he cannot resolve the problem himself or an abnormal condition persists, he proactively contacts healthcare professionals for advice.

Mr. A's case demonstrates all three attributes of diabetes self-management: proactiveness and awareness of responsibility

for disease management; maintenance of disease-management behaviors in daily life; and the ability to detect problems, assess causes, make decisions, and take appropriate action. Therefore, this is a model case of the concept of diabetes self-management.

Construction of other illustrative cases

Borderline case:

Mr. A, aged 50 years, actively learns about the disease, self-monitors his blood glucose, and maintains his diet, physical activity, and medication use according to the plan. However, when his blood glucose changes abnormally, he only records the result and continues the previous plan without assessing the cause or identifying an appropriate management measure.

This case clearly demonstrates proactiveness and daily disease-management behaviors but lacks problem-solving and decision-making capacity in response to changes in the disease condition. It helps clarify that merely performing care behaviors is insufficient to fully define the concept of diabetes self-management.

Contrary case:

Mr. C, aged 58 years, has been diagnosed with type 2 diabetes but does not actively participate in disease management. He frequently skips medications, does not monitor his blood glucose, and does not maintain an appropriate diet or physical activity. When healthcare professionals explain his condition, he does not proactively seek further information and believes that disease control is entirely the responsibility of healthcare professionals. When abnormal symptoms occur, he does not recognize or assess his condition, does

not attempt to identify the cause, and does not proactively take management measures or seek appropriate medical support.

Mr. C's case does not demonstrate the core attributes of diabetes self-management. The patient does not participate proactively, does not maintain disease-management behaviors, and lacks the ability to proactively solve problems or make disease-related decisions. Therefore, this is a contrary case of the concept of diabetes self-management.

Related case

Ms. D, aged 52 years, has type 2 diabetes and self-monitors her blood glucose daily, takes medication as prescribed, maintains an appropriate diet, and exercises regularly. She performs these behaviors fairly consistently, but mainly to maintain health and prevent complications as instructed; she rarely proactively evaluates emerging problems or makes decisions to adjust her behaviors when circumstances change.

Ms. D's case clearly demonstrates self-care and treatment adherence, concepts that are closely related to but not entirely synonymous with self-management. This case shows that a patient may perform self-care behaviors well without necessarily demonstrating full self-management capacity, particularly in proactive decision-making and problem-solving.

Identification of empirical indicators

The empirical indicators of diabetes self-management can be specifically measured using validated standardized scales such as the SDSCA (Summary of Diabetes Self-Care Activities)²⁴ to assess the frequency of daily care behaviors, the DSMQ (Diabetes Self-Management Questionnaire)²⁵ to measure treatment adherence and interactions with healthcare services, and

the DMSES (Diabetes Self-Efficacy Scale)²⁶ to determine patients' confidence and self-coping capacity. Applying these tools enables behavioral manifestations to be quantified accurately, providing a basis for direct comparison with clinical indicators such as fasting blood glucose and HbA1c to comprehensively evaluate the effectiveness of the self-management process.

Synthesis and proposed definition of the concept

Diabetes self-management is an active, continuous, and adaptive process in which the patient holds a central role and assumes responsibility for disease management; proactively performs daily disease-management behaviors; and simultaneously monitors and recognizes changes in health status and living circumstances in order to adjust behaviors, select appropriate coping responses, and reassess outcomes. When necessary, the patient proactively seeks professional support to maintain disease control, adapt to changes, and sustain an appropriate life while living with diabetes.

CONCLUSION

This article identifies diabetes self-management as an active, continuous, and adaptive process in which the patient plays a central role in managing the disease and maintaining life with the condition. The concept encompasses not only daily disease-management behaviors but also emphasizes the abilities to monitor, recognize changes, adjust behaviors, cope, and seek support when necessary. Clarifying the concept helps guide nursing practice and the development of interventions to strengthen diabetes self-management capacity.

Research ethics: Ethical issues were not addressed in this article.

Conflict of interest: There is no conflict of interest.

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