



Experience for Self-care Education of Type 2 Diabetic Patients in Korea

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*Abstract*¹

Background/Objectives: This is a qualitative study that analyzed the contents of self-management education experiences of diabetic patients registered in the hypertension diabetes registration management project through in-depth interviews. **Methods/Statistical analysis:** Data collection was conducted for 6 diabetic patients enrolled at the Blood Pressure Diabetes Registration and Education Center in 2019. The data analysis of this study was analyzed using content analysis based on the recorded data of the in-depth interview and the transcribed data.

Findings: As a result of the content analysis, the topic appeared as a motivation for participating in self-management education, participation experience, and demand for future education.

Improvements/Applications: it is necessary to develop and verify a community-based self-management education program for diabetes patients by reflecting the participation experience and educational needs shown in the results of this study.

Index Terms

Self-care, Education Experience, Diabetes, Qualitative Research, Content Analysis

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I. INTRODUCTION

Type 2 diabetes is a disease that causes chronic complications due to persistent hyperglycemia. According to the Diabetes fact sheet in Korea 2018 published by the Korean Diabetes Association [1], the prevalence of diabetes among adults over 30 years of age increased from 5.6% in 2006 to 14.4% in 2016, and 5.10 million people over 30 were diabetic. It is estimated While the number of diabetic patients in Korea is steadily increasing, only 62.67% of diabetic patients are aware of diabetes. In addition, 56.7% of diabetic patients were receiving treatment, and the glycemic control rate (glycated hemoglobin of 6.5% or less) was only 25.1%. Uncontrolled hyperglycemia increases the risk of chronic complications such as myocardial infarction, stroke, chronic kidney disease, diabetic retinopathy, and neuropathy. Among them, coronary artery disease and cerebrovascular disease are the three major causes of death along with cancer [2]. This is due to the failure of proper management of the preceding diseases such as hypertension and diabetes along with the rapid aging of the population. Therefore, the Korea Centers for Disease Control and Prevention (KCDC) is implementing the high blood pressure and diabetes registration management project as part of the cardiovascular disease prevention and management project. The hypertension and diabetes registration management project is a public-private partnership project that registers and manages hypertension and diabetes patients over the age of 30 who reside in the project area according to their resident registration. Currently, in Korea, 22 supporters and 19 hypertension and diabetes centers nationwide provide disease and nutrition education and counseling services to improve patients' self-management ability [3]. Although the sharing of business performance and quantitative evaluation are reported every year, it is difficult to explore the unique experiences of diabetic patients or the overall situation of life with a structured questionnaire. In addition, in quantitative evaluation, it is easy to overlook important issues that patients express in different ways, and it may be difficult to search for practical experiences and services necessary for self-management of diseases from the perspective of subjects rather than the researcher [4]. In previous studies, the education for self-management of diabetic patients, which is being implemented in Korean hospitals, has been steadily emphasized for the past 50 years. However, the evaluation of the effect is insufficient and the satisfaction is not high, indicating that many improvements are needed in diabetes education [5]. According to a study on the education status of diabetic patients for the 5th

National Health and Nutrition Examination Survey, 20.3% of a total of 1,498 people diagnosed with diabetes received diabetes education, of which 15.7% received education in hospitals, and other public health centers and public lectures were reported to have been educated [6]. Diabetes self-management education in Korea is still carried out mainly in hospitals, and systematic reporting on the effectiveness of programs or education for relieving patients in the local community, especially the evaluation of performance indicators on the subject side, is very insufficient [5,7]. Therefore, it is necessary to study the specific experiences of the subjects who received education for effective operation and quality education services for diabetic patients by reflecting them in future programs. Therefore, this study intends to explore the experiences of self-management education of diabetic patients through content analysis.

The purpose of this study is to provide basic data for effective operation by in-depth exploration of the self-management education experiences of diabetic patients registered in the hypertension diabetes registration management project and reflecting them in future programs. The research question to achieve this objective is "hypertension. How is the self-management education experience of diabetic patients enrolled in the diabetes registration management project?"

II. MATERIALS AND METHOD

A. Study Design

This study is a qualitative study that analyzed the contents of self-management education experiences of diabetic patients registered in the hypertension and diabetes registration management project through in-depth interviews.

B. Participants

Participants in this study were six diabetic patients who had at least one self-management education experience at the Hypertension Diabetes Registration Education Center. In a previous study on the experiences of the elderly living with diabetes in the vulnerable class, six subjects were also targeted [8].

C. Data Collection

Data collection was conducted from March to June 2019 in G city in Korea. This researcher conducted an in-depth interview with 8 nursing college students who voluntarily applied for participation through a recruitment notice. The in-depth interview took about 50-90 minutes. The data were collected from diabetic patients over the age of 30 who had self-management education at the Hypertension and

Diabetes Registration Education Center in G city. When visiting the center, the explanations and consent forms were read to those who voluntarily participated in the study, and subjects were recruited. The in-depth development interview was conducted 1-2 times through open-ended interview questions, and the duration of the interview was approximately one hour. The additional interview was conducted to those who needed it when there was a part that the data analyzer did not understand properly or when it was necessary to confirm additional concepts. The in-depth interview was conducted by selecting the day the research participants would like to visit the center and choosing a comfortable place. If the subject wanted, a quiet counseling room in the center or a coffee shop in the center building was used as the interview location. Before proceeding with the study, consent was obtained from the research participants, including the purpose of the study, the time required, the process, the recording of the interview, and the consent of the data. It was explained that a given gift was paid when participating in the study, and a given gift was provided even if the participant withdraws from the study in the middle.

The in-depth interview questions are as follows:

- How did you come to know and participate in the education? (Participation path)
- How many times have you participated in diabetes-related self-management training at the center?
- What motivates you to participate in education? (Motive to Participate)
- (What did she expect to participate in through education?)
- How (where) do you usually get health information about diabetes management?
- How did you get health information before using the Godang Center?
- What experience did you have while participating in diabetes self-management training at our center?
- What has changed since you received diabetes self-management training?
- If you have experience in education through the mass media or other institutions, please tell us what you think is different from the self-management education conducted in our center.
- We would like to ask you some specific questions for better education in the future. Please speak frankly and comfortably.

D. Data Analysis

Content analysis is a research method that classifies unstructured communication data using a type-specific system and infers conclusions through careful interpretation. is a method to extract and

analyze [9,10]. Therefore, the data analysis of this study was analyzed using the directive content analysis based on the recorded data of the in-depth interview and the transcribed data. In the case of directive content analysis, codes are determined before data analysis and during the data analysis process based on theories or previous research results [10]. As the first step of the analysis, the researcher reads the copied data repeatedly and extracts meaningful words, sentences, and paragraphs related to the phenomenon, paying attention to the context and the participants' responses in the data. Then, the experiences of the education experience of diabetic patients confirmed based on previous studies are classified and the data corresponding to each category are named and classified. In order to secure the validity of the research results, researchers reviewed each other and provided feedback.

E. Ethical Considerations

The researcher posted the recruitment notice on an online bulletin board mainly used by nursing students. Students interested in participating in the research were asked to leave a personal message to the researcher and voluntarily express their intention to participate. The purpose of the research, research methods, data collection, confidentiality, and guarantee of anonymity were explained to the research participants so that they could voluntarily participate in the research. The researcher explained to the study participants that they could withdraw from the study at any time during the study, and that this did not affect the individual evaluation score. Only those who understood the purpose of this study and voluntarily consented to participate in the study were interviewed after obtaining a written consent form.

III. RESULT AND DISCUSSION

This study is a qualitative content analysis study attempted to help the understanding of the subjects by in-depth exploration of the experiences of diabetes self-management education for adults with type 2 diabetes in the community. The results of in-depth interview data analysis are as follows in Table 1.

Table 1. CONTENT ANALYSIS OF EDUCATION EXPERIENCE OF TYPE 2 DIABETES PATIENTS'S SELF CARE

Category	Subcategory
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	recommendations around	<ul style="list-style-type: none"> • family's recommendation • Recommendations from friends and acquaintances • Recommendation of medical personnel from medical institutions 			<ul style="list-style-type: none"> • management skills acquisition • Acceptance of diverse understandings and differences among group members
motivation to participate	voluntary participation	<ul style="list-style-type: none"> • Accidental visit to the training site while needed • A satisfactory educational experience • To get help with professional knowledge and methods • Anticipation of self-management motivation • Anticipation of meeting other diabetic patients • For basic physical examination 		trust in the institution	<ul style="list-style-type: none"> • Experience with the organization's attention to detail and respect • Confidence in business through cooperation with medical institutions • Thank you for your continued management • Financial help in providing free tests and free education • Comfort with familiar educators and trust in the institution
	Encouraging Institutions to Participate	<ul style="list-style-type: none"> • Thanks and sorry for the educational guide text • Sending promotional materials and calling 			<ul style="list-style-type: none"> • Strengthening the contents of psychological coping strategies such as depression • Expansion of time to share experiences through cases among training participants • Specific countermeasures against factors that hinder self-management
	increase awareness	<ul style="list-style-type: none"> • Recognize the causes of diabetes in connection with my situation • Recognizing the cause of my elevated blood sugar • Knowing the current disease state by health indicators • Knowing about diabetes and how to manage it • Knowing my management goals • Perception of relative risk for developing complications 		Training content	
Participation process	improve motivation	<ul style="list-style-type: none"> • An escape from helplessness • Decided to start over • The success experience of group members is a stimulus • Efforts not to be a burden to my children. • Decided to prevent terrible complications 		Educational request after participation	<ul style="list-style-type: none"> • Expansion of long-term program operation • Expansion of participatory program operation • by age. Education operation by level of diabetes knowledge • Individual education if necessary after group education
	Improving social relationships	<ul style="list-style-type: none"> • The joy of creating and learning together • The comfort and psychological safety • Daily vitality of learning and encounters • Sharing experiences through examples among participants • A feeling of psychological atrophy due to the difference in speed between group members and 		Other improvements	<ul style="list-style-type: none"> • Demand to increase the number of inspections and training operations • Various hours of training for office workers • Operation of psychological counseling program and connection and support to specialized institutions

A. Motivation to participate

In this study, the motivations for participating in diabetes self-management education were very diverse. In other words, they participated in the education for various reasons and occasions, such as the recommendation of family, acquaintances, and

medical personnel, voluntary participation in order to know professional knowledge and management methods, and continuous text or phone counseling from local educational institutions. In addition, it was found that the previous positive educational experience had an important influence on the motivation to participate in re-education. Therefore, there is a high possibility that education will lead to re-education in the local community only when the education meets the needs of the target audience and various situations in the educational field. Chronic disease management is not a one-time education. Therefore, in order to promote the implementation of self-management through continuous and repeated education, it is necessary to examine in depth the motivation for participation, such as why the subjects participated and what they are expecting [11].

B. Participation process

The experiences of participants in this study were divided into four categories. First, the study participants were aware of general diabetes knowledge and diabetes management methods. However, it was necessary to recognize the disease state and raise awareness of each individualized management goal rather than unilateral information delivery and instructional education. Improving awareness of disease is an experience that can be closer to achieving the purpose of education. Also, in this study, the relative risk perception of complications showed negative results such as active self-improvement efforts and anxiety and fear. Therefore, it is necessary to consider an intervention method for positive change [12].

Second, the improvement of self-awareness helped to improve the motivation for self-management. In addition, sharing successful cases of other diabetic patients in similar circumstances improved their self-efficacy and made them determined to start anew. Therefore, the success of self-management implementation requires the individual understanding of the subjects to improve intrinsic motivation [13].

Third, most of the existing studies have focused on program effectiveness evaluation and quantitative evaluation. However, the emotional and social experiences of the subjects of this study in the educational participation process have important meanings for the diabetic subjects who are socially and psychologically withdrawn and the elderly diabetic in the community with many limitations in social relationships. In particular, it was found that subjects with strong negative perceptions of diabetes received comfort or psychological stability just by meeting the same diabetic. In addition, in the case of the subjects participating in the long-term program,

they not only acquired knowledge or skills, but also felt the joy and intimacy felt while working and communicating together. These feelings acted as a motivation to participate in education afterwards and gave vitality to daily life. Improving social relationships is also helpful in resolving emotional and psychological problems such as depression and isolation in diabetic patients. Therefore, the expected effect of such education should be considered when developing a long-term, participant-participating program [13,14].

Fourth, the subjects showed trust and satisfaction with the institution. The specific reasons are as follows. It was gratitude for continuous management, consideration and respect experienced in the process, connection with medical institutions, and familiarity and comfort to educators who are familiar even after the years have changed.

C. Education request after participation

The results of interviewing the subjects of this study on the premise of future education participation plans after participating in education are as follows.

First, depression and psychological coping strategies are pointed out as a part to be strengthened in the standardized education for diabetes self-management. It was found that the subjects of this study had the psychological and emotional problems experienced by having diabetes, such as the burden of self-management including blood sugar control and the fear of the risk of complications. In addition, daily stressful experiences, such as family relationships and work life, showed a vicious cycle of aggravating diabetes by giving them a feeling of desperation or helplessness. It was found that not only the stress from the disease itself, but also the continuous and excessive daily life stress causes depression and anxiety, which leads to an increase in blood sugar and a vicious cycle that leads to a decrease in physical function. Psycho-emotional problems such as psychological exhaustion and frustration due to long-term illness and a sense of helplessness in daily life were found to be major factors that deteriorated the quality of life. According to previous studies, when depression or anxiety worsens, it indirectly interferes with diabetes management behavior and can affect metabolic control, so psychological intervention for this emotional state is absolutely necessary. Therefore, there is a limit to solving these psycho-emotional problems only with the stress management provided by standardized educational materials. Therefore, it is urgent to develop a program that can strengthen the content of coping strategies and operate in the local community. In addition, there was a study on specific methods of coping with factors that interfere

with self-management such as exercise management and diet management. Diabetic patients are having difficulty maintaining the recommended self-management behavior, so an educational approach with practical and specific cuts will be able to solve the needs [15,16].

Second, as for the demand for education method, it is not a one-time education, but an opportunity to repeat education quarterly a year, strengthen participatory education programs such as exercise programs, dietary prescription and diet experience, and cooking practice, and education by age group and diabetes knowledge level operation was requested. In addition, they wanted participatory education through concrete and vivid experiences of diabetic people in similar situations rather than unilateral delivery-type education by educators. In this way, the self-esteem of the presenter of the case is improved and the effect of improving the self-management motivation and self-efficacy discussed above for the participants can be expected [17,18]. In addition, there was an increase in the number of times of diabetes-related physical measurements and education in various time zones for office workers.

IV. CONCLUSION

The purpose of this study is to explore the experiences of self-management education of Type 2 diabetic people through the content analysis technique, and to seek strategies to increase the effectiveness of education.

Through this study, it was possible to explore the experiences of self-management education of diabetic people, and these results will serve as basic data for more efficient operation of community-based self-management education programs and verification of their effectiveness in the future. Since this study was conducted on diabetic patients in one region, there is a limit to generalization.

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