

Self-management Experience of Patient with Diabetes Mellitus Type 2

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Abstract

Background: Population of people with diabetes mellitus (DM) in Indonesia are increasing every year. Indonesia ranked sixth countries for the number of adults with diabetes (20-79 years) and ranked third as the deadliest diseases, (IDF, 2017; WHO, 2016). However, little research is known regarding self-management experience of people with DM type 2 in Indonesia.

Objectives: The purpose of this study was to explore the Self-management Experience of Patient with Diabetes Mellitus Type 2 in Indonesia.

Methods: Purposive sampling, one-on-one, in-depth with semi-structural interviews were conducted to collect data. Data saturation was achieved after interviewing five participants with DM type 2. Narratives were analyzed by Colaizzi's (1978) seven-step method.

Results: These five themes and the sub-themes were: dietary adjustment (decreasing carbohydrate intake, decreasing sweet food), using medicine to decrease blood glucose (using herbal medicine, taking oral hypoglycemic drug, injecting insulin), taking exercise (taking exercise by walking, taking light exercise to decrease blood sugar, maintaining exercise habit, taking exercise with friends), taking care of DM by oneself (Checking blood sugar by oneself, Injecting insulin by oneself, controlling eat desire) and looking for information regarding DM (getting information from nurse, getting information from google, getting information from health worker, getting information from physician).

Conclusion: Health workers have to realize that each patient with DM can carry out self-management. The difficulties were patients complaining are control desire to eat and the availability of valid information related to the way of stabilization their blood glucose through food adjustment, exercise and medication. The most important thing before the patient can perform self-management properly that the provision of basic information about the disease.

Key words: diabetes mellitus type 2, self-management, experiences, Indonesia

I. Introduction

Population of people with diabetes mellitus (DM) are increasing every year. The total of patients with DM around the world are 425 million people, which increased 48% rather than each year before.

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Prediction in 2045, the population will increase until 629 million. Moreover, patients with DM in Indonesia were 159 million in 2017, increasing 15% of the previous year. Meanwhile, predicted the number of Indonesian populations who will be suffered from diabetes are about 183 million in 2045, (IDF, 2017).

Furthermore, Indonesia ranked sixth countries for number of adults with diabetes (20-79 years) and ranked forth undiagnosed diabetes in the world as well as ranked third as the deadliest diseases, (IDF, 2017; WHO, 2016). The main reason why these events can occur is due to self-awareness related to economic factor (medical and accommodation costs), the difficulty of processing health insurance, difficulty access to health services, unsatisfactory health services, more trust with traditional medicine than modern medicine and lack of knowledge regarding diabetes mellitus and risk of complication, (Pranata, 2017). As consequence, most people who suffer DM do not know how to manage them self during sickness or we called as self-management.

Self-management is the individual capacity of patient to handle his health problem such as, symptoms, physical and psychosocial consequences and lifestyle changes, (Barlow et al, 2002). Efficacious self-management encompasses ability to monitor one's condition and to achieve the cognitive, behavioral and emotional responses necessary to maintain a satisfactory quality of life.

In Indonesia, patients with DM are more likely to take treatment and control their condition in health workers around their homes because it feels easier, more efficient and cheaper. Most people are not interested to process their health insurance because of the complicated process. Moreover, most of them do not know how to manage them self, sometimes there are not using footwear when doing activities and claims that the numbness in their legs is a normal condition due to not use footwear for a long time. Actually, this situation was not matched with health worker expectation, (Pranata, 2019; Pranata, Hs, & Sujianto, 2016).

Majority of health worker expectation were patient can improve their health by manage healthy behavior. On the other hand, several of patients often feels over whelmed by complexity of his problem such as control blood glucose, diet, exercise and drug consumption as regularly, (Sassen, 2018). The difficulty life experiences and struggle to adapt diabetes mellitus need to be attention for health worker. The incompatibility between self-management was shown by patients and health worker expectations showed us that health workers are less successful to provide the best solution based on patient need, further it assists this study to capture and subjectively present information about the cause of lack self-management. The purpose of this study was to explore the self-management experiences among patients with DM type 2.

II. Methods

Study Design

Qualitative research explores unknown areas of knowledge. Phenomenology explores the meaning of a live experience from the individual's perspective. Qualitative researchers usually take a person-centered and holistic perspectives; phenomenology is a qualitative approach designed to seek people's life world and lived experiences to gain insight and extract the essence of the experience that human beings have in common beyond personal cases. The cases objectively described the phenomena and obtained the truth of matters in the broadest sense, (Polit & Beck, 2015). Husserl defined phenomenology as "the science of

essence of consciousness”, and promoted the meaning of lived experience as a rigorous way of understanding the world, (Groenewald, 2004). Colaizzi (1978) developed a method of phenomenological analysis based on Husserl’s descriptive phenomenology, (Morrow, Rodriguez, & King, 2015). From this philosophical stance, the meaning of an experience is described within emergent themes and common patterns from specific experiences, (Groenewald, 2004; Morrow et al., 2015).

As the focus this study was to understand of self-management experiences among patients with DM in community, Colaizzi’s (1978) phenomenological approach was used because it provides a clear structure for analyzing data, (Gill, 2014).

Settings and Participants

The researcher recruited participants using a purposive sampling method in community at Sumbawa Besar, West Nusa Tenggara, Indonesia. After the researcher was checked the data in hospital regarding patients with DM and selected into inclusion criteria’s, therefore, five respondents were selected. Before conducted the interview, the participant who wished to participate had gotten explanation about the study aims and procedures. Eligibility criteria were set for selecting the participant, such as: Having diabetes mellitus type 2 for at least one year Living at the community, willing to participate in research, had signed the informed consent form, willing to express their feelings, thoughts and share their experiences via an in-depth interview.

Data Collection

Following consent, participants were asked by the researcher to describe their experiences related to self-management in community, using a semi-structured interview guide with several broad questions, such as:

1. Would you tell me how long having the diabetes mellitus?
2. What kinds of experience changed since having the diabetes mellitus?
3. How do you deal with all the changed or experience regarding the diabetes mellitus?
4. What are your feelings and thoughts when you deal with your diabetes mellitus?
5. What difficulties do you experience during you manage your diabetes mellitus?
6. Do you have expectations regarding manage your diabetes mellitus?
7. Do you have more information to be shared regarding your experience to handle your diabetes mellitus?

Probing questions were also prepared to encourage the participants to give more information about their experiences, such as "Can you tell me more about that?". At the end of interview, the question "Is there anything else you would like to tell me?" was a positive closure to interviews, (Polit & Beck, 2015). Interviews were conducted in a comfortable place around patient home. Interviews lasted 15-20 minutes and were digitally recorded and transcribed verbatim.

III. Data Analysis

The interview results were analyzed by the researcher according to Colaizzi's phenomenological analytic method, (Colaizzi, 1978). It consists of seven steps (Polit & Beck, 2015) such as:

1. Read all protocols to acquire a feeling for them
2. Review each protocol and extract significant statements
3. Spell out the meaning of each significant statement
4. Organize the formulated meanings into clusters of themes
5. Integrate results into an exhaustive description of the phenomenon under study
6. Formulate an exhaustive description of the phenomenon under study in as unequivocal a statement of identification as possible
7. Ask participants about the findings thus far as a final validating step

The first step was to acquire a sense of each transcript. In this study, each interview was listened to and checked for audibility and integrity as soon as possible when the interview was completed. The interview was transcribed verbatim and returned, therefore, the participants ensured that meaning was preserved. The interview transcript was written in Indonesian and translated into English by researcher. Each transcript was read several times until a sense of experience of self-management patients with DM type 2 in community was clear. All thoughts, feelings, and ideas were written during this stage.

The second step was to extract significant statements. Statements and phrases about the experience of self-management in community were extracted from each transcript. These were debriefed and discussed with the research team.

The third step was to formulate the meaning of each significant statement. The extracted statements related to self-management experiences among patients with DM type 2 in community were interpreted into underlying meanings derived from the significant statements.

The fourth step was to organize the formulated meanings into clusters of themes, each cluster of which was coded, including all grouped formulated meanings.

The fifth step was to integrate the results with an exhaustive description containing all the dimensions related to self-management of patient's with DM type 2 in community.

The sixth step was to describe the fundamental structure of the phenomena. At this stage, redundant descriptions were eliminated to establish the fundamental structure and generate specific relationships between clusters of themes and extracted themes. Transcripts were re-analyzed to confirm that themes represented the experiences of the participants to ensure consistency of the data analysis.

The seventh step was to return these research findings to the participants for discussion. All participants gave feedback that the results reflected the meaning of their experiences regarding self-management among patients with DM type 2 in community.

Trustworthiness

Credibility, transferability, dependability, and confirmability were enhanced by using Shenton's framework, (Shenton, 2004). Questions were asked in a logical sequence in semi structured interviews; after each interview, the participant was given a copy of their transcript to affirm the accuracy of the data, and they could give any additional information after the interviews. The researcher attempted to remain as neutral as possible, be aware of presuppositions about how the self-management in community is. Together the research team discussed the findings during the analysis process to make sure that themes that emerged from narratives of participants' descriptions reflected their experiences. The provision of verbatim quotations provided a check to ensure that the researchers faithfully presented the participants' experience.

Ethical Approval

Participants provided written informed consent procedures to participate in this study. This study also was successfully accepted by the hospital's and local government.

IV. Results and discussions

Five emergent themes were identified to illustrate the self-management experiences among patients with DM type 2. These themes were: (i) dietary adjustment, (ii) using medicine to decrease blood glucose (iii) taking exercise, (iv) taking care of DM by oneself, and (v) looking for information regarding DM.

1. Dietary Adjustment

Dietary adjustment refers to patient's efforts to maintain dietary intake and ensure that dietary intake is a safe and sufficient to keep his blood sugar stable. When dietary intake is felt by patients to be unsafe and sufficient for their needs, further patients begin to look for other alternative food that are safer in keeping their blood sugar still stable. This theme included two subthemes: decreasing carbohydrate intake and decreasing sweet food.

a. Decreasing carbohydrate intake

This study found that patients effort to maintain dietary intake and ensure that dietary intake is a safe and sufficient to keep his blood sugar still stable.

I only eat 1 meal each day. Usually 3 times a day but now it has become 1 time a day. I often drink milk... (participant 3).

Eat 2 times a day, morning and afternoon. Afternoon no eat anymore until evening except drink water. (participant 5)

In another words, patient also try to find other alternative food that are safer in keeping their blood sugar content stable:

I was limited my diet, I ate brown rice, now my condition is better. I'm eating with brown rice. (participant 1).

b. Decreasing sweet food

I never drank sweet tea, sometimes I eat a little sweet cake but it's not every day. (participant 1).

I thought that durian fruit is a big enemy hahaha. (participant 2).

2. Using Medicine to Decrease Blood Glucose

The theme using medicine to decrease blood glucose defines as the approach chosen by patients to reduce or stabilize their blood sugar levels. This theme included three subthemes such as: using herbal medicine, taking oral hypoglycemic drug and injecting insulin.

a. Using herbal medicine

Patients choose to use herbal medicines because they feel safe and have few side effects. Moreover, the herbal medicine gives good effect to control their symptom:

I drunk herbal medication like daun salam or PKI...The gegereng powder is only small pieces of wood, sometimes I have added a ginger to get hot sensation, then the dizziness is gone. (participant 1)

I always consume herbal medicine like an insulin tree, I just drank the leaf. I only consume one leaf if I feel my blood sugar was rises. Sometimes 3 times a day, sometimes 3-4 times a week. I consume it as an addition. (participant 4)

I take herbal medicine every morning...(participant 5)

In another words, patients also use herbal medicines to decrease the doses of chemical drugs such as insulin:

I routinely consume the herbal Mahkota Dewa. I tried to drink mahkota dewa while lowering my insulin levels, starting the insulin I used 12 units down to 8 units, 8 units down to 6 units, 6 units going down to 3 units and finally down in 2 units until I never used it again. I stopped taking insulin because there was mahkota dewa. (participant 3).

b. Taking oral hypoglycemic drug

Patients choose to use oral hypoglycemic drug because they trust to recommendation by physician for using oral hypoglycemic drug to control their blood glucose level:

I get a medicine from a doctor, I consume the medicine after breakfast, the reaction during the day. (Participant 2).

Usually my blood sugar is 300-400, to reduce it by drunk drugs which recommended by doctors (belidabet, metformin), I have both of them. I always consumption routinely. (participant 4).

c. Injecting insulin

Patients choose to use insulin injection because they trust to recommendation by physician for using insulin injection to control their blood glucose level. Moreover, the physician was recommended that insulin injection is safer for patient:

Now I have used insulin. The doctor said insulin was safer. I'm using the insulin 3 times a day. Insulin was injected 5 minutes before eating. (participant 2)

3. Taking Exercise

The term of taking exercise describes about patient's effort to control their blood glucose level by taking exercise. This theme included four subthemes, such as: taking exercise by waking, taking light exercise to decrease blood sugar, maintaining exercise habit and taking exercise with friends.

a. Taking exercise by walking

In this sub-theme, the patient conveys the type of exercise was did, furthermore what the positive effects by doing exercise regularly for their body.

I traveled the distance of the farm by walking approximately 2 kilometers, if I use another road, the distance will be one kilometer... if I go there regularly, I feel more comfortable and healthier. (participant 1).

b. *Taking light exercise to decrease blood sugar*

The patient conveys the type of exercise was chosen to control their blood sugar level.

I anticipate my excessive blood sugar with light exercise, such as running, playing ping-pong and walking in the morning. (participant 2)

c. *Maintaining exercise habit*

The patient effort to control their blood sugar by maintaining the exercise habit, included when they were doing exercise, also how many times and frequencies for doing exercise:

It is necessary to do light exercise. There is a bicycle in my house. I was doing exercise by bicycle less than 5 minutes each day. (participant 3).

Every morning and evening I do exercise, approximately 3 km, at least 3 hours to stabilize my blood sugar. (participant 4).

I am doing exercise after prayer in the morning...(participant 5)

d. *Taking exercise with friends*

This subtheme shows with who and what kind of exercise was did by patient for controlling their blood glucose level:

When afternoon I exercise with my friends, do tennis table. (participant 4)

4. *Taking Care of Dm By Oneself*

The term of taking care of DM by oneself describe about patient ability to make choices independently those how to deal with symptoms caused by diabetes and checked them self by considering with his physical, emotional, knowledge and believe.

a. *Checking blood sugar by oneself*

The patient checks his blood sugar level independently to ensure his health condition:

I checked my blood sugar before drunk a mahkota dewa. After I drunk it, I measured my blood sugar 2 hours later and has down to 130 mg/dl. (participant 3)

b. *Injecting insulin by oneself*

The patient shows his ability to make decisions about how to choose the location of insulin injection based on his physical, knowledge and believe:

I injected it through my thigh or stomach, the location that is easily accessible. (participant 2).

c. *Controlling eat desire*

This shows patient effort to take care of his self to keep his blood sugar still stable.

When I saw durian my desire to eat was very large. But when I remember I was suffering DM, I always tried to control myself. (participant 2).

5. *Looking for Information Regarding Dm*

This term of looking for information regarding DM describe about the patient's efforts to find information about DM actively and passively from various sources and use it to understand the disease:

a. *Getting information from nurse*

Patient get information about DM passively from nurse:

During this time, I often got information from nurse Lisa those reducing food - Sweet foods. (participant 1)

b. *Getting information from google*

This study found that patient get information about DM actively from web:

I searched information from Google internet about how to make blood sugar always stable.
(participant 3)

c. *Getting information from health worker*

This study found that patient get information about DM passively from health worker:

I got information from health workers that diabetes is a genetic illness. (participant 2).

d. *Getting information from physician*

This study found that patient get information about DM passively from physician:

I had a discussion with my personal physician. I always consultation regularly. (participant 4).

It might be reasonable that self-management affected by culture, social value and knowledge. However, from this study, there are so many obstacles were patients facing in reality. Especially for source valid information regarding how to manage them self into food adjustment, exercise and medication. Moreover, valid information from educative process give great impact into self-management process will running well, (Ncama, 2011; Sassen, 2018).

Several participants were tried to practice self-management activity based on their believe, knowledge and value. Information from health worker, web or patients experience has big effect to carried out a self-management. However, doing self-management without good knowledge may unnecessary and potentially even to unhealthy practices, (Atak, 2008; Sassen, 2018; World Self-medication Industry, 2010).

On the other hand, several participants had ability to manage them self very well. Although, it is depending on their knowledge, literacy and social economy, participant number three, four and five have shown that. Provide good, interesting and applicable information for patients become challenges in the future. As a result, patients may have good motivation to change their behavior and effect their self-management, (Bandura, 1989; Sassen, 2018). In addition, the health, insurance and support systems of family must also be another consideration to make self-management can be successful, (Vas et al., 2017).

Using complementary therapy quite popular in Indonesia. Almost all participants in this study used complementary therapy as an additional in medical treatment. Patients got information about the function and usefulness of complementary therapy from various sources such as television advertisements, newspapers, google search, friends and family whose suffer diabetes. Communication between diabetes community, families and health workers are necessary in self-management, (DiNardo, Gibson, Siminerio, Morell, & Lee, 2012; Grossman, Roscoe, & Shack, 2018; Powers et al., 2015; Therapies, 2014). Health professionals should give attention the reality that complementary therapy was popular in community. Need intensive assistance by health workers, because if patients with DM continue to consume complementary therapy without basic knowledge of diabetes care, patients may risk at malpractice experience either hypoglycemia or hyperglycemia caused by medication dosage errors, (DiNardo et al., 2012; Powers et al., 2015). Misunderstanding of complementary therapies selection will result in the wrong management, further complications in the future need to be aware.

This study was an in-depth interview on few informants, and they cannot be considered as representative population among experience of patients with DM in Indonesia. It might possible that patients who participate in this study have different experience from those who were not participate. The

generalizability self-management experience among patient with DM is unknown. Both quantitative and qualitative studies with big sample in the future research are needed.

V. Conclusion

This study is considered as the first research to explore the self-management experiences among patients with DM type 2 at community in Sumbawa Besar, West Nusa Tenggara, Indonesia. Health workers should begin to realize that each patient has ability to carry out of self-management. The difficulties among patients were control desire to eat and availability of valid information from trusted sources. Basic information about disease becomes the most important thing before the patient with DM is able to perform self-management. Moreover, better understanding of disease and good awareness among patients with DM makes self-management will be successful.

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