


# Identifying Information, Motivation & Behavioral Factors and Its' Relation to Diabetes Self-Care: A Qualitative Study among People with T2DM

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| Article info   | Abstract  |
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| <p><b>Article history:</b><br/>Received: July 20<sup>th</sup>, 2023<br/>Revised: August 07<sup>th</sup>, 2023<br/>Accepted: August 20<sup>th</sup>, 2023</p> <hr/> <p><b>Correspondent author:</b><br/>Name: Nadia Amirudin<br/>Address: Institute for Health Behavioural Research, National Institutes of Health (NIH), Malaysia<br/>E-mail: nadia.amr@moh.gov.my</p> | <p><b>Background:</b> Self-care in diabetes management is not a one-size-fits-all approach. It requires individualization based on factors such as age, lifestyle, social support, and overall health. <b>Objective:</b> This study aimed to qualitatively explore psychosocial aspects such as information, motivation &amp; behavioral factors concerning diabetes self-care among people with type 2 Diabetes Mellitus (T2DM). <b>Method:</b> Purposive sampling was used to select patients with Type 2 Diabetes Mellitus from government health facilities in Klang, Selangor. They participated in an In-Depth Interview (IDI) session, which included a semi-structured guide questionnaire. All data were analyzed thematically. <b>Results:</b> A total of 21 IDIs consisting of nine females and twelve males T2DM patients were conducted with an average age of 56 years. The qualitative analysis identified three major themes: Information, Motivation, and Behavior. <b>Conclusions:</b> It is crucial to understand individual needs, capabilities, and the factors that affect type 2 diabetes patients' capacity to perform these self-care behaviors. <b>Recommendation:</b> Psychosocial aspects should be embedded in diabetes care settings to delay or prevent the progression of complications associated with Diabetes.</p> |
| <p>International Journal of Nursing and Health Services (IJNHS)<br/>Volume 6, Issue 4, August 20<sup>th</sup>, 2023<br/>DOI: 10.35654/ijnhs.v6i4.745<br/>E-ISSN: 2654-6310</p>   | <p><b>Keywords:</b> Type 2 diabetes, information, motivation, behavioral factors, self-care.</p>  |
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## INTRODUCTION

Diabetes kills about 80% of people in low and middle-income nations, where the incidence rises the fastest (1). Diabetes is also attributed to comorbidities, including cardiovascular disease, nephropathy, retinopathy, and neuropathy, which can cause severe mortality rates.

Data from the National Health and Morbidity Survey (NHMS) in Malaysia shows an increasing trend in the diabetes prevalence rate from 11.2% in 2011 to 18.3% in 2019 (2). Hence, it is unsurprising that Malaysia has recorded the highest prevalence of Diabetes among countries in Asia, with an estimated 3.6 million cases. In addition, more than 90% of those with Diabetes in 2015 were anticipated to have type 2 diabetes, and by 2040, that number is expected to rise to 642 million (3).

Nonetheless, most studies have suggested that Diabetes could be controlled and treated through behavioral intervention by combining lifestyle with drug therapy. 80% of coronary artery disease and 70% of all strokes are preventable by some form of behavioral change, including avoiding smoking, maintaining an ideal weight, being active in physical activity, and practicing healthy eating (4). A behavioral diagnosis evaluates impacts on intended patient behavior and considers several aspects, such as individual, social, environmental, and medication intake, that may restrict or assist self-care behavior.

Additionally, since the endless, more significant part of day-to-day care in Diabetes is taken care of by patients or families, there's an imperative requirement for dependable and substantial measures for the self-care of Diabetes. Self-care management in Diabetes, which involves frequent self-glucose monitoring, managing diet, complying with medication, active exercising, and behavior modification, is positively slowing the onset of type 2 diabetes and avoiding long-term consequences. In other words, it could help patients with glycemic control, reduce complications, and improve overall quality of life.

Despite this fact, compliance with these activities still needs to improve. However, more than compliance with self-care activities is required to have reasonable metabolic control (5). It must be a combination of many variables in psychosocial aspects, including information, motivation, and behavior factors. Besides that, patient-centered care is vital for promoting

excellent medical outcomes and psychological well-being, which offers treatment that is respectful of and attentive to individual patient preferences, requirements, and values to ensure that patient values lead and determine all clinical choices (6).

The initial step in helping patients control their disease is increasing adherence to self-care management practices. Examining and comprehending the variables influencing diabetic patients' self-care management is crucial (7). This will support and strengthen initiatives to enhance diabetic patients' adherence to self-management activities. Additionally, it will assist medical practitioners in better managing the illness and lowering the danger of disease-related consequences such as renal failure or retinopathy (eye problem).

However, diabetes education is equally crucial and must be translated into action to benefit the patient. On the other hand, one essential psychosocial element associated with improved diabetes management and treatment results is patient beliefs of their own competence, or self-efficacy, to self-manage Diabetes (25). Therefore, it is critical to understand individual needs, capabilities, and the factors that affect type 2 diabetes patients' capacity to perform these self-care behaviors.

## OBJECTIVE

This study aims to better understand psychosocial aspects by identifying information, motivation & behavioral factors, and their relation to Diabetes Self-Care by exploring qualitatively among Type 2 diabetes patients.

## METHOD

### Design

This cross-sectional study utilized purposive sampling to select the eligible participants for the IDIs who are attending their appointment or follow-up at two healthcare government facilities in Selangor, which are Hospital Tuanku Ampuan Rahimah, Klang and Klinik Kesihatan Meru, Klang. This study has been conducted from June 2019 to May 2020.

### Sample, sample size, and sampling technique

The IDI participants were type 2 Diabetes Mellitus patients recruited by nurse supervisors. The sample size for IDI was calculated based on the Minimum Maximum Variation Sampling (8). The recruitment of participants for this study

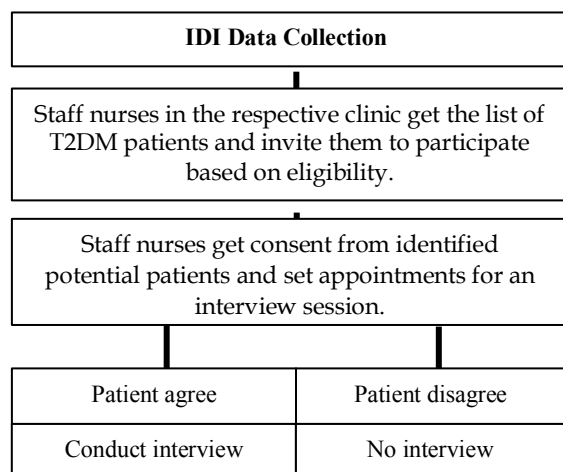
includes both genders, male and female, from three different ethnicities: Malay, Indian, and Chinese. The participants were then categorized as controlled or uncontrolled T2DM patients based on their HbA1c level. The interviews were continued until data saturation was achieved.

### Data collection process

Data collection procedures applied in-depth interviews (IDI) based on interview protocol to guide and facilitate the interview process. IDI was conducted in the presence of a moderator to address challenges encountered by patients in an attempt to investigate patient's perspectives on psychosocial aspects, such as information, motivation, and behavioral factors, about Diabetes self-care.

Before recruitment, each respondent will give written permission to participate voluntarily. The interviews were conducted with one facilitator and note-taker in a private room. Each session lasted 45 to 60 minutes. All participants have been fully informed of the possible risks and benefits of participating in this study before enrolment. Participants also have the option to withdraw from the research at any moment throughout their participation.

To summarize, the qualitative data collection process is presented in Figure 1



### Instrument for data collection

The in-depth interviews (IDI) were conducted among T2DM patients using semi-structured guide questionnaires with an open-ended questioning approach. This questionnaire is used to explore the three domains of psychosocial aspects among T2DM patients: Information, Motivation, and Behavior. For Information aspects, patients have been asked

about sources of information, types of information, and information-delivering issues. Whereas for the Motivation aspect, the sub-domains are self-motivation, socio-motivation, and communication between the healthcare providers and patients. However, in terms of Behavioral factors, patients were interviewed about medicine compliance, the regime of diet, Self-monitoring Blood Glucose (SMBG), foot care, and physical activity to understand their routine regarding their Diabetes self-care management.

### Data analysis

Qualitative data was analyzed from several IDI sessions to explore the three domains among T2DM patients. IDI data have been audio-taped, transcribed verbatim, and reviewed by two researchers, one with extensive experience in this field, to maintain dependability and determine credibility. Descriptive codes have been generated, and words and phrases explored to elicit shared meanings and perceptions across interviews using a thematic analysis approach. Themes that are commonly presented by patients will be identified. The content of existing scales will then be adapted to be consistent and relevant to the findings of the IDI and incorporated into the design of the instrument. The qualitative data have been managed using the software package NVivo V.10.

### Ethical consideration

The Medical Review & Ethics Committee (MREC) granted ethical permission for this study with NMRR registration number NMRR-19-862-46635. Informants will be informed that the sessions will be recorded, and their privacy is assured. In addition, study codes were used to ensure confidentiality, and only study researchers were given access to the data.

## RESULTS

### Overview of informants

A total of 21 IDIs consisting of nine female and twelve male T2DM patients were conducted with an average age of 56 years. Most of them are Malays, followed by Chinese and Indians. The eligibility criteria for inclusion were T2DM patients aged 18 years and above, able to communicate in Malay or English language, diagnosed with type 2 diabetes for more than three years, and mentally fit.

The findings indicate that the average duration of diagnosis with T2DM for the majority of the patients is around five years to 10 years. Three major themes were identified after an in-depth analysis of the participant's interviews. The main themes and subthemes are presented below;

## Major themes

### THEME 1: Information

#### (a) Sources of Diabetes knowledge:

Most of the respondents identified family members and friends as their source of information. Some of them also refer to the internet, such as Google and YouTube, when they need to know about Diabetes. However, some patients who are older still depend on doctors and nurses to get information through verbal communication because they trust the doctor as a credible source of information. Other than that, some patients informed me that they learned about Diabetes through self-experience.

##### i. Family

*"Usually, I ask my daughter..." (I2HTM59)*

##### ii. Friends

*"I know all the symptoms when I ask my close friends..." (I1KMM46)*

##### iii. Internet (YouTube & Google)

*"The only thing I see is YouTube, mostly I see on YouTube, and generally I choose to watch health topics." (I1HTF57)*

*"I Google lah... haa... you know, if anything I'm not sure, usually before I come for a check-up, normally I will Google the condition that I have. And then, I just discuss with the doctor lah..." (I2HTM59)*

##### iv. Doctor & Nurse

*"From the doctors and the nurse, they teach how to control sugar intake... must not more than 10 or 7 like that...they teach me" (I8HTF39)*

##### v. Self-experience

*"I feel something is not right with my body. I can feel the symptoms (Diabetes). I easily feel sleepy; I can't read WhatsApp messages (blurry vision). That's what I experienced. So, the next day...I went to the clinic lah. I remember it happened on the first day of the fasting month." (I1KMM46)*

#### (b) Types of knowledge:

This study discovered that patients have different types of knowledge about Diabetes: medication, food consumption, symptoms and complications, physical activity, and foot care. They know the importance of taking medicine & how to take care of their lifestyle. For food consumption, they know what to avoid and what they should eat to control their blood sugar. They also know the best way to prepare food because they know the risk of diabetes complications if they do not control it well. Besides that, patients also see the importance of being physically active and taking precautions when walking to avoid harm. This kind of knowledge is crucial because they will learn how to act accordingly and be more alert.

##### i. Medication

*"Oh, I think erm... I think medication is important." (I2HTM59)*

*"...because we need to have a proper rest. And all these medications work better when you're resting. You see, the immune system also functions better when resting well, not only when you are active." (I3HTM61)*

##### ii. Food consumption (Diet)

*"Doctor asks me not to eat oily food, fried food, but eat more vegetables and fruits. Eat a small portion of rice. But for fruits, do not eat the sweet one. Like that lah..." (I8KMF48)*

*"...You know, the food pyramid, right? At the hospital, at the clinic, and everywhere. You should know and be aware of what you eat. Even dining outside, I will choose more protein with vegetables but take less rice. If I'm eating at home, I will eat rice as usual... lunch is okay (to eat rice) because we are moving around. So, it can burn lah... metabolism will help. But I usually try to avoid eating carbohydrates, even bread, at night because it is not good. This is carbohydrate. So, I try to avoid..." (I2HTM59)*

*"We know the basics, I said okay, now we cannot eat sweets. Like what we know, rice cannot eat a lot, flour also cannot eat a lot. This is all about food." (I6KMM44)*

##### iii. Symptoms & Complications

*"... I observed amputation, ermm... and also kidney failure, heart disease. My father died of a heart attack. So, I have a family history, you know. So, these are the main things, and yeah, Glaucoma (too). So, now I'm*

also on a medical check-up for my eyes. So, these are the main things that I understand." (I2HTM59)

"The first one is blood pressure, the second one is kidney. The third one is the eyesight. Fourth is the nerves, which affect us. You will look exhausted because of sugar in the blood but insufficient insulin. Sometimes, the pancreas may not secrete sufficient insulin. You have to depend on this (the device). So, there are a lot of complications; sometimes, you find the muscle also weak. If there is poor blood circulation, you will also have neurological problems. So, Diabetes is one of the diseases that has a lot of complications if it's not well controlled". (I3HTM61)

#### iv. Physical activity

"Exercise is critical...If free, walk out in your house or the park area and do some physical activity. Why? When we exercise, our lungs will expand, and our hearts will beat fast. It would help if you inhale more oxygen. And you also exhale the carbon dioxide. Secondly, your heart also pumps better, and then you'll have enough blood reaching your brain, foot, etc. Exercise is very, very important. Otherwise, all the joints will become stiff. You must have proper blood circulation (in your body)." (I3HTM61)

#### v. Footcare

"For foot care, (we are asked to) use a mirror because we cannot see the bottom part. We cannot see well (if we have) blurry vision. Secondly, (we) need to be careful with water because sometimes diabetics like us feel numb and don't know whether the temperature is hot or cold. So, we use a soft cloth". (I4HTM55)

"She will tell you when you should buy your shoes. Whether in the morning, afternoon, or evening. So, she said, in the evening. Why? Because when you're walking, you feel tired and your foot will expand. At first, I didn't know. And then, I will wear my socks inside out. People will feel weird. Maybe the threat is not good. White color is better to wear. So, they give me a lot of knowledge lah." (I4HTM55)

### THEME 2: Motivation

From a motivation perspective, patients revealed that they know how to perform self-care to control their blood glucose. Diabetes self-care activities are actions conducted by people who have or are at risk of developing Diabetes to manage the disease on their own properly. Nevertheless, some patients also mentioned that they have been receiving negative perceptions and stress in life, which affect their motivation to

do daily self-care activities. They understand apart from self-motivation, socio-support or social motivation also plays an important role that can influence their self-care. Emotional support, especially from family members, and a good rapport with HCPs motivate them to adhere better to following proper diet and medication intake. Diabetes patients with self-motivation will inspire and raise awareness for others to care for themselves. However, one patient demonstrated his understanding by stating that a healthy lifestyle is more significant than medication.

#### (a) Self-care

"To control sugar, we need to take medicine & control what we eat" (I8HTF39)

"...if you ask me personally, I think lifestyle lah. Haa, how we manage our lifestyle. Lifestyle means you observe what types of food you consume and exercise you do. All these things, if you don't care, even if you take so many medicines, it won't give any benefit to your body" (I2HTM59)

#### (b) Negative perception/stress

"The doctor never helps. He seems to like to mock me; I love to eat a lot." (I5KMF50)

"Not only does the disease itself give me stress, but I am also stressed because of financial problems. If I don't have money, all sorts of problems will arise. Sometimes I do feel like I want to kill myself." (I8HTF39)

"When I'm stressed, I don't have the mood to consume my medicine. It has a psychological effect on me. When I'm stressed, I don't know whether I eat right. Sometimes I don't follow (the rules) anymore because I feel a bit pressure" (I4HTM55)

#### (c) Socio-support

"The nurses are wonderful. They take so much care and interest. They have saved many legs from getting amputated. I salute them" (I3HTM61)

"But most of the time, my neighbors keep communicating with me. Anything they will call me. Now, my Malay neighbour moved out already. But his son still came and took care of me. When my husband died, their family took care of me. Here, they (HCP) treat me very well. So far, I have never complained. All are very good... So, all doctors around ah... If I come, they all take care of me very properly". (I1HTF57)

"...My wife is very concerned about what I eat...you know... the cooking. She's very concerned. When we are dining outside, ermm... my wife and I are dining outside... but very rare lah...I feel more comfortable if my wife prepares for it (cooks for me); I'm also used to being a chef. I cook by myself... So, I cook, in terms of care, it is there (I don't feel worried). But for my medication, my wife doesn't know yet... What is my medicine? But, she will remind me to take my medicine and ensure I will take it..." (I2HTM59)

"Yes, she (wife) does the best. I don't think I can control it alone if she doesn't. She cools me down and prepares all the medicine for me. She will prepare for one week or two weeks of medicine. She knows all the medicine names that I don't know." (I9HTM72)

In addition, several patients claimed that they are driven to control as much as possible since now they are aware of having Diabetes and want to prevent it from getting worse in the future.

#### (d) Awareness

"My children, even though they are still small, I know they can understand. We give some advice, like drink less canned drinks. Even if you are still young, it can affect your health. So, we always advise them. We choose what we want to eat, the right food. If they insist on eating candy, they can eat, but I told them not to overeat." (I4HTM55)

"I'm not ready to die yet... But I already know I'm sick, so this is my effort. To cure my illness" (I1KMM46)

"I have to be careful because I don't want it to be more serious... Well, if you hear the word "more serious," there's a lot of risks. It can be worse. If can, I don't want to be like that. So, I have to control it" (I5KMF50)

### THEME 3: Behavior

Many patients acknowledged that they know Self-Monitoring Blood Glucose (SMBG) to manage their Diabetes, especially in planning their daily meals, engaging in physical activity, and taking medicine properly. They also recognized that taking insulin, maintaining a healthy diet, and engaging in physical activity were key factors in determining how to manage their Diabetes effectively.

#### a) SMBG (Self-Monitoring Blood Glucose)

"Usually, I do it randomly. In a week, maybe twice, or three times a week. I don't want to do it every day. But sometimes, I monitor my blood pressure and blood sugar because I have the device, so I do it randomly. Maybe in a week, I will do it twice" (I2HTM59)

"No, actually... initially I was doing it half an hour before breakfast, two hours after breakfast, half an hour before...that is initially lah. Then they said there was no need because it would cause pain. They advised you to do it before breakfast and then at lunchtime or evening. So that's how it works." (I3HTM61)

"Yes, I have an insulin pen. High blood pressure also has (The BP set). But I always feel pain when I take insulin (jab). I will do it twice in a month. But I'll come back here (clinic) for them to check whether my blood sugar is still high" (I4KMM64)

#### b) Physical activity

"I do gardening and try being active during my office hours because I do cleaning services. When I'm working, I try to walk a lot. If I come here for a check-up, I always climb upstairs. I don't want to take the lift, So, as far as I can, I will try to walk, climbing stairs like that... yes. A little bit of exercise lah for me..." (I2HTM59)

"Doctor asks me to walk; he asks me at least 30 minutes daily for brisk walking."

(I1KMM46)

"Doctor from Johor told me to go jogging after meals, in the evening. At least practice two to three days in one week". (I4KMM64)

#### c) Medication (insulin)

"Ermm... insulin I have to take half an hour before meal lah. But for Metformin, I will take immediately after my meal" (I3HTM61)

#### d) Healthy diet

"They have a Diabetic Counselling Unit, but they are more focused on your food. How to control your Diabetes based on what type of food you can eat, what you cannot eat because you must take the insulin dosage according to the type of food you are taking, the glucose content in it." (I3HTM61)

Moreover, patients also mentioned that they learned how to care for their feet and receive assistance from nurses and their wives to check them for them. Patients are aware that they must

pay close attention to their footwear to prevent injury that might result in amputation.

e) Footcare

"Yes, the Diabetic foot clinic does that, and they also got the photos, pictures, and so on. Last time, there was a nurse called A [name of the nurse]. She does a wonderful job. She always told me to wear socks. And if you have Diabetes, don't wear Japanese slippers. You should wear the closed shoes. They are doing an excellent job". (I3HTM61)

"They (HCP) told me to watch for fungus. If any area of my feet got fungus, it means something serious. They informed me if you see whitish fungus, quickly come here (to the clinic)." (I1KMM46)

"And then my wife, she helps me to check my feet sole for any lesion." (I2HTM59)

f) Barriers to self-care management

Patients mentioned a few limitations throughout the interview that prevented them from thoroughly discussing with doctors about self-care management. Common reasons are time constraints, limited knowledge, and feeling shy to share their problems due to communication gaps, such as different genders. These limitations hinder them from sharing concerns or telling the truth. Consequently, patients feel disappointed because they don't get enough information to overcome their challenges, especially managing Diabetes daily.

i) Time constraint

Most patients revealed that they needed more information because the doctors were too busy to educate them properly due to limited time and the number of patients coming to the clinic every day. They hope the doctor would spend more time explaining because they are eager to know about certain things, such as what kind of food they can eat, how much portion or calories they are allowed to take, and many more.

"Actually, to be honest, it is insufficient information because when they describe something, they don't say...Okay, you can take the Gardenia bread, one slice. But I want to know how many calories they are. And for one slice, how much is Actrapid you should take? If they take two slices, how many (calories) do you consume? They don't explain that. The doctor will tell me to go and see the dietician. Because he has too many patients." (I3HTM61)

"Some doctors are okay. They try to take time to explain further. But some of them think they maybe think it's not important for me to know. What's more important is...I got my medicine, and that's all." (I2HTM59)

However, to address this issue, one of the patients recommended that doctors hold their counseling sessions with their patients to adequately listen and educate them carefully without feeling guilty or burdened to attend to their patients during the consultation.

"Emm... sometimes actually, we like to ask a lot of questions and get answers from them, but because the number of patients is so high, you will find that they don't have much time. They should have a counseling room where patients can go and discuss together. The doctors should say, "Okay, any patients (who need discussion), please come and visit us; if you have any questions, please write them down and ask us directly." (I3HTM61)

ii) Limited knowledge

Several patients observed that the doctors needed more knowledge regarding the specific topic they were interested in learning about. Therefore, the patients resorted to seeking answers online, such as through search engines like Google, to get immediate answers. Even though they admitted they were doubtful about the answers given, they still relied on the information since they had no other options.

"That's why I said, on YouTube, they said you can eat freely, but I feel skeptical and puzzled. Is it right? When I asked the doctor, the doctor didn't know how to answer my question. He just said it is not generally recommended... that's all." (I5KMF50)

"So, that is why I request to give in pictorial form. Okay, even the various fruits we are eating, if one slice of this fruit, how many units of intermediate insulin or Actrapid insulin do we need to take? Or if you are taking it at night, the Insulatard. How many units? That information is essential; if you take one Marie biscuit, okay... How many calories do they consume? And one unit of that insulin Actrapid is for how many calories? They don't explain everything, so we must search for all this information online." (I3HTM61)

iii) Communication gap

One patient mentioned feeling awkward and shy to share his problem with a female doctor

because it's personal. Even though he needs an answer, he still refuses to ask further because of a different gender.

*"No, I won't tell. Things like these are sometimes embarrassing to say. Hehe... I don't know when I was brave to tell. Because it's a bit personal (about Erectile Dysfunction), I see many female doctors. Maybe I'll talk (if I see a male doctor later). Haaa, when I'm Google it, I know that our sex drive will decrease, but I never ask about that to the doctor (because of shame)" (I1KMM46)*

Therefore, dealing with diabetes patients needs to consider psychosocial aspects to help them to have good self-care management. To recap, the themes and sub-themes that emerged from this study are presented as follows:

**Table 1. Summary of themes and sub-themes**

| Themes      | Sub-themes  |
|-------------|---|
| Information | (a) Sources of information<br>(b) Types of knowledge  |
| Motivation  | (a) Self-care<br>(b) Negative perception/stress<br>(c) Socio-support<br>(d) Awareness   |
| Behavior    | (a) SMBG (Self-Monitoring Blood Glucose)<br>(b) Physical activity<br>(c) Medication (insulin)<br>(d) Healthy diet<br>(e) Footcare<br>(f) Barriers to self-care management |

## DISCUSSION

This study explores the psychosocial aspects that identify information, motivation & behavioral factors and their relation to Diabetes Self-Care. Patients know diabetes self-care requires establishing a balanced lifestyle that involves taking prescribed medications as directed and conducting routine blood glucose tests. From this study, we found that most respondents exhibited quite good knowledge about Diabetes, the importance of a healthy diet, medication, physical activity, foot care, and complications & symptoms due to Diabetes.

Nevertheless, even though their knowledge is good, health education activities

such as individual consultation and group counseling by healthcare providers should be encouraged to assist them in managing their disease better and implementing good self-care behavior.

In addition, a study by Didarloo et al. (7) showed a statistically significant difference between self-care behavior and diabetes knowledge. It implies that as knowledge grows, Diabetes women's ability to execute self-care procedures will improve. Theoretically, patients must be aware of their illness and how to control it if they are actively participating in managing their health. The person must comprehend medicine, food, exercise, blood glucose self-monitoring, foot care, and how to modify the regimen according to their health to manage Diabetes.

However, a study by Gautam (9) revealed that as knowledge increases, practice also grows, and as attitude declines, knowledge increases. Likewise, when the level of mentality is elevated, the amount of training is decreased. This variation may result from conservative thoughts with excessive confidence and a lack of willingness to put the knowledge into practice.

Even though we understand knowledge is crucial, it is still insufficient to change diabetes self-care behaviors (25). Other psychosocial elements that affect a patient's ability to manage their condition, such as motivation and behavior, must also be considered (24).

Thus, we found motivation from family support played an important role in self-care practices among the respondents in many different ways, including food intake, medicine identification, blood glucose testing, and managing a healthy diet. Several respondents mentioned that they found it challenging to identify their medications and handle the glucometer when checking their blood sugar because they feared needles. Hence, family members' assistance and encouragement help them adhere to their medication intake (10). Other studies also have demonstrated the value of family support in enhancing medication compliance and blood glucose monitoring in people with Diabetes (11).

Consistent with our findings, a study done by Koetsenruijter et al. (12) stated that social support is an essential and significant predictor for self-care behavior (13), particularly in managing chronic diseases like Diabetes (13,26). In addition, Marquez et al. (13) claimed that

social support plays an essential role in physical activity and weight loss in patients with Diabetes. However, a study by McCoy (15) and Neblett (16) indicated that social support was associated with better blood glucose control and self-care behavior. Similar findings were also reported by Rajati (17), which showed social support had the most significant relationship with self-care behavior, such as monitoring blood glucose.

Nevertheless, studies have also shown that there exists a significant relationship between attitude and health behavior; a positive attitude towards a specific behavior results in more readiness to do that behavior, as reported by Hazavehei et al. (18), Vatankhah et al. (19), and Karimy et al. (20). This finding was supported by Didarloo et al. (8), who carried out research on diabetes patients and mentioned that a positive attitude toward self-care will increase the possibility of better self-care practices. According to Albert Bandura's self-efficacy theory, persons who have strong self-beliefs in their abilities tend to complete their everyday duties consistently (20-21)

The frequent barriers to self-care, time constraints, limited knowledge, and communication gaps when communicating with doctors of different genders are among the frequent barriers shared by our respondents. It has been indicated that diabetes illness complications can be cut down by up to 50% if a patient practices good self-care behavior (20). However, self-care is a personal matter, although it is influenced by social support (26).

Concerning the patient-doctor relationship, some respondents shared that they needed to be educated about various aspects of self-care. A study done by Ansari et al. (22) also reported a similar experience of dissatisfaction with a doctor's attitude due to a few parts of self-care in disease management that needed to be discussed more.

On the other hand, making healthy food choices daily is among the most challenging aspects of Diabetes self-care (23). Current guidelines should promote flexible and healthy eating patterns personalized to the individual rather than defining a wide range of behaviors as dietary "noncompliance." Thus, self-monitoring of food intake may help patients with Diabetes become more aware of their own eating patterns while providing information that helps dietitians guide and assist with meal planning and develop

personalized dietary recommendations. Indirectly, it helps in identifying disordered eating behaviors.

Moreover, multiple factors other than patient behavior also could affect diabetes treatment outcomes (25). It could be the suitability of medical management, duration of Diabetes, weight gain, and other health-related problems. For instance, comorbid illness or social factors, such as low income and access to healthcare. Hence, it is inappropriate to only ascribe self-management behaviors to unfavorable occurrences like hypoglycemia and poor A1c. When self-management results are not ideal, the purpose of communication between HCP and patient should be to empower the patients rather than criticize them for "noncompliance" (7).

Nonetheless, respectful communication between nurses and patients can improve patient adherence to medication and treatment plans, minimize uncertainty, and increase patient engagement in decision-making. Therefore, improving patient-centered care and achieving successful outcomes in healthcare requires excellent nurse-patient clinical communication (27). Besides that, understanding patients and their particular needs, exhibiting empathy and attentive attitudes, expressing warmth and respect, and treating patients and caregivers with dignity and compassion as fellow humans are all ways to promote patient-centered care (24). By enabling trust and mutual respect in the care process, it fosters care methods that consider patients' needs, concerns, and preferences.

### **Conclusion and recommendation**

In conclusion, our study findings shed some light on the psychosocial aspects, namely information, motivation, and behavior among T2DM patients, which can be improved and customized based on patients' actual needs to ensure the intervention's efficiency. It is hoped that this research can provide easy access to essential information about psychosocial and its relation to Diabetes self-care, especially for policymakers and healthcare providers. Additionally, this study is anticipated to add to the body of knowledge regarding the facilitators and impediments to diabetes patients' ability to manage their own treatment.

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