Original Article

Necessity of Developing Psychological Interventions in the Management of Type II Diabetes and its Barriers: A Qualitative Study from the Perspective of Iranian Health Policymakers

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Abstract

Background and Objective: Diabetes mellitus is known as one of the health emergencies of the 21st century. This disorder is associated with an increased risk of developing cardiovascular diseases, stroke, diabetic nephropathy, neuropathy, retinopathy, and pregnancy complications, as well as lower quality of life, high economic burden, and high risk of premature death. The aim of this study was to investigate the necessity of and barriers to developing psychological interventions to treat, improve, and manage type II diabetes from the perspective of health policymakers in Iran.

Materials and Methods: This qualitative study was conducted on 11 policymakers of the Ministry of Health and Medical Education of Iran within 2016-2019. The data were collected using semi-structured and in-depth interviews and then analyzed by content analysis.

Results: The main themes related to the necessity of developing psychological interventions included impact on the quality of life, disease management, cost-effectiveness, and complications of diabetes.

Conclusions: The current study was conducted on senior health policymakers in the Ministry of Health and Medical Education of Iran. Accordingly, our findings can be used in decision making and the development, implementation, and evaluation of psychological intervention programs for type II diabetic patients in Iran.

Keywords: Diabetes mellitus, Health policy, Psychology

Background

Diabetes mellitus is known as one of the health emergencies of the 21st century. According to the World Health Organization (WHO) statistics, this disorder has affected 422 million people around the world so far, with an almost double increase in its global incidence [1]. Diabetes is associated with an increased risk of developing cardiovascular diseases, stroke, diabetic nephropathy, neuropathy, retinopathy, and pregnancy complications. It can also lead to low quality of life, a high economic burden, and a high risk of premature death [2-4]. Diabetes as one of the major health disorders in societies is the most common disease resulting from metabolic disorders [5].
Based on the WHO statistics, the number of people with diabetes will be doubled in 2030 [6]. According to the WHO report in 2016, the prevalence rates of type II diabetes in Iran were 10.3% and 14% in the adult population and those aged > 30 years, respectively. This disease had also the prevalence rates of 9.3% and 11.1% respectively in males and females in this country [7]. The prevalence of diabetes type II is on a rising trend worldwide. Accordingly, this disease incurs cost and burden on the healthcare system of many countries and is accompanied by mortality and morbidity given its long-term complications [8]. For example, about 2%, 10%, and 50% of type II diabetic patients respectively get blind, develop visual impairment, and suffer from neuropathy after a diabetes

history of 15 years. Overall, the risk of death for diabetic patients is rated twice that of non-diabetic ones [9].

Diabetic patients are required to perform most of their activities individually; accordingly, their behaviors play a key role in controlling their disease [10]. The delivery of diabetes self-management training and support is a critical element in taking care of all people with diabetes. This end involves an ongoing process of presenting the required knowledge, skills, and abilities to enable self-care, as well as the introduction of activities that help the patients to perform and maintain essential behaviors to manage their condition [11]. It is important to learn about diabetes self-management to prevent or delay its side effects. The effectiveness of diabetes self-management has been also confirmed in numerous studies suggesting such benefits as better clinical outcomes, improved quality of life, fewer cases of hospitalization, and reduced healthcare costs [12-16].

Self-management in diabetes includes healthy eating, doing physical activity, taking medications on time, following the health tips by health workers, and modifying medications and behaviors accordingly [16]. Proper control of blood glucose can prevent or delay diabetes complications, thereby not only improving patient's quality of life but also significantly reducing healthcare costs [17]. However, structured education for self-management seems unknown for diabetic patients. For instance, less than 10% of people diagnosed with type II diabetes in the UK and less than half of all diabetic patients in the United States registered for diabetes self-management education [18].

Moreover, patient adherence to self-management is at an undesirable level mainly owing to the complexity of the treatment that should be followed over a long period of time. Based on the literature, medication adherence among diabetic patients is 35.7-67.9%, which was even lower for doing physical activity and following a healthy diet [1, 19]. In the same vein, studies in Iran are indicative of poor self-management status among diabetic patients. In a study performed in Turkey [1], the lowest self-management score was reported for physical activity among patients [20].

Diabetes is a significant source of stress in life; therefore, it is not surprising that this disease is correlated with psychological disorders and comorbidities [21]. People with diabetes are twice as likely to develop depression at the clinical level [22]. In addition, 40% of diabetic patients show the symptoms of severe anxiety [23]. Diabetes also creates social pressure that can prevent social interactions as people with diabetes are often negatively judged by others [24-26]. In this regard, Schabert et al. reported that diabetic patients were concerned about unwanted attention or misinterpretation of drug abuse when using vials and syringes publicly. As a result, such stigma could prevent diabetes-related self-management in the affected patients [24]. Negative emotional states caused by stigma also prevent insulin injection in public places or delay insulin intake [25]. Another example of concealment is unwillingness to reduce the consumption of high-calorie foods for shame [26].

Objectives
Given the importance of the topic, the current study was conducted to investigate the necessity of and barriers to developing psychological interventions to treat, improve, and manage type II diabetes from the perspective of health policymakers in Iran, using qualitative content analysis.

Materials and Methods
Participants
This qualitative study was conducted using content analysis. This type of analysis is utilized to classify qualitative data in studies that aim to describe a phenomenon [27]. This study was performed after making the necessary coordination with the head of the Mental Health and Addiction Office of Ministry of Health and Medical Education in Iran and receiving an ethics code from the Ethics Committee of Islamic Azad University, Alborz Branch, Iran. The data were collected using an interview. Prior to the interview, the participants' consent was obtained to record their voice. Furthermore, they were assured about the confidentiality of their information.

The study population consisted of the policymakers of the Ministry of Health and Medical Education of Iran who were selected by the Deputy Health Minister of Health and Medical Education of Iran. The study was conducted between 2016 and 2019. The participants included internal medicine experts, epidemiologists, and social medicine experts. The study population was selected using the purposive sampling technique, and sampling was continued until data saturation (i.e. collecting new data until the repetition and stabilization of the previous data). In the present study, data saturation was obtained after the implementation of 11 interviews.

Inclusion and exclusion criteria
The inclusion criteria were work experience related to the domain of the study and willingness to participate in the study and share experiences. On

the other hand, the exclusion criterion was dissatisfaction to continue the interviews for any reason.

Data collection

The data were collected using semi-structured and in-depth interviews. The interview began with small talk and brief explanation on the decision of Mental Health and Addiction Office of Iran Health and Medical Education Ministry to develop a protocol for psychological intervention for diabetes management in Iran according to the primary healthcare components. Each interview lasted 45-60 min. The interviews were conducted at a convenient time and place in the Medical Education building of Iran Ministry of Health.

The key questions asked included: "How do you assess the need for developing a package of psychological interventions for the treatment, improvement, and management of diabetes?", "What is the role of psychological interventions in the treatment of non-communicable diseases (e.g., diabetes), improvement of disease management, and prevention of physical and mental comorbidities?", "What do you suggest for the better implementation of psychological intervention package and better collaboration of the health team in diabetes treatment?", and "To your best knowledge and experience, what do you think are the most important barriers to the implementation and effectiveness of such interventions, and what is your suggestion for overcoming these barriers?".

In the present study, the key questions were modified or described, if necessary, according to the discretion of the interviewees. Furthermore, if needed, each interview was followed by some clarifying questions, such as "What do you mean?" or "Please explain more if you can." At the end of the interview, the participants were asked to add more complementary information, if needed. The transcripts of the interviews were prepared and analyzed precisely, and then the next interview was run. The audio files of the interviews were transcribed precisely and then analyzed by the researcher to obtain the internal and external components. Each interview was listened several times so that the researcher could find a deep understanding of the participants' conversations. Semantic units and main messages were identified after several reviews. The sections of the obtained texts were summarized and coded. In this section, each recorded word and phrase was considered as the unit of analysis.

Data analysis

In this study, raw data were classified based on the accurate interpretation and inference of the researcher. After coding, summarizing, and categorizing these concepts, the themes were extracted. A constant comparison method was used accordingly. To ensure the clarity and consistency of the data, the intercoder agreement on the coded texts with similar samples was determined, and the necessary modifications were applied [28, 29].

Ethical considerations

All related ethical considerations, including voluntary participation, oral consent, participant privacy, and confidentiality of information, were respected in this study. The present study was approved by the Ethics Committee of Islamic Azad University, Alborz Branch (IR.IAU.K.REC.1398.014).

Results

The participants in the study included 11 health policymakers at the highest level of decision-making in the Ministry of Health and Medical Education of Iran. All participants were experienced in policymaking in the field of non-communicable diseases. The participants had the age range of 45-80 years. The demographic characteristics of the study participants are presented in Table 1.

Table 2 summarizes the main themes and sub-themes of the experiences of health policymakers in Iran about the necessity of and barriers to developing psychological interventions for the treatment, improvement, and management of diabetes.

In the following sections, the participants' views that were used to determine the concepts are presented.

1) Impact on quality of life

According to the study participants, one of the most important reasons for the necessity of developing a psychological intervention package for the treatment, improvement, and management of diabetes was the impact of such interventions on the quality of life among diabetic patients. The extracted sub-themes in this domain included

Table 1. Demographic variables of study participants

Variables	Mean Frequency	SD (%)
Age	53.09	13.5
Work experience	24	14.81
Work experience in non-communicable diseases	20.8	13.53

Table 2. Main themes and sub-themes of the experiences of health policymakers in Iran about the necessity of and barriers to developing psychological interventions for the treatment, improvement, and management of diabetes

Sub-themes	Main themes
Restriction	
Disease label	Impact on quality of life
Dependence on others	
Compliance with treatment	
Active follow-up	
The importance of psychological interventions in the treatment of non-communicable diseases	Disease management
The role of psychological interventions in treatment compliance	
Costs of disease control, management, and treatment	Cost-effectiveness
Physical complications of the disease	
Psychological complications of the disease	Diabetes complications
Difficulty to communicate with the patient	
Low perceived risk in society	
Lack of trust in the expertise of the service provider system	
Patient fatigue due to long-term treatment	Barriers to perform interventions
Need for family support	
Lack of a referral culture in society	
Limited prevention services per capita	

restriction, disease labels, and dependency on others.

A) Restriction

Many participants pointed to the limitation due to illness as one of the most important factors justifying the need for developing psychological interventions to treat, improve, and manage diabetes. In this respect, one participant stated:

"Due to diabetic labeling, a patient may think that he/she has some intense limitations that severely affect his/her lifestyle. For example, he/she may think that he/she is unable to play football or do some intense physical activities or should not eat many foods, which, in turn, affect the quality of life." (An epidemiologist)

B) Disease label

Many participants pointed to disease labeling (the title of the disease), which restricts diabetes self-management, as one of the reasons for the necessity of developing a related psychological intervention package. Accordingly, one participant acknowledged:

"Like other chronic diseases, diabetes has a very long-term treatment period, which may have its own consequences. No matter what happens, the label restricts the patient whether these restrictions are real or not". (An epidemiologist)

C) Dependency on others

In the present study, many participants supported the necessity of developing interventions since diabetes can lead patients to be dependent on others. According to the participants, this dependence could be due to financial need, information achievement, and medication supply. In this regard, a subject said:

"An elderly patient who does not have a good memory depends on another person for medication reminding and provision. When a person takes medicine for 30 years or more, he or she needs to visit a doctor every 3 months for medicine prescription"

2) Disease management

In the present study, many participants referred to the role of developing interventions package in disease management.

A) Compliance with treatment

One of the reasons that Iranian health policymakers supported the necessity of developing interventions was compliance with treatment. This was clearly evident in their conversations:

"A person who is educated knows how to answer to those who say, 'Eat; it is only this time.' and how to respond to those who warn him, 'Don't eat. You are a diabetic patient, this is not good for you.' He/she knows how to manage to avoid these all."

B) Active follow-up

Some participants indicated the importance of designing an intervention package in the active follow-up of the disease. In this regard, it was stated:

"A patient should be always aware of his/her blood pressure and careful of his/her blood sugar." (An expert in social medicine)

In addition, an epidemiologist pointed out:

"Attempt should be made to encourage people to change their treatment or lifestyle on their own."

C) Importance of psychological interventions in the treatment of non-communicable diseases

A great number of participants in the study emphasized the importance of psychological interventions package in the treatment of non-communicable diseases. Regarding this, an expert in social medicine said:

"People with mental disorders, both mild and severe, who at the same time suffer from non-communicable diseases most likely do not have their illnesses under control ... those who are not aware of their mental problems mostly deny their physical illnesses."

This issue was also noted by a physician who

argued:

"Depression caused by chronic illness as a known condition ... anxiety, and anxiety about the disease … non-adherence to the treatment ... all these are areas where counseling is needed, anyway in psychology and psychiatry."

Additionally, a social medicine expert in this regard stated:

"People with depression disorder have much or little amount of foods in their diet. This increases or decreases glucose tolerance and affects their blood sugar... So, it is accepted that you have to control mental disorders in people with non-communicable diseases. "

D) Role of psychological interventions in treatment compliance

Most of the health policymakers in the present study believed that psychological interventions play an important role in controlling and improving diabetes. Some of the participants' comments in this regard are as follows:

"A patient must be able to identify and remove the barriers to self-care. That means he/she must have problem-solving skills and be able to adapt and cope with the conditions."

"In any case, our healthcare system must consider the physical, psychological, and social aspects altogether, rather than just paying attention to psychological issues."

3) Cost-effectiveness

Many participants believed that designing psychological interventions could be helpful in the cost-effectiveness of diabetes treatment and control. For example, one of the participants mentioned:

"A master thesis written by an epidemiology student was about a very significant relationship between social capital and hemoglobin A1c and suggested that the higher the social capital, the lower the A1C hemoglobin levels."

4) Complications of diabetes

Another reason necessitating intervention development from the participants' perspective was the complications of diabetes. These complications were categorized into two types of physical and psychological.

A) Physical complications of diabetes

With regard to the physical complications of diabetes, one of the participants said:

"Diabetes is one of the diseases that, if left unchecked, causes serious complications, one of the most important of which is 'diabetic foot ulcer', which can even lead to death or amputation ... Diabetes complications are important and finally occur. Another complication of diabetes is related to the eyes in the form of vision loss. Diabetes can also cause kidney problems or need for dialysis and cardiovascular problems since it affects all organs."

B) Psychological complications of diabetes

Considering the psychological complications of diabetes, a subject stated:

"The challenges a patient exposed to make him/her stressful."

5) Barriers to implementation of interventions

The data obtained from interviews resulted in the identification of the barriers to implementing interventions. A total of seven sub-themes were obtained that included difficulty in patient communication, low perceived risk in the community, lack of trust in the expertise of the service provider, patient fatigue due to exposure to long-term treatment, lack of family support, lack of referral culture in society, and limited per capita prevention services.

A) Difficulty in communicating with the patient

An expert in social medicine in this regard pointed out:

"Cultural differences are among the major barriers to communication."

Furthermore, another participant stated,

"Our practitioners used to be successful because they knew the culture of the place, they would know how to deal with people. They might be taught some skills in their curriculum though I am not sure, but it's important that staff know how to talk to people since they have to deal with people. However, unfortunately, in Iran, doctors do not listen to and communicate with their patients."

Additionally, an epidemiologist referred to this issue as follows:

"Specialists often speak in media which is not effective because they speak a language that is not understandable by the audience."

B) Low perceived risk in society

Low perceived risk among patients was cited by many participants as a barrier to developing interventions. For instance, an expert in social medicine contended:

"In Iran, people mostly believe that they do not develop any complications; it happens to others; it does not happen to me."

Similarly, an epidemiologist clearly asserted:

"Risk perception is low in Iran."

In addition, another expert in social medicine said:

"We warn diabetic patients if they do not control their sugar blood level, they shall suffer from kidney problems in 5 years, their vision shall decrease, and they may face retina bleeding. Besides, they may experience kidney failure in 20 years and lose their vision in 25 years. But they ignore the long-term consequences."

B) Lack of trust in the expertise of service providers

People's lack of trust in the expertise of service providers was raised as another reason urging the need for the development of intervention packages. This lack of trust was clearly indicated by a social medicine expert as he said:

"People believe that if something is cheap, it is worthless. This problem has been reported by family doctors since the

early years of healthcare plan; they mentioned that as visits to doctors are free, people think that the doctors are not expert and experienced, so they look for other doctors."

C) Patient fatigue due to long-term treatment

According to the policymakers, diabetic patients get tired of prolonged treatment and daily physical monitoring. Therefore, this issue could be taken as another reason for the necessity of intervention development.

D) Need for family support

The need for family support was another reason indicated by the participants. This was evidently stated by a subject:

"We shall change the eating habits of a family rather than an individual, which means all the family should develop healthier eating habits instead of having a member on diet."

E) Lack of referral culture in society

Some participants also referred to the lack of referral culture in our society as another reason necessitating the development of intervention packages for diabetic patients. In this regard, a subject stated:

"One major drawback to our culture, which actually is not a cultural problem, is that people want to be provided with the highest level of service; this is our biggest challenge in the field. See, all the statistics show that we can control diabetes at the primary health care level, but what are we doing? All caregivers, all of those who come to us, want to visit diabetes ad endocrinology specialists to control their problems"

G) Limited per capita prevention services

The presence of limited prevention services per capita was also indicated as a reason for the importance of developing interventions. Accordingly, one of the participants argued:

"One of the major challenges is the expenses. There is a limited budget for the delivery of prevention services per capita. If you do not consider the budget and start to expand services, then you have already accepted to reduce the quality of services."

Discussion

Based on the findings, the main themes related to the necessity of developing psychological interventions included impact on the quality of life, disease management, cost-effectiveness, and complications of diabetes. Many studies reported the role of diabetes in reducing the quality of life in patients [30-33]. Quality of life in diabetic patients is so important that some studies have suggested that the early diagnosis and treatment of diabetes improve life quality [30]. The diabetes guidelines clearly focus on the importance of achieving and maintaining the quality of life that is considered a major goal in the healthcare system [31].

Several studies also highlighted the importance of psychological interventions in the improvement of the quality of life in patients with chronic diseases. For example, Fernandez et al. investigated the influence of problem-solving skills on patients' quality of life and self-esteem and found that problem-solving skills significantly improved the dimensions of quality of life in patients, including their cognitive function, health perception, mental well-being, and physical function [32]. In another study, Wattana et al. showed that self-management programs promoted the quality of life among Thai patients with type II diabetes [33]. The findings of the present study also indicated the necessity of developing psychological interventions to improve the quality of life among diabetic patients.

From the perspectives of Iranian health policymakers, the development of psychological interventions is required due to their influence on the management of type II diabetes. Consistent with our findings, Noordali et al. introduced learning coping techniques and self-care as important steps in managing diabetes [21]. Hampson et al. also showed that psychological interventions can lead to better treatment compliance and therapeutic outcomes among diabetic patients [34]. Furthermore, the results of other studies are indicative of the positive effects of motivational interviewing on hemoglobin A1c (HbA1c) level reduction, fear of low blood sugar levels, and improved quality of life [35-37]. In this regard, in a systematic review and meta-analysis, Sherifaliet al. showed that the implementation of psychological interventions among diabetic patients led to a slight improvement in HbA1c levels and suggested to apply these techniques, along with therapeutic approaches, in diabetic patients [35].

In another study, Harvey concluded that psychological interventions were influential in adherence to everyday care for diabetes [36]. Given the importance of psychological interventions in the management and improvement of diabetes, Christie et al. studied children and adolescents with type I diabetes and found that receiving these interventions did not lead to a decrease in HbA1c among children with poor control. However, they considered such interventions essential for the management of diabetes disease [38]. According to similar studies, it seems that the provision of psychological interventions for diabetic patients may result in useful findings, which was clearly stated by health policymakers in Iran.

Another implication of the present study was the cost-effectiveness of psychological interventions in the management and treatment of diabetes. Many studies reported the importance of psychological interventions in reducing the expenses related to

chronic diseases, such as diabetes. For example, in a systematic review, Hampson et al. showed that psychological interventions could shorten the length of hospital stay in diabetic patients and therefore, reduce treatment costs and improve disease management [34]. Riegel et al. also suggested the effectiveness of the motivational interviewing method in reducing hospital readmission in patients with heart failure [39]. Consistent with the previous studies, the findings of the present study demonstrated the necessity of psychological interventions to reduce costs associated with the improvement and control of diabetes.

The policymakers also suggested the complications of diabetes as another reason urging the need for developing psychological interventions to improve diabetes management and treatment. Given the high number of diabetes complications [2-4], it is necessary to develop psychological interventions to improve and control this disease and its associated complications.

Finally, factors, such as difficulty in communicating with patients, low perceived risk in society, lack of trust in the expertise of service providers, patient fatigue due to prolonged treatment, need for family support, lack of referral culture in society, and limited per capita prevention services, were introduced as the most important barriers to providing psychological interventions among diabetic patients by the participants in this study. Similar to our research, Chapman et al. conducted a qualitative study on 23 physicians in China to identify the most important barriers to providing psychological services to type II diabetic patients. In the mentioned study, the major barriers to the interventions included physicians' knowledge and skills, time constraints, and lack of financial incentives, as well as other barriers, such as social perception (mental health treatment is less important than physical health), neglect of policymakers, deliberate disregard for psychological care by physicians, and doubts about the effectiveness of psychological care [40].

In another qualitative study, Blixen et al. showed that interventions to optimize communication between patients and service providers could provide useful findings for eliminating the barriers to self-management among diabetics [41]. In their systematic review, Sohal et al. suggested that diabetes programs that focus on the improvement of communication, consideration of prevailing misconceptions, and adoption of culture-specific strategies could improve diabetes management among patients in South Asia [42].

One of the prominent strength of this study is its qualitative design since the findings can provide a deep understanding of the necessity of and barriers to developing psychological interventions for the management of type II diabetes that could not be achieved through quantitative studies. However, the findings reported in this study have certain limitations. Firstly, voluntary participation made room for the exclusion of the experiences of those who did not wish to participate in the study for any reason. In addition, the data were collected only from health policymakers, and type II diabetes patients were not included in the study. Regarding this, complementary studies are recommended to be performed on type II diabetes patients.

Conclusions

The present study was conducted on senior health policymakers in the Ministry of Health and Medical Education of Iran. Therefore, our findings can be used in decision making and the development, implementation, and evaluation of psychological intervention programs for type II diabetic patients in Iran. Given the necessity of developing psychological interventions in the treatment, improvement, and management of type II diabetes and considering the barriers to the implementation of such interventions, it seems essential to consider such programs in the primary healthcare system of the country.

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