Journal of Fundamental and Applied Sciences

Research Article

ISSN 1112-9867

Available online at http://www.jfas.info

THE EXPERIENCES OF WOMEN WITH TYPE 2 DIABETES ABOUT BARRIERS TO WALKING: A QUALITATIVE STUDY

F. Asma[1], M. S. M. Ali[2*], V. A. Akbar[3], N. Nouzar[4], H. Fatemeh[5], F. Hossein[6]

[1]Candidates of Ph.D in Health Education and Promotion, Department of health education and promotion, school of public health, Shahid Sadoughi University of Medical sciences, Yazd, Iran

[2]Professorin Health Education and Promotion, Department of health education and promotion, school of public health, Shahid Sadoughi University of Medical sciences, Yazd, Iran

[3]Assistant professor Department of Nursing, School of Nursing & Midwifery, Research Center for Nursing & Midwifery Care in Family Health, Shahid Sadughi University of Medical Science, Yazd Iran

[4]professor in Community Medicine, Neurological Sciences Research Center, Kerman University of Medical Sciences, Kerman, Iran

[5]Assistant professor in psychiatry, research center of addiction and behavioral sciences Shahid Sadughi University of Medical Science, Yazd, Iran

[6]Professor in Biostatistics, Department of Biostatistics and Epidemiology, Research Center of Prevention and Epidemiology of Non-communicable Disease, Faculty of Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

Published online: 01 January 2018

ABSTRACT

Background: The chronicity of diabetes and its potential complications require the identification of easy and uncomplicated solutions to prevent its complications. One of these measures such as walking. Simple walking is a great sportthat does not require any special means and can be incorporated into the daily lives of people with diabetes. The purpose of this study was to explain the experiences of women with type 2 diabetes about barriers to walking

Author Correspondence, e-mail: morrowatisharif@yahoo.com

doi: http://dx.doi.org/10.4314/jfas.v10i1.41

Methods: This qualitative study was conducted using directed content analysis. For this purpose, 17 women aged 30-60 years with type 2 diabetes, selected by purposive sampling, were interviewed using semi-structured individual interviews and group interviews at the Diabetes Center of Kerman from December 2017 to September 2018. The interviews were conducted according to an interview manual, and data analysis was conducted by the Lundman and Graneheim method.

Results: The mean age of the participants was 46.94 ± 8.2 years. Twelve subcategories, i.e., having physical problems, problems due to blood sugar imbalance, busy life, having a personal vehicle, lack of time, lack of patience, lack of proper facilities, lack of interest and tendency, lack of family support, Lack of safe and suitable environment**,** laziness, and bad weather, were reportedly drawn as the most important barriers to walking in diabetic women.

Conclusion: Identifying barriers to walking that is an easy and convenient physical exercise for women with type 2 diabetes can be effective in removing the barriers facing patients and empowering them to conduct effective walking.

Key words: Type 2 diabetes, Obstacles, Walking, Women, Qualitative study

INTRODUCTION

Diabetes is one of the chronic diseases and is one of the major health challenges of the 21st century (1). diabetes is the most common metabolic disorder, especially in the elderly, which has debilitating and dangerous effects on any of the vital organs of the body, including blindness, limb amputation, renal failure, and cardiovascular disease(2).

There are currently more than 230 million people with diabetes worldwide that is projected to rise to 300 million by 2025, with the number of the patients in developing countries becoming larger (3). It has also been reported that the disease occurs at an earlier age in developing countries so that many people with diabetes in the developed countries are older than 65 years old (4).

In 1983, an estimated 10 million people had diabetes in the USA (5). Today, it is estimated that 1.3 million people in the UK and 285 million people worldwide have diabetes, and by 2030, due to problems such as the prevalence of aging population, lifestyle changes, lack of proper diet and exercise, and the increased prevalence of associated obesity, it is projected that over 435 million people will suffer from diabetes (6). Type 2 diabetes is one of the most common types of diabetes, accounting for 90% of all cases of diabetes (7). According to the WHO experts, the prevalence rate of type 2 diabetes in Iran in the years 1995, 2000, and 2025 was estimated to be 5.5, 7.5 and 6.8 percent, respectively, according to which the diabetic

population of the country in the above-mentioned years would be 1692000, 1977000, and 5125000 respectively (8).

Diabetes has been attracting more attention due to late and life-threatening complications (2), and therefore its control is important. The chronicity of diabetes and its potential complications often result in high financial costs, a decrease in quality of life, and lifestyle changes for the patient and family, which necessitates identifying strategies to relieve the symptoms (9).

Global recommendations on physical activity for health (2010) states that all individuals should have at least 30 minutes of moderate-intensity physical activity most days, preferably all the days of the week. Despite these recommendations, individuals, especially women, have not had much physical activity participation and their activity levels decrease with increasing age, so that only 14-16% of women aged 45-74 years have acceptable physical activity (10). In addition, over 80% of people with diabetes do not have adequate activity, and in comparison with the general population, the diabetic population has a higher inactivity relapse (11).

It is therefore essential to investigate the experiences of patients with diabetes about barriers to walking given the effectiveness of physical activity, especially walking, to reduce the disease symptoms. The aim of this study was to explain the experiences of women with type 2 diabetes about barriers to walking.

MATERIALS AND METHODS

The data were collected at the Diabetes Center of Kerman from December 2017 to September 2018. The content analysis method used to analyze the data was the based on Lundman & Graneheim method, according to which qualitative data analysis consists of five steps: 1- Transcribing the whole interview immediately after the interview; 2- Reading the whole transcript to gain a general understanding of its content; 3. Determining meaning units and the basic codes; 4. Classifying similar primary codes into more comprehensive classes 5. Determining the themes implied by the data (12).

Since there is no standard or legal basis for determining the number of participants in qualitative study before the study begins, the number is dependent on the amount of information drawn from the participants and until data saturation is achieved.

In this study, after 17 in-depth, semi-structured interviews and a group interview, data saturation was achieved. Purposive sampling was used to select samples with rich experience. Inclusion criteria to enroll participants were being 30-60 years, having at least third grade

middle school, having diabetes for at least one year, having stress due to diabetes. At the completion of the interview, a gift was given to the participants as an appreciation for spending time being interviewed.

For the group interview, of the patients who could provide the most information for the study, six were finally selected, and a day and time for the interview was scheduled with the participants so that all six participants could conveniently participate. The researcher played the role of conductor and coordinator of the group interview, and asked the questions, and an assistant was assigned to determine the direction of interaction among the participants so that the interview does not diverge from its purpose.

The interviews were conducted with open-ended questions, e.g., *What makes it difficult for you to walk regularly*? and then, on the basis of the questions that the participant asked, the follow-up questions were asked, such as *explain more*? and *What do you mean*? The participants were also asked to give an example according to their own responses to help the interviewer understand their ideas better during the interview, according to the contributions of the participants. The duration of the interviews was at least 34 and at most 96 minutes.

After conducting and recording the interview, the interview was transcribed word for word. Then, the whole text was read for several times to obtain a general understanding of its content and draw the primary codes. For this purpose, the interview transcripts were first transformed into meaning units, which were summarized in the next step, and were then converted into codes. Next, different codes were compared for their similarities and differences and classified into subcategories. In the next step, the classification of the subclasses was done based on similarity, suitability, and differences, and the categories were drawn, and eventually the classification of the classes, subclasses, codes, and data was reviewed to draw the main themes.

Credibility, dependability, transferability and confirmability were taken into account to improve the accuracy and robustness of the data. Credibility was assured through in-depth and long-term engagement with the subject of research, the allocation of sufficient time to collect data, and to conduct a group interview and several in-depth, individual interviews in different places and at different times. Dependability was also confirmed after two faculty members who were not the members of the research team reviewed the interview transcripts with reference to the codes and categories drawn. The results were also provided to a number of diabetic women with similar characteristics in order to make judgement on the similarity between the research findings and their experiences to confirm the transferability of the data. The confirmability of the data was also accomplished by transcribing the participants'

statements so that other researchers could analyze the statements of diabetic women and achieve the same findings.

The study protocol was reviewed by the ethics committee of the Shahid Sadoughi University of Medical Sciences in Yazd, and an ethical code was issued for it. Necessary ethical considerations, such as obtaining the informed consent of the participants and allowing them to discontinue interview, were also observed. Their permission to record the interviews was also obtained. They were also ensured that their information would be kept confidential, and any bias and prejudice in interpreting the results would be avoided.

RESULTS

The mean age of participants was 46.94 ± 8.2 years. The majority of the participants (35.3%) were retired, and most of them had high school diploma (23.5%) and secondary education completion (23.5%). Of the participants, 58.8% used pills to control diabetes (Table 1).

The data analysis yielded 12 subcategories (i.e., physical problems, problems due to blood sugar imbalance, busy life, having a personal vehicle, lack of time, lack of patience, lack of proper facilities, lack of interest and tendency, lack of family support, Lack of safe and suitable environment, laziness, and bad weather) were reportedly drawn as the most important barriers to walking in diabetic women (Tables 2 and 3). The participants' statements are explained below:

Table 1. Demographic characteristics of participants in study

Education level	Secondary education(n:4),high school diploma(n:4), associate's degree(n:3), bachelor's degree(n:3), master's degree(n:3)
Marital status	Married(n:14),single(n:3)
Employment status	Student(n:2),clerk(n:2),self-employed(n:3), retired (n:6) hosewife(n:4)
Duration of diabetes	1-5 years duration of diabetes (n:4) -5-10 years duration of diabetes (n:9)-over 10 years duration of diabetes(n:4).
Type of treatment:	Pills (n:8)-insulin (n:4)-pills and insulin (n:5)

Physical problems

Having physical problems was one of the themes drawn from the data. Feeling and understanding these problems were repeatedly expressed by women with diabetes, and the older their age, the more experience and understanding of physical problems were expressed by them. Some women tended to walk, but they were unable to walk due to their physical problems**.**

*A 41-year-old woman with secondary school completion certificate said:***'** *My foot is wounded [when] I go and come on my feet, it discharges [and] I come to clean [it] again. It's so hard I've no zest to go again***'**.

A 45-year-old woman with associate's degree said: 'I've just undergone hernia surgery, so I can't walk as before.'

Problems due to glucose imbalance

The experience of the majority of patients with type 2 diabetes suggests that problems due to glucose intolerance are one of their main concerns for walking. This factor has been experienced by insulin users.

A 50-year-old woman with secondary school completion certificate said: **'** *Sometimes, when I walk, my blood sugar is disrupted, goes down, I should definitely take something with myself to eat. We diabetics can't do any activity easily, we should be careful about our blood sugar drop.'*

A 52-year-old woman with high school diploma said: **'***Because I have [high blood] sugar, I'm not like other people, I can't walk too fast, my sugar goes down, I may fall down, I can go few steps slowly.'*

Busy life

The experiences of most women with type 2 diabetes indicate that their lives are fraught with problems and concerns about their spouse and children, and they also engaged in employment for the welfare of their lives, whose management was *reported as an obstacle to walking by our participants.*

A 35-year-old women with high school diploma said: **'***Men and women are working in all parts of the city. A women is cooking sweets. One is sewing, one has opened a hairdresser. In old times, it was not like this. I'm working all day. I'm too much busy, I can't go'*

A 41-year-old women with master's degree said: ' [In] this period, people's plights have increased, I have to worry about the plights of my children and my wife, I can't think of myself [and] specify time to walk'

Having a personal vehicle

The experiences of some women with diabetes showed that having a personal vehicle for commuting and doing daily routines was a major obstacle to their daily and weekly walking, so that the majority of them had a vehicle to commute and do daily routines with it instead of walking.

A 32-year-old woman with master's degree said: 'If you had a car, I wouldn't do walking if I had a car. Students who have car walk less." My father now has diabetes and wherever he wanna [go, he] goes with the car. His tasks during the day are numerous [and] by this way, he does his tasks more quickly. So, he does no movement '

A 45-year-old with high school diploma said:' The car has made [us] do no movement, because our tasks are done more quickly and more easily with car, wherever we wanna go, [we] go with car, which itself causes a thousand of illnesses'.

Lack of time

The lack of time was one of the experiences that most women, both the employed and housewives, understood, although this had been experienced by the employed women more frequently, so that they could not spend adequate time walking because of spending time outside the home, dealing with household tasks, and taking care of their spouse and children after returning home. The experiences of housewives on a typical day also showed that had less opportunity to go walking due to spending time at home and dealing with family members' matters.

A 40-year-old woman with associate's degree said: 'We have a lot of women working in the house. I have all the problems on my shoulder, then I don't have the opportunity to walk, I should have free time so I can go walking. When I wanna go [walking] and return in hurry, then this walking is not a pleasure to me '

A 41-year-old female graduate with a master's degree said: 'Mostly, I don't have time. When I return from work I should do household tasks, no opportunity remains, a special program is needed to require us to do this work'.

Lack of patience

The majority of our participants considered lack of adequate patienceto be obstacles to walking.

A 60-year-old man with secondary school completion certificate said:' I know walking is good for me, but I can't, my patience doesn't allow, I don't have enthusiasm, the problems due to the disease have also made me more impatient'.

A 55-year-old woman with associate's degree said:‘ Due to fatigue from the disease, I'm impatient and have no tendency, when I am so, I can't do anything, no one can also force me to do a work, I don't go on my feet as well‘

Lack of proper facilities

The majority of women with type 2 diabetes talked of inappropriate facilities for walking in urban spaces where they go walking daily and also lack of proper facilities in the parks as one of the spaces for walking.

A 51-year-old with high school diploma said: ‘Sometimes the problems of the street are also present, our sidewalks are not good for walking. Their pavings are not good. They have a lot of holes. I wanna walk to solve a problem of mine. Worse [than that], my leg is screwed up and I also got worse than this. A motorcyclist passes through us at a high speed. The buildings are being constructed, their front has been closed, one is afraid that something may fall on his/her head at any moment. ‘

A 43-year-old woman with master's degree said: ‘The lights in the streets and the park of our neighborhood have burned down and the municipality doesn't come to replace them. When the park doesn't have light, if you wanna go walking afternoon or at night, it isn't possible‘.

Lack of interest and tendency

Lack of tendency and reluctance to go walking were expressed as one of the obstacles to walking by some of our participants.

A 60-year-old woman with bachelor's degree said:‘ don't like walking. It's not pleasurable to me. When I'm not interested in a work, even if it's good for me, I'll not do it, because my spirits will even become worse.‘

A 35-year-old woman with high school diploma said: ‘ I generally don't have much interest in walking since my sugar doesn't go down so much after walking. Walking is not exciting for me. I don't like going to the gym and doing exercise.‘

Lack of family support

The experiences of the vast majority of women with the disease showed that spouse support played an important role in encouraging them to walk.

A 52-year-old woman with associate's degree said: ‘My husband's consent and permission are very important. My husband doesn't agree with very routes where I wanna go and walk.‘

A 38-year-old woman with bachelor's degree said: ‘My husband is jealous, until he himself doesn't accompany me, he doesn't allow me to go anywhere. He’s on work [and] doesn't have time to go walking with me. I also can't go.‘

Lack of safe and suitable environment

One of the experiences of our participants was lack of security in the parks for walking, Obviously, if women feel that the environment is safe and suitable, they are *further encouraged to go walking.*

A 52-year-old, retired woman with associate's degree said: 'Parks are not suitable for walking as well, many people across the are jobless." they utter joshes. Several times, they've told to myself "[You] The old woman wanna lose weight." They don't look at my age.'

A 41-year-old woman with master's degree said:' The district where we are [living] is not suitable for walking around for women, they don't look at you in a good way'.

Individual laziness

One of the experiences that some women described as an obstacle to walking was laziness, which some of the participants considered to be an individual characteristic, and some others considered to be due to diabetes and its problems.

A 40-year-old woman with an associate's degree said: ' Laziness is a reason. I myself was inherently a lazy man since childhood. Now that I reached this age and I got this disease, then I even became worse.

''A 45-year-old woman wiyh highschool diploma ' Laziness itself is a problem, it is a negative energy that doesn't allow man to go walking regularly' .

Bad weather

Climatic conditions and unpleasant weather, in some of the participants' opinions, cause them to feel unwilling to go walking.

A 50-year-old woman with secondary school completion certificate said: 'Sometimes the weather is very cold, although I want to go outside [and] walk, because of coldness I don't go, especially because my knee pain problem gets worse'

A 34-year-old student with a master's degree said: ' During the summer, you can barely walk due of the heat of the day, just as the sun sets down the weather becomes a little better for walk'

DISCUSSION

Doing physical activity, especially walking, can play a role in controlling and improving diabetes, but it faces certain obstacles. Identifying and understanding the factors explaining why people are active or inactive are of great importance in physical activity research. This

study and other studies have addressed walking in diabetic women, providing a set of similar findings.

The underlying factors, such as the physical environment, affect health and health-related behaviors. However, today, the issue of how the physical environment affects health behaviors is very little known (13). In our study, lack of proper walking facilities was one of the obstacles reported by women with diabetes, which is consistent with the studies of Casey et al. (2009) and Dwyer et al. (2008), showing lack of facilities and appropriate place as barriers to doing physical activity (14,15). In addition, the study of Cauwenberg et al. (2012) on the environmental barriers of walking, participants noted the importance of sidewalk quality. In this regard, streets with busy traffic and bumpy surfaces were understood by participants to be less attractive for walking. They also expressed some undesirable experiences with the presence of water, ice, snow, flowers or leaves, steep slopes, especially in snowy and ice conditions, inappropriate street lighting for walking after sunset (16).

In the study of Locket et al. (2005), an exploratory qualitative study, a theme, namely, falling risks, was drawn that represented the elderly's concern about cracked sidewalks and bumpy surfaces, especially when using a walking aid such as walker (17) In our study, participants also pointed out that some of the sidewalks were not suitable for walking, their paving were not good, and they had many holes have not been well built, and there were plenty of holes, Crowdedness of the parks, the lack of appropriate lighting, lack of beauty of the sidewalks, the abandonment of incompletely construed buildings on sidewalks, and the presence of mud and pebbles on some sidewalks have also been reported as barriers to walking.

In the present study, the lack of time was reported by the participants as a barrier to walking. Lack of time in various studies has been reported as the most important barrier to exercise and walking (14-20).

In the study of Dambros et al., the most common reason for lack of participation in physical activity and walking was bad weather and lack of time (21). In a study by Cauwenberg et al. (2012), one of the themes, as an environmental barrier to walking, was weather, and the participants said that walking in the spring and summer would be prettier (16). In our study, participants considered the cold weather in winter and the warmth of the air in the summer to be barriers to walking walking. In addition, some weather conditions such as wind blowing, dusty air in some days, and raining and snowing prevented them from walking in some days.

According to numerous studies, there is a positive correlation between physical activity behavior and social support from family, friends, peers, and program staff in supervised locations (22). The study of Mishala et al. (2011) showed that family support and awareness

greatly influenced treatment adherence in controlling diabetes, which in turn could improve the quality of life of patients (23). In the study of laranjo et al. (2017) on the management of type 2 diabetes, family and social support was recognized as a barrier and a facilitator by the participants (24). In the study of Cauwenberg et al. (2012) on environmental barriers to walking, participants noted that they did not tend to be alone while walking in the street, they preferred others to be present; the participants often liked to visit their neighbors and friends during walking and expressed that saying just a hello or a short chat made the walking pleasant (16). It shows the importance of social encounters and communication. In our study, spouse's disagreement and lack of accompanying are one of the concerns of diabetic women about walking. They tended to have their husbands accompany them during their walking.

In our study, the problem of life and work was found as one of the intrinsic features, in line with the current study in Casy et al. (2009), conducted on patients with type 2 diabetes, responsibilities such as work and family as a barrier (14). In the study Advika et al. (2017), a qualitative study conducted on patients with type 2 diabetes, the work schedule and other responsibilities and duties were raised as an experience by the patients preventing them from including physical activity in their daily program (25).

Participants in our study stated that physical problems such as diabetic foot ulcers, back pain, leg pain, knee pain, weeping legs, and umbilical hernia made it impossible for them to walk. In Lawton et al. (2006), perception and experience of a disease was reported as a barrier for type 2 diabetic patients, and many respondents talked of physical complaints facing doing simple walking (26). In the study of Casy et al. (2009), other health concerns that are not related to diabetes prevented them from doing physical activity (14). In a descriptive, cross-sectional study, Kabbie et al. (2009) on women with type 2 diabetes, diseases represented the barriers of the highest percentage, so that 32% of the sample reported the disease as preventing them from going to walking (27).

In our study, Lack of safe and suitable environment was one of the experiences of the participants. Certainly, security is one of the basic needs and motives of mankind, so that with the decline of security, calm of man disappears and the satisfaction of many human needs depends on the security offered by women in this study. Uttering joshes by jobless people, lack of security in the park for personal belongings, the presence of jobless people in the city as well as the gathering of addicts in the parks have led to a feeling of insecurity and unsafety among people, making them reluctant to do outdoor walking**.**

In a qualitative, exploratory study by Alvardo et al. (2015), a theme, namely, *gender norms*, was named by the researcher as one of the barriers to doing exercise in women as the women

were rarely reported to accompany men while exercising, and most women during the group interview reported their tendency to do exercise with other women and to join women's groups (28).

In our study, some participants said that personal vehicle for commuting in the city was an obstacle to doing physical activity and walking. Consistently, Buffart et al. (2009) reported having a car to be a barrier to active transportation (walking, cycling, and wheelchairing), but it was also found to facilitate going to sports and sports facilities (27).

In addition to the environmental barriers affecting walking in women, several individual factors can also be a hindrance to them. For example, in a study by Kabbi et al. (2009) which was a cross-sectional descriptive study on women with type 2 diabetes, a percentage of lumbar specimens was mentioned as one of the barriers to physical activity (25), also in the study of habiba (2010) on women at risk for type 2 diabetes was referred to as personal and individual barriers to low-motivation participants as well as fatigue (29).and was referred to as a factor in fear and embarrassment in lawtone et al. (27). In the study, diabetic women referred to factors such as lack of interest and reluctance, lack of patienceand laziness.

In a study by Thomas et al. (2017), a small number of type 2 diabetic patients participated in physical activity, and those who did physical activity experienced low severity diabetes, and the perceived problems facing engaging in physical activities were lack of time, lack of local facilities, feeling tired, and distracting by watching something good on television (30).

In a study by Bethancourt et al. (2013), the most important barriers to physical activity and exercise in women were physical problems, aging, lack of awareness of the benefits of exercise, lack of conditions and proper facilities for regular physical activity (31). In other studies, the disease and injury experiences, work-related problems, bad weather, fatigue, muscle and joint pain, and complications and physical damage caused by diabetes were identified as the most important barriers to doing physical activity and walking in diabetic patients (24, 32).

Women in the Iranian society, often in the family, are responsible for emotional care and household tasks, it can be argued that there is not enough time for women to do sports and go walking because of their responsibility for household tasks and family matters, and being committed to be present at home. The environmental and cultural factors affecting the society have caused women to face certain limitations The barriers mentioned in the above studies are all in line with the statements expressed by our participants.

Therefore, raising the motivation and eliminating individual barriers, creating a suitable environment and adequate facilities for encouraging people, and psychological support of the

family can serve as a driving force to promote regular physical activities, especially walking, among people with diabetes, in order to reduce the physical and psychiatric side effects of the disease; and, in general, due to some differences in time, place, and social and cultural context as well as the characteristics of the participants, the perceived barriers in different studies can be different in terms of frequency and variety.

CONCLUSION

Regarding the effect of exercise and walking on relieving and controlling the physical and psychological symptoms of diabetes, it is possible to provide a suitable platform for facilitating this exercise and to develop an appropriate culture by identifying the current obstacles to these exercises.

Table 2. Process of drawing codes from the units of meaning

Meaning unit	codes
The car has made us do no movement, because our work is easier and quicker with the car. Everywhere we wanna go, we go by the car, it by itself causes a thousand illnesses.'	**The easiness of doing daily routines with a personal car instead of walking - doing daily routines faster with a personal car - having a personal car leads to numerous illnesses**
'The district where we are [living] is not suitable for walking around for women, many people across the city are jobless,they utter joshes.several times,they told to myself: [you!] old woman!.wanna lose weight they don't look at my age..'	**The unsuitability of the park environment - the presence of jobless people across the city - joshes uttered by jobless people**
'I've just undergone the umbilical hernia surgery, so I can't walk as before'	**Having an umbilical hernia and undergoing surgery**

Table 3. The process of drawing codes, subcategories, and categories

codes	subcategories	categories
Diabetic foot ulcer **Having back pain** **Having leg pain** **Having knee pain** **Weeping legs due to diabetes** **Having an umbilical hernia and undergoing surgery for**	**physical problems**	*Personal factor*
Blood sugar going up and down throughout the day **Falling because of low blood sugar throughout the day** **Dizziness due to low blood sugar** **Lethargy due to low blood** **Inability to perform any movement due to blood sugar imbalance**	**problems due to glucose imbalance**	
Having a feeling of reluctance due to low blood sugar after walking **Having a feeling of reluctance to walk due to complications of the disease bood sugar** **Not having enthusiasm due to the untreatability of the disease**	**lack of interest and tendency**	
Feeling lazy **Having a sense of inherent laziness from childhood** **Becoming lazier due to diabetes**	**Individual laziness**	
doing household tasks **keeping grandchildren at home** **dealing with spouse and children matters** **employment outside the home**	**Busy life**	
Not having mood due to the untreatability of the disease **Not having mooddue to fatigue the disease** **Not having mooddue to lack of hope for outleaving** **Not having mood due to the disease complications**	**lack of patience**	

Not having time due to doing hosehold task **Not having time due to keeping grandchildren at home and dealing with their matters** **Not having time due to dealing with spouse and children matters**	**Lack of time**	
Jobless people's uttering joshes **The presence of jobless people in the city** **Addicted people gathering in the parks** **the presence of jobless people across the city**	**Lack of safe and suitable environment**	*Environmental Factor*
The easiness of commuting in the city with personal car instead of walking **The easiness of doing daily routines with a personal car instead of walking** **Doing daily routines faster with a personal car instead of walking** **The possibility of multiple tasks during the day with a personal car instead of walking**	**Having a personal vehichle**	
Spouse's lack of consent for wife's going out alone **Lack of spouse's accompanying in walking due to being busy** **Spouse's disagreement with going to distant places** **Spouse's lack of consent for wife's going to park**	**Lack of family support**	

Lack of facilities in parks **The crowdedness of sidewalks** **No paving on some sidewalks** **The abandonment of incompletely constructed buildings on sidewalks** **Inappropriate paving of sidewalks** **Slipperiness of some sidewalks** **The crowdedness of parks** **Lack of proper lighting in the parks** **Lack of beauty of walking routes** **The presence of mud and pebbles on some sidewalk**	**Lack of proper facilities**	
Cool weather in the winter **Hot weather in the summer** **Wind blowing** **Dust in the air in some days** **Raining and snowing**	**Bad weather**	

REFRENCES

1. Hussain A, Claussen B, Ramachandran A, Williams R. Prevention of type 2 diabetes: A review. Res Clin Pract 2007;76(3):17- 26.

2. Zimmet P. The burdun of type 2 diabetes .are we doing enough? Diabetes Metab 2003, 29(4 Pt 2)::6s9-18.

3. Rathman W, Giani G. Global prevalence of diabetes, estimates of the year 2000 & projections for 2030. Diabetes Care 2004;27(5): 1047-53.

4. Mitra A, Bhattacharya D, and Roy S. Dietary influence on type 2 Diabetes (NIDDM). J HumEcol 2007; 1(2): 139-147.

5. Snoek F J, Skinner TC. Psychological aspects of diabetes management. Medicine2006; 34: 61-63.

6. Goldeston DB, Kovacs M, Obrosky DS, Iengar S. A longitudinal study of life events and metabolic control among youth with insulin-depndent diabetes mellitus.Health Psychol 1995; 14: 409-14.

7. Ahmann A. Guidelines and performance measures for diabetes. Am J Manag Care; (13): 6-41.

8. King H, Aubert RE,Herman WH.Global burdun of diabetes 1995-2025.Diabetes Care 1998;21(9):1414-31.

9. Nagelkerk J, Ericka K, Meengs L. Perceived barriers and effective strategies to diabetes self management.J Adv Nurs 2006;54(2):151-8.

10. Costanzo C,Walker SN, Yates BC,Maccabe B, Berg K.Physical activity counselling for older women .West J Nurs Res 2006,28:286-801;discussion 2-10.

11. Amati F, Barthassat V, Miganne G, et al. Enhancing regular physical activity and relapse prevention through a 1-day therapeutic patient education workshop: A pilot study. Patient Educ Couns 2007;68:70-8.

12. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts,procedures and measures to achieve trustworthiness. Nurse education today. 2004; 24(2):105-12.

13.Macintyres S,Ellaway A,Commins S.Place effects on health:How can we conceptualise,opertionalise and measure them? Soc SciMed2002.55(1):125-39.

14.Casey MM, Eime RM, Payne WR, Harvey JT. Using a socioecological approach to examine participation in sport and physical activity among rural adolescent girls. Qual Health Res 2009; 19(7): 881-93.

15.Dwyer GM, Higgs J, Hardy LL, Baur LA. What do parents and preschool staff tell us about young children's physical activity: a qualitative study. Int J Behav Nutr Phys Act 2008; 5: 66.

16. Van Cauwenberg J, Van Holle V, Simons D, Deridder R, Clarys P,Goubert L, et al. Environmental factors influencing older adults' walking for transportation: a study using walk-along interviews. Int J Behav Nutr Phys Act. 2012;9:1-11.

17. Lockett D, Alette W, Edwards N. Through Seniors' Eyes:An Exploratory Qualitative Study to Identify Environmental Barriers to and Facilitators of Walking. CJNR 2005,Vol. 37 No 3, 48–65.

18. Yates T, Davies M, Gorely T, Bull F, Khunti K. Effectiveness of a pragmatic education program designed to promote walking activity in individuals with impaired glucose tolerance. Diabetes Care 2009;32(8):1404-10**.**

19.Terada T, Friesen A, Chahal BS, Bell J, McCargar L, Boulé N. Exploring the variability in acute glycemic responses to exercise in type 2 diabetes. Journal of diabetes research 2013:1-6.

20. Payne WR, Casey MM, Harvey JT. Transition inparticipation in sport and unstructured physical activity for rural living adolescent girls. Health Educ Res 2010; 25(2): 282-93.
21. Dambros DD, Lopes LFD, Santos DL. Perceived barriers and physical activity in adolescent students from a Southern Brazilian city. Brazilian Journal of Kinanthropometry and Human Performance. 2011; 13(6):422-428.
22. Trost SG, Owen N, Bauman AE, Sallis JF, Brown W.Correlates of adults, participation in physical activity:review and update .Med Sci Sports Exerc2002;34(12):1996-2001
23. Mishalia M, Omera H, Heymann AD. The importance of measuring self-efficacy in patients with diabetes. Fam Pract 2011:28(1):82-7.
24.Laranjo L, Neves AL, Costa A, Ribeiro RT, Couto L, Sá AB. Facilitators, barriers and expectations in the self-management of type 2 diabetes—a qualitative study from Portugal. Eur J Gen Pract.2015:21(2):103-10.
25. Advika TS, Idiculla J, Kumari SJ. Exercise in patients with Type 2 diabetes: Facilitators and barriers - A qualitative study. J Family Med Prim Care 2017;6(2):288-92.
26. Lawton J, Ahmad N,. Hanna L,. Douglas M, Hallowell N. 'I can't do any serious exercise': barriers to physical activity amongst people of Pakistani and Indian origin with Type 2 diabetes. Health Educ Res 2006,21(1) : 43-54.
27. Al-Kaabi J, Al-Maskari F, Saadi H, Afandi B, Parkar H, Nagelkerke N. Physical Activity and Reported Barriers to Activity Among Type 2 Diabetic Patients in the United Arab Emirates 2009, Rev Diabet Stud. 6(4):271-8.
28.Alvarado M, Murphy M, GuellC, Guell M. Barriers and facilitators to physical activity amongst overweight and obese women in an Afro-Caribbean population: A qualitative study. International Journal of Behavioral
Nutrition and Physical Activity (2015) 12:97
29.Ali HI, Baynouna LM, Bernsen RM, Alvarado M, Murphy MM, Guell C. Barriers and facilitators of weight management: perspectives of Arab women at risk for type 2 diabetes. Health Soc Care Community. 2010 Mar;18(2):219-28
30.Thomas N, Alder E , Leese GP. Barriers to physical activity in patients with diabetes. Postgrad Med J 2004;80:287–91
31.Bethancourt HJ, Rosenberg DE, Beatty T, Arterburn DE. Barriers to and facilitators of physical activity program use among older adults. Clinic Med Res 2014;12(1-2):10-20.
32. Tulloch H, Sweet SN, Fortier M, Capstick G, Kenny GP, Sigal RJ. Exercise facilitators and barriers from adoption to maintenance in the diabetes aerobic and resistance exercise trial. Can JDiabetes2013;37(6):367-74.

How to cite this article:
Asma F, Ali M S M, Akbar V A, Nouzar N, Fatemeh H, Hossein F. The experiences of women with type 2 diabetes about barriers to walking: a qualitative study. J. Fundam. Appl. Sci., 2018, *10(1), 528-546.*