Gender Differences in Self-Care Practices Among Diabetics Presenting at Tertiary Care Hospital in Lahore

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ABSTRACT

***Background & Objective**: Self-care practices adherence helps diabetics in better glycemic control and prevents complications associated with uncontrolled diabetes. Worldwide emphasis is being laid down to improve self-care practices among diabetics to reduce associated comorbidities. The objective of this study was to assess the gender difference in self-care practices among diabetic patients attending a tertiary care hospital, Lahore-Pakistan.*

***Methods:** A cross-sectional study was conducted at Diabetic center of Sheikh Zayed Hospital, Lahore from 1st January 2018 to 30th August 2018. A sample of 388 participants having either type I or type II diabetes was taken by using non-probability type of consecutive sampling technique. A structured closed ended questionnaire was filled by interview technique, after taking informed consent from the participants. Data was entered and analyzed on SPSS Version 24. Data was presented in the form of frequency tables, bar charts and pie charts. Chi square test of significance was applied to assess the gender differences in self-care practices keeping P value at ≤ 0.05 as significant.*

***Results:** Out of 388 participants, 181 (46.6%) were males and 207 (53.4%) were females. Patients affected with type 1 diabetes were 54 (14%) and with type 2 diabetes were 225 (58%) and 109 (28%) participants, were unaware of the type of diabetes they had. Duration of diabetes was more than ten years in 133 (34.2%). Oral hypoglycemic drugs were used by 201 (51.8%) whereas Insulin was used by 186 (47.9%) by the participants. Significant difference was observed in two genders and their self-care practices among the participants. Skipping meal to control diabetes was a common practice amongst female patients (P = 0.011). Usage of artificial sweeteners was more common in males (P =0.025). Use of diabetic diet for maintaining blood sugar level was believed by male participants (P= 0.045). Visit to dietician was considered beneficial by males (P = 0.007).*

***Conclusion:** Self-care practices regarding diabetes differ with gender in Pakistan population. Significant difference was observed in self-care practices among two genders in diabetics attending diabetic center of Sheikh Zayed Hospital, Lahore-Pakistan.*

KEYWORDS: *Diabetes, Self-management, Self-care practices.*

INTRODUCTION

Diabetes mellitus is a group of metabolic syndrome, resulting from either genetic predisposition or following viral infection (Diabetes type I) or sedentary lifestyle with obesity (Diabetes type II). According to World Health Organization, diabetes mellitus is the 6th leading cause of death worldwide. Recently it is estimated in 2019 that 422 million people, are suffering from diabetes mellitus globally, and this figure will be doubled by 2025.[1] More than 80% of the diabetic population belongs to low and middle income countries out of which more than 60% live in Asia.[2] Worldwide undiagnosed diabetics account for 193 million or 49.7% of the whole population, whereas 374 million people have impaired glucose tolerance test (IGT).[3]

Pakistan ranks 7th among the top 10 countries with the highest number of people living with diabetes. The diabetes prevalence rate in Pakistan is 11 per cent, which is expected to rise up to 15 per cent by 2030 and then Pakistan will rank 5th in the world.[4] Diabetes mellitus is considered as global pandemic and is associated with multiple complications. A close relationship exists between diabetes and associated complications, increasing risk of developing thrombosis of cardiovascular and renal system, retinal and peripheral vasculature. Approximately one half of patients with type 2 diabetes die prematurely of a cardiovascular cause and approximately 10% die of renal failure.[5]

Worldwide prevalence of diabetes mellitus varies. In India 73% of population suffers from this disease.[6] In Sri-Lanka, estimated prevalence of diabetes was 10-

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16% in urban and 5-8% in rural population.[7] A screening survey was conducted in 2016-2017 in Pakistan that showed that the prevalence of diabetes was 26.3%. Out of these 19.2% had known diabetes, and 7.1% were newly diagnosed cases of diabetes.[8] The overall prevalence of diabetes associated micro-vascular complications is 56.9%, constituting 15.8% cases of retinopathy, 31.0% nephropathy, and 48.7% neuropathy among Pakistani population.[9]

International studies have shown that 5 million deaths worldwide are attributable to diabetes. This mortality rate is significantly high in low-middle income countries causing mortality in 50% of diabetic patients before 60 years of age.[10] Diabetes mellitus also has a major impact on a state's economy. Data has revealed that in 2015, total global healthcare expenditure on diabetics was USD 1.3 trillion.[11]

Self-care practices play significant role in reduction of these co-morbidities among diabetics.[12] The main stay of this self-care is based upon awareness about blood glucose, lipid control, smoking cessation, weight management, physical activity, and lifestyle modifications.[13] All diabetics should be encouraged to participate in Diabetes Self-Management Education in order to facilitate their knowledge, skills and abilities, necessary for their diabetes control.[14] This Self-care/ management in turn will lead to improved clinical outcomes and quality of life of patients.[15] However this Diabetes Self-Management Education should rely on individual patient's preferences, needs, and socio-cultural values.[16] Such educational activities about self-care in diabetes guide patients about clinical decisions in the management of their disease. Diabetes Self-care Education programs should be an integral part of management plan of diabetic patients as cost-saving strategy.[17] The objective of this study was to find out the gender difference in self-care practices among diabetic patients attending a tertiary care hospital, Lahore.

METHODS

This was a cross-sectional study, conducted in Sheikh Zayed Hospital Lahore. Before data collection approvals from ethical committee and institutional review board were taken. Three hundred and eighty eight patients having either Diabetes mellitus type I or type II, presented to adult Diabetic center of Sheikh Zayed Hospital Lahore, were recruited from 1st January 2018 to 30th August 2018. Patients who didn't give the consent and were going to state of diabetic ketoacidosis were excluded from the study. Sampling technique used was non-probability convenient sampling. After taking consent, data was collected with the help of a structured closed ended questionnaire. Variables like age, gender, educational & occupational status, duration for their diabetes i.e. 5 yrs, 5-10 yrs, > 10 yrs, positive family history of diabetes (either parents or siblings are diabetic) etc were included in the questionnaire.

STATISTICAL ANALYSIS

Data was entered and analyzed using SPSS 24. Qualitative variables were presented in the form of frequency tables, graphs, charts. Chi square test was applied to find out gender difference in self-care practices, keeping 95% confidence interval, P-value was fixed at ≤ 0.05 to make results significant.

RESULTS

In this study 388 diabetic patients were recruited from Diabetic Center of Sheikh Zayed Hospital, Lahore. The socio demographic profile of the patients revealed that mean age of the participants was 52.48 ± 12.19 years. Out of these 388 patients, 181 (46.6%) were males while 207 (53.4%) were females. Their educational status revealed that majority of patients, 132 (34%) were illiterate. Only 32 participants (8.4%) had professional degree. Occupational status revealed that a vast majority of 217 (55.9%) were unemployed. Regarding family history, 253 (65%) had family history of diabetes while 135 (35%) had no family history of diabetes. Amongst those who had a family history of diabetes, 165 (65.2%) had it in their parents while 91 (35.9%) had affected siblings. Out of 388 participants 68 (18%) were smoker (Table- 1).

Table -1: *Socio-demographic Profile of Diabetic Patients (n = 388).*

Variables	*Frequency*	*Percentages*
Gender		
Male	181	46.6
Female	207	53.4
Education Status		
Illiterate	132	34
Under Matric	56	14.4
Matric	74	19.1
FA	40	10.3
BA	54	13.9
MA	0	0
Professional	32	8.4
Occupation Status		
Unemployed	217	55.9
Laborer	14	3.6
Farmer	21	5.4
Office worker	44	11.3
Self-employed	45	11.6
Professional	23	5.9
Others	24	6.1
Family History of Diabetes Mellitus		
Positive	253	65.2
Negative	135	34.7

Diabetic Relatives (n = 253)		
Parents	165	65.2
Siblings	94	35.9
Smoking Pattern		
Yes	68	18
No	320	82

When the participants were asked to give information regarding type of diabetes they are suffering from, 54 (14%) responded that they had type 1 diabetes. Type 2 diabetes was mentioned by 225(58%) of the respondents and 109 (28%) were unsure about their status (Fig.1).

Regarding duration of diabetes 138 (35.6%) had history of less than 5 years, 117 (30.2%) had diabetes for 5-10 years and 133 (34.2%) had diabetes for more than 10 years.

Results revealed that out of 388 participants, 201 (51.8%) were using oral hypoglycemic drugs and 186 (47.9%) were using insulin. Skipping meals to control diabetes was mentioned by 155 (39.9%) of the participants while 233 (60%) had never skipped their meals for control of diabetes. Use of artificial sweeteners to control diabetes was mentioned by 120 (30.9%) of the respondents. Two hundred and forty four (62.8%) patients thought that they have controlled their diabetes with their practices while 144 (37.1%) believed that their glycemic control is poor with current practices. Visit to dietician will be helpful was believed by 323 (83.2%) of the participants while 65 (16.7%) believed that it will not help them control their diabetes.

When it was asked the participants to rate their knowledge regarding their disease, its medical and non-medical management and its associated complications 190 (49%) believed that they had good knowledge and 57 (14%) believed that they can rate their knowledge as very good (Fig.1).

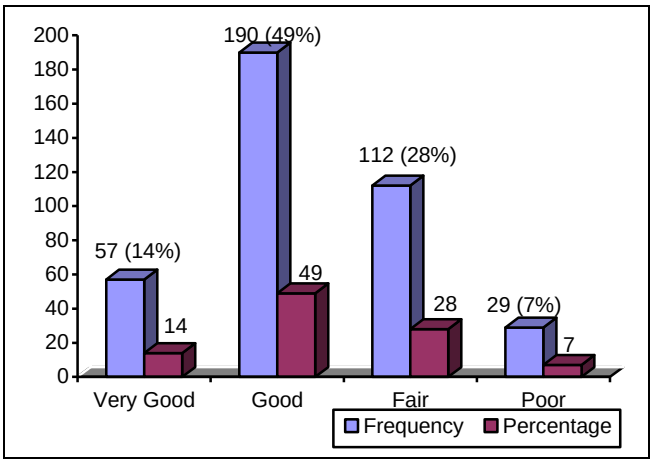

Fig. 1: *Knowledge about Diabetes.*

Significant difference was observed in two genders and their self-care practices among the participants. Skipping meal to control diabetes was a common practice amongst female patients *(P = 0.011)*. Usage of artificial difference was more common in males as compared to female population *(P = 0.025)*. Use of Diabetic diet keeps in maintaining blood sugar level was believed by male participants (72.4%) while 62.8% of the females believed this phenomena. Significant difference was observed in opinion of two genders about use of diabetic diet for control of diabetes with *P value of 0.045*. Visit to dietician was considered beneficial by males with a significant difference of 0.007 between two genders (Table - 2).

Table-2: *Association of gender with self-care practices related to Diabetes.*

Variables	*Responses*	*Male*	*Female*	*P value*
Skip meals for control of diabetes	Yes	60 (38.7%)	95 (61.3%)	0.011*
	No	121 (51.9%)	112 (48.1%)	
Visit to dietician is helpful	Yes	151 (49.8%)	152 (50.2%)	0.007*
	No	27 (41.5%)	38, (58.5%)	
Doing Well on diabetic diet	Yes	131 (50.2%)	130, (49.8%)	0.045*
	No	50 (39.4%)	77 (60.6%)	
Usage of artificial sweeteners	Yes	62 (53.9%)	53 (46.1%)	0.025*
	No	119 (44.4%)	149 (55.6%)	
Rate your understanding of diabetes	Very good	36 (63.2%)	21, (36.8%)	0.030*
	Good	82 (43.2%)	108 (56.8%)	
	Fair	53 (47.3%)	59 (52.7%)	
	Poor	10 (34.5%)	19 (66.5%)	

DISCUSSION

Self-care in diabetes has been defined as an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of diabetes in a social context.[18] A vast majority of day-to-day care in diabetes is handled by patients themselves and their families.[19] International literature shows that essential self-care behaviors in diabetic patients predicting good outcomes include healthy eating, being physically active, monitoring blood sugar and compliance with medications.[20] Self-care is the most practical and cost-effective approach to reduce complications associated with this disease. Diabetes self-care successfully

promotes better management of disease by patients.[21] Good self-care practices help in maintaining glycemic control, reduction of complications and improvement in quality of life.[22]

Worldwide emphasis the importance of patients becoming active and knowledgeable participants in their care of disease.[23] WHO has also recognized the significance of self-care practices among patients with diabetes.[24] The American Diabetes Association had found that there was a four-fold increase in diabetic complications for those individuals with diabetes who had not received formal education concerning self-care practices.[25] American Diabetes Association educators have condensed these self-care behaviors into seven categories namely healthy eating, being physically active, monitoring of blood sugar, compliance with medications, good problem-solving skills, healthy coping skills and risk-reduction behavior.[26]

Gender distribution in present study revealed 53.4% females and 46.6% males. However studies suggest that world-wide prevalence of diabetes is higher in men than in women.[27,28] 65.2% of the participants in had positive family history of diabetes mellitus. This finding was in concurrence with other previous studies which reported a very strong association of family history with diabetes.[29,30]

Significant proportion of males *(P-value 0.030)* responded that better understanding of this diseases help them in better self-care of their glycemic control. Comparable results were shown in another study that males if acknowledged about diabetes and its associated co-morbidities show better self-care practices.[31]

Majority of female (45.9%) patients skipped meals *(P-value of 0.011)* as compared to men (33.1%) as diabetes self-management practice, this finding is in line with another study which showed that diabetic females restricts their diet as if prohibited for better glycemic contol.[32] But on the other hand the use of artificial sweeteners to modify the diet was more among diabetic males *(p-valueo .025)* in comparison to female patients. Contrast results were shown in another study which showed diabetic female preferred the use of artificial sweeteners in their diet in contrast to males.[33]

Males showed more satisfaction regarding their glycemic control when on diabetic diet *(P-value .045)*. However no significant difference of satisfaction between male and females regarding diabetic diet and resultant glycemic control was observed in other studies.[34] Majority of male diabetic patients agreed that going to dietician will be helpful for them in the management of their glycemic levels. A study conducted in Saudi Arabia suggest the same thing that guiding the patients about taking expert dietary advice helps them in better self-care of diabetes.[35]

CONCLUSION

Self-care practices regarding diabetes differ with gender in Pakistan population. Significant differences were observed in practices of males and females regarding skipping meal, usage of artificial sweeteners, perception of controlled diabetes with usage of diabetic diet, understanding about diabetes, perception about visiting to dietician to control diabetes.

LIMITATIONS OF STUDY

This study was based on single center survey so generalization of the results cannot be done on diabetic population of other centers. Moreover study design was a Cross-sectional survey, better results of self-care practices can be obtain by longitudinal study. Researcher used non-probability consecutive sampling, better results can be obtain by using other types of probability sampling.

RECOMMENDATIONS

It is recommended that diabetes self-management education programs should be introduced at the primary care level. Periodic reinforcement of such programmes is necessary to achieve change in behavior of diabetic population about self care practices and sustaining the same for a longer period of time.

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AUTHOR'S CONTRIBUTION

FA: Conception, literature search and write up of Introduction.
IM: Supervision and technical input in methodology, Analysis of data &interpretation of data.
TZ: Extensive literature search with write up of discussion
HI: Acquisition of data and presentation of data.
HM: Acquisition of data and presentation of data.
HA: Questionnaire development

CONFLICT OF INTEREST

None to declare.

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