

## **Diabetes Self Care and Diabetic Distress in Patients with Type 2 diabetes**

**Saleha Rehan**

Department of Applied Psychology, Bahaudin Zikriya University, Lahore

**\*Humaira Naz**

Centre for Clinical Psychology, University of the Punjab, Lahore

### **Abstract**

The present study investigated the relationship of the diabetes self-care and diabetic distress in patients with type 2 diabetes. It was hypothesized that there will be a negative relationship between diabetes self-care, demographics and diabetes distress. Further, there will be gender difference in self-care and diabetes distress. A sample of 100 was collected using purposive sampling, including 38 men with the mean age of 58.03 (SD= 7.99) and 62 women with the mean age of 55.38 (SD= 7.05). Summary of Diabetes Self Care Activities and Diabetes Distress Scale were used. Results showed a significant negative relationship of diabetes care with general diet and regimen related distress, interpersonal distress and total distress. Diabetes care with specific diet also had significant negative relationship with treatment related distress. Gender differences revealed that men with diabetes engage more in exercise for diabetes care. Women reported high emotional burden and distress associated with treatment. It is concluded that patients of diabetes type 2 who engage in diabetes care by diet intake experience less diabetic distress, interpersonal distress and emotional burden. Findings have implication in devising counseling program to teach diabetes' care, and ways to manage distress, thereby to improve treatment adherence and health promoting behaviors.

**Keywords:** Diabetes self-care and diabetic distress (type II diabetes)

### **Introduction**

Long term chronic illnesses frequently bring difficulties in patient's lives, change the way patients see themselves, bring financial

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Saleh Rehan, Mphil Scholar, Department of Applied Psychology Bahaudin Zikriya University, Lahore. Saleha1944@hotmail.com

**\*Correspondence concerning this article should be addressed to** Ms. Humaira Naz, Assistant Professor, Centre for Clinical Psychology, University of the Punjab, Lahore. , Email:humaira.cpsy@pu.edu.pk

hardship, and even disturb the family dynamics and cause distress. Chronically ill patients have psychological, social and emotional needs that are different from those of healthy people. The healthcare professionals who attend to the patient's disease but neglect, physical, social and emotional needs required for treatment adherence (Brannon & Fiest, 2004). Diabetes is one of the chronic illnesses that due to long course, constant demand for patients to regulate glucose level and control diet etc, pose challenges for both physical and psychological well-being.

Diabetes demands constant care by maintaining treatment compliance, diet management, blood sugar level so as to prevent adverse complications. Diabetes self-care is conceptualized as the awareness of the illness as well as learning the ways to live with the complications (Cooper & Booth, 2003) and patient needs education to enhance their expertise in self-management (Martha, Funnel & Anderson, 2004). Self-care activities encompass appropriate diet plan, enlarged exercise, using less saturated fat foods, self-glucose monitoring, and foot care are emphasized as integral part of diabetes education and need to be evaluated for behavioral change (Walker, 1999; Glasgow & Strycker, 2000). Haskell (2007), emphasized the regular physical activity for the diabetic care.

Diabetic patients are at risk for illness related distress. Diabetes distress is commonly experienced by the patients while they concern regarding treatment, social support, emotional burden and access to care etc (Polonsky et al, 2003). Researches and healthcare professionals have identified that diabetes condition, along with daily monitoring of glucose level and restriction of diet (Macrodimitris & Endler, 2001; Fisher et al, 2008). In addition, diabetes-related complications, work impairment unemployment, treatment costs are the subsequent stressors causing distress (Ciechanowski, Katon & Russo, 2000; Spencer et al, 2006; Katon, 2011). Many studies highlight that inadequate self-management of diabetes as determinant of emotional and behavioral pressure and fear of diabetes complications as major stressor of illness and affect health (West & McDowell, 2002; Wilson, et al, 1986; Whittermore, Melkus & Grey, 2005, Peyrot, et al. 2005) as well inflict with depression and anxiety. Distress from moderate to high level may be experienced in response to poor, diet management, diabetes complications and metabolic control (Islam et al, 2014). This study attempted to understand the preferred self-care by diabetic patients and illness related distress in patients with type 2 diabetes. The findings will further help in creating awareness that in order to improve diabetic self-care and reducing the risk of emotional

disturbances.

### **Objectives**

- To investigate the relationship between diabetes self-care and diabetes distress in patients with type 2 diabetes.
- To find out the gender differences on diabetic self-care and diabetic distress in patients with type 2 diabetes.

### **Hypotheses**

- There is likely to be negative relationship between self-care and diabetes distress in patients with type 2 diabetes.
- There is likely to be positive relationship between demographic, diabetic self-care and diabetic distress.
- There is likely to be gender differences on diabetic self-care and diabetes distress, in patients with type 2 diabetes.

## **Methods**

### **Research design**

Co relational research design was used in the present study.

### **Sampling**

In this research purposive sampling was used. Participants included were with diagnosis of type 2 diabetes with minimum duration of 1 year. Those patients with type I diabetes, and diabetic complication were excluded.

### **Participants**

The sample size consisted of 100 including 32 men and 68 women. Patients were taken from outdoor patient department (O.P.D) of Sheikh Zayed hospital, Jinnah hospital and Mayo Hospital referred from consultant physicians. Men were with age ( $M= 58.03$ ;  $SD= 7.99$ ) and women had an age ( $M=55.38$ ;  $SD= 7.05$ ). Most of the participants were educated up to 8<sup>th</sup> class (24.0%), married (83.0%) and living in a joint family system were (57%).

### **Measuring Instruments**

*Demographic form.* was developed by the researcher to get information about demographic characteristics of participants such as

age, education, occupation, monthly income and relationship with spouse. In addition information was inquired about duration of diagnosis of disease, other physical illness and any psychological problem due to disease.

***Summary of the diabetes self-care activities scale (SDSCA).*** was developed by Toobert, Hampson and Glasgow (2000). In study the Urdu translated version was used (Bilal & Kausar, 2013). It is comprised of 12 items that inquire diabetes self-care such as about the diet, exercises, blood sugar test, foot care and smoking. Means scores are calculated and score  $<3$  indicate low self-care and  $>3$  means high self-care. Chronbach alpha calculated on present sample showed adequate internal consistency range from .42 to .84.

***Diabetes Distress Scale (DDS17).*** was developed by Polonsky et al. in 2005. The urdu translated version was used in the study after seeking permission from original author. It was translated in Urdu by Aurangzeb and Naz (2013). There are four subscales including emotional burden, physician-related distress, , regimen-related distress, and interpersonal distress. The responses to each item were rated on a 6-point rating scale ranged from 1 = not a problem to 6= a serious problem and 6 = a very serious problem). In the present study the Chronbach  $\alpha$  of subscales ranged from .76 -.89 indicated high reliability.

## **Procedure**

First of all permission was taken by original author of questionnaires, the translations of both the tools were already present, then permission was taken by the authors of Urdu translated version. The participants were approached from outdoor patient of Sheikh Zayed Hospital, Jinnah hospital and Mayo hospital. Formal permission was taken from authority of these hospitals. The pilot study was conducted on 5 participants from Jinnah Hospital to determine any difficulty faced during administration of questionnaires. The total 100 participants were approached for main study. The questionnaires were individually administered by the researcher. Those who were educated filled the questionnaire by themselves. The participants took almost 20 minutes to fill the demographic and questionnaires.

### **Ethical Considerations**

The ethical considerations that were followed throughout the research process such as use of questionnaires with permissions of original authors and translators consent from participants, assurance of confidentiality to the participants whenever they wanted to leave the research. It was notified that participant must be comfortable when he/she leaves the study.

### **Results**

Pearson product moment correlation coefficient was employed to analyze the relationship between studied variables.

Correlation analyses partially accepted first hypothesis. It showed significant negative relationship between general diets, regimen related distress and interpersonal distress. It means who regularly intake general diet tend to experience less regimen (treatment) related distress and interpersonal distress. The general diet had also significantly negative correlation with total score of diabetic distress. Specific diet was found to have significantly negative correlation with regimen related distress. It suggests that patient who control and manage diabetes with specific diet, were less vulnerable to illness related distress. Correlation analyses, revealed significant positive relationship of education with diabetic care with foot care. It means patients with an increase in education also reported to aware of the adverse physical effect of wound and hence more engage in care of their feet. Monthly income had significant positive relationship with exercise, referring that with better socioeconomic status patients have an access to practice exercise. It might also be inferred those people had low family income may be did not bear the expenses of gym and club. Results also indicated negative relationship of education with diabetes distress and all subscales. It means those patients with better education level reported less diabetes distress. They are least succumbed to feel burden of illness and negative emotions. Monthly income had significant negative relationship with diabetes distress total, emotional burden and regimen related distress. It means those people had adequate family income bear their disease related expenses easily that help them to feel less distressful toward illness.

Table 1

*Relationship Between Summary of Self Care Activities and Diabetes Distress of Patient with Diabetes Type II (N=100).*

<i>Measures</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>M</i>	<i>SD</i>
1 General diet	-	.06	.15	.03	.15	-.12	-.15	-.24*	-.30**	-.25*	6.99	2.74
2 Specific diet		-	.10	.22*	.13	-.30	.02	-.22*	-.04	-.15	2.70	3.10
3 Exercise			-	.16	-.06	-.02	-.02	-.08	.04	-.04	4.19	2.45
4 Blood Sugar Testing				-	.10	.02	-.04	-.11	-.05	.05	5.24	3.01
5 Foot care					-	.01	.14	-.01	-.14	-.01	5.13	1.96
6 Emotional burden						-	.20*	.66**	.61**	.83**	14.73	5.85
7. Physician distress							-	.38**	.44**	.56**	5.64	3.32
8 Regimen distress								-	.54**	.87**	10.99	4.68
9 Interpersonal distress									-	.74**	5.52	3.40
10 Total distress										-	43.34	15.83

*Note.* \*\* $p < .01$ ; \* $p < .05$ .

Independent sample t test was first run to see gender differences on subscales of diabetes self-care activities. Result indicated that women and men reported to have similar practice in general and specific diet intake, foot care, blood glucose testing. However, compared to women, men preferred more to focus on exercise in care of diabetes. According to results, significant gender differences were found on emotional burden and physician related distress. Emotional burden of diabetic distress and regimen related distress was more experienced by women. Whereas, physician related distress was more perceived by men.

Table 2

*Gender Differences in Diabetes Self Care Activities*

Sub scales	Men		Women		t(98)	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
GD	6.96	2.71	7.00	2.78	-.06	.94	-1.21	.13	0.01
SD	5.57	2.62	4.91	1.53	.11	.11	-.17	1.48	0.30
E	3.87	3.18	2.14	2.92	.01	.01	.44	3.00	0.56
BSGT	4.78	3.02	3.91	2.10	.09	.09	-.16	1.90	0.33

**Note:** CI=Confidence Interval; LL= Lower Limit & UL=Upper Limit, GD= general diet, SD= Specific Diet, E= Exercise, BSGT= Blood Sugar Glucose Testing

Table 3

*Gender Differences in Diabetes Distress Scale.*

Sub scales	Men		Women		t(98)	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
EB	12.18	5.49	15.93	5.66	-3.11	.00	-6.13	-1.36	0.32
PD	6.20	4.15	5.37	2.84	1.15	.24	-.58	2.23	0.23
RD	8.63	4.48	12.10	4.38	-3.65	.00	-5.34	-1.58	0.78
IPD	5.02	3.67	5.76	3.26	-1.02	.31	-2.19	.70	0.21
DDS T	37.81	16.9 2	45.94	14.7 1	-2.45	.02	- 14.7 0	- 14.7 0	0.51

**Note:** CI=Confidence Interval; LL= Lower Limit & UL=Upper Limit. DDS=diabetes distress total; EB=emotional burden; PRD=Physician related distress; RRD=regimen related distress; and IPD=interpersonal distress.

### Discussion

Study mainly investigated the contributing role of diabetes related care and demographic factors in diabetes distress. First hypothesis of the study is that there would likely to be negative relationship between self-care and diabetes distress in patients with type 2 diabetes. It was partially accepted. The results of this study revealed a significant negative correlation between general and specific diet and regimen related distress, interpersonal distress and with total scores of diabetes distress. Specific diet had significant negative relationship with regimen (illness) related distress. It inferred that those who took care of themselves as per doctor's advice were less distressed. The findings of this study show that dietary management significantly relate with all domains of diabetic distress. Results are well supported by previous studies that also found that diabetic care (poor diet, irregular medication intake, limited exercise, illness related factors (duration, complication) had implication on diabetes distress. Adherence in diabetes care by intake of general and specific diet, blood glucose testing and foot care positively affect quality



of life (Svartholam & Nylander 2010; Tol et al, 2012; Sekhar et al 2013). In Pakistani culture, food is considered important and in diabetes diet plays both positive and negative role in diabetic state. According to result, patients manage diabetes fluctuations by their diet intake. In present study, self-care practices as exercise, blood glucose testing and foot care had no significant relationship with diabetes. It may be assumed that participants of present study reported high mean scores on general and specific diet that showed adequate adherence to diabetes self-care by proper diet intake (sugar free). Inadequate practice of exercise was evident from low mean scores. It may be argued that patients tend to engage in physical activities to less extent and unable to minimize diabetes distress. It may also be inferred that although patients practiced blood glucose testing and foot care, regardless its associated influence on their distress related to illness. In present study both education and family income were found as negative correlate of diabetic care and diabetes distress. There is a substantial support from previous study found that education and all diabetes care have positive relationship. Relating to present study majority of participants was educated, which indicated that educated people have more self-care behaviors and reported less diabetes distress. In the present study most of the participants had average family income and monthly income is a predictor of diabetic distress. In a study done by Islam, Karim, Alam and Yasmin, (2014), diabetic complications and average monthly family income emerged as a predictor of diabetes distress of patients with the type 2 diabetes. Result related to gender difference, depicted that men practice exercise for diabetes care and experience less diabetes distress. Result are supported by previous study done by Svartholam and Nylander (2010) found male were concerned with high fat food, participating exercise, checking inside the shoes, dry between toes, counseling about smoking cessation, and seeking herbal treatment. Previous study also found that high prevalence of diabetes and its resulting complications in woman than in men attributed to their less practice of exercise and diet control and furthermore less glycemic control (Ilyas, 2009). It may be inferred that men are comparatively physically more active than women. This gives them more opportunity to visit out for a walk and exercise. Another reason can be attributed to women's more tendency to experience diabetes related distress that also decreases diabetes related self-care. Women are more prone to experience emotional burden, and regimen related distress.

## Conclusion

Diabetes self-care is of crucial important in improving treatment compliance and psychological implications of illness. Patients tend to have high and low diabetes distress depending upon their diabetes self-care specifically related to diet intake. Moreover women are more prone to experience diabetes distress.

## Limitations and suggestions

- In present study only type 2 diabetes patients were taken, comparison with diabetes 1 could give differential information on diabetic self-care and diabetes related distress.
- The data was collected from government hospitals so approached mostly with low and middle socioeconomic class. Financial burden might a significant stressor that highlights the need to investigate the socioeconomic difference in Diabetes Self-care and Diabetes Distress.
- The present study focused on the relationship between diabetes self-care and diabetes distress in patients with type 2 diabetes. In future, other factors and their influencing nature on the lives of diabetic patients should be studied and investigated upon such as adjustment to illness and coping strategies and diabetes distress.
- Qualitative research can be done that may provide in-depth analysis of patients experiences, of being patient and personal barriers in adherence to self-care.
- Personality traits can vary regarding patients self-care. Investigating the personality traits with variable can become valuable information in devising counseling program for diabetic patients.

## Implications

Findings can be implemented to devise counseling program to teach them self-care activities, and different ways to manage their diabetes related distress. Role of the caretakers of diabetic patients is highly needed and findings can help to emphasize the family support.

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