

Anxiety and Depression: A study of Diabetic Types

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The purpose of this study was to determine difference in the level of hospital anxiety and depression in patients with Type 1 and 2 diabetes. For data collection patients from outpatients unit of one of the famous hospital of city of Karachi, Pakistan were selected. With the consent of hospital authorities, total of 100 diabetic patients including 50 males and 50 females were individually approached. They completed personal information form and Urdu version of Hospital Anxiety and Depression Scales (HADS). Application of t' test indicates statistically significant difference in anxiety and depression between Type 1 and Type 2 patients, that was higher for Type 2 diabetic patients. The results has positive implications for the clinicians as well as for diabetic patients.

Key words: Hospital anxiety and depression; diabetic patients; type 1 diabetes; type 2 diabetes

The problem of the study centered on the query about difference in the level depression and anxiety between type 1 and type 2 diabetic patients. Further it also focuses on the question of gender difference, marital status and family structure of diabetic patients as additional variables.

It is a well know fact that in the treatment of any physical illness, together with medical care, social and psychological factors also play vital role. The function of family system, work environment, social support, economic status, patients personality characteristics, gender, marital status and duration of marriage are few among many factors considered important in different diseases. These variables may act as a risk factor as well as supportive factor and can also help in management or treatment of acute and chronic illnesses. Psychological variables of stress, anxiety, and depression have direct and indirect consequences on individual and contribute in the development and hinder in the treatment of various physical disorders. One such medical condition is Diabetes mellitus that is on increase these days. The World Health Organization (WHO) foresees that "more than 360 million people worldwide will have diabetes by 2030" (Tobianah, 2013).

It is viewed that this chronic physiological disease "results from failure of the islet cells of the pancreas to manufacture sufficient insulin, affecting blood glucose levels and producing effects in many organ systems" (Brannon & Feist, 2000). Considering diabetes we find in literature two main types, the first one is Diabetes Mellitus Type 1 and second is Diabetes Mellitus Type 2. In first condition, person may easily become fatigue and feel excessive thirsty, hungry and urination. It may have an effect on digestion system too. Its onset is considered more frequently before the age of 30. The second type is found in majority of adult diabetes cases. It may show its occurrence more frequently after the age of 30.

Alike variety of other chronic medical problem such as cancer, cardiac problems etc. it is identified that diabetes can also be accompanied by few psychological symptoms. Anxiety, depression, aggression, irritability, suspiciousness, and other emotional problems may act as a threat and contribute in the development of severe medical condition. In some condition few psychological conditions may be associated features or co morbid. In a research on diabetic patients visiting outpatient department, the common psychological problems were adjustment disorder, depressive disorder and generalized anxiety disorder (Rauf, Rehman, & Abrar, 2005).

Eaton, Armenian, Gallo, Pratt, and Ford (1996) considered major depressive disorder as high risk factor in type 2 diabetes. Anderson, Freedland, Clouse, and Lustman (2001) also found that, in adults with type 1 or type 2 diabetes difficulties, depression is viewed as a high risk factor. It has been noted that when depression decreases then there is improvement in patient's condition. Eren, Erdi, and Ozcankaya (2003) studied psychiatric co morbidity in 104 diabetic type 2 patients with poor and good glycemic control. Major depressive disorder was more prevalent in former group of diabetic patients. Mansour and Jabir (2007) studied type 2 diabetes mellitus with co morbid depression. These patients were found to have more depression than the control group. In Malaysia, Mohamed, Kadir, and Yaacob (2012)

found depression as more frequent in type 2 diabetes mellitus patients and was related to diabetes difficulties also. Moreover Mathew, Dominic, Isaac, and Jacob (2012), work shows that more than 1/3rd type 2 diabetes mellitus patients with duration of more than 5-year had depressive symptoms. These symptoms were further related with deterioration of glycemic control.

Further anxiety symptoms were also noted in various other surveys and researches, for example Generalized Anxiety disorder was present in 14% and high anxiety in 40% of diabetic patients studied (Mathew, Anderson, Freedland, Clouse, & Lustman, 2002). Survey on 420 patients having type 1 and type 2 diabetes indicate that occurrence of affective disorders was more found in diabetic patients than non-diabetic group, while frequency of anxiety disorders was not raised (Hermanns, Kulzer, Krichbaum, Kubiak, & Haak, 2005). Collins, Corcoran, and Perry (2009), found that the presence of signs of anxiety and depression in patients of diabetes were more as compared to sample of control group. Similarly in Malaysia, Kaur, Tee, Ariaratnam, Krishnapillai et al (2013), reports that depression; anxiety and stress indications were more in Type 2 diabetes, with 1/3 also anxious.

Vulnerability to depression and anxiety in diabetes and control of sugar level as mentioned earlier can also be function of various personal factors. Zhao, Chen, Lin, and Sigal (2006) reports considerable relationship of diabetes with depression in women falling in age group of 20–39 years as compared to women in age group of 40–64 years. However this relation was not noteworthy in men of both age groups. Roupia et al (2009) reports that anxiety and depression symptoms as measured through HADS were higher in females than males with type 2 diabetes mellitus.

Results of few studies where data was not collected from patients population having diabetes but are worth mentioning for example, in Pakistani remote village areas of Sindh, Luni, Ansari, Jawad, Dawson et al (2009) found that depression and anxiety were related with females, however they did not found relationship of anxiety and depression with marital status and family system of the respondents. Maniar (1993) did not noted significant difference in specific psychological symptoms, between married and unmarried patients Further Munaf and Siddiqui (2013) concludes from their work that women in joint family experience less post natal depression, they are more satisfied with their lives and had more marital satisfaction than women of nuclear family system.

Although there is high motivation among Pakistani clinical psychology students and scholars to conduct researches, yet there is dearth of research related to diabetes patients and their psychological problems. Hence there is need to conduct research on this specific topic.

Objective

The objective of the present research is to compare level of hospital anxiety and depression in type 1 and type 2 diabetic patients. Additionally it would further determine difference in mean anxiety and depression on variables of gender, marital status, and family structure. It is an important research and would have positive implications as on the lines of it's results recommendations can be given by clinicians to their diabetic patients, which would help them to lessen their anxiety and depression that are important in improvement of physical as well as other psychological problems of the patients.

Hypothesis

Level of anxiety and depression would be more in Type 2 than Type 1 diabetic patients.

Method

Research Design

It is a two group comparative study, where depression and anxiety of patients having type 1 and type 2 diabetes would be compared. Here independent variables would be type 1 and type 2 diabetic patients and their scores on hospital anxiety and depression scale would be dependent variables. Diabetic patient in this study includes patients of type 1 and type 2, diagnosed since /minimum of one year. Anxiety and depression in this study are defined as what it is measured through HADS Urdu version by Mumford, Tareen, Bajwa, Bhatti and Karim (1991).

Participants

In this research participants included 100 diabetic patients with 50 diagnosed as having diabetes Type 1, their mean age was 28.58 (SD=5.69) and 50 diabetes Type 2, their mean age was 43.64 (SD=8.62). There was high

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discrepancy in mean age of both the groups ($t' = -10.304$, $df = 98$, $p < .00$). There were equal number of male (Mean age=36.90, $SD=10.72$) and female patients (Mean age=35.32, $SD= 10.30$) in both diagnostic categories. It included married (72%) and unmarried (28%) patient .They belonged to nuclear (68%) as well as joint (32%) families. Their minimum educational level was intermediate and minimum length of diagnosis of diabetes was one year. Patients for data collection were selected through convenient sampling method from those visiting hospital's OPD and already diagnosed by medical doctor as having type 1 or type 2 diabetics.

Introduction to Participant and Informed Consent Form

Introduction to participant and Informed consent form included introduction about the purpose of the study and participant's consent, for voluntary participation. It further included information about the ethics involved in the research.

Personal Information Form

It was self developed semi structured interview form for gathering information related to patient's illness, family history of diabetes, duration, types and age of diagnosis. Further information related to personal characteristics for example age, education, family members, family structure, marital status, earning family members, residential area, perceived economic status, and history of any main psychological disorder if present before the diagnosis of diabetes was taken. Those having major diagnosis of any mental disorders were excluded from the study.

Hospital Anxiety and Depression Scale (HADS) Urdu version by Mumford, Tareen, Bajwa, Bhatti and Karim (1991)

The hospital anxiety and depression scale was first developed by Zigmond and Snaith (1983), for measurement of anxiety and depression in outpatient units of hospitals. It is considered as self report reliable scale and also valid for identification of anxiety and depression in emotional problems. Bjelland, Dahl , Haug , and Neckelmann (2002) analyzed 747 papers related to validity of HADS and found that it detect degree of anxiety and depression not only, in patients having medical problems but also in psychiatric problems and in general population as well.

HADS was translated in many languages and in present research its Urdu version was administered.HADS Urdu version by Mumford, Tareen, Bajwa, Bhatti and Karim (1991) is a self administered scale .It consists of 14 items, which assess anxiety and depression of patients. Item 1, 3, 5, 7, 9, 11 and 13 assess level of anxiety and items 2, 4, 6, 8, 10, 12 and 14 determine level of depression. These items are rated on 0-3 rating scale, where 0= Not at all, and 3= Most of time. Maximum score of each scale is 21. Its total score gives entire anxiety and depression score. Hospital Anxiety and Depression Scale, Urdu version, is highly reliable and valid measure, and has been used as measure of anxiety and depression in various Pakistani researches. Mumford et al., (1991) also conclude that HADS Urdu version is a reliable and valid measure to assess anxiety and depression in Pakistan.

Procedure

After taking written consent from the Ethical Review Committee of one of the well know hospital of Karachi, Pakistan, the researcher well trained in assessment and diagnosis of psychological problems, approached outpatient department where diabetic patients were visiting for treatment purpose. After brief verbal and written description about the nature of research work, and after taking patients consent, they were requested to complete personal information form. Those falling under inclusive criteria were further requested to complete HADS Urdu version. Few patients asked for next appointment for the administration of the scale; therefore a proper schedule was prepared for individual patients. After scoring, t test was applied to determine difference in level of anxiety and depression of type 1 and 2 diabetes patients. Additionally in order to determine whether any difference exists in mean anxiety and depression between male and female, married and unmarried and those patients belonging to joint and nuclear family system, again t' test was applied.

Ethical Considerations

With the consent of hospital authorities data collection was started. It was only collected from patients who agreed upon voluntarily participation. They were given assurance for confidential of the individual data , however they were informed that for research purpose collective data would be used.

Results

Table 1

Difference in the mean Hospital Anxiety ,Depression and combined Anxiety and Depression (HADS) scores of patients with Type1 and Type2 Diabetes

HAD Variables	Diabetes Types	M	SD	t	p
Anxiety	Type1	7.00	3.45	-6.14	.00**
	Type 2	11.20	3.37		
Depression	Type1	3.70	3.09	-9.33	.00**
	Type 2	9.82	3.45		
Anxiety and Depression	Type1	10.70	5.85	-8.70	.00**
	Type 2	21.02	6.00		

Note. N: Type1=50, Type 2=50, df= 98, ** indicates significance at α .01

Table 1 clearly shows that there is significant difference between Type 1 and 2 diabetic patients on level of anxiety, depression and combined HADS ($t = -6.14$, $df=98$, $p < .01$), ($t = -9.33$, $df=98$, $p < .01$) and ($t = -8.70$, $df=98$, $p < .01$) respectively. The mean score of Type 2 is more than Type 1, diabetic patients on all three domains.

Table 2

Difference in the mean Hospital Anxiety ,Depression and combined Anxiety and Depression (HADS) scores of male and female Diabetic patients

HAD variables	Gender	M	SD	t	p
Anxiety	Male	10.20	3.55	2.84	.00**
	Female	8.00	4.15		
Depression	Male	7.60	4.12	1.89	.06
	Female	5.92	4.71		
Anxiety and Depression	Male	17.80	6.89	2.53	.01*
	Female	13.92	8.33		

Note. N: Males=50, Females=50, df= 98, * & ** indicates significance at α .01.

There is significant gender difference in diabetic patients on the level of anxiety ($t=2.84$, $df=98$, $p < .01$) and combined HADS ($t= 2.53$, $df=98$, $p < .01$) where scores of males was higher than females, but insignificant difference on depression $t=1.89$ $df=98$ $>.05$ was clear.

Table 3

Difference in the mean Hospital Anxiety ,Depression and combined Anxiety and Depression (HADS) scores of Married and Unmarried Diabetic patients

HAD variables	Marital Status	M	SD	t'	p
Anxiety	Unmarried	7.39	3.66	-2.74	.00**
	Married	9.76	3.95		
Depression	Unmarried	4.36	3.43	-3.53	.00**
	Married	7.69	4.51		
Anxiety and Depression	Unmarried	11.75	6.31	-3.43	.00**
	Married	17.45	7.84		

Note. N: Married=72, Unmarried=28, df= 98, ** indicates significance at α .01.

There is a significant mean difference on anxiety, ($t=-2.74$, $df=98$, $p < .01$) depression ($t = -3.53$, $df = 98$, $p < .01$) and combined HADS ($t=-3.43$, $df =98$, $p < .01$) between married and unmarried diabetic patients. The married patients appeared as more anxious and depress than unmarried patients.

Table 4

Difference in the mean Hospital Anxiety, Depression and combined Anxiety and Depression (HADS) scores of Diabetic patients from Nuclear and Joint families.

HAD variables	Family Structure	M	SD	t'	p
Anxiety	Nuclear family	9.51	4.06	1.52	.13
	Joint family	8.22	3.78		
Depression	Nuclear family	7.10	4.31	1.11	.26
	Joint family	6.03	4.80		
Anxiety and Depression	Nuclear family	16.61	7.77	1.41	.16
	Joint family	14.25	7.90		

Note. N Nuclear Family =68, N Joint family=32, df= 98

There is insignificant difference on anxiety, ($t=1.52$, $df= 98$, $p>.05$), depression ($t=1.11$, $df=98$, $p>.05$), and combined HADS ($t=1.41$, $df 98$, $p>.05$), between diabetic patients residing in joint and nuclear family systems.

Discussion

In this section, the results of present study are elaborated and discussed with the help of researches.

The purpose of current study was to find out difference in the level of anxiety and depression between type 1 and type 2 diabetic patients .The study comprised of diabetic patients from OPD of one of the well reputed hospital of Karachi; Pakistan. It is clear from the table 1, that our hypothesis, "level of anxiety and depression would be more in Type 2 than Type 1 diabetic patients", was proved. It indicates that anxiety, depression and combined HADS of type 2 diabetic patient is significantly higher than type I patients. Alike in Malaysia, as reported earlier Kaur, Tee, Ariaratnam, Krishnapillai et al (2013), informed that in Type 2 diabetes, depression; anxiety and stress were more common.

Further it is apparent from additional findings in table 2, that anxiety of male patients is significantly more than female patients as well as combined HADS, but there was slight insignificant difference on depression only. Overall there appeared a difference. Similarly, but not directly related to diabetes, Minhas, Farooq and Rahman (2001), found that psychiatric problems are more prevalent in males than females. It is also obvious from the work of Munaf, Farhat and Rehman (2004), that majority of patients visiting outpatient unit of Clinical Psychology were males. This can indicate presence of more psychological problems in males than female. Therefore one can expect that depression and anxiety in patients having diabetes would also be relatively more in men than in women. The work of Roupa, Koulouri, Sotiropoulou, Makrinika, et al (2009) as mention in introduction, contradict our supplementary findings that males scored high on overall anxiety and depression scores than females.

Further in table 3, we find sigificant difference between married and unmarried patients. Married patients were found to have more anxiety, depression and HADS as compared to unmarried patients . Contrary to our present result, Munaf,Panwar, Iqbal, and Shaheen, (2006) , reported that unmarried people, seek more psychological help or/ and suffer more from Axis-I and Axis-II disorders. On the other hand as reported earlier Maniar (1993) , could not found any significant difference in psychological problems between married and unmarried patients. Anxiety and depression in married diabetic patients may be attributed to responsibilities of marital life together with management of severe illness like diabetes that have made them more prone to anxiety and depression than unmarried patients, who do not have to face and handle stresses of marital life together with their illness. Another additional variable of family system was also studied . Table 4 clearly shows insignificant difference in anxiety, depression and HADS between diabetic patients residing in joint and nuclear family set up . Similar findings were noted in the work of Luni, Ansari , Jawad, Dawson et al (2009), who were unable to find relationship of anxiety and depression with joint and nuclear family status of the respondents.

Conclusion

It is clear from the results and discussion that anxiety and depression are more prominent in Type 2 diabetic patients as compared to Type 1 patients. It further seems to be more in males as well as married patients than females and unmarried patients respectively. No significant difference was noted between patients living in joint and nuclear families.

Implications and Recommendations

The findings of the present study shed light on to the importance of research, as the significant difference in anxiety and depression scores of diabetic patients on various variables would be of great help for the clinicians who are treating patients suffering from diabetes. They can have a better understanding and identification of psychiatric co morbidity among diabetic patients, its Types, gender difference, and difference in anxiety and depression with reference to marital status. It may also facilitate them to develop more effective prevention/treatment / management program for them in relevance to Pakistani culture and environment in collaboration with Clinical Psychologist. Stress management training program can also be arranged with OPD unit for patients having diabetes. Moreover, awareness program can be launch regarding negative impact of anxiety and depression upon physical health of the patients. Media can also play important role in developing this awareness among people.

Limitations of the study and avenues for future research

There are few limitations of this study. One of it is that the sample size of the patients was very small and data was also collected only from one hospital of city of Karachi. Although results are quite noteworthy one should still take care in generalizing the findings with high reliability. It is suggested that future researcher may replicate this study employing an increased sample size and collection of data from hospitals of all the provinces of Pakistan.

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