Original Research Article

Psychological Status among Patients with Type 2 Diabetes Mellitus Attending in a Tertiary Level Hospital, Kathmandu

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ABSTRACT

Background: Psychological status (Anxiety and depression) in diabetic population have strong negative influence on glycemic control, complications and quality of life. Therefore the aim of the study was to assess the psychological status of patient with type 2 Diabetes Mellitus (DM).

Methods: A descriptive, cross sectional design was adopted to conduct the study among 121 patients with type 2 DM patients, attending in Endocrinology OPD at Tribhuvan University, Teaching Hospital (TUTH) Kathmandu, Nepal. The participants were selected purposively and data was collected through interview method, using semi structured questionnaire, along with Nepali version of standard tools, Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI).Data **was** analyzed using Statistical Package for Social Science Version 16.

Results: The study findings revealed that the mild, moderate and severe level of anxiety and depressive symptoms were 28.1%, 22.3% 12.4% and 23.1%, 19.0%, 7.4% respectively.. Regarding association with anxiety, age (p= 0.046), sex (p= 0.003), educational level (p< 001), duration of illness (p= 0.027) and some aspect of family support were found statistically significant. Whereas educational level (p=0.002) and listening to issues were found association with depressive symptoms.

Conclusions: Based on the current study findings, it can be concluded that mild level of anxiety as well as depression symptoms are high among Diabetic patients which was associated with age, sex, educational level duration of illness, family support, thus awareness programs to prevent severity of anxiety and depression among diabetic patients are suggested considering above mentioned associated factors.

Key words: Anxiety, Beck Anxiety Inventory, Beck Depression Inventory, Depression, Psychological Status, Type 2 Diabetes mellitus

INTRODUCTION

Diabetes is a chronic disease with a considerable impact on the health status and quality of life. Apart from other common co-morbid conditions, depression and anxiety have been found to be more commonly associated with DM. [1] Worldwide**,** the prevalence of anxiety and depression is higher among persons living with diabetes compared to those without diabetes. [2] Diabetes mellitus is a growing public health concern in Asia, where more than 110 million people are living with diabetes, and more than 1.0 million people die annually in the region from the disorder. [3]

The study conducted in Kathmandu showed an estimated prevalence of depression between 40.3% and 54.1%. [4] The study done in Dhulikhel found an overall prevalence of anxiety 22.7 % and depression was 11.7 %. [5] Numerous study findings documented higher risk of depression and anxiety among diabetic

population. Anxiety and depression in turn are proven to have strong negative influence on glycemic control, complications and quality of life in diabetic patients. Major evidence linking DM, depression and anxiety comes from developed countries, and there is scarcity of research in this regard in developing and low-income countries. [6]

Positive psychological status may sustain long-term coping efforts and protect patients from the negative consequences of prolonged emotional disorders, illness perception and thus facilitating diabetes self-management behaviors and better physical health. Negative psychological state can intensify a variety of health threats. [7] Coexistence of mental health problems on diabetes mellitus can result in poor management of the illness, poor adherence to treatment, low psychological status and low quality of life. [8] Therefore, measurement of Psychological aspect is very essential. There is limited study regarding psychological status in diabetic patients in Nepal. Hence, the researcher was interested in this topic and this study might fulfill the gap by identifying the psychological status of patient with DM and helps to improve their psychological well being and ultimately better management of diabetes.

METHODS

A descriptive cross sectional design was used to carry out the study. Non probability purposive sampling technique was adopted to collect the data from 121 respondents from July 2017 to August 2017 in medical O.P.D. of TUTH, Maharajgunj. Data was collected through semi structured questionnaire, along with Nepali version of Beck Depression Inventory and Beck Anxiety Inventory. Approval was obtained from research committee of Maharajgunj Nursing Campus, obtained the ethical approval from Institutional Review Board (IRB) of Institute of Medicine, Tribhuvan University. The permission was obtained from the hospital authority of the Tribuvan

University Teaching Hospital, Maharajgunj. Prior to data collection, informed consent was taken from each respondent. After collecting data, it was checked for completeness of information. Data was then edited, coded, entered into in SPSS version 16. Upon completion of data entry, it was analyzed by using descriptive and inferential statistics.

STATISTICAL ANALYSIS:

After collecting data, data were checked for completeness of information. Data were then edited, coded, entered into in SPSS version 16 on the same day. Upon completion of data entry, the data were analyzed by using SPSS version 16. The collected data were analyzed by using descriptive statistics for demographic characteristics. Inferential statistics was used to examine the associations between independent and dependent variables.

RESULTS

More than half (52.9%) of respondents were within the age group of 41- 60 years and only 7.4% were in the less than 40 years with the mean standard deviation of 57.97±1.076 (Table 1). Female constitute more than half (59.5%) of the respondents. In the terms of ethnicity, more than one - fourth (38%) of the respondents were upper cast group. Regarding educational status more than half (59.5%) could read, write, and 52.8% of them have completed up to primary level. Regarding occupation 41.3% of the respondents were homemaker. More than half of respondent's (53.7%) household income was sufficient for 6 - 12 months. Regarding marital status almost all of the respondents (98.3%) were married and majority of the respondents (57.9) were from joint family (Table1).

Table 1: Socio-demographic Characteristics of the Respondent

Characteristics	Number	Percentage
Age groups (years)		
≤ 40	9	7.4
41- 60	64	52.9
≥ 61	48	39.7
Mean±SD : 57.97±10.076, (Age range 31- 78)		
Sex		
Female	72	59.5
Male	49	40.5
Ethnicity		
Upper caste group	46	38.0
Relatively advantaged janajatis	32	26.4
Disadvantaged Janjati	23	19.0
Others*	20	16.5
Educational status		
Can read and write	72	59.5
Cannot read and write	49	40.5
Level of Education (n = 72)		
Up to primary level	38	52.8
Secondary level	15	20.8
Higher Secondary and above level	19	26.4
Occupation		
Homemaker	50	41.3
Service	31	25.6
Business	25	20.7
Others (Student, Agriculture, Labour)	15	12.4
Economic Status		
Income enough for < 6 months	10	8.3
Income enough for 6-12 months	65	53.7
Income enough for 12 months and surplus	46	38.0
Marital Status		
Married and living with spouse	95	78.5
Widowed	12	9.9
Divorced	8	6.6
Separated	4	3.3
Unmarried	2	1.7
Family Type		
Joint	70	57.9
Nuclear	51	42.1

∗ - Others include Dalit, Disadvantaged non - dalit Terai caste group, Religious minorities which include less number in each group.

Anxiety symptom was present in more than half of respondents (62.8%) and depressive symptom was present nearly half of the respondents (49.6%). Among those with anxiety symptoms, majority of respondents (28.1%) had mild levels of anxiety symptoms as well as majority of respondent (23.1%) had mild level of depressive symptoms. Sever level of symptoms were lowest in both anxiety and depression that were (12.4%) and (7.4%) respectively (Table 2).

Table 2: Anxiety and Depressive Symptoms and its level among the Respondents

Variables	Number	Percentage	Confidence Interval (95%)
Anxiety related Symptom			
Present	76	62.8	
Level of Anxiety Symptom			
Normal (0-9)	45	37.2	(28.1- 46.3)
Mild (10-18)	34	28.1	(19.9-36.4)
Moderate (19-29)	27	22.3	(14.9-29.8)
Severe (30-63)	15	12.4	(6.6-18.2)
Depressive related Symptom			
Present	60	49.6	
Level of Depressive Symptom			
Normal (0-9)	61	50.4	(41.3-58.7)
Mild (10-16)	28	23.1	(15.7-30.6)
Moderate (17-29)	23	19.0	(12.4-25.6)
Severe (30-63)	9	7.4	(3.3-12.4)

Table 3: Association between Anxiety Symptoms and socio-demographic characteristics, duration of illness and types of treatment

Characteristics	Anxiety Symptoms		χ2 value	p value
	Present (%)	Absent (%)		
Age Groups (in years)				
≤ 50	16 (48.5)	17(51.5)	3.98	**0.046**
≥ 51	60 (68.2)	28 (31.8)		
Sex				
Female	53 (73.6)	19 (26.4)	8.88	**0.003**
Male	23 (46.9)	26 (53.1)		
Occupation				
Home maker	37 (74.0)	13 (26.0)	4.82	0.185
Service	17 (54.8)	14 (45.2)		
Business	13(52.0)	12 (48.0)		
Others	9 (60)	6 (40.0)		
Economic Status				
Income enough for < 1 year	49 (65.3)	26(34.7)	0.53	0.463
Income enough for > 1 year	27 (58.7)	19 (41.3)		
Education Status				
Can read and write	41 (56.9)	31 (43.1)	2.61	0.106
Cannot read and write	35 (71.4)	14 (28.6)		
Level of Education (72)				
Up to primary school completed	30 (78.9)	8 (21.1)	15.89	**<0. 001**
Above primary school completed	11 (32.4)	23 (67.6)		
Duration of Illness (in years)				
≤ 10	48 (56.5)	37 (43.5)	4.91	**0.027**
≥ 11	28(77.8)	8 (22.2)		
Types of Treatment				
Oral Tablets	60 (62.5)	36 (37.5)	0.01	0.921
Injecting Insulin	14 (63.6)	8 (36.4)		

p- significant at < 0.05

It was observed that age (p= 0.046) and sex (p= 0.003) had significant association with anxiety symptom. And there was highly significant association between educational levels (p< 001). Anxiety symptoms were found more in those respondents who suffered for long duration that was > 10 years (77.8%) and was found significant association (p= 0.027) (Table3).

Regarding family support, listening to issues of family support had significant association (p= 0.044) with anxiety symptoms (table 4).

Table 4: Association between Anxiety Symptoms with different aspect of Family Support of the Respondents   n=121

Variables	Anxiety Symptoms		$\chi2$ value	p value
	Present n (%)	Absent n (%)		
Economic support				
Always	51 (58.6)	36 (41.4)	2.45	0.293
Sometime	12 (70.6)	5 (29.4)		
Never	13 (76.5)	4 (23.5)		
Support in follow up visit				
Always	43 (57.3)	32 (42.7)	2.86	0.239
Sometime	21 (75.0)	7(25.0)		
Never	12(66.7)	6(33.3)		
Listening issues				
Always	44 (55.0)	36 (45.0)	6.26	**0.044**
Sometime	23 (76.7)	7 (23.3)		
Never	9 (81.8)	2 (18.2)		

*p- significant at < 0.05

It shows that educational level (p<0.002) had significant association with depressive symptoms and others variables shows insignificant association (table 5).

Table 5: Association between Depressive Symptoms and Socio-demographic Characteristics, duration of illness and types of treatment of the Respondents   n=121

Characteristics	Depressive Symptoms		$\chi2$ value	p value
	Present n (%)	Absent n (%)		
Age Groups (in years)				
≤ 50	12 (36.4)	21(63.6)	3.17	0.075
≥ 51	48 (54.5)	40 (45.5)		
Sex				
Female	40 (55.6)	32 (44.4)	2.53	0.111
Male	20 (40.8)	29 (59.2)		
Occupation				
Home maker	27 (54.0)	23 (46.0)	1.30	0.728
Service	16 (51.6)	11 (57.9)		
Business	11 (44.0)	14 (56.0)		
Others	6 (40)	9 (60)		
Economic Status				
Income enough for < 1 year	42 (56.0)	33 (44.0)	3.24	0.072
Income enough for > 1 year	18 (39.1)	28 (60.9)		
Education Status				
Can read and write	31 (43.1)	41 (56.9)		
Cannot read and write	29 (59.2)	20 (40.8)	3.03	0.082
Education Level				
Up to primary level	23 (60.5)	15 (39.5)	10.02	**0.002**
Above primary level	8 (23.5)	26 (76.5)		
Duration of Illness (in years)				
≤ 10	39 (45.9)	46 (54.1)	1.56	0.210
≥ 11	21(58.3)	15 (41.7)		
Type of Treatment				
Oral Tablets	47 (47.5)	52 (52.5)	0.97	0.324
Injecting Insulin	13 (59.1)	9 (40.9)		

p- significant at < 0.05

Regarding family support, it was observed that only available to listen issues about diabetes care had significant associations (p=0.007) with depressive symptoms and other variables shows insignificant association (table 6).

Table 6: Association between Depressive Symptoms with different aspect of Family Support of the Respondents. n=121

Family Support Variables	Depressive Symptoms		χ^2 value	p value
	Present n (%)	Absent n (%)		
Economic support				
Always	40 (46.0)	47 (54.0)	3.49	0.174
Sometime	8 (47.1)	9 (52.9)		
Never	12 (70.6)	5 (29.4)		
Support in follow visit				
Always	34 (45.3)	41 (54.7)	1.68	0.432
Sometime	15 (53.6)	13 (46.4)		
Never	11 (61.1)	7 (38.9)		
Listening to issues				
Always	32 (40.0)	48 (60.0)	8.79	**0.012**
Sometime	20 (66.7)	10 (33.3)		
Never	8 (72.7)	3 (27.3)		

p- significant at < 0.05

DISCUSSION

The overall presence of anxiety symptoms was 62.8% and among them, 28.1% had mild, 22.3% moderate and only 12.4% had severe level of anxiety. Similarly the presence of depression was 49.6% and among them 23.1% had mild, 19.0% had moderate and only 7.4% had severe level of depression. This rate was supported with this higher score ranges from 40-69.6%. [6,9,10,12] Regarding the severity of anxiety symptoms the prevalence of mild to severe anxiety score was 42.4% which was similar with this present study. [11] Similarly the presence of depression was comparable to different previous study ranged from 40% to 60%. [11–13]

In this study the findings show statistical significance (p= 0.046) between anxiety symptoms and age of the respondents. Anxiety was more common in age group of 51 and above. This finding was comparable (p< 0.001) to the descriptive study done in Malaysia Saudi Arabia. [14, 15] The higher risk of anxiety and depression among females than in males is well recognized, even in the general population. Also in this study, the result revealed that anxiety symptoms was significantly more common (p= 0.003) in female than in males. This finding was supported (p= 0.000) by a descriptive cross – sectional study done in Saudi Arabia and Iran. [15, 16] Higher anxiety and depressive symptoms were associated (<0.001), (0.002) with lower educational attainment. This result was supported in both anxiety and depression (p<0.05) in

survey study done in Lithuania, a descriptive cross-sectional study done in Malaysia and Saudi Arabia. [10, 14, 15] The current study shows that there was significant (p= 0.027) association between anxiety and duration of diabetes. Anxiety was high in those who suffered from > 10 years duration. This finding was supported i.e. p<0.001. [10,15] There were also significant association seen in family support in listening to issues about diabetic care (p= 0.044) in anxiety and (p= 0.012) in depression. This study was match with the previous studies which showed non supportive behaviors were associated with depression and anxiety. [16]

CONCLUSION

Based on the study findings it can be concluded that most of the respondents have mild level of anxiety as well as depressive symptoms. Anxiety is more common in later adulthood and female with long duration of illness. Similarly both anxiety and depression are significantly associated with low educational level and unavailability support from family in emotional aspect i.e. listening issues about diabetes care. To conclude, although the mild level of anxiety and depression are high, there should be raised awareness to delay the severity and other complications.

ACKNOWLEDGEMENTS

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