



Anxiety and Depression among diabetic patients in Bandarabbas, Southern Iran

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Abstract

Anxiety and depression are more common among diabetic patients than general population and can impact on treatment. The aim of this study is to screen a random selection of diabetic patients attending the diabetes clinic of Shahid Mohammadi hospital, Iran for anxiety and depression. 100 patients were surveyed using a valid and reliable measure for anxiety and depression. Data analyzed using SPSS 13 software. Prevalence of depression and anxiety was 50 and 67 percent respectively. Both depression and anxiety was more common among female patients, those with type 2 diabetes and those had at least one complication of diabetes. We report a very high prevalence of anxiety and depression in these patients. Routine assessment and treatment for anxiety and depression is indicated. Further research on the reason for the high incidence of depression in this patient group is warranted.

Key words: Diabetes, Anxiety, Depression.

Introduction

Diabetes mellitus is one of the most prevalent diseases worldwide. It is associated with high mortality and morbidity including renal, retinal and vascular complications.(1) Depression is also a common psychiatric disorder among diabetic patients. Prevalence of major depression was 8.3% in a survey among U.S adults with diabetes aged 18 years and older.(2) In Bangladesh the prevalence was higher with 22% of males and 30.5% of females with diabetes diagnosed with depressive symptoms.(3) Some studies reported that more than half of patients with diabetes are clinically depressed (4). Depression is more prevalent among females(3), patients with type 2 diabetes (5) and those who are treated with insulin (2). Results of longitudinal studies suggest that depression is associated with poor glycemic control and progression of diabetic retinopathy(6) and psychiatric treatment in diabetes care may be necessary to achieve improved glycemic control in this population.(3)

Studies from Iran suggest higher prevalence of depression and anxiety among diabetic patients.(7) In Isfahan the prevalence of depressive disorder were 53% (75% women and 25% men) and 14% of patients have anxiety disorders.(8) Depression was observed in 53.3% of males and 57.7% of females in Kashan(9) and 71.6% of non-Insulin dependent diabetic patients in Semnan(10) and also 72.2% of diabetic patients in Ahwaz. In similar studies in Iran significant associations were reported between depression and the type of diabetes mellitus, and particularly between depression and insulin therapy.(11) Another study in Iran showed that 40.6% have moderate to severe depression on the Beck test.(12) There is a significant difference between depressed and non-depressed individuals regarding gender, complications of disease, duration of diabetes and age.(13) The duration of disease, using Insulin and being hypertensive simultaneously is correlated with major depression in some study.(14) But data on prevalence of depression in



diabetic patients in Bandarabbas and also data on prevalence of anxiety in Iran is limited. The aim of this study was to determine the prevalence and the severity of depression and anxiety among patients attending the diabetes clinic of Shahid Mohammadi hospital of Bandarabbas, Southern Iran.

Method

This student project was approved by the student thesis committee of faculty of medicine of Hormozgan University of Medical Sciences. A survey was carried out in 2009 in Bandarabbas, Southern Iran. Target population was diabetic patients attending Shahid Mohammadi hospital diabetes clinic. Shahid Mohammadi hospital is the main educational hospital in Bandarabbas serving the Hormozgan University of Medical Sciences. The diabetic clinic of Shahid Mohammadi hospital is the only governmental diabetes clinic in Hormozgan province and serves all diabetic patients in this province. Hormozgan has over 1,062,000 people of whom 483,000 live in Bandarabbas city. Over 5000 patients are registered at this center. We approached 105 patients at random to participate; the first 100 patients who consented to participate in the study were recruited. We had limited resources to complete this preliminary student study. With a population of 5000 people and 100 respondents we had a 9.7% margin of error.(15) A response rate of 95% was recorded. Each participant completed a 21 item Beck's questionnaire for depression and also another 21 item questionnaire for anxiety. We used a valid translation of Beck's questionnaire into Persian. Demographic questions included age, gender, marital status, other medical conditions and type of diabetes mellitus. Respondents with severe anxiety or depression were offered a referral to Ebne Sina governmental clinic for treatment if indicated.

For each question in the Beck's inventory a value between 0 and 3 was possible and for each patient sum of the questions' score was considered which could range from 0 to 63. For each patients sum of the scores calculated and described as follows:

Depression questionnaire

Less than 9 = without depression
10 to 18 = mild depression
19 to 29 = moderate depression
30 to 40 = severe depression
40 and more = very severe depression

Anxiety questionnaire

Less than 7 = without anxiety
8 to 15 = mild anxiety
15 to 25 = moderate anxiety
25 to 63 = sever anxiety
Data was analysed using SPSS13 software and descriptive statistics and also chi-square and Fisher's exact tests.

Results

Among the participants (N=100) 21 were male and 79 were female. Ninety four were married and 6 were single. Ten had type 1 diabetes and 90 type 2 diabetes. The mean age of

participants was 48 years. Forty seven suffered from hypertension, 51 had eye problems and 22 had renal problems. Seventy five patients had at least one of the complications of diabetes. Four patients had diabetic foot complications.

In our study the prevalence of depression and anxiety was 50% and 67% respectively. Table 1 shows the prevalence of depression and anxiety according its severity. Both depression and anxiety was more common among female patients, those with type 2 diabetes and those had at least one complication of diabetes as illustrated in Table 2 and 3.

Discussion

We report the first systematic screening for anxiety and depression at this center. Other studies in Iran reported high prevalence of anxiety and depression relative to other countries. The prevalence is reported 53%, 57.7% and 72.2% in Isfahan, Kashan and Ahwaz respectively compared with 8.3% in U.S and 22% and 30.5% in Bangladesh. (2, 3,8,9,11) We can only speculate about the reasons for this difference and further research is warranted.

We acknowledge several limitations chiefly that the questionnaires was completed by the participant in front of other patients and the clinic nurse which may have had a bearing on the results.(16) However all similar studies in Iran apply this method and so our results may be said to be comparable. Therefore we suggest that our results reflect the approach to screening as reported elsewhere and could be used to identify those at risk of anxiety and depression in diabetic patients at this center. (17)

Studies on prevalence of depression in Iran suggest higher rates relative to other countries. Therefore one might surmise that the prevalence of depression and anxiety in diabetic patients in Iran may reflect cultural issues. The rate of depression is reported to be more than 20% in Tehran (Capital of Iran).(18) In Hormozgan the prevalence of depression has been estimated to be as high as 60% among nursing students and about 50% among medical students.(19) The higher prevalence among diabetics may also reflect the older demographic of this population. In Kerman 18.6% of persons over 50 years old had borderline depression and 60% overall had some symptoms of depression.(20) These data however cannot be fully explained and we recommend further research.



TABLE 1- prevalence of depression and anxiety in diabetic patients according to the severity

Total		Severe and very severe		Moderate		Mild		Severity Type
Percent	Number	Percent	Number	Percent	Number	Percent	Number	
50%	50	3%	3	3%	3	44%	44	Depression
67%	67	6%	6	12%	12	49%	49	Anxiety

TABLE 2- prevalence of depression according to age, gender, marital status and type of diabetes in patients

Test results (Chi squared test)	Yes		No		Depression Related factors	
	Percent	Number	Percent	Number		
P= 0/083	18%	9	32%	16	Under 40	Age
	82%	41	68%	34	Above 40	
P=0/024*	12%	6	30%	15	Male	Gender
	88%	44	70%	35	Female	
P= 0/013	100%	50	88%	44	Married	Marital status
	0%	0	12%	6	Single	
P=0/04	4%	2	16%	8	Type 1	Type of diabetes
	96%	48	84%	42	Type 2	
P=0/012	84%	42	62%	31	Yes	Having at least one complication of diabetes
	16%	8	38%	19	No	

* Fisher's exact test

TABLE 3- Prevalence of anxiety according to age, gender, marital status, type of diabetes and its complications in diabetic patients.

Test results (Chi squared test)	Yes		No		Anxiety Related factors	
	Percent	Number	Percent	Number		
P=0/267	22/4%	15	30/3%	10	Under 40	Age
	77/6%	52	69/7%	23	Above 40	
P=0/002	11/9%	8	39/4%	13	Male	Gender
	88/1%	59	60/6%	20	Female	
P=0/014	98/5%	66	84/8%	28	Married	Marital status
	1/5%	1	15/2%	5	Single	
P=0/014	4/5%	3	21/2%	7	Type 1	Type of diabetes
	95/5%	64	78/8%	26	Type 2	
P=0/015	80/6%	54	57/6%	19	Yes	Having at least one complication of diabetes
	19/4%	13	42/4%	14	No	



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