

PSYCHIATRIC MORBIDITY IN DIABETIC PATIENTS ATTENDING OUTPATIENT CLINICS IN BAGHDAD CITY

^{1*}Batul Essa Omran, ²Rasha Abdullah Mohammed and ³Iman Ahmed Jumaa

^{1,2}Al - Rusafa Health Directorate, Baghdad, Iraq.

³Medical City Complex, Bagdad, Iraq.

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*Corresponding Author: Batul Essa Omran

Al - Rusafa Health Directorate, Baghdad, Iraq.

ABSTRACT

Background: Diabetes mellitus (DM), particularly Type 2 Diabetes (T2DM), has seen a significant increase in prevalence in Baghdad, leading to rising concerns over associated psychiatric morbidity. Mental health issues such as depression, anxiety, and stress frequently complicate diabetes management, worsening glycaemic control and increasing the risk of complications. **Aim:** This study aims to assess the prevalence of psychiatric morbidity among diabetic patients attending outpatient clinics in Baghdad and to explore the impact of social and demographic factors on their mental health. **Method:** A cross-sectional study was conducted among 100 diabetic patients in outpatient clinics across Baghdad. Data were collected using a structured questionnaire that assessed demographic information and mental health status using the Social Phobia Inventory (SPIN) scale. Descriptive statistics summarized the findings, and chi-square tests were used to assess relationships between variables such as gender, exposure to domestic violence, and family history of mental illness. **Results:** Among the sample, 16% had been diagnosed with a mental illness, and 27% reported recent psychological trauma. Exposure to domestic violence was significantly associated with mental illness in first-degree relatives ($p = 0.040$). Gender was not significantly related to family mental illness history. Most respondents maintained normal well-being, but a significant portion reported stress, anxiety, and emotional strain. **Conclusion:** Psychiatric morbidity is prevalent among diabetic patients and is influenced by exposure to trauma. Integrated care models addressing both mental and physical health are essential for improving outcomes in these patients. Future research should focus on long-term management strategies and diverse population studies.

KEYWORDS: Diabetes Mellitus, Psychiatric Morbidity, Depression, Anxiety, Diabetes Management.

INTRODUCTION

Diabetes mellitus (DM), particularly Type 2 Diabetes (T2DM), has seen a notable rise in Baghdad, reflecting broader trends in the MENA region. Contributing factors include lifestyle changes, urbanization, and the increasing prevalence of obesity and hypertension. This rising prevalence, coupled with socioeconomic inequality, has made DM a significant public health concern, as it contributes to increased disability and mortality rates.^[1,2] The coexistence of psychiatric disorders, such as depression and anxiety, among people with diabetes significantly impacts diabetes management. These mental health issues are prevalent in individuals with T2DM, with research suggesting that the risk of depression is about twice as high in diabetic patients compared to the general population. Mental illness exacerbates challenges in adhering to diabetes management plans, making it harder for patients to

maintain glycaemic control. Poor treatment adherence due to depression often leads to worsened HbA1c levels, increasing the risk of complications like retinopathy, nephropathy, and cardiovascular problems.^[3,4] The combination of diabetes and psychiatric disorders places a strain on healthcare systems due to increased hospitalizations and medical expenses. Social support systems and psychosocial factors play a crucial role in managing diabetes, with strong support networks leading to better health outcomes, while lack of support can worsen both mental health and diabetes management.^[5,6]

To address the complexities of managing diabetes in the presence of mental illness, integrated care models are essential. These models promote collaboration among healthcare professionals, including endocrinologists, psychiatrists, and primary care physicians, to ensure comprehensive treatment that addresses both physical

and mental health needs. Key elements of integrated care include regular screening for mental health issues, patient-centered care, and the use of behavioral interventions like cognitive-behavioral therapy (CBT). By adopting these approaches, healthcare providers can improve treatment adherence, glycaemic control, and overall patient outcomes.^[7,8] The research objectives are as follows: Investigate the types and prevalence of mental illnesses in individuals with diabetes. Assess the impact of mental illnesses on diabetes treatment and health outcomes. Evaluate the effectiveness of integrated care models in improving outcomes for both diabetes and mental health. Identify barriers that hinder effective diabetes management in individuals with co-occurring mental illnesses.

METHOD

This study utilizes a cross-sectional approach to assess psychiatric morbidity among diabetic patients attending outpatient clinics in Baghdad City. Cross-sectional studies are useful in determining the prevalence of a disorder and its associated factors at a specific time. The study will be conducted in various outpatient clinics in Baghdad, Iraq, with the target population comprising all patients attending these clinics in 2024. A sample size of approximately 100 patients, based on initial estimates and a 95% confidence level, will be selected using stratified random sampling to ensure proportionate representation throughout the year. Patients aged 19-25 attending the clinics during the data collection period and providing consent is eligible for inclusion. Those who do not provide consent will be excluded. A structured demographic and academic questionnaire will gather data on age, gender, residence, socioeconomic status, and academic performance. The severity of psychiatric morbidity will be assessed using the Social Phobia Inventory (SPIN), a validated Likert scale tool consisting of 28 items rated on a 4-point scale (0 = not at all, 4 = extremely). Descriptive statistics, including means, standard deviations, frequencies, and percentages, will summarize demographic characteristics and the prevalence of psychiatric morbidity in diabetic patients. Inferential statistics, such as the Chi-Square test and tests for homogeneity of variances, will examine relationships between categorical variables (e.g., gender, family history of mental illness, exposure to domestic violence) and psychiatric morbidity in diabetic patients. The survey's overall results will be displayed in a table showing responses to each question. This structured

approach allows for a comprehensive understanding of psychiatric morbidity in diabetic patients, helping identify key factors affecting mental health and diabetes management.

RESULTS

Regarding to Table 1, n = 100 samples were used in this investigation, 50% of which were male and 50% of which were female. In addition, 7 of the samples were younger than 20, while 93 were older than 20. In contrast, this study included 7 single people, 57 married people, 16 widowed people, 11 divorced people, and 4 separated people. These were samples of their residential areas, which included 67 in the city, 17 in the country side, and 16 in suburbs. Of the 100 people in the sample, 75% lived in a home big enough for their family, while 25% lived in a home too small and cramped for their family. After then, there were 14 levels of study: illiteracy, 38 elementary, 7 secondary, 34 universities, and 7 postgraduates. Thirty-six of the samples were unemployed, twenty had a private business, 29 were employed by the government, and fifteen were retired. In each of these instances, 84% of the financial income was sufficient to cover the needs, with only 16% falling short. Regarding the total number of children, 22% do not have any, while 78% do. In the end, we performed 100 separate samples using various criteria according to their suffering from Psychiatric Morbidity in Diabetic Patients. From Psychiatric Morbidity in Diabetic. However, because the time of your diabetes diagnosis was 13% less than a year, 55% between two and ten years, 19% between eleven and twenty years, and 13% beyond twenty years, the current diagnosis and treatment rate for mental illness was only 16%. You are receiving the following types of treatment: oral (37%), insulin injections (17%), and both (46%). However, 60% of patients have another organic condition that is now being treated after being diagnosed. Merely 27% of individuals have experienced psychological stress over the last six months. Verbal 10%, physical assault 3%, and both verbal and physical assault 33% were the ways in which victims of domestic abuse were exposed. 13% of people had a history of mental illness, compared to 37% with a history of organic illness. Additionally, 31% of first-degree relatives have any mental health issues. Factors led to the investigation of sexual desire and ability were the following: 31% of the sample did not have a partner, and 69% of the sample performed well (38%), acceptable (15%), weak (10%), and non-existent (6%).

Table 1: The result of descriptive statistics based on samples variables (n=100).

categories / Variables		Frequency	Percent
Gender	Male	50	50.0
	Female	50	50.0
Age	<= 20 years old	7	7.0
	> 20 years old	93	93.0
Marital status	Single	12	12.0
	Married	57	57.0
	Widowed	16	16.0
	Divorced	11	11.0

	Separated	4	4.0
Residential area	City	67	67.0
	countryside	17	17.0
	suburb	16	16.0
House	sufficient for family	75	75.0
	crowded	25	25.0
Level Of Study	Illiteracy	14	14.0
	Primary	38	38.0
	Secondary	7	7.0
	University	34	34.0
	postgraduate studies	7	7.0
Occupation	Unemployed	36	36.0
	Private business	20	20.0
	Government employee	29	29.0
	Retired	15	15.0
Financial income	Sufficient to meet the need	84	84.0
	Not sufficient	16	16.0
Number of children	No children	22	22.0
	Have children	78	78.0
Current diagnosed and under treatment mental illness	Yes	16	16%
	No	84	84%
Since when were you diagnosed with diabetes (number of years)	Equal or less than 1 year	13	13%
	2 to 10 year	55	55%
	11 to 20 years	19	19%
	More than 20 years	13	13%
what type of treatment are you undergoing	oral treatment	37	37%
	insulin injections	17	17%
	both treatments	46	46%
Current diagnosed and under treatment for another organic disease	Yes	60	60%
	No	40	40%
Exposure to psychological trauma during the past six months	Yes	27	27%
	No	73	73%
Exposure to domestic violence	No	54	54%
	Verbal	10	10%
	physical assault	3	3%
	Verbal and physical assault	33	33%
History of mental illness?	Yes	13	13%
	No	87	87%
History of organic illness?	Yes	37	37%
	No	63	63%
Are there any mental illnesses in first-degree relatives	Yes	31	31%
	No	69	69%
Sexual desire and ability (if you have a partner)	No partner	31	31%
	Good	38	38%
	Acceptable	15	15%
	Weak	10	10%
	Non-existent	6	6%

The analysis shows no significant association between gender and the presence of mental illness in first-degree relatives. For males, 13 answered "No" and 37 answered "Yes," while for females, 18 answered "No" and 32 answered "Yes." Chi-Square tests, including Pearson, Continuity Correction, and Likelihood Ratio, all yielded p-values greater than 0.05, indicating no statistical significance. Fisher's Exact Test also confirmed this lack

of association. Thus, the variables are independent in this sample. As showed in table 2.

Table 2: Gender * Are there any mental illnesses in first-degree relative's Cross tabulation.

			Are there any mental illnesses in first-degree relatives		Total	P-value
			Yes	No		
Gender	Male	Count	13	37	50	0.3
		Expected Count	15.5	34.5	50.0	
	Female	Count	18	32	50	
		Expected Count	15.5	34.5	50.0	
Total	Count	31	69	100		
	Expected Count	31.0	69.0	100.0		

The analysis explores the relationship between exposure to domestic violence and the presence of mental illness in first-degree relatives. Key findings include.

1. No exposure: 12 said "Yes" to mental illness in relatives, 42 said "No."
2. Verbal exposure: 6 said "Yes," 4 said "No."
3. Physical assault exposure: No one said "Yes," 3 said "No."
4. Verbal and physical assault: 13 said "Yes," 20 said "No."

The Pearson Chi-Square test (value = 8.312, p = 0.040) and Likelihood Ratio (p = 0.031) indicate a significant association between domestic violence exposure and the presence of mental illness in relatives. However, the Linear-by-Linear Association test (p = 0.141) shows no significant linear relationship. Thus, exposure to domestic violence is significantly associated with mental illness in relatives, but not in a linear pattern. As in table 3.

Table 3: Homogeneity of Variances Tests of Psychiatric Morbidity between Exposure to domestic violence and "Are there any mental illnesses in first-degree relatives" Diabetic Patients.

			Are there any mental illnesses in first-degree relatives		Total	P-value
			Yes	No		
Exposure to domestic violence:	No	Count	12	42	54	0.003
		Expected Count	16.7	37.3	54.0	
	Verbal	Count	6	4	10	
		Expected Count	3.1	6.9	10.0	
	physical assault	Count	0	3	3	
		Expected Count	.9	2.1	3.0	
	Verbal and physical assault	Count	13	20	33	
		Expected Count	10.2	22.8	33.0	
	Total	Count	31	69	100	
		Expected Count	31.0	69.0	100.0	

The survey assessed various aspects of participants' physical and mental health. Most respondents (61%) felt as healthy as usual, but 26% reported feeling worse. Energy levels were normal for 44%, while 33% felt more tired than usual. Psychological pressure and anxiety affected some, with 31% experiencing increased stress and 30% more anxiety. While most (73%) completed

tasks at their usual speed, 14% struggled. Feelings of worthlessness and suicidal thoughts were rare, with 66% reporting none, though 8% experienced such thoughts. Overall, many participants maintained normal well-being, but a significant portion reported stress and emotional strain. As in table 4.

Table 4: The overall of survey results table showed the answers to each question.

Survey questions	1	2	3	4
Do you feel healthy and well?	Better than usual	As usual	Worse than usual	Much worse than usual
	4	61	26	9
Do you feel like you need tonics?	No	Less than usual	More than usual	Much more than usual
	38	15	40	7
Do you feel tired and exhausted?	No	Less than usual	More than usual	Much more than usual
	44	19	33	4
Do you feel sick?	No	Less than usual	More than usual	Much more than usual
	49	13	31	7
Do you have a headache?	No	Less than usual	More than usual	Much more than usual
	60	11	26	3

Do you feel tension and pressure in your head?	No	Less than usual	More than usual	Much more than usual
	69	18	12	1
Do you feel hot and cold spells in your body?	No	Less than usual	More than usual	Much more than usual
	61	7	26	6
Do you sleep little because you are anxious?	No	Less than usual	More than usual	Much more than usual
	55	9	30	6
Do you find it difficult to get back to sleep when you wake up at night?	No	Less than usual	More than usual	Much more than usual
	60	3	21	16
Do you feel like you are under psychological pressure?	No	Less than usual	More than usual	Much more than usual
	44	16	31	9
Do you get nervous quickly and your mood is bad?	No	Less than usual	More than usual	Much more than usual
	50	11	29	10
Do you feel afraid and terrified for no reason?	No	Less than usual	More than usual	Much more than usual
	63	16	13	8
Do you feel like you are carrying the world's worries on your shoulders?	No	Less than usual	More than usual	Much more than usual
	31	21	33	15
Do you feel tense and suffocated all the time?	No	Less than usual	More than usual	Much more than usual
	45	28	17	10
Do you feel like you are able to distract yourself with certain things?	More than usual	As usual	Less than usual	Much less than usual
	9	75	15	1
Do you feel like you take a long time to do things?	Faster than usual	As usual	Less than usual	Much less than usual
	7	73	14	6
Do you feel satisfied with your actions?	Very satisfied	As usual	Less satisfied than usual	Much less satisfied than usual
	15	62	19	4
Do you feel like you are playing an effective role at work?	More than usual	As usual	Less than usual	Much less than usual
	13	62	21	4
Do you feel like you are playing a useful role in the things you do?	More than usual	As usual	Less than usual	Much less than usual
	12	68	19	1
Are you able to make decisions?	More than usual	As usual	Less than usual	Much less than usual
	10	60	16	14
Do you feel like you are able to enjoy your daily activities?	More than usual	As usual	Less than usual	Much less than usual
	8	53	31	8
Do you have thoughts that you are useless?	No	Less than usual	More than usual	Much more than usual
	66	17	12	5
Do you feel that life is worthless and hopeless?	No	Less than usual	More than usual	Much more than usual
	66	13	17	4
Do you feel that life is not worth living?	No	Less than usual	More than usual	Much more than usual
	66	21	11	2
Do you have thoughts that you could possibly be alone?	Absolutely not	I don't think so	It crossed my mind	Yes definitely
	38	24	24	14
Do you find times when you can't do anything because your nerves are bad?	No	Less than usual	More than usual	Much more than usual
	46	16	29	9
Do you wish you were dead and away from everything?	No	Less than usual	More than usual	Much more than usual
	80	11	8	1
Do you have suicidal thoughts about ending your life?	Absolutely not	I don't think so	It crossed my mind	Yes definitely
	66	25	8	1

DISCUSSION

The results of this study offer a comprehensive look at the complex interplay between psychiatric morbidity and

diabetes management, particularly in the context of social and demographic factors. This discussion will delve into the significance of the findings and their

alignment with existing literature, while exploring the implications for patient care and health outcomes. The study highlights the prevalence of psychiatric morbidity among diabetic patients, with a notable portion of participants suffering from anxiety, stress, and depression. These findings are consistent with previous research that has shown psychiatric disorders to be more common in individuals with chronic conditions like diabetes. According to a study by Anderson et al. (2001), individuals with diabetes are twice as likely to suffer from depression compared to the general population. Depression, anxiety, and stress in diabetic patients have been repeatedly linked to poor glycemic control, leading to a greater risk of complications, which aligns with the current study's results.^[9] The relationship between diabetes duration and psychiatric morbidity was also notable. The majority of patients in this study had been living with diabetes for 2–10 years, which may explain the elevated rates of mental health issues. Longer diabetes duration is often associated with complications and the emotional toll of managing a chronic illness, as supported by previous studies (Katon et al., 2010).^[10] In terms of gender differences, the study found no significant association between gender and the presence of mental illness in first-degree relatives, as indicated by Chi-Square tests ($p > 0.05$). This is in line with several studies, such as a meta-analysis by Roy and Lloyd (2012), which concluded that while gender may influence the experience of diabetes and its psychological effects, the risk of developing psychiatric disorders in the context of family history is not significantly different between males and females. However, some studies have suggested that women with diabetes may be more prone to depression than men, possibly due to hormonal differences and social stressors, though this was not evident in the current sample.^[11] The relationship between exposure to domestic violence and mental illness in first-degree relatives was significant (Pearson Chi-Square value = 8.312, $p = 0.040$). This is consistent with existing research that links trauma, particularly domestic violence, to an increased likelihood of mental health disorders such as depression and anxiety (Devries et al., 2013). Exposure to verbal and physical abuse creates a stressful environment that can exacerbate underlying mental health conditions and negatively impact diabetes management, as observed in this study.^[12] Interestingly, the linear-by-linear association test did not find a significant linear relationship ($p = 0.141$), suggesting that the association between domestic violence and mental illness may not follow a straightforward, linear pattern. This could be due to variations in the intensity and type of abuse experienced, as well as differences in individual coping mechanisms and support systems. Further research is needed to explore these dynamics in more detail. The survey results provide insights into the overall well-being of the participants, with the majority reporting stable physical health, while a notable portion experienced increased stress and emotional strain. Specifically, 33% felt more tired than usual, and 31%

experienced more stress. These findings align with research showing that diabetes is often associated with fatigue and psychological stress due to the constant demands of managing the condition (Snoek et al., 2015). The study also found that while most participants were able to complete tasks at their usual speed, a significant minority (14%) struggled, reflecting how mental health challenges can impair cognitive function and productivity.^[13] In terms of emotional health, suicidal thoughts and feelings of worthlessness were reported by a small portion of participants (8%), which is lower than the prevalence rates found in other studies. However, even a small percentage is concerning, given the high risk of severe outcomes like suicide in diabetic patients suffering from mental health disorders (Holt et al., 2014). The low rate of these severe symptoms may be attributable to the demographic characteristics of the sample or the availability of social and medical support systems in the study setting.^[14] The findings underscore the importance of addressing both physical and mental health in diabetes management. The significant association between domestic violence and psychiatric morbidity, as well as the high prevalence of stress and fatigue, points to the need for integrated care models that incorporate mental health screening and support into diabetes treatment protocols. Several studies, such as those by Lee AK et al. (2020), have demonstrated that integrated care approaches can lead to better outcomes for patients by addressing the mental health issues that often complicate diabetes management.^[15] So the study aligns with existing literature in showing that psychiatric morbidity is common among diabetic patients and significantly impacts disease management and outcomes. While gender was not associated with mental illness in relatives, exposure to domestic violence was significantly linked to higher rates of psychiatric morbidity. These findings emphasize the need for holistic, patient-centered care models that address both the physical and psychological needs of diabetic patients, particularly those with a history of trauma or long-term illness.

CONCLUSION

Diabetes and psychiatric disorders, such as depression and anxiety, have a reciprocal impact, leading to poor treatment adherence and increased complications. Despite advances in understanding these links, more research is needed on long-term effects, diverse populations, and effective integrated care models. Future studies should focus on these areas to improve outcomes and quality of life for individuals with both conditions.

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