

**Diabetic Mellitus Predicts Psychological Problems and Decreased Marital Satisfaction among Patients****Dr. Haleema Parveen¹, Shahida Parveen², Abdul Waheed³, Sumaira Riaz⁴, Asif Ali Jauhar⁵, Seemab Arshad⁶****Abstract**

Diabetes Mellitus (DM), a chronic metabolic disorder, has far-reaching consequences beyond physiological complications, significantly affecting psychological well-being and interpersonal relationships. This study aims to explore the predictive relationship between diabetes mellitus, psychological problems (e.g., depression, anxiety, stress), and marital satisfaction among adult patients. A cross-sectional, correlational study was conducted on a sample of adult individuals diagnosed with Type 1 or Type 2 diabetes. Participants were recruited from outpatient clinics and diabetes support groups. Standardized psychological assessment tools, including the Depression Anxiety Stress Scales (DASS-21) and the Index of Marital Satisfaction (IMS), were used to measure psychological distress and marital satisfaction, respectively. Demographic and clinical data were also collected. The findings revealed a significant positive correlation between diabetes duration and levels of psychological distress. Patients with longer disease duration and poor glycemic control reported higher levels of depression and anxiety. Furthermore, these psychological disturbances were significantly associated with lower scores on marital satisfaction, particularly in domains of emotional intimacy and conflict resolution. Regression analysis confirmed that both the presence of diabetes and elevated psychological distress independently predicted reduced marital satisfaction. Diabetes Mellitus significantly predicts psychological problems, which in turn adversely affect marital satisfaction. These findings highlight the need for integrated psychosocial interventions as part of diabetes management. Health care providers should adopt a holistic approach that includes mental health support and couples counseling to improve both psychological outcomes and relationship quality in diabetic patients.

Keywords: Diabetes Mellitus, Psychological Problems, Depression, Anxiety, Marital Satisfaction, Chronic Illness, Psychosocial Impact

1. Introduction

Diabetes mellitus, a metabolic disorder, is characterized by elevated blood glucose levels, leading to potential organ damage and the development of other complications. Diabetes mellitus can be broken down into different kinds, such as type 1 and type 2 diabetes, based on how the disease affects people. Diabetes mellitus has the potential to result in several health-related consequences, including negative impacts on psychological aspects, such as an elevated prevalence of depression among those diagnosed with diabetes. In addition, women seemed to be more affected by diabetes distress because of their marital status, especially for married women (Huang et al., 2022). Based on data provided by the International Diabetes Federation (IDF), it was projected that in 2019, there were around 463 million persons between the ages of 20 and 79 living with diabetes mellitus. This figure represented 9.3% of the global population. Furthermore, projections indicate that the prevalence of diabetes is expected to rise to 10.2% (578 million) by the year 2030 and 10.9% (700 million) by 2045. While the prevalence of type 2 diabetes is on the rise globally, it is noteworthy that a significant majority of individuals with diabetes, around 79%, reside in low- and middle-income countries (Yang & Wang, 2023). Furthermore, it is anticipated that the increase in prevalence will be particularly pronounced in low-income countries (Kaiser et al., 2018). People who have diabetes have a greater risk of morbidity and mortality, in addition to increased costs associated with medical care, as comparison to the general population. According to the International Diabetes Federation (IDF), diabetes was the cause of 4.2 million deaths and at least 10% of global health expenditures in 2019 (USD 760 billion dollars) (Yang & Wang, 2023). Diabetes is commonly regarded as a controllable condition through the use of lifestyle adjustments and medical interventions. Nevertheless, the perpetual obligations associated with diabetes management, including dietary adherence, physical fitness maintenance, blood glucose monitoring, routine medical check-ups, symptom management, and concerns over potential consequences, might contribute to heightened stress levels in individuals with diabetes. As a consequence of this, people are prone to experiencing feelings of despair, anxiety, and stress, all of which have a negative impact on their overall quality of life and their physical health (Penckofer et al., 2007). The rise in glucose level presents a bigger challenge to those attempting to keep their metabolism under control. Patients who have poor glycemic control and functional impairment due to developing diabetes complications may experience sadness and anxiety for the first time or experience a worsening of their symptoms (Khan et al., 2019). The occurrence of anxiety and depression is frequently observed in individuals diagnosed with type II diabetes, and numerous studies have provided a comprehensive overview of their incidence (Alzahrani et al., 2019). Research found that patients with diabetes experienced much higher levels of anxiety and depression than the general population (Rajput et al., 2016). If someone has diabetes and depression at the same time, it can lead to poor glycemic control and self-management, an increased risk of diabetes complications, a decrease in overall quality of life, and a shortened life expectancy (Alzahrani et al., 2019). The global incidence of diabetes has exhibited a consistent upward trend over the course of the last thirty years (Zimmet et al., 2014). It is anticipated that the number of diabetic patients will rise from 463 million in 2019 to roughly 700 million in 2045 as a result of population growth, urbanization, and changes in lifestyle (Saeedi et al., 2019). This will cause diabetes mellitus to continue to have its destructive effects. In addition, healthcare professionals have documented that diabetes ranks among the top ten prevalent causes for individuals seeking medical care at primary healthcare facilities worldwide (Finley et al., 2018).

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Women are disproportionately affected by type 2 diabetes, and risk factors include low education, low social and vocational position, and low income. Higher household income has stronger effects on the risk of type 2 diabetes and is linked to a higher prevalence rate among men in developed countries (Sun et al., 2022). Moreover, the availability of healthcare services, particularly for women residing in developing nations, can provide a hindrance to adequate prevention and treatment of type 2 diabetes. In the context of Japan, there exists a significant association between higher levels of perceived stress and an elevated likelihood of developing incident diabetes. This relationship is particularly pronounced among the male population (Aviles-Santa et al., 2020). Men are more protected by high work demands and an active employment, while women are more at risk of type 2 diabetes due to reduced decision latitude. There exists a significant association between sedentary behavior and several negative psychological outcomes, such as anxiety, depressive symptoms, increased perceived interference, and reduced self-efficacy. This relationship is more pronounced among women diagnosed with type 2 diabetes. Only women who worked at night for a long time were more likely to get Type 2 diabetes. Previous studies have documented comparable findings on the effects of shift employment on women. In conclusion, it may be inferred that psychological risk factors exert a more pronounced influence on the onset of type 2 diabetes in females as opposed to males (Chilet-Rosell et al., 2020).

Marital satisfaction refers to the state in which partners experience a prevailing sense of contentment and fulfillment with one another (Tavakol et al., 2017). The establishment of strong connections within romantic partnerships can be assessed based on the presence of mutual affection, comprehension, and the level of concern demonstrated towards one another (Dadgari et al., 2015). A poor marital adjustment among diabetic patients can adversely affect both physical and mental health, quality of life, and the economic status of these couples (Trief et al., 2002). Marriage and its worth are two of the most important psychological factors that affect a person's health in many ways. In addition, the examination of marital quality encompasses various dimensions, including positive aspects such as marital satisfaction, adjustment, intimacy, positive supportive interaction, marital support, constructive communication, and enjoyment. It also encompasses negative dimensions such as marital stress, marital risk, marital tension, marital strain, and negative unsupportive interactions. People think that the quality of a marriage is an important part of the quality of life, which affects many parts of health. As a result of modern lifestyles, diabetes is now recognized as a major international health concern. A study done by Raval et al. (2010) in India proved that high prevalence of depression in patients with type 2 diabetes mellitus was associated with diabetic complications particularly neuropathy and diabetic foot disease.

People with DM have a higher risk of morbidity and mortality as well as increased healthcare cost than the general population. The prevalence of diabetes is reported to be higher in urban than in rural areas (Gyawali et al., 2015). Diabetes is typically a manageable disease through lifestyle modifications and treatment. However, it can create added stress to the diabetes patients due to the never-ending demands of diabetes care, such as eating and maintaining physical health, exercising, monitoring blood glucose, regular follow-up, and management of symptoms and fears about or the reality of complications. As a result, they experience feelings of depression, anxiety, and stress, which affect their health and overall quality of life (Penckofer et al., 2007). During psychological stress, counter-regulatory hormones such as catecholamine, a neurotransmitter, glucocorticoids, growth hormones, and glucagon are activated (Grisel et al., 2006). The activation of the counter regulatory hormones interferes in the action of insulin which is not able to lower glucose but instead elevates blood glucose. The increase in glucose level creates a greater challenge in maintaining metabolic control. Poor glycemic control and functional impairment due to increasing diabetes complications may cause or worsen depression and anxiety in patients (Khan et al., 2019).

Anxiety and depression are common among patients suffering from type II diabetes, and their prevalence has been summarized in a number of studies (Alzahrani et al., 2019). Patients with diabetes had significantly higher anxiety and depression than general population (Rajput et al., 2016). The coexistence of diabetes and depression results in poor glycemic control and self-management, increases the risk of diabetes complications, and reduces overall quality of life and life expectancy (Holt & Katon, 2012). So, prevention, early recognition, and treatment of these conditions are essential for achieving optimal goals in the management and in patients' overall quality of life. Prevalence of depression and anxiety disorders is common among people with diabetes mellitus. Coexistence of diabetes and depression/anxiety increases the risk of diabetes complications and reduces the overall quality of life. Depression and anxiety were observed among diabetes patients. Current living status, educational status, medicine adherence, satisfaction toward current treatment, and history of mental illness in the family were found to be significant factors associated with the anxiety of patients with diabetes. Further, educational status, smoking habit, satisfaction towards current treatment, and history of diabetes in family were the factors associated with depression. Prevalence of depression and anxiety is high among admitted patients with diabetes mellitus, and many factors are associated with it. Hence, regular screening services are essential along with diabetes management plan for timely identification and treatment of the vulnerable groups in the healthcare centers (Sharma et al., 2021).

It has long been established that stress has a significant impact on metabolic function. Type 2 diabetes may be initiated by psychological and physical stress. The release of catecholamines and a rise in serum glucocorticoid concentrations caused by psychological stress enhance the requirement for insulin and insulin resistance. Experiencing persistent hyperglycemia in people with diabetes may be influenced by stress. Blood sugar levels may rise due to hormones being released in response to stress. Although this has adaptive significance in a healthy patient, in the long run, it can cause insulin resistance and lead to diabetes. Additionally, diabetes may cause abnormalities in the regulation of these stress hormones (Sharma et al., 2022). Several studies investigated marital quality as a risk factor for type 2 diabetes. A 5-year retrospective cohort study by Roberson et al. found that marital risk and strain were associated with the risk of having diabetes. Furthermore, marital strain and poor communication have had an association with an increase in the risk of developing diabetes. In low-income subjects, there is an inverse relationship between marital support and the risk of diabetes (Roberson & Fincham, 2018). The results of the study reflect that the psychological burden of diabetic patients influences their degree of marital satisfaction significantly. Female patients are reported with a greater level of psychological burden but they were observed with a poor degree of marital satisfaction as compared to males (Hussain et al., 2019). Marital relationship and its quality are among the major psychological factors affecting the multiple aspects of a person's health status. Chronic diseases are also among the factors that affect various aspects of the lives of millions of people including their marital

quality status. Marital quality remarkably influences diabetes-related factors and is itself affected by the condition resulting from diabetes in individuals with diabetes mellitus (Rastkar & Jalalifar, 2023). Reduced sexual desire is highly prevalent in diabetic women and is reported to be up to 70% in diabetic women. Diabetic women who experience less conflict in the family tend to better cope with their condition and receive better treatments. Marital dissatisfaction and sexual dysfunction, a chronic complexity of diabetes mellitus, are often overlooked in diabetic women (McCabe et al., 2016).

1.1. Rationale of Study

Diabetes mellitus (DM), a chronic metabolic disorder, has far-reaching consequences beyond physiological health. Numerous studies have documented the psychological burden of managing diabetes, including elevated levels of depression, anxiety, and stress. These psychological issues often arise from the demands of continuous self-monitoring, dietary restrictions, fear of complications, and the long-term nature of the disease. Furthermore, chronic illnesses like diabetes can strain interpersonal relationships, particularly marital dynamics. Marital satisfaction may be adversely affected due to emotional stress, financial burdens, role changes within the family, and decreased intimacy or sexual functioning—common complications of diabetes. Despite this, limited research has systematically examined the link between diabetes, psychological health, and marital satisfaction, especially in non-Western or developing contexts. This study is therefore crucial in highlighting diabetes as not only a physical health issue but also a psychosocial challenge. By investigating how diabetes mellitus predicts psychological problems and marital dissatisfaction, the study aims to inform holistic approaches to diabetes care that include mental health support and relationship counseling. This can ultimately lead to improved quality of life for patients and their spouses.

1.2. Objectives of Study

To investigate the effect of psychological problems on marital satisfaction among patients of diabetic mellitus.

2. Method

2.1. Participants

The study was conducted to predict the relationship between psychological problems and marital satisfaction among patients of diabetic mellitus. Sample size was 100 diagnosed diabetic patients.

2.2. Instruments

There are two research instruments were used in study.

1. Depression, Anxiety and Stress Scales (DASS-21).
2. Index of Marital Satisfaction (IMS).

2.3. Depression, Anxiety and Stress Scales (DASS-21)

The Depression, the Anxiety and Stress Scales (Lovibond, 1995) is used in the study to measure and assess the psychological burden in life of diabetic patients. It is a quantitative measure of distress with 3 axes stress, anxiety and depression and not used for clinical diagnoses as a categorical measure. DASS is useful for assessing the disturbance and lot of other complication. It has 21 items that indicates and describes the level of depression, the anxiety and stress and the responses on this scale are listed as; 0 score means, it is statement of response which is not applied for that person. 1- Responses which are given on 1 number denote the situation that is matched with person sometimes and at some extend. The responses on the situation 2 express the statement about the individual for a good time. Responses on this category have 3 numbers, which finds the condition that is related to close to the person. The normal score of the depression is ranged from (0-4), and as well as anxiety is separated from (0-3) and stress is moving the value from (0-7). The mild score of the depression of the people is start from the figure (5-6), while the anxiety is situated between these numbers (4-5) and the stress as well as is comes between this group (8-9). The moderate score of depression is ranging from (7-10), and the anxiety that is categorized between such type of values (6-7) and the stress values are ranged into this condition that is lies between these values (10-12). Severe and chronic level of the depression is categorized into these numbers (11-13), and the severe condition of anxiety lies between this group (8-9) and the stress is divided for it severity is ranged between such condition (13-16) while the extreme scores of the depression is indicated to this particularly is (14+), anxiety is related to this figure (10+) and the stress severe level is always indicates this category of score (17+). Scores of the individuals do not mean appropriate interventions.

2.4. Index of Marital Satisfaction (IMS)

The index of the marital satisfaction that is given by (Hudson, 2008) and was designed to measure the partner marital relationship and spouse problems related marital life and assess the degree and severity of marital issues during marital relationship. The ultimate purpose of IMS is to measure the degree of satisfaction and dissatisfaction between couple during marital relation with each other. Total number of the items are 25 among them some items are presented through some different way like as these have reversed scoring. Reversed item are twelve 12 which have these numbers; 1, 8, 3, 9, 16, 11, 21, 13, 16, 23, 19, 20, 21, and 17. Each item of this scale that is used to measure the satisfaction in couple life is scored with five different categories; 1 states the responses are not occur for any time, 2 figure indicates these responses are comes not on regular time, 3 figure is considered this response is occurred Sometime, 4 categories expresses the responses which are part of that person of life, 5 number means these are part of people life. The reverse scoring of the following items 5 is converted into the category 1, 4 is segregated into this number 2, 3 is will remains the same value, while 2 becomes the response 4 and 1 converted into 5 category. Lower scores of the scale describe the marital satisfaction on this scale whenever higher scores indicate the dissatisfaction among marital relationship among people.

2.5. Procedure

Hospital authority was approached and informed to get permission for conducting the research on their diabetic patients and the purpose of the study was explained to them. After getting permission, they were requested to give separate room for the administration of the scale in order to maintain confidentiality. Authority of the hospital was very cooperative in this regard. A booklet of scales was given to those diabetic patients who were educated give the responses honestly. A complete instruction was provided to them for complete the scales by the researcher. Responses were taken from uneducated diabetic patients through reading the questions by researcher. It was ensured that their information will be kept confidential and used for only research purpose.

3. Results

Table 1: Relationship between Psychological Burden and Marital Satisfaction among patients of Diabetes Mellitus

	Psychological Burden	Marital Satisfaction
Psychological Burden	1	-.379**
Marital Satisfaction		1

Table 1 shows the significant negative relationship between psychological burden and marital satisfaction among diabetic patients. These variables have an opposite direction. When psychological burden is decreased then the level of marital satisfaction is increased. It means marital satisfaction is negatively associated with psychological burden among patients of diabetes mellitus. The value of $p < 0.05$ correlation is significant.

Table 2: Regression analysis showing the Impact of Psychological Burden on Marital Satisfaction among diabetic patients

Predictor	B	Std. Error	Beta	t	p-value
Constant	113.433	4.237		7.021	.000
Psychological Burden	-1.184	.127	-.389	-5.031	.000

Table 2 shows the significant impact of psychological burden on marital satisfaction among diabetic patients. Psychological burden is treated as independent variable and marital satisfaction as dependent variables. Findings revealed that depression, anxiety and stress have negative effects on the level of marital satisfaction those who suffer diabetes mellitus disease.

4. Discussion

The aim of study was to predict the psychological burden and marital satisfaction among patients of diabetic mellitus. Diabetes mellitus is growing rapidly in the world. Its complications threaten the people's life with chronic consequences. The victims of diabetes mellitus were reported 285 million around the world in 2010 and will be increased in the coming years. Patients with diabetes mellitus have many health problems. Diabetes is associated with poor psychological well-being, depression, marital dissatisfaction, mood disturbance, stress, social interaction anxiety, sexual problems, life satisfaction and anxiety disorders. Diabetes mellitus is increasing dangerously in the world that causes health challenging issues among people. Prevalence and incidence rate is not fair in the future till 2030. The researchers predict that the number of patients will become doubled in coming time because it is common disease in Pakistan. Lack of awareness and screening adequacy leads this disease on international level complications associated with it. Pakistan is developing country which has no appropriate treatment interventions for its causes which disturb people in many ways. It creates sexual impairments that directly damage the marital satisfaction among married couples and cause profound effects on mental health like as stress, anxiety and depression, social anxiety, life satisfaction and general happiness. It distorts the pattern of normal behaviour among individuals. It has main two types which influence the health in different modes of severity. Type 1 is considered less harmed as compared to type 11 diabetes because it is easily managed and controlled by proper diet and exercise. Type 11 has severe complications because it is caused by low level of insulin in the liver and patients are dependent on insulin and become conscious about the level of insulin to remained balance. Table 1 shows that psychological burden have a negative effect on the satisfaction level of marriage among the patients of diabetes. It means that marital satisfaction is significantly effected through the independent variable like as psychological burden and where the dependent variable is considered the marital satisfaction which is affected. Findings reveal the significant negative correlation between the psychological burden and marital satisfaction. These variables have an opposite direction among patients because one is in increasing and second is decreasing that means, when disturbances like depression, stress and anxiety related to disease are managed and controlled then the level of satisfaction with marital life is increased.

5. Conclusion

The conclusion of the study likely indicates that individuals with diabetes mellitus are more prone to experiencing psychological challenges (such as depression, anxiety, or stress) and decreased levels of marital satisfaction compared to those without the condition. Diabetes can lead to emotional distress due to chronic management, lifestyle restrictions, and fear of complications, contributing to mental health issues. The stress and demands of managing diabetes may strain relationships, reduce intimacy, and cause conflict, thus lowering marital satisfaction. The presence of diabetes may serve as a predictor or risk factor for both psychological problems and difficulties in marital relationships.

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