

Exploring The Relationship Between Diabetes Distress, Health Anxiety, Psychological Distress, And Quality Of Life Among Patients With Type I And Type II Diabetes Mellitus: A Cross-Sectional Study

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DOI: <https://doi.org/10.70670/sra.v3i4.1223>

Abstract:

The increasing prevalence of Type 1 and Type 2 diabetes mellitus (DM) in Pakistan presents serious obstacles to the psychological well-being of diabetes patients. The impact of diabetes distress, health anxiety, and psychological distress on quality of life is significant. There exist a limited number of studies in Pakistan that examine these factors. This cross-sectional study investigates the interplay among diabetic distress, health anxiety, psychological distress, and quality of life in T1DM, and T2DM patients. Total 250 patients were taken from various hospitals in Faisalabad using purposeful sampling. The demographic form, Diabetes Distress Scale (DDS), Short Health Anxiety Inventory (SHAI), Patient Health Questionnaire-9 (PHQ-9), and Diabetes Quality of Life (DQOL) scale, were used for data collection. The findings indicated a significant interconnection among diabetes distress, health anxiety, and psychological distress, with all three factors correlating with a diminished quality of life ($p < .01$). The results indicate that individuals with Type 2 diabetes experience heightened levels of psychological distress. Research indicates that psychosocial factors play a crucial role in the management of diabetes, and the integration of mental health treatments within diabetes care is of significant importance in Pakistan. Individuals diagnosed with diabetes may enhance their mental well-being and overall quality of life by effectively managing stress and anxiety.

Introduction:

Diabetes is a metabolic disorder characterized by high glucose levels (Edgerton, 2025). Over 422 million people worldwide have diabetes. Diabetes ranks 8th in fatal diseases (Fisher et al., 2021). The most common kind of diabetes is Type II, insulin resistance raises blood glucose levels in older people (Bellary et al., 2021, p. 2). Type I diabetes, often known as adolescent diabetes, develops

when the pancreas cannot produce enough insulin for the body and is common in adolescents (Kelly, 2024).

Diabetes impacts physical, social, and mental health, including well-being. Diabetes patients often struggle with psychosocial issues that influence their well-being and relationships (Kalra et al., 2018). Researchers have connected diabetes to depression and distress. Diabetes is an emotional suffering, patients feel tension, regret, and denial due to their sickness (Tran et al., 2021). Diabetic distress affects all ages across cultures and populations (Onyenekwe et al., 2020). Depression causes low self-esteem and motivation. Diabetes increases depression risk and vice versa (Wu, et al., 2021). Misinterpreting bodily symptoms as signs of a dangerous illness causes health concerns. Health anxiety with diabetes is rarely discussed. Health anxiety emphasizes sickness and maladaptive health consequences. Diabetes distress raises health-related worry because DM patients fear symptom of recurrence or worsening their disease. Therapy compliance, healthy habits, and medical costs may be affected by anxiety (Lebel et al., 2020). Quality of life is an individual's view of their status about their culture and value systems, objectives, expectations, standards, and worries (Abadi et al., 2014). Diabetes lowers mental health and life quality. Since diabetes often causes co-morbidities and consequences, discomfort can lower quality of life (Burno et al., 2021). Diabetics' health-related quality of life is reduced by distress, depression, and anxiety.

Diabetics in low- and middle-income countries like Pakistan suffer emotionally. Type 1 and Type 2 diabetics often experience sadness and anxiety. Diabetes is common in Pakistan, but little is known about how psychosocial factors affect different forms. This study addresses the gap by examining Type 1 and Type 2 diabetes distress, HA, depression, and QOL in Pakistan.

Methodology:

Research design:

This study uses a cross-sectional design. The study was carried out across various hospitals in Faisalabad. The total sample consisted of 250 patients diagnosed with type I and type II diabetes.

Participants:

The research included N=250 patients who were diagnosed with either Type 1 or Type 2 diabetes mellitus. We selected participants through purposeful sampling from outpatient endocrinology departments in different hospitals across Faisalabad.

Inclusion and exclusion criteria:

We include participants over 18 years old, have been diagnosed with diabetes for at least a year, and can read and complete self-report questionnaires. People with known cognitive impairments, major mental diseases, or concurrent chronic illnesses (such as cancer or kidney failure) were not allowed to participate.

Measures:

Demographic form:

Patients' age, education, SES, marital status, duration of illness, and medical details like glucose levels, treatment duration, treatment type, and family history were collected on a demographic form.

Diabetes Distress Scale (DDS-17 Polonsky, 2005). DDS-17 measures diabetes-related discomfort. It has 17 items. 1 is no problem and 6 is quite difficult. Subscales measure emotional, physician, regimen, and interpersonal distress. Scores for each subscale are divided by its item count. Sum these scores and divide by 17 to get the total. It's 0.87 Cronbach's alpha reliable.

Short Health Anxiety Inventory (SHAI; Salkovskis, 2002): The SHAI is commonly used to assess health-related anxiety. It has 18 items. The items assess health worries, physical feelings or changes, and sickness fears. SHAI reliability, criteria validity, and treatment sensitivity are high.

The Patient Health Questionnaire (PHQ-9 Kronke, 1999): PHQ-9 diagnoses depression with 9 items. PHQ-9 scores range from 0 to 3, indicating no to virtually frequency. It has five intensity levels, including moderate depression. depression: mild, moderate, severe, very severe.

Revised Version of Diabetes Quality of Life Questionnaire (RV-DQOL 13 Bujang 2018): The RV-DQOL measures diabetes patients' quality of life. It covers satisfaction, impact, and worry with 13 items. From no impact and no problems to always satisfied, constantly affected, always anxious, or never satisfied, the scale has five points. Worry reliability coefficients are 0.92 and 0.84, satisfaction 0.98 and 0.60, and impact 0.99 and 0.57

Procedure:

Data was collected using purposive sampling. First, the department research committee approve the study. After committee approval, it was referred to GCUF's Institutional Review Board for final approval. The study followed GCUF's Ethical Committee requirements. Data was collected when hospital management gave consent. Along with the informed consent form, a data collector summarized the study's goals and how participants would benefit. The same person verbally informed the subject that they may participate in the study.

Ethical consideration:

Before data collection began, all participants got a consent form detailing the study's goals, the researchers' goals, confidentiality, privacy, and the right to withdraw. The participant's initials or signature on the form indicate research consent.

Statistical analysis:

Analysis was done with SPSS 26. Demographic data was summarized using means, SD. The associations between DDS, HA, PD, and QOL were examined using correlation analysis. Significant psychological factors were compared between Type 1 and Type 2 diabetics using independent samples t-tests.

Result:

Table 1: Demographic Characteristics of variables (N=250)

	N	Mean	Std. Deviation
Gender	250	1.43	.497
Age	250	37.22	7.867
Edu	250	1.65	.576
MS	250	1.02	.125
DOI	250	1.9363	.75625
TOT	250	1.61	.618
DOT	250	1.8048	.78341
BMI	250	3.18	.841
FH	250	1.36	.481

Note: Edu: Education; FS: Family System; Occupation; DL: Diabetes level, DOI: Duration of Illness; TOT: Type of Treatment; DOT: Duration of Treatment; BMI: Body Mass Index; FH; Family History. Table shows the demographic characteristics of type I and type II diabetes mellitus patients (Table 1).

Table 2: Pearson Product Moment Correlation Analysis of Demographic Characteristics, DDS, SHAI, PHQ-9, DQOL, among type I and type II Diabetes Patients (N=250).

	DDS	SHAI	PHQ	DQOL
DDS	1	.664	.779**	-.809**
SHAI		1	.809**	-.811**
PHQ			1	-.798**
DQOL				1

** . Correlation is significant at the 0.01 level (2-tailed).

Note: DDS= Diabetes Distress; PHQ-9= Patients Health Questionnaire; SHAI= Short Health Anxiety Inventory; DQOL= Diabetes Quality of Life Scale

Findings indicate a significant positive relationship among DDS, SHAI, and PHQ. A negative relationship was observed between DDS, SHAI, PHQ, and DQOL (Table 2).

Table 3: Independent sample t-test for DDS, SHAI, PHQ and DQOL among type I and type II Diabetes Patients (N=250).

	T1DM		T2DM		t	p
	M	SD	M	SD		
EBS	3.20	1.071	3.34	1.009	-.863	.389
PDS	3.40	1.025	3.51	.986	-.738	.461
RDS	3.32	.914	3.40	.915	-.586	.558
IDS	3.00	.999	3.10	.991	-.666	.506
DDS	3.25	.951	3.36	.920	-.762	.447
SHAI	24.34	9.666	25.65	9.668	-.907	.365
PD	12.86	5.167	13.64	5.066	-1.012	.313
SAT	60.96	15.218	60.84	15.306	.051	.959
IMP	60.86	16.305	61.13	15.781	-.115	.908
WOR	59.10	18.802	62.93	19.211	-1.352	.180
DQOL	60.50	15.095	61.42	14.984	-.407	.684

Note: EBS= Emotional Burden Subscale; PBS= Physician Burden Subscale; RDS= Regimen Distress Subscale; IDS = Interpersonal Distress Subscale; DDS= Diabetes Distress; PHQ-9= Patients Health Questionnaire; SHAI= Short Health Anxiety Inventory; SAT= Satisfaction Subscale; IMP =Impact Subscale ;WOR= Worry Subscale; DQOL= Diabetes Quality of Life Scale.

Findings indicate that there was no significant mean difference between type I and type II diabetes patients regarding the levels of DDS, SHAI, PHQ, and DQOL (Table 3).

Discussion:

This study examined how diabetes distress, health anxiety, psychological distress, and quality of life affect Type 1 and Type 2 diabetes patients. Previous research has linked diabetes distress, health anxiety, and psychological distress to lower QOL (Tareen & Tareen., 2024).

Even after controlling for other psychological characteristics, diabetes distress and health anxiety predicted lower quality of life (Abbas et al., 2023). This suggests that diabetes management loads and health and physiological symptom worries may affect life satisfaction more than general depression symptoms. Other research highlights emotional loads as key factors in diabetes outcomes and quality of life (Rodríguez-Almagro, et al., 2018).

Our findings suggest that patients with Type 1 diabetes have much more health anxiety than those with Type 2. This is likely because Type 1 diabetes starts earlier, and insulin management is more complicated (Balfe et al., 2013). However, Type 2 diabetics reported greater psychological distress, including sadness. This may be because patients are diagnosed later in life, have long periods of untreated illness, and have several lifestyle issues that make them feel unhappy, guilty, or hopeless (Perrin et al., 2017). It is essential to incorporate mental health screenings and support services into diabetes care in poor and middle-income countries like Pakistan, where healthcare systems often fail to address the psychosocial aspects of long-term illness.

Conclusion

To summarize, the study presents convincing evidence that diabetes distress and health anxiety are important psychological issues for diabetic patients in Pakistan, with tangible consequences for their quality of life. These findings highlight the critical need to incorporate mental health therapies within standard diabetes management. Improving psychological well-being is likely to improve quality of life while also contributing to better treatment adherence, glycemic management, and long-term health outcomes.

Limitation and recommendation

Cross-sectional designs do not allow causal inferences, and self-report measures may bias results. The sample was limited to cities, limiting its value for rural residents. Future research should include demographics, clinical data, and longitudinal or interventional methods. Pakistan should incorporate mental health assessments into diabetes care and develop culturally appropriate psychosocial therapies to improve results.

Implication

In diabetes care, this study shows effective diabetic discomfort and health anxiety evaluation tools. CBT, psycho-education, and diabetic self-management training help lessen diabetes worry and unhappiness. Since stigma may inhibit mental health care, Pakistan needs culturally appropriate models.

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