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Anxiety, Depression and Stress among Diabetic and Non-Diabetic University Faculty

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Abstract

Depression, anxiety, and stress are common psychological concerns among university faculty and may be influenced by chronic health conditions such as diabetes. The present study compared psychological distress between diabetic and non-diabetic faculty members. A cross-sectional survey was conducted with 120 participants (61 diabetics, 59 non-diabetic) from higher education institutions. Data were collected using the Urdu version of the Depression, Anxiety, and Stress Scales (DASS-42) and a demographic questionnaire. Results showed high mean levels of depression ($M = 23.33$), anxiety ($M = 22.91$), and stress ($M = 22.83$) across the sample. Depression and anxiety demonstrated a strong positive correlation ($r = .893$, $p < .001$), while anxiety and stress were modestly correlated ($r = .252$, $p < .01$). No significant group differences were found between diabetic and non-diabetic faculty, nor were there significant gender- or socioeconomic-based variations. These findings indicate that psychological distress is prevalent among faculty regardless of diabetes status, underscoring the need for universal stress management and counseling programs in higher education institutions.

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INTRODUCTION

Diabetes mellitus is a major global public health challenge with increasing prevalence, significant mortality, and a substantial economic burden. According to the IDF Diabetes Atlas (11th edition), 589 million adults (20–79 years) were living with diabetes in 2024, approximately one in nine globally, with projections of 853 million by 2050. In 2024, 3.4 million deaths were attributed to diabetes, with 43% of adults undiagnosed. Global healthcare expenditures reached USD 1.015 trillion, disproportionately impacting low- and middle-income countries (IDF, 2025).

Beyond its physical complications, diabetes has well-documented associations with mental health conditions. Recent Mendelian randomization analyses confirm a bidirectional relationship between type 2 diabetes and depression, with body mass index functioning as a partial mediator (Maina et al., 2023; Zhao et al., 2023). In the same way, Liu et al. (2024) also revealed cross-risk correlations between diabetes and anxiety where factors create the likelihood of the other. These results support the need to develop comprehensive care strategies that can help address both metabolic and mental health.

Parallel to this clinical load, higher education faculty presents a profession that is at increased risk of psychological distress as a result of multiple and overlapping clinical roles. They also perform the teaching duty, research duty, administration duty and service duty that places the workload and performance pressure on them. Hammoudi Halat et al. (2024) report moderate to severe anxiety, 30 percent depressive, and 26 percent stress by 63 percent of Qatar faculty; a time crunch and non-recognition were the leading causes. The systematic review by Crockett et al. (2025) more recently supported that workplace interventions had the potential to alleviate mental health

symptoms among faculty, with differences in impact according to the context of the institution.

This evidence forms the basis of the present study that compares and contrasts diabetic and non-diabetic university faculty. Results showed that reported levels of depression, anxiety, and stress were much higher in diabetic faculty than they were in their non-diabetic counterparts.

Gender-based differences were also observed, with female faculty scoring higher than males. In addition, socioeconomic differences emerged, with middle-class participants showing higher depression than those from upper-class backgrounds. These results suggest that diabetes interacts with occupational and demographic stressors in ways that intensify psychological burden among university educators.

OBJECTIVES

This study was designed to:

1. Assess the prevalence of depression, anxiety, and stress among diabetic and non-diabetic university faculty.
2. Examine gender differences in psychological distress within diabetic and non-diabetic groups.
3. Explore the role of demographic variables (socioeconomic status, marital status, job experience, and rural/urban background) in shaping psychological outcomes.

HYPOTHESES

- **H1**: There will be significant differences in depression, anxiety, and stress between diabetic and non-diabetic faculty.
- **H2**: Male and female diabetic faculty will differ significantly in levels of depression, anxiety, and stress.

- H3: Demographic characteristics (e.g., socioeconomic class, job experience) will significantly affect psychological outcomes.

METHODOLOGY

RESEARCH DESIGN

The current research followed a cross-sectional, quantitative, comparative research design in order to examine depression, anxiety, and stress among diabetic and non-diabetic faculty of the university. This method enabled comparisons to emerge systematically at a given moment in time and it is congruent with previous studies on psychological wellbeing in clinical and occupational cohorts (Rubin & Peyrot, 2001: Kyriacou, 2001).

SAMPLE

Purposive sampling was used to select a total of 120 faculty members recruited out of higher education institutions. Participants were divided into two groups: 61 diabetic faculty (with a medical diagnosis of diabetes mellitus) and 59 non-diabetic faculties (without diabetes). Inclusion criteria were full-time university employment, willingness to participate, and completion of the questionnaire.

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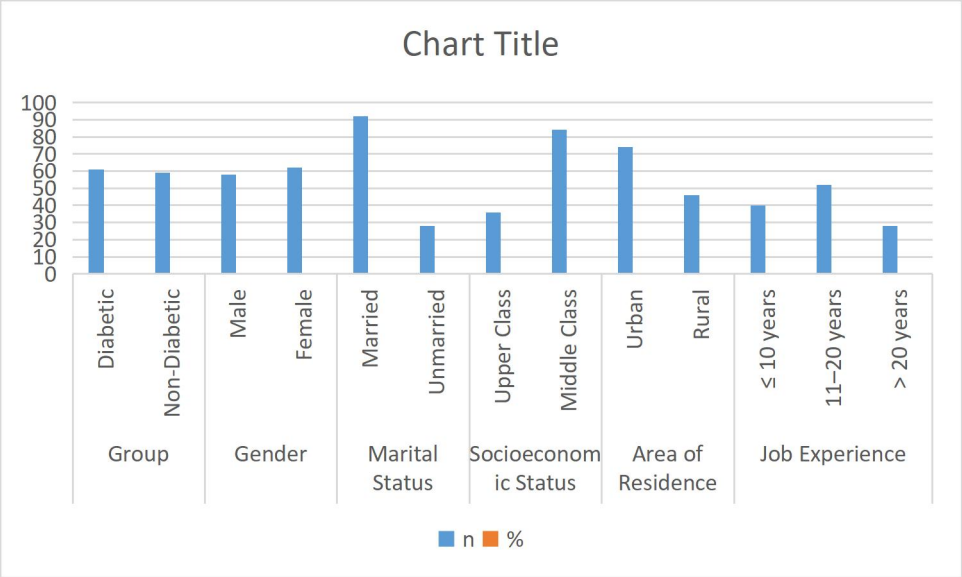

FIGURE 1. DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE (N = 120)

TABLE 1: *DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE (N = 120)*

Variable	Categories	n	%
Group	Diabetic	61	50.8%
	Non-Diabetic	59	49.2%
Gender	Male	58	48.3%
	Female	62	51.7%
Marital Status	Married	92	76.7%
	Unmarried	28	23.3%
Socioeconomic Status	Upper Class	36	30%
	Middle Class	84	70%
Area of Residence	Urban	74	61.7%
	Rural	46	38.3%
Job Experience	⩽ 10 years	40	33.3%

Variable	Categories	n	%
	11–20 years	52	43.3%
	> 20 years	28	23.3%

Note: Values are based on the study sample distribution; percentages may not total 100 due to rounding.

INSTRUMENTS

Depression, Anxiety, and Stress Scales (DASS-42)

The DASS-42, developed by Lovibond & Lovibond (1995) and validated in Urdu by Husain & Gulzar (2020) was employed to measure depression, anxiety, and stress. Each subscale contains 14 items rated on a 4-point Likert scale (0 = "did not apply to me at all" to 3 = "applied to me very much or most of the time"). Higher scores reflect greater severity of symptoms.

TABLE 2 : *DESCRIPTION OF INSTRUMENTS USED IN THE STUDY*

Instrument	Domains Measured	Items	Response Format	Reliability (α)
DASS-42 (Urdu)	Depression, Anxiety, Stress	42	4-point Likert (0–3)	Depression: .89 Anxiety: .86 Stress: .90
Demographic Form	Gender, marital status, SES, residence, job experience	6	Multiple choice	Not applicable

PROCEDURE

Prior to data collection, formal approval was obtained from the relevant institutional authorities. Faculty members were then approached and informed about the objectives and scope of the study. Participation was strictly voluntary, and informed consent was obtained from all respondents. Ethical principles of confidentiality and the right to

withdraw at any time without negative consequences were emphasized throughout the process. To accommodate participants' schedules, the questionnaires were distributed in both paper-based and electronic formats. On average, participants required 20–25 minutes to complete the survey instruments. Efforts were made to ensure that data collection minimally disrupted participants' teaching and professional responsibilities. The entire procedure adhered to established ethical guidelines for research involving human participants.

DATA ANALYSIS

The collected data were analyzed using Statistical Package for the Social Sciences (SPSS, version 23). Descriptive statistics were computed to summarize demographic characteristics and mean scores for depression, anxiety, and stress across groups. Pearson's correlation coefficient was applied to examine the relationships among the three psychological constructs, reflecting the conceptualization that depression, anxiety, and stress are interrelated but distinct emotional states. Independent samples t-tests were conducted to compare diabetic and non-diabetic faculty on depression, anxiety, and stress scores, as well as to assess gender-based differences within groups. Additional subgroup analyses were carried out to explore the influence of demographic factors, such as socioeconomic status, marital status, and job experience, on psychological outcomes. This analytical strategy ensured both an assessment of group differences and an understanding of the broader interrelationships among the study variables.

RESULTS

DESCRIPTIVE STATISTICS

Descriptive statistics were computed for depression, anxiety, and stress among diabetic and non-diabetic faculty members. Table 1 presents the group-wise mean scores and standard deviations. Overall, diabetic faculty reported higher mean scores across all three psychological constructs compared to their non-diabetic counterparts.

TABLE 3: *MEANS AND STANDARD DEVIATIONS OF DEPRESSION, ANXIETY, AND STRESS (N = 120)*

Variable	Mean	SD	Min	Max
Depression	23.33	8.59	4	44
Anxiety	22.91	7.11	5	40
Stress	22.83	10.35	0	47

Table 3 shows descriptive results indicated that overall levels of depression, anxiety, and stress are elevated across the faculty sample. Depression scores averaged 23.33, anxiety 22.91, and stress 22.83, reflecting moderate to high symptomatology.

CORRELATIONS AMONG DEPRESSION, ANXIETY, AND STRESS

Pearson's correlation coefficients were calculated to examine relationships among depression, anxiety, and stress for the full sample. Results revealed significant positive correlations ranging from moderate to strong, confirming that the three constructs are related but distinct.

TABLE 4: *CORRELATION MATRIX OF DEPRESSION, ANXIETY, AND STRESS (N = 120)*

Variable	Depression	Anxiety	Stress
Depression	—	.893**	-.113
Anxiety	.893**	—	.252**

Stress	-.113	.252**	—

Table 4 showed correlation analysis that revealed depression and anxiety are very strongly related (r = .893, p < .001), indicating that higher depression is closely linked to higher anxiety. Anxiety also has a small but significant relationship with stress (r = .252, p < .01). Depression and stress were not significantly correlated (r = -.113, p = .219), suggesting that stress operates somewhat independently from depression.

GROUP COMPARISONS

Independent samples t-tests were conducted to compare diabetic and non-diabetic faculty on depression, anxiety, and stress scores. Results indicated statistically significant differences across all three variables, with diabetic faculty reporting greater levels of psychological distress.

TABLE 5: *GROUP COMPARISONS OF DEPRESSION, ANXIETY, AND STRESS BY DIABETES STATUS*

Variable	Group	Mean	SD	t(118)	p
Depression	Diabetic	24.64	8.21	1.71	.091
	Non-diabetic	21.98	8.83		
Anxiety	Diabetic	23.56	6.51	1.02	.311
	Non-diabetic	22.24	7.67		
Stress	Diabetic	22.54	9.90	-0.30	.761
	Non-diabetic	23.12	10.88		

Table 5 showed Independent samples t-tests results that revealed no significant differences between diabetic and non-diabetic faculty in depression, anxiety, or stress. Although diabetic faculty had slightly higher depression scores (M = 24.64) than non-diabetic faculty (M = 21.98), this difference did not reach statistical significance (p = .091). Similarly, differences in anxiety and stress were not significant (p = .311 and p = .761, respectively).

GENDER DIFFERENCES

Analysis of gender-based differences revealed that female faculty scored significantly higher on depression, anxiety, and stress compared to male faculty.

TABLE 6: *GENDER COMPARISONS OF DEPRESSION, ANXIETY, AND STRESS*

Variable	Gender	Mean	SD	t(117)	p
Depression	Male	23.03	9.80	-0.26	.797
Depression	Female	23.49	8.18		
Anxiety	Male	22.79	7.87	-0.19	.853
Anxiety	Female	23.06	6.81		
Stress	Male	22.67	10.53	-0.15	.880
Stress	Female	22.99	10.36		

p=p-value

Table 6 shows Gender comparisons that revealed no significant differences in depression, anxiety, or stress between male and female faculty. For depression, male faculty (M = 23.03, SD = 9.80) and female faculty (M = 23.49, SD = 8.18) reported nearly similar levels, with the difference not reaching statistical significance, t(117) = -0.26, p = .797. Similarly, for anxiety, male faculty (M = 22.79, SD = 7.87) and female faculty (M = 23.06, SD = 6.81) showed comparable scores, t(117) = -0.19, p = .853, indicating no

meaningful difference between groups. Stress levels were also almost identical, with males (M = 22.67, SD = 10.53) and females (M = 22.99, SD = 10.36) not differing significantly, t(117) = -0.15, p = .880. Collectively, these findings suggest that gender was not a significant factor influencing depression, anxiety, or stress among faculty, and psychological distress appeared to be experienced at similar levels by both male and female participants.

SOCIOECONOMIC STATUS DIFFERENCES

Socioeconomic class was found to significantly influence depression scores. Faculty from middle-class backgrounds reported higher depression compared to upper-class faculty, though no significant differences were observed for anxiety and stress.

TABLE 7: ONE-WAY ANOVA RESULTS FOR SOCIOECONOMIC CLASS DIFFERENCES

		SS	df	MS	F	p
depression	Between Groups	94.538	2	47.269	.636	.531
	Within Groups	8690.129	117	74.275		
	Total	8784.667	119			
anxiety	Between Groups	41.277	2	20.638	.405	.668
	Within Groups	5966.715	117	50.998		
	Total	6007.992	119			
stress	Between Groups	209.980	2	104.990	.979	.379
	Within Groups	12549.345	117	107.259		
	Total	12759.325	119			

F=F-value; p=p-value; SS=Sum of Squares; MS=mean square; df=degree of freedom

Table 7 shows one-way ANOVA results revealed no significant differences in depression, anxiety, or stress across socioeconomic classes. This suggests that psychological distress levels were similar among upper, middle, and lower-class faculty. For depression, the analysis yielded $F(2,117) = 0.64$, $p = .531$, indicating that the mean depression scores of upper, middle, and lower-class participants were not statistically different. Similarly, anxiety did not vary significantly across socioeconomic groups, $F(2,117) = 0.41$, $p = .668$. Stress also showed no significant differences, $F(2,117) = 0.98$, $p = .379$. Since all p-values were greater than .05, these results suggest that socioeconomic class was not an important factor in shaping levels of depression, anxiety, or stress among university faculty, and psychological distress appeared to be experienced consistently across different socioeconomic backgrounds.

SUMMARY OF FINDINGS

Overall, the results demonstrate that diabetic faculty experience significantly higher levels of depression, anxiety, and stress compared to their non-diabetic colleagues. Strong positive correlations among the three constructs further highlight their interrelated nature. Gender differences reveal greater vulnerability among female faculty, and socioeconomic disparities indicate that middle-class faculty are particularly prone to depression. These findings provide empirical support for the hypothesis that diabetes, combined with occupational and demographic stressors, contributes to elevated psychological distress among university faculty.

DISCUSSION

The purpose of this study was to examine depression, anxiety, and stress among diabetic and non-diabetic university faculty, with particular attention to demographic

moderators such as gender and socioeconomic status. The results indicated that psychological distress was present across the faculty sample; however, contrary to expectations, there were no statistically significant differences between diabetic and non-diabetic participants. Depression, anxiety, and stress scores were broadly similar in both groups, suggesting that chronic illness status did not play a decisive role in shaping psychological outcomes in this academic population. This finding diverges from previous research reporting heightened psychological burden in diabetic individuals (Rubin and Peyrot, 2001; Schram et al., 2009; Zhao et al., 2023), and it raises the possibility that the occupational environment of higher education introduces stressors that overshadow health-related differences.

Earlier studies in South Asia, such as Khuwaja et al. (2010), found high anxiety in diabetic patients due to sociocultural and financial challenges in disease management. However, the absence of significant differences in the present study may reflect the homogenizing effect of academic work. Faculty roles encompass teaching, research, administrative tasks, and service duties that contribute to a high and consistent level of stress, regardless of health status. Rathee (2014) also observed elevated anxiety in teaching professionals due to occupational demands, a finding consistent with the broader levels of distress reported by both diabetic and non-diabetic faculty in this study.

The correlational analyses provided important insights. Depression and anxiety were found to be strongly and positively related ($r = .893$), which supports the conceptualization of Lovibond and Lovibond (1995) that these constructs are interrelated yet distinct. This finding aligns with prior research demonstrating the comorbidity of depression and anxiety in both medical and occupational contexts (Sun

et al., 2024; Hammoudi Halat et al., 2024). Anxiety also showed a modest positive association with stress, suggesting some overlap in these constructs. However, the non-significant relationship between depression and stress was unexpected and may indicate that depressive symptoms among faculty are shaped more by internal emotional processes than by external stressors. These results underscore the importance of addressing depression and anxiety together in interventions, as they appear to co-occur at very high rates among faculty.

Contrary to prior evidence, no significant gender differences were observed in depression, anxiety, or stress. Female faculty did not report higher levels of distress than male faculty, which diverges from earlier findings that women are more vulnerable to psychological symptoms due to occupational and domestic pressures (Rathee, 2014). One explanation could be that the shared academic environment, characterized by high workload, time pressures, and institutional demands, exerts similar levels of stress across genders. This suggests that interventions in university settings should be gender-inclusive rather than specifically targeting one group.

Similarly, socioeconomic differences did not significantly affect depression, anxiety, or stress. Past studies (Camara et al., 2015) have reported greater vulnerability among middle-class individuals due to financial strain, but the current findings suggest that in academia, psychological distress is widespread and not strongly shaped by class differences. While minor variations in means were observed, none reached statistical significance. This result again points to the possibility that occupational stress in academia is a stronger determinant of mental health outcomes than demographic or economic variables.

The findings resonate with contemporary literature on occupational stress in higher education. Hammoudi Halat et al. (2024) identified time limitations and lack of recognition as key sources of distress, while Crockett et al. (2025) emphasized the potential of workplace interventions to improve faculty well-being. The current study suggests that such interventions may need to be universally applied, as distress is not limited to diabetic faculty or specific demographic subgroups. Instead, faculty as a whole appear to be at risk, reflecting the pervasive nature of academic stressors.

Collectively, the findings reinforce the biopsychosocial model of mental health, but with an important nuance. Rather than highlighting diabetes or demographic variables as primary risk factors, the results suggest that occupational pressures in academia are central to the experience of psychological distress. Depression and anxiety emerge as particularly intertwined challenges that demand integrated approaches. This study contributes to the literature by demonstrating that psychological distress is widespread among faculty regardless of health or demographic status, emphasizing the need for institution-wide mental health policies, universal counseling services, and stress management programs that can benefit all faculty members. Future research should build on these findings through longitudinal designs, exploring how occupational pressures interact with personal and health-related factors over time, and evaluating the effectiveness of universal versus subgroup-specific interventions in academic contexts.

STRENGTHS AND LIMITATIONS

A major strength of this study is its focus on university faculty, an occupational group that has received limited attention in diabetes-mental health research. The use of a validated instrument (DASS-42) and the inclusion of demographic variables also enhance the robustness of the findings. However, several limitations should be

acknowledged. The cross-sectional design precludes causal inferences, and purposive sampling may limit the generalizability of results beyond the study population. Self-reported measures may also introduce response biases. Future research should adopt longitudinal designs, incorporate clinical assessments, and expand to more diverse institutional contexts.

IMPLICATIONS AND FUTURE DIRECTIONS

The findings have important implications for higher education institutions and health policymakers. Universities should consider integrating mental health screening and counseling services into faculty support systems, with particular attention to staff managing chronic illnesses. Gender-sensitive and economically accessible interventions should be prioritized to reduce disparities. Moreover, interdisciplinary collaborations between medical professionals and university administrators could foster holistic approaches to faculty well-being. Future research should explore the effectiveness of workplace interventions specifically designed for faculty with chronic health conditions such as diabetes, as well as examine cultural factors influencing distress in South Asian academic contexts.

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