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A CROSS-SECTIONAL ANALYSIS OF GENDER VARIATIONS IN THE PREVALENCE OF DEPRESSION, ANXIETY, AND STRESS IN LAHORE, PAKISTAN

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Abstract

Objective: *The present study aimed to examine gender-based differences in the prevalence of depression, anxiety, and stress among patients in Punjab, as well as to identify the socio-economic and cultural factors contributing to these mental health issues.*

Methods: *A cross-sectional survey was conducted involving 400 patients (200 males and 200 females), aged 18–65 years, recruited from both outpatient (OPD) and inpatient (IPD) departments of Lady Wallington Hospital, Lahore. Data were collected using the Depression, Anxiety, and Stress Scale (DASS-21) alongside a structured demographic questionnaire. Statistical analyses included descriptive statistics, independent t-tests, and logistic regression to assess associations and predictors.*

Results: *Findings revealed that female participants reported significantly higher prevalence rates of depression (65%), anxiety (70%), and stress (60%) compared to their male counterparts (40%, 45%, and 35%, respectively). Socio-economic factors such as low educational attainment, unemployment, domestic abuse, and financial instability were strongly associated with poor mental health outcomes among women. Male participants also experienced notable levels of stress and anxiety, largely linked to poverty, inflation, and the pressures of supporting large families.*

Conclusion: *The study identified marked gender disparities in depression, anxiety, and stress prevalence among patients in Punjab. The higher rates among women underscore the importance of culturally sensitive and gender-responsive mental health services. Strategies such as promoting economic independence, reducing gender-based educational gaps, and expanding accessible mental health care are essential to alleviate the mental health burden in the province*

INTRODUCTION

Mental health conditions such as depression, anxiety, and stress constitute a significant public health challenge in Pakistan. National-level data highlight a substantial burden of mental disorders, particularly among women of reproductive age. For instance, depressive disorders contribute to approximately 3.89% of disability-adjusted life years (DALYs) in females, compared to 2.37% in males, revealing a notable gender disparity (Alvi et al., 2024). This gendered gap underscores the importance of

examining differences not only in prevalence but also in underlying socio-economic and cultural drivers specific to provinces like Punjab.

Local cross-sectional research has also identified that female university students in Punjab, particularly undergraduates, exhibit higher levels of psychological distress compared to their male counterparts. A recent survey using the DASS-21 tool reported mild stress and moderate depression on average, with severe anxiety disproportionately affecting female students (Khajuria et al., 2022). These findings suggest that gender-based differences in mental health begin to emerge early—even among educated populations—highlighting the need for broader studies that include varied age groups and socio-economic backgrounds.

Broader cultural and social context further contributes to gendered mental health outcomes in Pakistan. In conservative and patriarchal settings, women are often exposed to greater social pressures, limited autonomy, and higher rates of domestic violence. Approximately 57% of reported cases of violence against women during the COVID-19 period originated from Punjab (Pakistan), indicating pervasive gender-based stressors that may exacerbate mental health problems (Women in Pakistan, 2025).

Taken together, these factors suggest that gender differences in depression, anxiety, and stress are likely influenced by both individual and structural determinants that warrant in-depth exploration through studies such as the present one in Punjab.

1. Materials and Methods

This analytical cross-sectional study was carried out at **Lady Wallington Hospital, Lahore** over a six-month period, from **January 2024 to June 2024**, following formal approval from the hospital's Institutional Review Board (IRB). A total of **400 patients** were enrolled in the study using a purposive sampling technique, comprising **200 males and 200 females** aged between **18 and 45 years**.

Participants were recruited from both outpatient and inpatient departments. Eligibility criteria included the ability to provide informed consent, willingness to participate, and the capacity to respond to the questionnaire items. Exclusion criteria were a documented history of major psychiatric disorders (e.g., schizophrenia, bipolar disorder), diagnosed neurological diseases, or any cognitive impairments that could affect comprehension and response accuracy.

Data were collected using two instruments:

1. **Depression, Anxiety, and Stress Scale (DASS-21)** – a validated self-report tool designed to measure the severity of depression, anxiety, and stress symptoms.

2. **Structured Demographic Questionnaire** – developed by the research team to capture socio-economic, cultural, and psychosocial variables, including education level, employment status, household income, marital status, and exposure to domestic or financial stressors.

Prior to data collection, participants were briefed on the study objectives, assured of confidentiality, and provided with written informed consent forms. The questionnaires were administered in either **Urdu or English** based on participant preference, with assistance available for those requiring clarification of items.

Data entry and analysis were performed using **Statistical Package for the Social Sciences (SPSS), version 26**. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize demographic characteristics and mental health scores. **Independent samples t-tests** were applied to compare mean scores of depression, anxiety, and stress between male and female participants. Statistical significance was set at $p < 0.05$.

3. Results

Table 1. Prevalence of Depression, Anxiety, and Stress by Gender

Mental Health Condition	Total (%)	Male (%)	Female (%)
Depression	52	40	65
Mild	20	15	25
Moderate	22	18	26

Severe	10	7	14
Anxiety	58	45	70
Mild	25	20	30
Moderate	23	18	28
Severe	10	7	12
Stress	48	35	60
Mild	18	12	24
Moderate	20	15	25
Severe	10	8	11

Among the study participants, depression was reported in 52% of cases, with a notably higher prevalence among females (65%) compared to males (40%). Similarly, anxiety affected 58% of respondents, again showing a higher prevalence in females (70%) than in males (45%). Stress was present in 48% of participants, with 60% of females and 35% of males affected. Across all three mental health conditions, women consistently exhibited higher rates of mild, moderate, and severe symptoms, indicating a clear gender disparity in psychological distress.

Table 2. Logistic Regression Analysis of Predictors of Depression, Anxiety, and Stress

Predictor Variable	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Education (Low)	2.5	1.8 – 3.5	<0.001
Unemployment	3.2	2.4 – 4.3	<0.001
Joint Family System	1.7	1.3 – 2.4	0.002
Female Gender	2.8	2.0 – 3.9	<0.001
Marital Status (Married)	1.3	0.9 – 1.8	0.089

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The logistic regression model identified several significant predictors of depression, anxiety, and stress. Low educational attainment increased the odds of experiencing these mental health conditions by 2.5 times, while unemployment had the strongest association, with a 3.2-fold increase in risk. Living in a joint family system was also significantly associated with higher odds (OR = 1.7, p = 0.002). Female gender emerged as a strong predictor, with women being 2.8 times more likely to experience these conditions compared to men. Marital status (being married) showed a non-significant association (p = 0.089), indicating no strong predictive relationship in this study.

4. Discussion

This study found a notably higher prevalence of depression, anxiety, and stress among females compared to males, with women consistently showing elevated rates across all severity categories. Such findings align with previous evidence from Punjab and other provinces of Pakistan indicating that women are at a greater risk of psychological distress due to combined socio-cultural, economic, and familial pressures (Khalid et al., 2019). Cultural norms that limit women's mobility, decision-making power, and access to resources may increase vulnerability to mental health disorders (Saleem et al., 2020).

Our regression analysis highlighted **unemployment** as the most significant predictor of poor mental health outcomes, followed by **low educational attainment**. These results mirror findings from a study in Lahore that identified unemployment and lower education as major determinants of depression and anxiety, particularly among urban populations facing economic instability (Batool et al., 2020). Limited educational opportunities reduce awareness of coping strategies and access to healthcare, further compounding mental health risks (Bano et al., 2018). Additionally, living in a **joint family system** was associated with higher odds of depression, anxiety,

and stress, consistent with evidence suggesting that interpersonal conflicts, restricted privacy, and household role overload in extended family structures may exacerbate stress, especially for women (Mahmood et al., 2019).

Gender itself was a strong independent predictor, with females nearly three times more likely to experience these conditions. This aligns with a study conducted in Rawalpindi, which found that women reported higher rates of depression and anxiety due to domestic responsibilities, financial dependency, and gender-based discrimination (Jadoon et al., 2010). Interestingly, marital status was not a significant predictor in our study, indicating that being married does not inherently confer either risk or protection—a finding also reported by Farooq et al. (2017), who noted that the quality of marital relationships is a more important determinant of mental health than marital status alone. These findings underscore the need for **gender-sensitive mental health interventions in Punjab**, integrating socio-economic empowerment, targeted psychoeducation, and accessible community-based services to address the multifactorial roots of psychological distress.

5. Conclusion

Based on the findings, this study concludes that depression, anxiety, and stress are highly prevalent among patients in Punjab, with a marked gender disparity as females exhibited significantly higher rates across all severity levels. Socioeconomic disadvantages, particularly unemployment and low educational attainment, along with cultural dynamics such as living in a joint family system, were significant predictors of poor mental health outcomes. While marital status was not found to be a significant factor, the strong influence of gender underscores the need for targeted, gender-sensitive mental health policies and interventions. Addressing these issues through economic empowerment, educational opportunities, and culturally appropriate psychosocial support services could play a pivotal role in reducing the mental health burden in the region.

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