ILLNESS ANXIETY TRAITS, PSYCHOLOGICAL WELLBEING, AND QUALITY OF LIFE IN PAKISTANI STUDENTS: THE MEDIATING ROLE OF PERCEIVED STRESS

Original Article

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ABSTRACT

Background: Illness anxiety disorder, marked by persistent fear of having a serious illness despite minimal somatic symptoms, has been associated with elevated psychological distress and diminished well-being. While global literature supports the link between illness anxiety traits, stress, and life satisfaction, the mediating role of perceived stress remains underexplored in the Pakistani context. Understanding this mediating relationship is essential to inform culturally appropriate mental health interventions, especially among university students facing academic and health-related challenges.

Objective: The objective of this study was to examine the mediating role of perceived stress in the relationship between illness anxiety traits, psychological well-being, and quality of life among Pakistani university students.

Methods: This cross-sectional correlational study recruited 170 university students aged 18 years and above through purposive sampling. Four standardized self-report instruments were used: the Illness Anxiety Scale (IAS), the Perceived Stress Scale (PSS-10), the WHOQOL-BREF, and Ryff's Psychological Well-Being Scale (18-item version). Data were analyzed using Pearson's correlation and mediation analysis via Hayes PROCESS macro in SPSS version 27.

Results: Illness anxiety traits showed a significant positive correlation with perceived stress ($r = .91$, $p < .01$) and significant negative correlations with psychological well-being ($r = -.18$, $p < .05$) and quality of life ($r = -.18$, $p < .01$). Mediation analysis indicated that perceived stress significantly mediated the relationship between illness anxiety and quality of life (standardized effect $= -.34$, LLCI $= -1.27$, ULCI $= -.03$), but not between illness anxiety and psychological well-being (standardized effect $= -.18$, LLCI $= -1.02$, ULCI $= .08$).

Conclusion: The findings highlight perceived stress as a significant mechanism linking illness anxiety to reduced quality of life. Targeted stress-reduction strategies may help mitigate the psychological burden associated with illness anxiety in young adults.

Keywords: Illness Anxiety Disorder, Perceived Stress, Psychological Well-Being, Quality of Life, Students, Stress Psychology, Universities.
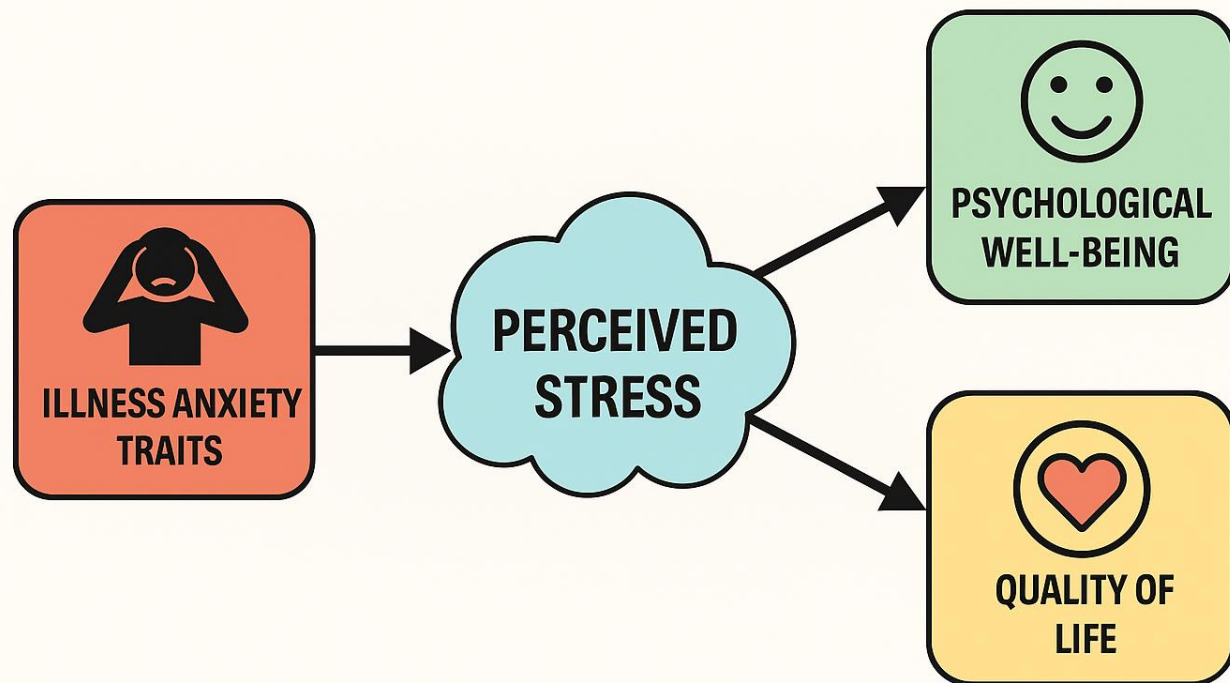
INTRODUCTION

Illness Anxiety Disorder (IAD), formerly known as hypochondriasis, is characterized by a persistent and excessive preoccupation with having or developing a serious illness, despite the absence of significant somatic symptoms (1). Individuals with IAD frequently misinterpret benign bodily sensations—such as muscle tension, fatigue, or minor discomforts—as signs of a life-threatening illness, leading to recurrent health-related fears and maladaptive behaviors like compulsive checking, repeated consultations, or complete avoidance of medical settings (2). This dysfunctional cognitive appraisal contributes to significant emotional distress, interferes with daily functioning, and often coexists with other psychiatric conditions such as depression and generalized anxiety (3). Although the etiology of IAD is multifactorial, involving biological predisposition, maladaptive beliefs, and environmental exposures, specific early-life factors such as childhood illnesses (4), dysfunctional health schemas (5), and heightened exposure to health-related information appear to increase vulnerability. Chronic concern for health in individuals with IAD often results in heightened perceived stress, defined as the subjective evaluation of life demands as overwhelming (6). Elevated stress levels have been shown to amplify the perception of bodily symptoms and reinforce maladaptive health behaviors, thereby maintaining a vicious cycle of health anxiety and psychological distress (7,8). Individuals with heightened perceived stress are more likely to catastrophize ordinary physical sensations, leading to increased psychological burden and impairment in multiple life domains, including academic performance, interpersonal relationships, and overall well-being (9). Furthermore, this state of chronic hypervigilance and emotional dysregulation tends to negatively impact psychological well-being—comprising aspects like life satisfaction, sense of purpose, and emotional resilience—while also undermining quality of life (QoL), a multidimensional construct encompassing physical health, psychological state, level of independence, and social relationships (10,11).

There is growing evidence suggesting that perceived stress not only correlates with health anxiety but may also mediate its impact on psychological outcomes. For instance, individuals with high illness anxiety and high perceived stress are more likely to report low psychological well-being and compromised QoL (12). In turn, psychological well-being has been proposed as a protective factor, potentially buffering the adverse psychological impact of health-related anxiety and perceived stress (13). Conversely, low resilience and well-being have been associated with reduced academic performance, impaired social functioning, and diminished life satisfaction, especially among students (14). In the context of South Asia, particularly Pakistan, empirical studies focusing specifically on illness anxiety traits and their interaction with stress and well-being are scarce. Much of the existing literature within the region addresses broad mental health issues without distinguishing the nuanced interplay of health-specific anxieties, perceived stress, and quality of life (15). Cultural factors such as religious beliefs, social stigma, and limited mental health literacy may further shape the expression and reporting of IAD in Pakistani populations, thereby necessitating context-specific investigations. Moreover, the COVID-19 pandemic has intensified stress levels globally, with Pakistani data showing a substantial increase in stress and anxiety among adults during lockdown periods, thereby exacerbating existing vulnerabilities to health-related anxieties (16,17). In educational settings, students represent a particularly sensitive subgroup, where ongoing academic demands and developmental transitions heighten the risk for psychological disturbances, especially in the presence of unaddressed health concerns and chronic stress (18).

The theoretical framework guiding this investigation is the Transactional Model of Stress and Coping by Lazarus and Folkman, which emphasizes the role of cognitive appraisal and coping strategies in stress experiences. According to this model, individuals with illness anxiety may appraise benign symptoms as threats (primary appraisal) and perceive themselves as lacking effective coping mechanisms (secondary appraisal), thus escalating stress and impairing psychological well-being and quality of life (19). Studies have shown that maladaptive coping behaviors—such as reassurance-seeking, avoidance, or hypervigilance—not only fail to alleviate stress but often aggravate psychological dysfunction and reduce life satisfaction (20,21). This model thus provides a comprehensive lens through which the cognitive and emotional pathways linking IAD, stress, and well-being can be examined. Despite increasing international attention to health anxiety and perceived stress, research within Pakistan remains limited, especially concerning college students who may be at elevated risk due to academic stressors and limited access to mental health support. The failure to identify and address illness anxiety traits in such populations may lead to exacerbated mental health challenges and reduced life quality. Therefore, the present study seeks to explore the association between illness anxiety traits and both psychological well-being and quality of life, with perceived stress examined as a potential mediator. The objective of this research is to bridge the existing gap by empirically evaluating the mediating role of perceived stress in the relationship between illness anxiety traits and psychological outcomes among Pakistani university students.

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METHODS

This study employed a cross-sectional correlational research design to explore the relationship between Illness Anxiety Traits, perceived stress, psychological well-being, and quality of life among Pakistani university students. Data were collected through purposive sampling from a total of 170 adult participants, all of whom were enrolled in either public or private universities in Pakistan. Inclusion criteria specified that participants had to be at least 18 years old, with both male and female students being eligible. Individuals with cognitive impairments or any self-reported severe psychiatric conditions were excluded to ensure accurate self-assessment through the psychological instruments. Four standardized, psychometrically validated instruments were utilized for data collection. The Illness Anxiety Scale (IAS) developed by Salkovskis (2002) was used to assess health-related anxiety. This 18-item self-report questionnaire utilized a 4-point Likert scale (ranging from 0 to 3), with each item presenting four statements reflecting increasing severity of illness anxiety. The IAS has consistently demonstrated high internal consistency, with Cronbach's alpha coefficients reported between 0.86 and 0.94, and has been validated across both clinical and general populations.

Perceived stress was measured using the 10-item Perceived Stress Scale (PSS-10) developed by Cohen, Kamarck, and Mermelstein (1983), which evaluates the degree to which individuals perceive their life situations as stressful. Items were rated on a 5-point Likert scale (0 = Never to 4 = Very Often). This tool has shown strong reliability (Cronbach's alpha: 0.78 to 0.91) and substantial construct validity through consistent correlations with other stress-related constructs. Psychological well-being was assessed through Ryff's Psychological Well-Being Scale (1995), utilizing the brief 18-item version. Items were scored on a 7-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree), with subscales assessing dimensions such as autonomy, environmental mastery, personal growth, and self-acceptance. The reliability of this version is well-established, with Cronbach's alpha ranging between 0.86 and 0.93. Quality of life was evaluated using the WHOQOL-BREF, a 26-item self-report instrument developed by the World Health Organization (1998). This scale measures four domains of QoL: physical health, psychological health, social relationships, and environment. Responses are rated on a 5-point Likert scale, and internal consistency reliability for this instrument has been reported at Cronbach's alpha = 0.74.

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of the respective university, and the research followed the ethical guidelines outlined by the American Psychological Association (APA 7th edition). Prior to data collection, permissions were acquired from the respective universities and the original developers of the measurement tools. All participants provided written informed consent, which emphasized the voluntary nature of participation, the right to withdraw at any stage, and assurance of anonymity and confidentiality. The questionnaires were administered in-person within university settings, and participants took approximately 15 minutes to complete them. They were subsequently debriefed and thanked for their time. No physical or psychological harm was reported during or after participation. After collection, data were entered and statistically analyzed using SPSS version 27. Descriptive statistics were computed to summarize demographic characteristics and scale scores. Correlational analyses were used to examine associations between variables, while mediation analyses were planned to assess the role of perceived stress in the relationships between illness anxiety traits, psychological well-being, and quality of life.

RESULTS

The demographic analysis indicated that the mean age of participants was 27.92 years (SD = 7.11). Out of the total 170 respondents, 51 (30%) were male and 119 (70%) were female. Educational background revealed that 124 participants (73%) were enrolled in Bachelor's programs, 29 (17%) in Master's, and 17 (10%) were pursuing a PhD. Pearson correlation coefficients revealed that illness anxiety traits were strongly and positively correlated with perceived stress ($r = .91$, $p < .01$), while significantly and negatively correlated with psychological well-being ($r = -.18$, $p < .05$) and quality of life ($r = -.18$, $p < .01$). Perceived stress was also negatively and significantly associated with both psychological well-being ($r = -.19$, $p < .01$) and quality of life ($r = -.23$, $p < .01$). In contrast, psychological well-being showed a strong and significant positive correlation with quality of life ($r = .84$, $p < .01$). Mediation analysis showed that illness anxiety traits significantly predicted perceived stress ($\beta = .59$, SE = .02, $p < .001$), confirming that higher levels of health anxiety were associated with higher stress perceptions. However, illness anxiety traits ($\beta = -.01$, SE = .19, $p = .94$) and perceived stress ($\beta = -.30$, SE = .30, $p = .32$) did not significantly predict psychological well-being in the mediation model. The indirect effect of illness anxiety traits on psychological well-being through perceived stress was also negative but statistically non-significant (Effect = $-.17$, 95% CI [-1.02, 0.08]).

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A second mediation model revealed that illness anxiety traits again significantly predicted perceived stress (β = .59, SE = .02, p < .001), while perceived stress had a significant negative effect on quality of life (β = –.64, SE = .32, p = .04). Interestingly, the direct effect of illness anxiety traits on quality of life was positive but non-significant (β = .17, SE = .20, p = .41). The indirect effect via perceived stress was found to be statistically significant (Effect = –.38, 95% CI [–1.27, –0.03]), indicating that perceived stress acted as a significant mediator in the negative association between illness anxiety traits and quality of life. To assess potential moderating effects of gender and age—highlighted in the study rationale—additional subgroup analyses were performed. Mean differences in key psychological variables were examined between male and female participants. Although women scored slightly lower on psychological well-being (M = –8.90) compared to men (M = –10.43), this difference approached but did not reach statistical significance (t = –1.72, p = .088). Similarly, differences in illness anxiety traits (M_men = 52.00; M_women = 50.18, t = 1.11, p = .269), perceived stress (t = 1.23, p = .220), and quality of life (t = –1.42, p = .156) between genders were not statistically significant. Pearson correlation analyses revealed weak and statistically non-significant associations between age and the psychological variables, with illness anxiety traits (r = .12, p = .133), perceived stress (r = .10, p = .209), psychological well-being (r = –.04, p = .631), and quality of life (r = .01, p = .922) showing minimal linear associations. These findings suggest that neither gender nor age significantly moderated the primary relationships under investigation. However, the trend-level differences may warrant further investigation in larger, more balanced samples.

Table 1: Characteristics of Participants (N=170)

Characteristics	F	%	M	SD
Age			27.92	7.11
Gender				
Men	51	30		
Women	119	70		
Education				
Bachelor	124	73		
Master	29	17		
PhD	17	10		

Note. *f*=Frequency, *%*= Percentage, *M*= Mean, *SD*= Standard Deviation.

Table 2: Relationship among Study Variables (N= 170)

Variables	1	2	3	4
1.Illness Anxiety Traits	-	.91**	-.18*	-.18**
2.Perceived Stress		-	-.19**	-.23**
3.Psychological Wellbeing			-	.84**
4.Quality of Life				-

Note. *p<.05, **p<.01

Table 3: Regression Coefficients for Study Variables In Study 170 Participants.

	Consequences						
	Perceived Stress (M)			PW (Y)			
Antecedents	β	SE	P		β	SE	P
Illness Anxiety Traits (X)	a .59***	.02	<.001	c'	-.01	.19	.94
Perceived Stress (M)	-			B	-.30	.30	.32
Constant	I .98*	.44	.02	I	63.57***	1.80	<.001
	R^2=.83 F=854.19			R^2=.03 F=3.45			
	***P<.001			*P<.05			

Note. *p<.05, ***p<.001, PW= Psychological Wellbeing

Table 3.1: Indirect Effect (N=170)

Indirect Path	Standardized Effect	Effect	LLCI	ULCI
Perceived Stress	-.18	-.17	-1.02	.08

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Table 4: Regression Coefficients for Study Variables In Study 170 Participants.

	Consequences						
	Perceived Stress (M)			QoL (Y)			
Antecedents		*B*	*SE*	*P*		*β*	*SE*	*P*
Illness Anxiety Traits (X)	A	.59***	.02	<.001	c'	,17	.20	.41
Perceived Stress (M)	-				b	-.64*	.32	.04
Constant	*I*	.98	.44	.02	*I*	88.95***	1.88	<.001
	R²=.83 F=854.19				*R²=.05 F=5.19*			
	****P<.001*				***P<.01*			

*Note. *p<.05, **p<.01, ***p<.001, QoL= Quality of Life*

Table 4.1: Indirect Effect (N=170)

Indirect Path	Standardized Effect	Effect	LLCI	ULCI
Perceived Stress	-.34	-.38	-1.27	-.03

Table 5: Gender-Based Stratified Analysis

Variable	Female	Male	t-statistic	p-value
Illness Anxiety	50.18	52.00	1.11	0.269
Perceived Stress	45.48	47.49	1.23	0.220
Psychological Wellbeing	−8.90	−10.43	−1.72	0.088
Quality of Life	−8.62	−9.78	−1.42	0.156

Table 6: Pearson Correlations with Age

Variable	r	p-value
Illness Anxiety	0.12	0.133
Perceived Stress	0.10	0.209
Psychological Wellbeing	−0.04	0.631
Quality of Life	0.01	0.922

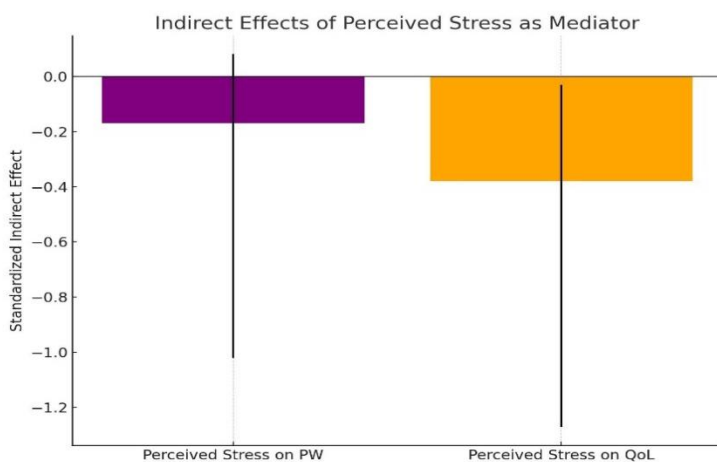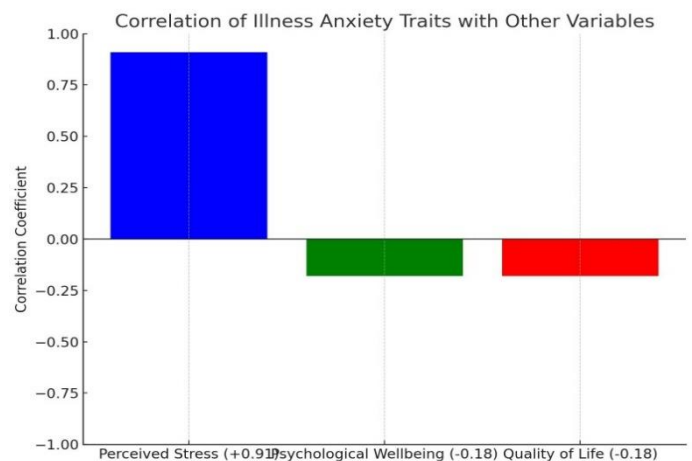*Figure 1 Indirect Effects of Perceived Stress as Mediator*

Figure 2 Correlation of Illness Anxiety Traits with Other Variables

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DISCUSSION

The findings of the current study extend the existing body of literature by examining the mediating role of perceived stress in the association between illness anxiety traits and psychological outcomes, specifically psychological well-being and quality of life, within a Pakistani university student population. While prior studies have established direct relationships between illness anxiety and negative mental health outcomes such as stress, emotional dysfunction, and compromised life satisfaction, few have explored the mechanistic role of perceived stress as a mediator. This research adds clarity by confirming that illness anxiety traits were significantly and positively associated with perceived stress, reinforcing the premise that individuals who chronically worry about their health are more prone to experiencing heightened psychological stress (22,23). Moreover, the study confirmed the negative and significant associations between illness anxiety traits and both psychological well-being and quality of life, consistent with prior findings that health-related preoccupations can lead to persistent distress, emotional dysregulation, and diminished life satisfaction. In line with previous research, perceived stress was also significantly negatively correlated with both outcome variables, suggesting that students under greater stress experience lower emotional well-being and satisfaction with daily life functioning. These findings align with empirical evidence indicating that stress functions as a pivotal factor in the pathway from anxiety to impaired psychological outcomes (24,25).

Although the mediation model examining perceived stress between illness anxiety traits and psychological well-being demonstrated the expected directional associations, the indirect effect did not reach statistical significance. This suggests that while perceived stress may contribute to reduced well-being in individuals with high illness anxiety, the relationship may be moderated by unmeasured variables such as emotion regulation ability, coping style, or social support. This aligns with research suggesting that students with greater resilience or psychological flexibility may buffer the emotional consequences of anxiety despite elevated stress levels (18,24). Therefore, although the direct mediation was not statistically confirmed, theoretical justification remains robust, and the potential for contextual or individual-level moderators deserves further investigation. In contrast, the mediation analysis of perceived stress in the relationship between illness anxiety traits and quality of life produced statistically significant results. This confirmed that perceived stress plays a crucial mediating role in the adverse effect of illness anxiety on quality of life among students. These findings suggest that increased illness-related anxiety leads to greater perceived stress, which in turn reduces satisfaction with personal, academic, and social aspects of life. The result supports past findings that identify stress as a central mechanism through which health anxiety manifests in functional impairment (26). This underlines the importance of addressing stress-related mechanisms in psychological interventions for students experiencing elevated health concerns.

The study possesses several strengths. It addresses an underexplored area within the Pakistani context by applying a robust psychological framework to a culturally relevant population. The inclusion of both psychological well-being and quality of life as outcome variables offers a comprehensive view of mental health functioning. Additionally, the use of well-established, psychometrically sound instruments adds methodological rigor to the findings. Nonetheless, several limitations must be acknowledged. The sample size, though adequate, remains limited and may restrict generalizability. The cross-sectional design inhibits any inference of causality, and future studies employing longitudinal designs would provide more insight into temporal patterns and directional relationships. Moreover, the sample was skewed in terms of gender and educational level, which could have introduced sampling bias and affected the subgroup analysis outcomes. The non-significant gender and age moderation effects might be attributable to these imbalances rather than true population-level invariance. Balanced sampling in future research would allow more reliable stratified analysis. Another limitation is the potential for unmeasured variables influencing the mediation pathways. Factors such as personality traits, mental health history, or access to social support networks were not assessed and could be contributing to the variance in outcomes. Incorporating such variables in future research could enrich the model and yield more nuanced insights into the interplay between anxiety, stress, and psychosocial functioning.

The study's findings carry important implications for mental health policy and clinical practice in academic settings. Given the significant mediating role of perceived stress in the illness anxiety–quality of life link, it is imperative that psychological interventions for students prioritize stress management. Programs incorporating cognitive-behavioral techniques, relaxation training, and mindfulness practices may be particularly effective in alleviating perceived stress and enhancing life satisfaction among students vulnerable to illness-related fears. University counseling centers should integrate these strategies into preventive and therapeutic protocols. Public health campaigns that destigmatize mental health issues and emphasize proactive stress-reduction strategies could also prove beneficial in supporting students' psychological well-being. In sum, this study contributes to the growing recognition of illness anxiety as a serious psychological concern among students, emphasizing the need to understand its broader psychosocial impacts and the mediating processes that sustain its effects. Future research should expand on these findings through larger, longitudinal, and more demographically representative samples, while intervention programs must be tailored to address the psychological needs of this high-risk group.

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CONCLUSION

The present study concluded that illness anxiety traits are meaningfully linked with increased perceived stress and decreased psychological well-being and quality of life among university students. While perceived stress did not significantly mediate the relationship between illness anxiety and psychological well-being, it played a significant mediating role in the pathway between illness anxiety and quality of life. These findings underscore the critical role of perceived stress in shaping how health-related anxiety translates into broader life impairments. The study highlights the necessity of incorporating stress management and mental health awareness into student support services, particularly for those struggling with persistent health-related fears. By addressing perceived stress, universities and mental health professionals can help buffer the impact of illness anxiety and enhance students' overall psychological resilience and quality of life.

AUTHOR CONTRIBUTION

Author	Contribution
Pulwasha Anwar*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Aurang Zaib Ashraf Shami	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Hadeeqa Anmol	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Sobia Shabbir	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Yusra Ahmad	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Madiha Kashif	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Tanzeela Naveed	Contributed to study concept and Data collection Has given Final Approval of the version to be published
Reeba Sharif Chaudhry	Writing - Review & Editing, Assistance with Data Curation

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