

THE IMPACT OF SELF-CARE PRACTICES ON PSYCHOLOGICAL WELLBEING AMONG STUDENTS AT PUBLIC AND PRIVATE UNIVERSITIES IN PESHAWAR

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Abstract

University students face academic, social, financial, and personal demands that can affect their psychological wellbeing. This study examined the relationship between self-care practices and psychological wellbeing among students at public and private universities in Peshawar. Methods: An analytic cross-sectional study was conducted among 422 students drawn from four universities in Peshawar. Self-care was measured using a culturally adapted 31-item Mindful Self-Care Scale, and psychological wellbeing was measured using an adapted 27-item Ryff Psychological Well-Being Scale. Data were analyzed in SPSS Version 26 using descriptive statistics, reliability analysis, Pearson correlation, chi-square test, ANOVA, and linear regression. Results: The mean self-care score was 3.35 (SD = 0.519), and the mean psychological wellbeing score was 3.84 (SD = 0.654). Self-care was strongly and positively associated with psychological wellbeing ($r = .654$, $p < .001$), and linear regression showed that self-care significantly predicted psychological wellbeing, $R^2 = .427$, adjusted $R^2 = .426$, $F(1, 420) = 313.583$, $p < .001$, accounting for 42.7% of the variance. Conclusion: Self-care shows a substantial positive association with psychological wellbeing among university students in Peshawar. The findings support university-based wellness initiatives that encourage healthy self-care habits while remaining attentive to demographic and socioeconomic differences among students.

Introduction

University life is often described as a period of opportunity and personal growth, yet it also exposes students to academic workload, social adjustment, financial pressure, and the demands of independent daily decision-making, all of which can affect psychological wellbeing. In Ryff's (2023) model, psychological wellbeing is not simply the absence of distress but a multidimensional construct comprising self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Self-care, defined by the World Health Organization (2026) as the ability of individuals, families, and communities to promote health and prevent or manage illness with or without the support of a health worker, is increasingly recognized as an accessible and low-cost strategy through which students can support this kind of positive functioning.

A growing body of international research links self-care to better psychological outcomes among students. Ayala et al. (2018) found that U.S. medical students who prioritized self-care reported markedly lower stress and higher quality of life than their peers, and Anderson (2024) similarly found that U.S. college students who practiced self-care more consistently reported better overall wellbeing. Loi and Pryce (2022) reported a similar pattern among Australian undergraduates, where mindful self-care was associated with lower burnout and better emotional wellbeing. Estacio and Acab (2021) found that Filipino college students who practiced psychological, emotional, physical, spiritual, and relational forms of self-care rated their overall wellbeing comparatively high, and Zhao et al. (2020) observed that Chinese university students who kept up daily routines, slept adequately, and stayed in regular contact with family during COVID-19 self-isolation reported lower anxiety than those who did not. Taken together, these findings suggest that the association between self-care and wellbeing holds across quite different cultural and academic settings.

At the same time, psychological difficulties remain common among university students worldwide. Auerbach et al. (2016), drawing on the WHO World Mental Health Surveys, documented substantial lifetime and current prevalence of common mental disorders among first-year students across several countries, and later analyses of the same international dataset by Karyotaki et al. (2020) and Alonso et al. (2018) linked these disorders to meaningful impairment in students' academic and social functioning. Many students who experience such difficulties, however, do not seek help. Dessauvage et al. (2022) identified stigma, limited mental health literacy, and inadequate service availability as recurring barriers to care among university students in Southeast Asia, while McCormick et al. (2024) reported comparable barriers among first-year students in the United States during the COVID-19 pandemic.

Research on self-care and psychological wellbeing among Pakistani university students remains comparatively limited. Khan et al. (2024) examined body image satisfaction, self-compassion, and psychological wellbeing among students in Islamabad and found that self-compassion played an important explanatory role, but the study did not treat self-care as a broader, multidimensional construct. Ehsan et al. (2024) implemented an intervention to strengthen self-care behaviors such as mindfulness and physical activity among first-year dental students and observed measurable improvement, although the study was confined to a single academic discipline and relied on a study-specific rather than a validated self-care measure. Beyond these studies, most Pakistani self-care research has centered on the management of chronic physical conditions such as diabetes and hypertension rather than on the psychological wellbeing of otherwise healthy student populations.

Cultural and structural factors add further complexity in Khyber Pakhtunkhwa, where social life is strongly shaped by Pashtunwali, a code of conduct built around family honor, collective reputation, hospitality, and social harmony (Aziz et al., 2021). Within this framework, disclosing personal or psychological difficulties can be experienced as bringing shame on the family, and mental health problems are frequently viewed as a sign of weakness rather than a health condition (Ikhtiar Khan & Irfan, 2023; Husain et al., 2020). Consistent with this, Daraz et al. (2025) found that each one-unit increase in perceived stigma was associated with a 26% reduction in the odds of seeking psychiatric help among adults in Peshawar, whereas culturally resonant messaging and supportive social norms were associated with greater help-seeking; together, cultural narratives, social norms, and stigma accounted for 68% of the variance in help-seeking behavior in their model. These findings suggest that self-care practices, which can be undertaken privately and do not require disclosure to others, may be a particularly acceptable route to supporting wellbeing in this cultural setting.

Taken together, the literature points to three specific gaps that motivated the present study. First, although the association between self-care and wellbeing is well established internationally, it has rarely been examined among general university student populations in Pakistan using validated, multidimensional instruments. Second, no study identified in this review had combined a culturally adapted Mindful Self-Care Scale with Ryff's model of psychological wellbeing among Pakistani university students. Third, no study had directly compared self-care practices and psychological wellbeing between students at public and private universities in the Pashtun cultural context of Khyber Pakhtunkhwa, despite plausible differences between these institution types in socioeconomic background, academic pressure, and access to supportive resources. The present study was designed to address these gaps by examining the relationship between self-care practices and psychological wellbeing among students at public and private universities in Peshawar.

Hypotheses

H_0 : There is no significant relationship between self-care practices and psychological wellbeing among university students in Peshawar.

H_1 : There is a significant relationship between self-care practices and psychological wellbeing among university students in Peshawar.

The primary objective of the study was to evaluate the relationship between self-care practices and psychological wellbeing among students of public and private universities in Peshawar.

Literature Review

Theoretical Framework

Psychological wellbeing, in Ryff's (2023) eudaimonic model, is described through six core dimensions – self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth – that together describe positive psychological functioning rather than the mere absence of distress. The model has been applied across a wide range of cultural settings and age groups, and it provided the theoretical basis for the wellbeing measure used in the present study.

Self-care, as operationalized in this study, draws on the Mindful Self-Care Scale (MSCS) developed and validated by Cook-Cottone and Guyker (2018), which measures how frequently a person engages in practices that support physical, emotional, psychological, and social health. For use in this Pashtun cultural context, the scale was adapted following the cross-cultural adaptation guidelines proposed by

Beaton et al. (2000), which recommend a structured process of translation, review, and pilot testing to preserve the conceptual meaning of an instrument when it is transferred between cultural and linguistic settings. The resulting 31-item version, organized into seven domains, is described in full in the Materials and Methods section.

Several theoretical accounts help explain why self-care practices might be expected to relate to psychological wellbeing. Self-determination theory (Ryan & Deci, 2000) proposes that autonomy, competence, and relatedness are basic psychological needs; self-care behaviors such as maintaining a healthy diet, staying physically active, and nurturing supportive relationships can be understood as everyday expressions of these needs, and McCourt (2022) extended this reasoning to argue that meeting them supports quality of life even in the presence of chronic stressors. Fredrickson's (2001) broaden-and-build theory offers a complementary account, suggesting that positive emotions generated through self-care – for example, through relaxation or spending time with supportive people – broaden a person's habitual ways of thinking and, over time, build durable psychological and social resources such as resilience and stronger relationships. The transactional model of stress and coping proposed by Lazarus and Folkman (1984) offers a third perspective, framing self-care as both a problem-focused strategy (for instance, better time management) and an emotion-focused strategy (for instance, relaxation practices) that students can draw on to manage the demands of university life. Considered together, these frameworks suggest that self-care may support wellbeing through several distinct but complementary pathways rather than a single mechanism.

Global Evidence on Self-Care and Wellbeing

A number of studies conducted outside Pakistan provide more detailed evidence on how specific self-care domains relate to wellbeing. Posluns and Gall (2020), reviewing literature on helping professionals such as counselors and psychotherapists, found that engagement in self-care across physical, social, and spiritual domains was associated with lower burnout and better psychological wellbeing under sustained occupational pressure; although this review did not focus on students, the pressures it describes closely resemble those reported by university populations. Zhong and Xie (2023) evaluated a structured self-care intervention, informally named "Joy Pie," among college students in Beijing and found that self-care efficacy was linked to better emotional regulation and, in turn, better mental health, with effects that varied somewhat by age, gender, and family income. Schmitt and Prasastyoga (2024), studying self-employed workers rather than students, similarly found that people who practiced regular self-care reported higher vitality and fewer health complaints, a pattern that plausibly extends to the demanding and often unstructured schedules of university life.

Within self-care, self-compassion and social connectedness appear to be particularly consistent correlates of wellbeing. Neff (2003), who introduced the modern conceptualization of self-compassion as treating oneself with kindness rather than harsh self-judgment during difficulty, argued that this disposition should buffer against psychological distress; a subsequent meta-analysis by Zessin et al. (2015) confirmed a moderate-to-strong positive association between self-compassion and wellbeing across a wide range of samples. Social relationships show a comparable pattern: Holt-Lunstad et al.'s (2010) meta-analysis of over 300,000 participants found that strong social relationships were associated with a substantially reduced risk of mortality, underscoring the broader health relevance of the supportive-relationships domain included in the self-care measure used here. More recently, Wan et al. (2025) examined psychological

wellbeing and its associated factors among university students in Sichuan, China, adding further support to the view that everyday relational and lifestyle factors, rather than any single behavior, shape student wellbeing.

Mental Health Burden and Help-Seeking Among University Students

The relevance of self-care as a low-cost, accessible strategy is heightened by the scale of unmet mental health need among students. As noted above, Auerbach et al. (2016), Karyotaki et al. (2020), and Alonso et al. (2018) each drew on the WHO World Mental Health Surveys International College Student initiative to document high rates of mental disorder and associated role impairment among first-year university students internationally. Despite this burden, many students do not receive care: Dessauvage et al. (2022) attributed this gap in Southeast Asia to stigma and limited service availability, McCormick et al. (2024) reported similar barriers among U.S. students, and Zhao et al.'s (2025) systematic review of help-seeking among college students more broadly identified attitudinal barriers – particularly a preference for self-reliance and uncertainty about where to seek help – as being at least as influential as structural barriers such as cost or availability.

The resource gap is especially stark at the health-systems level. According to the World Health Organization's Mental Health Atlas 2024, countries devote an average of only 2.1% of their health budgets to mental health, a figure that falls to roughly 1.5% or less in low- and middle-income countries compared with 4.3% in high-income countries; per-capita mental health spending ranges from a few cents in the lowest-income countries to tens of dollars in wealthier ones. In Pakistan specifically, Niazi et al.'s (2025) review of 35 studies involving more than 11,000 university students found that approximately 51% reported depressive symptoms, with prevalence ranging from 2.5% to 85% across individual studies – a wide range the authors attributed to differences in sampling methods, assessment tools, and study settings. Set against this backdrop, self-care represents a strategy that students can adopt without needing to access formal, and often scarce, mental health services.

The Pakistani and Peshawar Context

Within Pakistan, the limited available evidence suggests that self-care and wellbeing may be shaped by family structure and demographic factors that differ from those emphasized in Western literature. Ashraf et al. (2025) found that psychological wellbeing among Pakistani university students varied between those living in joint versus nuclear family systems, pointing to the continued importance of extended family structures in shaping students' everyday support networks. Fazal and Abbasi (2025) similarly reported demographic differences in mental health literacy, perceived stress, social support, and psychological wellbeing among Pakistani university students, suggesting that any intervention or policy response needs to account for this heterogeneity rather than treating students as a uniform group. Living arrangements add a further layer of complexity: Atif et al. (2024), in a qualitative study of young women living in hostels in Pakistan, described difficulties in adjusting to unfamiliar environments and reduced privacy, alongside the development of coping skills, self-reliance, and patience over time – illustrating how a single demographic factor, such as living situation, can carry both risks and resources for wellbeing. Broader living conditions are also relevant: data from the Pakistan Bureau of Statistics (2019) Social and Living Standards Measurement survey indicate that urban households in Khyber Pakhtunkhwa average more than seven members and often live in comparatively congested housing, a context that shaped several methodological decisions described in the Materials and Methods section.

Cultural attitudes toward mental illness add a further barrier that is specific to this region. As discussed above, Pashtunwali's emphasis on family honor and collective reputation (Aziz et al., 2021) means that psychological difficulties are often concealed rather than disclosed. Ikhtiar Khan and Irfan (2023), in a qualitative study conducted in a low- and middle-income country context, found that stigma and negative self-perception discouraged people from acknowledging mental health difficulties even to themselves, and Husain et al. (2020) found that stigmatizing attitudes toward mental illness were common not only in the general public but also among healthcare professionals and healthcare students in Pakistan – groups that might otherwise be expected to hold more favorable attitudes. Daraz et al.'s (2025) quantitative findings, described above, reinforce this picture, showing a direct and substantial statistical link between stigma and reduced help-seeking in Peshawar specifically. In this environment, self-care practices that can be carried out privately, without disclosure to family or community, may represent a particularly culturally congruent way of supporting psychological wellbeing.

Rationale for the Present Study

Reviewed together, this literature suggests that self-care is a multidimensional construct reliably associated with better psychological wellbeing internationally, but that this relationship has rarely been tested among Pakistani university students using validated, multidimensional tools, and never, to the authors' knowledge, using the Mindful Self-Care Scale alongside Ryff's model of psychological wellbeing in this population. It further suggests that self-care may carry particular relevance in Khyber Pakhtunkhwa, where stigma and cultural norms constrain formal help-seeking, and that public-private university status, family structure, and living arrangements are all plausible sources of variation in students' self-care and wellbeing that warrant direct examination. The present study was designed to address these gaps.

Materials and Methods

Study Design and Setting

An analytic cross-sectional study was conducted among students enrolled at four universities in Peshawar: two public universities (Khyber Medical University and the University of Peshawar) and two private universities (Gandhara University and City University of Science and Information Technology).

Sample and Sampling Procedure

The combined target population across the four universities was 29,481 students. Using a 95% confidence level and a 5% margin of error, a minimum sample size of 384 was calculated and then increased to account for an anticipated 10% non-response rate, yielding a final target sample of 422 participants. Multistage sampling was used, with the sample allocated proportionately to each university's student population: 26 students from Gandhara University, 53 from City University, 200 from the University of Peshawar, and 143 from Khyber Medical University. Eligible participants were enrolled students aged 18 years or older who were willing to participate and who self-reported no current diagnosis of, or treatment for, mental illness. Students who had experienced a recent significant stressful life event, had a history of psychiatric illness, were currently on academic leave, or had a chronic, congenital illness or disability were excluded.

Measures

Self-care. Self-care was assessed using a culturally adapted 31-item version of the Mindful Self-Care Scale, originally developed by Cook-Cottone and Guyker (2018) and adapted for this study following the cross-cultural adaptation guidelines described by Beaton et al. (2000). The adapted instrument comprises seven

domains: mindful relaxation, nutrition and eating habits, sleep and rest, physical activity, appearance and self-presentation, self-compassion and purpose, and supportive relationships. Items were rated on a five-point frequency scale ranging from 1 (never) to 5 (always). The scale demonstrated high internal consistency in this sample (Cronbach's $\alpha = .837$).

Psychological wellbeing. Psychological wellbeing was measured using an adapted 27-item version of Ryff's Psychological Well-Being Scale (Ryff, 2023), covering self-acceptance, positive relationships, autonomy, environmental mastery, purpose in life, and personal growth. Items were rated on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale also demonstrated high internal consistency in this sample (Cronbach's $\alpha = .919$).

Data Analysis

Data were analyzed using SPSS Version 26. Descriptive statistics were computed for demographic variables and scale scores, and reliability was assessed using Cronbach's alpha. Pearson correlation was used to examine the relationship between self-care and psychological wellbeing, and linear regression was used to assess the predictive contribution of self-care to psychological wellbeing. Group comparisons were conducted using ANOVA, Tukey's HSD post hoc test, and chi-square analyses where appropriate.

Results

Sample and Sociodemographic Characteristics

Data were collected from all 422 targeted participants, exactly matching the calculated, non-response-adjusted sample size, with proportional representation from two public universities (University of Peshawar and Khyber Medical University) and two private universities (City University of Science and Information Technology and Gandhara University). The sample comprised 230 women (54.5%) and 192 men (45.5%). Most participants (approximately 55%) were aged 21–23 years, with smaller proportions aged 18–20 years ($\approx 25\%$), 24–26 years ($\approx 14\%$), and above 26 years ($\approx 6\%$). Consistent with the sampling frame, 80.6% of participants were enrolled at public universities and 19.4% at private universities. Fourth-year students formed the largest year-of-study group (32%), followed by second-year (28%) and third-year (26%) students, with first-year students forming the smallest group (14.5%).

Variable	Category	n	%
Degree Program	BS Nursing	103	24.4
	Health Sciences	14	3.3
	Other programs	305	72.3
Marital Status	Single	382	90.5
	Married	40	9.5
Living Situation	With family	220	52.1
	Hostel	190	45.0
	Alone	12	2.8
Parental Income (PKR/month)	25,000–50,000	121	28.7
	50,001–100,000	135	32.0
	More than 100,000	166	39.3
Personal Income (PKR/month)	None	313	74.2

	Less than 10,000	25	5.9
	10,000–25,000	33	7.8
	More than 25,000	51	12.1
Parental Income Source	Government job	130	30.8
	Private job	72	17.1
	Business	62	14.7
	Other	158	37.4
Chronic Health Condition	Yes	62	14.7
	No	360	85.3

Note. $N = 422$ for all variables except where indicated otherwise in the text (age and year of study, reported as approximate percentages).

Descriptive Statistics

Variable	N	Mean	SD	Skewness	SE
Self-care	422	3.35	.519	-.751	.119
Psychological wellbeing	422	3.84	.654	-.957	.119
Valid N (listwise)	422				

The mean self-care score was 3.35 (SD = 0.519), indicating a moderate level of self-care among participants. The mean psychological wellbeing score was 3.84 (SD = 0.654), indicating a moderately high level of wellbeing. Both variables were mildly negatively skewed (self-care skewness = -0.751 ; psychological wellbeing skewness = -0.957), indicating that most participants scored toward the upper end of each scale.

Reliability

Variable	Cronbach's Alpha	N of Items
Self-care	.837	31
Psychological wellbeing	.919	27

The adapted self-care scale showed high internal consistency (Cronbach's $\alpha = .837$; 31 items), as did the psychological wellbeing scale (Cronbach's $\alpha = .919$; 27 items).

Pearson Correlation Between Self-Care and Psychological Wellbeing

Variable	Self-care	Psychological wellbeing
Self-care	1	.654
Psychological wellbeing	.654	1
Sig. (2-tailed)		< .001
N	422	422

Note. $p < .01$ (2-tailed).

Pearson correlation analysis showed a strong, positive, and statistically significant relationship between self-care and psychological wellbeing, $r(420) = .654$, $p < .001$. Students who reported higher levels of self-care also tended to report higher levels of psychological wellbeing, and the null hypothesis of no significant relationship is therefore rejected. Because the study used a cross-sectional design, this finding

indicates a substantial association between the two variables but does not establish that self-care causes higher psychological wellbeing.

Regression Analysis Predicting Psychological Wellbeing From Self-Care

Source	Sum of Squares	df	Mean Square	F	p
Regression	76.880	1	76.880	313.583	< .001
Residual	102.970	420	.245		
Total	179.850	421			

Predictor	R	R ²	Adj. R ²	SE	B	SE(B)	β	t	F	p
Self-care	.654	.427	.426	.495	.824	.047	.654	17.708	313.58	< .001
Constant					1.083	.158		6.866		< .001

Note. Dependent variable = psychological wellbeing; predictor = self-care.

Linear regression showed that self-care was a significant positive predictor of psychological wellbeing. The model produced $R = .654$ and $R^2 = .427$, indicating that self-care explained 42.7% of the variance in psychological wellbeing; the adjusted R^2 of .426 indicates that this estimate remained stable after adjusting for sample size and the number of predictors. The overall model was statistically significant, $F(1, 420) = 313.583$, $p < .001$, and the coefficient for self-care was also significant ($B = .824$, $SE = .047$, $\beta = .654$, $t = 17.708$, $p < .001$). A one-unit increase in self-care was associated with an estimated 0.824-unit increase in psychological wellbeing.

Chi-Square Analyses: Self-Care and Sociodemographic Variables

Self-care scores were dichotomized into low/moderate versus high categories and tested for association with each sociodemographic variable using chi-square tests.

Variable	χ^2	df	p	Result
Gender	9.106	1	.003	Significant
University type	0.780	1	.377	Not significant
Year of study	7.955	3	.047	Significant
Degree program	1.287	2	.525	Not significant
Marital status	2.510	1	.113	Not significant
Living situation	2.833	2	.243	Not significant
Parental income	0.468	2	.791	Not significant
Personal income	0.748	3	.862	Not significant
Parental income source	1.752	3	.625	Not significant
Chronic health condition	0.043	1	.836	Not significant

Self-care was significantly associated with gender ($\chi^2 = 9.106$, $df = 1$, $p = .003$): 33% of male students fell into the high self-care category compared with 20% of female students. Self-care was also significantly associated with year of study ($\chi^2 = 7.955$, $df = 3$, $p = .047$), with second-year students showing the highest proportion of high self-care (31%) and fourth-year students the lowest (17%). No other sociodemographic variable showed a significant association with self-care category.

Chi-Square Analyses: Psychological Wellbeing and Sociodemographic Variables

Psychological wellbeing scores were similarly dichotomized into low/moderate versus high categories and tested against each sociodemographic variable.

Variable	χ^2	df	p	Result
Gender	0.315	1	.575	Not significant
University type	3.548	1	.060	Not significant
Year of study	8.431	3	.038	Significant
Degree program	5.405	2	.067	Not significant
Marital status	0.066	1	.797	Not significant
Living situation	3.531	2	.171	Not significant
Parental income	4.319	2	.115	Not significant
Personal income	2.748	3	.432	Not significant
Parental income source	7.862	3	.049	Significant
Chronic health condition	0.210	1	.647	Not significant

Psychological wellbeing was significantly associated with year of study ($\chi^2 = 8.431$, $df = 3$, $p = .038$): the proportion of students in the high wellbeing category declined steadily from 80% in the first year to roughly 70%, 65%, and 60% by the second, third, and fourth years, respectively. Wellbeing was also significantly associated with parental income source ($\chi^2 = 7.862$, $df = 3$, $p = .049$), with students from business-owning families showing the highest proportion of high wellbeing (82%). No other sociodemographic variable showed a significant association with wellbeing category.

One-Way ANOVA: Self-Care and Psychological Wellbeing Across Sociodemographic Groups

Mean self-care and psychological wellbeing scores were compared across sociodemographic groups using one-way ANOVA with Tukey's HSD post hoc test where the omnibus test was significant.

Grouping Variable	F (self-care)	p	F (wellbeing)	p
Age group	0.127	.944	1.225	.300
Year of study	1.929	.124	3.168	.024
Degree program	0.514	.598	0.829	.437
Living situation	2.744	.065	2.401	.092
Parental income	3.110	.046	3.253	.040
Personal income	0.973	.405	1.384	.247
Parental income source	1.930	.124	2.252	.082

For self-care, only parental income showed a statistically significant overall difference across groups ($F = 3.110$, $p = .046$); however, the Tukey HSD post hoc test could not identify which specific pair of income groups differed. Age group, year of study, degree program, living situation, personal income, and parental income source showed no significant difference in mean self-care scores.

For psychological wellbeing, year of study showed a significant overall difference ($F = 3.168$, $p = .024$), and Tukey's HSD post hoc test confirmed that first-year students scored significantly higher than fourth-year students ($p = .020$). Parental income also showed a significant overall difference in wellbeing ($F = 3.253$, $p = .040$), although Tukey's HSD could not pinpoint the specific pair of income brackets responsible. Age

group, degree program, living situation, personal income, and parental income source showed no significant difference in mean wellbeing scores.

Discussion

Self-Care Among University Students

Participants in this study reported a moderate overall level of self-care ($M = 3.35$, $SD = 0.519$). A broadly similar pattern has been reported elsewhere: Brouwer et al. (2021) found that self-care scores among U.S. nursing students during COVID-19 were significantly and negatively associated with psychological distress, and Endo and Goryoda (2025) found that greater readiness to engage in mental health self-care was associated with more well-being-promoting behavior among Japanese university students in rural areas. Dando et al. (2023) reported a similarly moderate self-care level ($M = 3.96$, $SD = 0.81$) among health educators and professionals in the Hail region of Saudi Arabia, together with a comparably strong correlation with mental wellbeing ($r = .661$, $p < .001$) to the one observed in the present sample. Using a repeated-measures design, Simerly and Blackhart (2021) found that self-care and stress were reciprocally linked over an academic term among American undergraduates – students who practiced more self-care later reported less stress, and students under more stress later practiced less self-care – which is consistent with self-care being both a cause and a consequence of student wellbeing rather than a purely one-directional influence. The moderate level of self-care observed here may reflect the competing demands of coursework, examinations, and family responsibilities that characterize university life in this setting, similar to the pattern Estacio and Acab (2021) described among first-year Filipino college students who nonetheless maintained active self-care practices across several domains.

Psychological Wellbeing Among University Students

Participants reported a moderately high level of psychological wellbeing ($M = 3.84$, $SD = 0.654$), indicating generally positive psychological functioning. This finding is consistent with Khawaja and Kausar's (2025) study of Pakistani university students, which found that emotional regulation, strong family and interpersonal relationships, social support, and religious beliefs and practices were associated with higher wellbeing, while sense of community and neighborhood ties played a comparatively smaller role. This pattern suggests that in the Pakistani cultural context, emotional and family-based resources may matter more for students' psychological wellbeing than the broader community environment – consistent with the family- and community-oriented character of Peshawar's Pashtun cultural setting described earlier.

The Self-Care–Wellbeing Relationship

The strong, significant positive correlation between self-care and psychological wellbeing observed here ($r = .654$, $p < .001$), and the finding that self-care significantly predicted wellbeing and explained 42.7% of its variance, is consistent with the broader pattern described above: better self-care was associated with better psychological functioning across the U.S., Japanese, and Saudi Arabian samples reviewed here (Brouwer et al., 2021; Endo & Goryoda, 2025; Dando et al., 2023), as well as in Khawaja and Kausar's (2025) Pakistani sample. Taken together, this supports the study's central hypothesis and suggests that self-care may be a meaningful, modifiable factor associated with psychological wellbeing among university students in this setting, regardless of the specific cultural or institutional context.

Self-Care and Gender: An Unexpected Finding

Male students in this sample were more likely than female students to fall into the high self-care category (33% versus 20%, $\chi^2 = 9.106$, $p = .003$). This result runs counter to the pattern reported in much of the

international literature, where female students more commonly report higher self-care. Findings from Pakistan itself are mixed on this point: Rehman et al. (2018), studying university students in Karachi, found that female students reported healthier day-to-day habits, while male students rated their own health and happiness more favorably – illustrating that self-reported health behavior and self-reported wellbeing do not always move in the same direction by gender. Estacio and Acab (2021) offer a further possible explanation, reporting that male students in their Filipino sample focused relatively more on physical self-care while female students focused relatively more on emotional self-care; because the present study combined all seven self-care domains into a single overall score, a similar underlying pattern could have produced a higher combined score for male participants even if the domains they emphasized differed from those emphasized by female participants. It is also possible that female students in this sample had comparatively less discretionary time for self-care because of household and family responsibilities, or that male and female participants interpreted some self-care items differently; self-report and social desirability biases cannot be ruled out. Regardless of the underlying mechanism, this finding suggests that self-care promotion programs in this setting may benefit from a gender-sensitive approach rather than a single undifferentiated program for all students.

Self-Care and Wellbeing by Year of Study

Self-care did not differ significantly by year of study overall ($F = 1.929$, $p = .124$), although the proportion of students with high self-care declined numerically from the second to the fourth year. Psychological wellbeing, however, differed significantly by year of study ($F = 3.168$, $p = .024$), with first-year students reporting significantly higher wellbeing than fourth-year students (Tukey HSD, $p = .020$), and the proportion of students in the high-wellbeing category falling from roughly 80% in the first year to about 60% by the fourth year. This pattern may reflect first-year students' initial enthusiasm about university life, in contrast with the mounting academic and career-related pressures typically faced by final-year students. Notably, this pattern runs in the opposite direction to that reported by Liu et al. (2019) in a four-year Chinese cohort study, where depression and stress scores were highest in the first two years and eased somewhat by the third and fourth years. This contrast suggests that the trajectory of student wellbeing across the university years may depend on the surrounding academic and cultural system rather than following a single universal pattern, and that final-year support needs in Peshawar may differ from those documented elsewhere.

Financial Circumstances and Wellbeing

Parental income was significantly associated with both self-care ($F = 3.110$, $p = .046$) and psychological wellbeing ($F = 3.253$, $p = .040$), and parental income source was significantly associated with the wellbeing category specifically ($\chi^2 = 7.862$, $p = .049$), with students from business-owning families showing the highest proportion of high wellbeing (82%). Although Tukey's HSD post hoc test could not identify precisely which income groups differed on either outcome, the overall pattern suggests that financial stability and family economic circumstances may support both self-care engagement and psychological wellbeing among students in this population, consistent with the broader recognition that socioeconomic resources shape students' capacity to prioritize their own wellbeing alongside academic demands.

Strengths and Limitations

This study has several strengths. The sample of 422 students is comparatively large for this area of research and was achieved in full, without falling short of the calculated target. The sample was drawn from both

public and private universities, providing a fuller picture of self-care and wellbeing across Peshawar's higher education sector than a single-institution study would allow. Both instruments showed strong internal consistency in this sample (Cronbach's $\alpha = .837$ for self-care; $.919$ for wellbeing), and the analysis combined descriptive statistics, reliability analysis, correlation, regression, chi-square tests, and one-way ANOVA with Tukey's HSD post hoc testing, providing a comparatively thorough statistical picture for a topic that has received limited prior research attention among Pakistani university students.

Several limitations should also be noted. First, the cross-sectional design captured data at a single point in time, so causal relationships between self-care and psychological wellbeing cannot be established from these findings; self-care and wellbeing may influence each other reciprocally, as suggested by the longitudinal findings of Simerly and Blackhart (2021). Second, data were collected through self-report questionnaires, which are subject to socially desirable responding and imperfect recall; this is particularly relevant to the unexpected gender-based self-care finding, where social desirability or differing interpretations of self-care items between male and female respondents cannot be ruled out as contributing factors. Third, the study was conducted only at four universities in Peshawar, which may limit the generalizability of the findings to students in other cities and provinces of Pakistan. Fourth, the multistage proportionate sampling technique, while reflecting the actual population distribution across universities, produced uneven subgroup sizes for some demographic categories (for example, university type and degree program), which required some categories to be combined during analysis and may have reduced statistical power for comparisons involving smaller subgroups. Fifth, a small number of participants had missing responses on one or more variables, so the valid sample size for individual chi-square analyses ranged from 414 to 421 rather than the full 422; this is unlikely to have meaningfully affected the overall findings but is noted for completeness. Finally, several variables known to influence psychological wellbeing – including academic stress, personality traits, coping style, and specific life events – fell outside the scope of this study and should be incorporated in future research.

Conclusion and Recommendations

This study found a moderate level of self-care and a moderately high level of psychological wellbeing among university students in Peshawar, consistent with international findings that most students engage in some degree of self-care despite the competing demands of academic life (Ayala et al., 2018; Zhong & Xie, 2023). Self-care was strongly and positively associated with psychological wellbeing and significantly predicted it, accounting for 42.7% of its variance – an effect size broadly comparable to that reported by Schmitt and Prasastyoga (2024) among self-employed adults and by Posluns and Gall (2020) among helping professionals, suggesting that this association is not specific to any one occupational or life stage but reflects a more general pattern. Self-care and wellbeing also varied meaningfully across specific student subgroups: male and second-year students reported higher self-care, while first-year students and those from financially stable or business-owning families reported higher wellbeing.

These findings support university-level efforts to promote healthy self-care practices, while recognizing that gender, academic year, family structure, and socioeconomic circumstances may all shape how students engage in self-care and experience wellbeing (Ashraf et al., 2025; Fazal & Abbasi, 2025). Universities should consider health education sessions, workshops, and counseling services that build self-care skills, with particular attention to final-year students, who reported comparatively lower wellbeing, and to gender-sensitive programming given the unexpected gender pattern observed here. Financial support

services, such as scholarships and needs-based aid, may also help reduce the burden on students from less financially stable households. Because the cross-sectional design cannot establish causal direction, these findings should be interpreted as an association rather than evidence that self-care causes improved wellbeing. Longitudinal designs are needed to clarify this direction, and replication in other provinces and institutions, with larger and more evenly distributed subgroups, would strengthen the generalizability of these results. Mixed-methods and qualitative research could usefully explore how students in the Pashtun cultural context understand and prioritize self-care, particularly the gender pattern identified here, and intervention studies are needed to test whether structured self-care programs, delivered through university counseling or wellness services, can improve wellbeing directly. Future research would also benefit from examining resilience, social support, academic stress, coping strategies, mindfulness, emotional intelligence, and family environment alongside self-care, to build a fuller picture of what supports psychological wellbeing among university students in this setting.

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