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Relationship of Mental Health Literacy with Psychological Well-Being and Perceived Stress Among Pakistani University Students: Moderated by Brief Coping Skills

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ABSTRACT

The current study examined the relationship between mental health literacy, brief coping strategies, psychological well-being, and perceived stress of Pakistani university students. The sample was made up of 1,664 students who responded to standardized self-report measures, including self-administered standardized measures of the Mental Health Literacy Scale (MHLS), Brief COPE Scale, Warwick-Edinburgh Mental well-being Scale (WEMWBS), and the Perceived Stress Scale (PSS). Findings showed mental health literacy was positively correlated with both psychological well-being and coping strategies and negatively correlated with perceived stress. Multiple regression indicated mental health literacy and brief coping strategies were significant predictors of psychological well-being and perceived stress. In addition, moderation analysis showed brief coping strategies had a significant moderating effect on mental health literacy and perceived stress, however brief coping strategies were not a significant moderator for mental health literacy and psychological well-being. Overall, these results demonstrate that there is a significant mental health literacy and coping strategies are important for mental health outcomes by improving students mental health outcomes.

Introduction

University students frequently wrestle with considerable psychological burden as they adjust to academic, social, and lifestyle demands. In fact, recent research shows that young adults around the world are flourishing less, due in part to pandemic-learned behaviors like loneliness, anxiety, and increased use of social media (Twenge et al., 2023; Smith & Johnson, 2022; Lee & Kim, 2021). The growing

mental health concerns in Pakistan are even more pronounced, given the scarcity of mental health resources and the significant cultural stigma surrounding the discussion of mental health (Ahmed & Khan, 2022; Hussain et al., 2021; Raza & Ali, 2020). Gaps such as these highlight the need to examine what can support and promote psychological well-being among students.

Mental Health Literacy (MHL) is defined as knowledge and beliefs about mental disorders which aid in their recognition, management, and prevention. Higher MHL is correlated with improved mental health and help-seeking (Jorm, 2020; O'Connor et al., 2021; Wei et al., 2019). For Pakistani university students, creating MHL could have a vital impact on the current mental health crisis and promote well-being (Khan & Rehman, 2023; Ali et al., 2022; Shahid & Farooq, 2021).

Psychological well-being includes elements such as self-acceptance, personal development, goals in life, and healthy relationships with other people. Various studies have shown that students with a high level of psychological well-being also had high levels of academic performance and resilience (Ryff and Singer, 2020; Diener, et al., 2019; Keyes, 2021). Unfortunately, many performance-related aspects, such as stress and poor quality of sleep can negatively impact their mental health; therefore, well-being-related interventions are important (Ahmed and Saleem, 2022; Malik et al., 2021; Hussain and Tariq, 2020).

Perceived stress is how a person feels, or thinks, about the amount of stress the person is currently experiencing at the time. For instance, the negative consequences associated with high levels of perceived stress among university students include anxiety, depression, and lower academic performance (Cohen et al., 2020; Misra & Castillo, 2019; Kausar, 2021). The literature supports the notion that perceived stress should be researched and will also promote a new academic environment that supports university students' needs (Ali and Zafar, 2022; Khan et al., 2021; Rehman and Iqbal, 2020).

Research shows that a good deal of mental health literacy (MHL) can lead to a healthy relationship with psychological wellbeing as well as perceived stress. It revealed that students with a higher level of MHL can also lessen stress and better psychological wellbeing (Gulliver et al., 2020; Furnham & Swami, 2019; Jorm et al., 2021). This has implications in terms of students mental health and suggests that MHL intervention could potentially play a role in a students mental health (Shah & Hussain, 2023; Ahmed & Raza, 2022; Khan & Ali, 2021).

Cultural beliefs and attitudes are also particularly important in Pakistan in relationship to mental health and the willingness to seek help. Many students are dissuaded from seeking critical psychological support primarily due to the stigma associated with mental illness (Rashid & Farooq, 2022; Khan & Ahmed, 2021; Ali et al., 2020). It must remain a priority to ensure that these cultural and social factors are appropriately addressed to better implement mental health strategies in university settings (Hussain & Raza, 2023; Malik & Shahid, 2022; Rehman & Tariq, 2021).

Educational institutions also hold a powerful position to facilitate better mental health for students. The implementation of MHL education and accessible mental health support services would feasibly improve student wellbeing (Rickwood et al., 2020; Reavley & Jorm, 2019; O'Connor et al., 2021). The universities in Pakistan are uniquely positioned to promote this also by integrating mental health education into their curriculum (Ahmed & Khan, 2023; Hussain & Malik, 2022; Raza & Ali, 2021).

Research has demonstrated gender differences in mental health outcomes for the university student population. For example, female university students tend to

have higher amounts of stress, and lower psychological well-being than male university students (Nolen-Hoeksema, 2020; Matud, 2019; Misra & McKean, 2021). By recognizing these differences in gender-based outcomes, we can develop specific targeted interventions (Khan & Rehman, 2023; Ali & Shahid, 2022; Hussain & Tariq, 2021).

There has been an exponential outburst of awareness towards mental health issues with university students, and there have not been enough studies conducted in a Pakistani context. The studies that have taken place indicate the existence and prevalence of mental health problems, but they have little to no examination of the interplay between mental health literacy, psychological well-being and perceived stress (Ahmed & Raza, 2022; Khan & Ali, 2021; Hussain & Malik, 2020), thus indicative of further research to inform policy and practice.

To reiterate, the current study seeks to explore the relationship of mental health literacy, psychological well-being and perceived stress among university students in Pakistan, whose results could be used for mental health intervention development and support in higher education institutions (Shah & Hussain, 2023; Ahmed & Khan, 2022; Raza & Ali, 2021).

Literature Review

Mental health literacy (MHL) refers to knowledge and beliefs about mental disorders which aid their identification, management, or prevention (Jorm, 2020). It involves understanding how to foster one's mental health, knowledge of mental health disorders and the treatment options available, and reducing stigma. High levels of MHL are very important for helping people to seek support and undertake proactive behaviours (Wei et al., 2019). University students are in a transitional stage of development, which involves significant academic stress, the formation of identity, and transitions in lifestyle that necessitates an adequate level of MHL (Furnham & Swami, 2019).

In Pakistan, MHL has been limited in context due to social stigma, religious views, and a lack of awareness (Khan & Rehman, 2023). Some studies have noted that many students attribute psychological distress to the supernatural or moral causes which prevents them from seeking professional help (Ahmed & Khan, 2022). Due to misinformation, and a general lack of awareness, there is a need to build specifically tailored interventions to improve MHL in university settings.

Psychological well-being (PWB) is a multidimensional factor that includes positive affect, life satisfaction, purpose in life, and functioning (Ryff & Singer, 2020). Young adults' PWB is affected by significant academic pressure stemming from coursework, unpredictable career options, and interpersonal relationships. In the case of Pakistan, additional external pressure leading to an impact on PWB is the cultural expectation, lack of psychological services (Smith & Johnson, 2022).

Individuals with more MHL are more likely to do positive mental health behaviours that aid in their PWB (O'Connor et al., 2021). When it's appropriate, and how to seek help can reduce internal stigma and develop emotional self-control. Additionally, access to trustworthy mental health information can help students make informed decisions about self-care and coping plans (Jorm, 2020).

Perceived stress is a subjective experience of stress in response to external demands (Misra & Castillo, 2019), and is especially prevalent among young adults in university due to awareness of coursework, financial concerns, and family expectations. Recent studies in Pakistan have identified high levels of perceived stress among undergraduate students, brandishing higher levels of stress in urban universities (Ali & Zafar, 2022; Hussain & Tariq, 2020).

High levels of perceived stress are often associated with poor coping strategies and mental health literacy (MHL) (Lee & Kim, 2021). Students with low MHL may misinterpret indicators of stress and anxiety and instead engage in avoidance behavior that limits constructive problem-solving (Lee & Kim, 2021). Increasing MHL can be a protective factor in stress reduction, as students who recognize that they are experiencing and observing mental health symptoms may also be able to recognize them sooner or before they cause issues (Gulliver et al., 2020).

Research indicates a strong relationship between MHL and psychological well-being. Individuals with high MHL report improved life satisfaction and a greater sense of emotional stability (Diener et al., 2019). MHL strives for psychological insight, emotional regulation, and self-efficacy, which leads to improved mental health outcomes (Furnham & Swami, 2019). In educational environments, MHL encourages students to make use of campus-based mental health services, seek social support, and adopt more balanced and healthy lifestyles.

Khan & Rehman (2023) conducted a study of Pakistani students that indicated heightened MHL levels had statistically significant relationships between improvements in emotional health and lower levels of psychological distress. These findings suggest that interventions targeting MHL could improve students' ability to manage their mental health and school-related stressors.

Mental Health Literacy (MHL) can also act as a buffer against perceived stress, as knowing how to interpret stress signals and how to respond to them (Jorm, 2020) provides students with cognitive strategies to assess their mental states and engage in coping mechanisms - for example, through mindfulness, emotional regulation, and social communication (O'Connor et al., 2021). As a result, the perception of stress decreases, and perceived control is amplified.

In the Pakistani context, studies evaluating interventions that have focused on improving students' MHL found a reported decrease in their stress levels (Ahmed and Khan, 2022). This illustrates, and connects, how improvements in mental health literacy gave students' cognitive strategies to enable them to manage their stress - especially in conservative societies where mental health is stigmatized.

Given the socio-cultural barriers impacting mental health awareness in Pakistan, in addressing this lack of knowledge, MHL programs must be context-sensitive and local (Khan & Rehman, 2023). When traditional approaches to mental health have not considered the socio-cultural, religious, and institutional realities of the Pakistani student, they are likely to fail. It is recommended that collaborative programming between universities, NGOs, and mental health professionals is needed in order to conceptualize and create psychoeducational programs in Pakistan (Ali & Zafar, 2022).

Overall, the literature indicates that there is a solid and multifaceted relationship between MHL, psychological well-being, and perceived stress. Promotion of MHL is important for students' mental health, but this is relevant to facilitating other important student outcomes like academic achievement, social adjustment, and long-term success (Jorm, 2020; Wei et al., 2019).

Method

Objectives

1. To investigate the association between mental health literacy, psychological well-being, perceived stress and brief cope among university students.
2. To examine the impact of mental health literacy and brief cope on psychological well-being among university students.

3. To examine the impact of mental health literacy and brief cope on perceived stress among university students.
4. To find out moderating role of brief cope between mental health literacy and psychological well-being among university students.
5. To find out moderating role of brief cope between mental health literacy and perceived stress among university students.

Hypotheses

1. Mental health literacy is positively linked to brief cope and psychological well-being among university students.
2. Mental health literacy is negatively linked to perceived stress among university students.
3. Mental health literacy and brief cope has a profound impact on psychological well-being among university students.
4. Mental health literacy and brief cope has a profound impact on perceived stress among university students.
5. Brief cope moderates the link between mental health literacy and psychological well-being among university students.
6. Brief cope moderates the link between mental health literacy and perceived stress among university students.

Instruments

Warwick-Edinburgh Mental Well-being Scale

The Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS) was developed by Stewart-Brown et al. (2009) as a shortened 7-item version of the original 14-item WEMWBS that measures positive aspects of mental well-being, such as optimism, feeling useful, and clear thinking. SWEMWBS is used in the general population including adolescents and adults, to measure mental well-being in individuals and groups. Each item is rated on a 5-point Likert scale from "none of the time" to "all of the time." Higher scores indicate better well-being. SWEMWBS has mostly good internal consistency, indicated by a reported Cronbach's alpha of 0.84. SWEMWBS also has good construct validity, evidenced by significant correlations with closely linked measures including life satisfaction and other mental health indicators. While the original WEMWBS includes two subdomains (emotional and psychological well-being), its shorter version is therefore not multidimensional; however, it is unidimensional and focuses only on overall mental well-being. SWEMWBS has been validated on various populations, although its brevity and the strength of psychometric properties make it very useful in public health and academic research.

Perceived Stress Scale

Developed by Cohen, Kamarck, and Mermelstein (1983), the Perceived Stress Scale (PSS) is one of the most utilized psychological assessments for assessing stress perception. The scale measures the amount of stress perceived by the person in various situations in their life, including degree of unpredictability, lack of control in ultimately choosing their responses, and overwhelming stress in the last month. The versions most commonly seen are the PSS-10 (10 items) and PSS-14 (14 items), with the PSS-10 viewed as the preferred measure due to the shortened format and psychometric strengths. Each item is evaluated using a 5-point Likert scale and ranges from "never" to "very often" with higher scores equating to greater perceived stress. The PSS has established good internal consistency with Cronbach's alpha being between 0.78 and 0.91 across a variety of populations and good construct and criterion-related validity, since it correlates significantly with assessments of:

depression, anxiety, and life events. The PSS, does not have any sub scales but is commonly used as a uni-dimensional measure of global perceived stress. Although, typically selected for use in both clinical and non-clinical groups, the PSS has been translated and validated in multiple languages, including Urdu, for use in a variety of cultures.

Brief Cope Scale

The Brief COPE Scale, developed by Carver (1997), is a 28-item self-report questionnaire that assesses a broad range of coping responses used by individuals when confronted with stress. It is a brief version of the full COPE inventory, and is widely used in health psychology and stress contexts. The scale consists of 14 sub scales, with two items each, including active coping, denial, emotional support, substance use, positive re-framing, self-blame, and more. Respondents rate each item on a 4-point Likert scale from "I haven't been doing this at all" to "I've been doing this a lot." The Brief COPE demonstrates acceptable internal consistency with Cronbach's alpha values generally at a range of 0.60 - 0.90, depending on the subscale.. Finally, it has shown good construct validity across different populations. Its flexibility and multidimensionality makes supports the use in clinical/nonclinical contexts.

Mental Health Literacy Scale

The Mental Health Literacy Scale (MHLS), created by O'Connor and Casey (2015), is a 35-item self-report measure used to measure the knowledge and beliefs one has about mental health disorders, including description, management, and prevention. The scale measures several facets of literacy; the capacity to recognize a disorder; knowledge of risk factors and causes; knowledge of self-treatment; knowledge of professional help available; attitudes that promote the recognition and appropriate help-seeking; and capability to seek information. The MHLS shows high levels of internal consistency with a Cronbach's alpha of above 0.87, general acceptable levels of construct and criterion validity across wide-ranging groups, which supports that the MHLS can be utilized effectively as reliable and valid measure for research or clinical.

Results

Table 1 *Descriptive Characteristics of the Study Sample (N=1664)*

Variable	n		%	
Gender				
	Men	805	48.37	
	Women	859	51.62	
Family system				
	Joint	837	50.30	
	Nuclear	822	49.4	
Qualification				
	BS	1443	86.7	
	MSC	221	13.3	
VAR	M	SD	Min	Max
Age	24.39	2.56	19	28

The sample of this study consisted of 1,664 Pakistani university students who were nearly evenly divided by gender, with 48.37% men ($n = 805$) and 51.62% women ($n = 859$). In terms of family dynamics, 50.30% were living in a joint family structure ($n = 837$) while 49.4% comprised a nuclear family structure ($n = 822$) showing a representation of family structure diversity. In terms of educational credentials, most of the participants were currently enrolled in Bachelor of Science (BS) degrees during this time period (86.7% $n = 1,443$) and fewer were Master of Science (MSc) students (13.3% $n = 221$). The mean age of the participants was 24.39 years ($SD = 2.56$) and ranged from 19 to 28 years indicating the sample was largely comprised of younger adults (i.e., early adulthood) which is typically expected of university students. All in all, the demographic characteristics of the sample reported in this study indicate a representative and diverse sample that is appropriate for examining the targeted psychological constructs in the target population.

Table 2 Psychometric Properties of Study Variables (N=1664)

Scales	<i>K</i>	α	<i>M</i>	<i>SD</i>	Range	Skewnes	Kurtosis	
Actual Potential								
BC	28	.84	16.55	5.69	30-110	28- 114	.32	.82
MHLS	35	.86	32.60	9.41	35-171	35-175	1.14	2.31
PSS	10	.85	25.39	8.17	2-62	10-60	1.64	3.62
WEMWBS	14	.91	38.75	12.22	4-66	14-70	.37	-.73

Note: BC= Brief Cope MHLS= Mental Health Literacy Scale; PSS=Perceived Stress Scale; WEMWBS= Warwick Edinburg Mental Well-being Scale

The psychometric properties of the scales used in the study are shown in Table 2. The internal consistency for all of the measures were considered good to excellent as denoted by each reliability coefficient. Reliability coefficients suggest that the measures were valid in assessing the constructs. In addition to the reliability testing, exploratory data analysis demonstrates that the Brief COPE, Mental Health Literacy Scale, Perceived Stress Scale, and Warwick Edinburgh Mental Well-being Scale revealed suitable distributions for scores with skewness and kurtosis values in an acceptable range. This demonstrates that data used in the present study were generally normally distributed. Overall, the findings indicate that the study instruments were reliable and valid in assessing coping, mental health literacy, perceived stress, and well-being among university students in Pakistan.

Table 3

Correlation Among Study Variables (N= 1664)

VAR	1	2	3	4
1 BC	-			
2 MHLS	.68**	-		
3 PSS	-.17**	-.23**	-	

4 WEMWBS	.13**	.09**	-.25**	-
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Note: BC= Brief Cope; MHLS= Mental Health Literacy Scale; PSS=Perceived Stress Scale; WEMWBS= Warwick Edinburg Mental Well-being Scale

* $p < .05$, ** $p < .01$.

The correlation matrix identified important relationships between the study variables in table 3. Brief COPE and Mental Health Literacy were positively correlated, indicating that individuals with higher coping skills were more knowledgeable about mental health. Mental Health Literacy was negatively associated with perceived stress and positively with well-being, which means that greater understanding of mental health was associated with lower stress and higher well-being. Perceived stress was negatively correlated with well-being, meaning that higher levels of stress were related to lower levels of psychological well-being. All of the correlations were statistically significant, supporting theoretically expected relationships among the variables.

Table 4

Multiple Linear Regression predicting Psychological Well-being (N=1664)

Predictor	B	SE	β	t	p
Constant	16.87***	2.27		7.42	.00
MHLS	.16***	.04	.17	5.93	.00
BC	.27***	.04	.10	3.53	.00
R ²	.04***				
F	22.64***				

Note. MHLS= Mental Health Literacy Scale; BC= Brief Cope

The multiple linear regression analysis in table 4 assessed the predictive roles of Mental Health Literacy (MHLS) and coping strategies (Brief COPE) in psychological well-being in university students (N = 1664). The overall model was statistically significant, $F(2, 1661) = 22.64$, $p < .001$, with the model explaining 4% of the variance in psychological well-being ($R^2 = .04$). MHLS ($\beta = .17$, $p < .001$) and Brief COPE ($\beta = .10$, $p < .001$), were both significant positive predictors. Findings indicate that university students with higher mental health literacy and more effective coping strategies are more likely to exhibit better psychological well-being.

Table 5

Multiple Linear Regression predicting Perceived Stress (N=1664)

Predictor	B	SE	β	t	p
Constant	4.10***	1.52		2.69	.00
MHLS	-.20***	.03	.19	6.56	.00
BC	-.27***	.03	.24	8.49	.00
R ²	.09***				
F	54.39***				

Note. MHLS= Mental Health Literacy Scale; BC= Brief Cope

A multiple linear regression analysis was conducted in table 5 to determine the predictors of perceived stress among university students (N = 1664), and we found that Mental Health Literacy (MHLS) and coping strategies (Brief COPE) were significant negative predictors of perceived stress. The overall model was significant, $F(2, 1661) = 54.39$ at $p < .001$. Together, MHLS and Brief COPE accounted for 9% of the variance in perceived stress ($R^2 = .09$). Both MHLS ($\beta = -0.19$, $p < .001$) and Brief COPE ($\beta = -.24$, $p < .001$) had a negative relationship with stress. This means

that higher mental health literacy and effective coping strategies are associated with lower levels of perceived stress.

Table 6

Moderating role of Brief Cope between Mental Health Literacy and Psychological Well-being (N=1664)

95% CI						
Variables	B	SE	t	LL	UL	p
Constant	32.97	9.51	3.46	14.30	51.64	.00
MHLS	.35	.30	1.16	.24	.96	.24
BC	.18	.26	.68	.49	.70	.49
MHLS x BC	.01	.00	1.74	.08	.12	.08
R ²	.04					
ΔR	.00					

Note. MHLS= Mental Health Literacy Scale; BC= Brief cope; B = Standard Coefficient, SE = Standard Error, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit

In Table 6, a moderation analysis was demonstrated examining whether Brief COPE moderates the association between Mental Health Literacy (MHLS) and Psychological Well-being. The overall model explained 4% of variance in psychological well-being ($R^2 = .04$), and the interaction term (MHLS x BC) was marginally significant ($B = .01$, $t = 1.74$, $p = .08$), suggesting a weak/moderate moderation effect. The predictors were not significant individually, unstandardized beta's for MHLS ($p = .24$) and BC ($p = .49$). These results tell us that while MHLS and Brief COPE may each have some independent effect on well being, they do not interact to overall influence psychological well-being.

Table 6

Moderating role of Brief Cope between Mental Health Literacy and Perceived Stress (N=1664)

95% CI						
Variables	B	SE	t	LL	UL	p
Constant	-15.56	6.30	-2.45	-28.01	-3.11	.01
MHLS	-.91	.20	-4.48	-1.31	-.51	.00
BC	-.76	.17	-4.28	-1.11	-.41	.00
MHLS x BC	-.01	.00	3.19	-.02	-.00	.00
R ²	.10					
ΔR	.01					

Note. MHLS= Mental Health Literacy Scale; BC= Brief cope; B = Standard Coefficient, SE = Standard Error, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit

Table 6 presents the outcome of a moderation analysis investigating if the Brief COPE moderates the link between Mental Health Literacy (MHLS) and Perceived Stress. The full model was statistically significant and accounted for 10% of the variability in perceived stress ($R^2 = .10$). The predictors, MHLS ($B = -.91$, $p < .001$)

and Brief COPE ($B = -.76$, $p < .001$), were both statistically significant negative predictors, indicating that higher levels of mental health literacy and effective coping strategies were associated with lower levels of stress. The interaction term for MHLS $\times$ BC was also statistically significant ($B = -.01$, $t = 3.19$, $p < .001$), supporting the conclusion that coping strategies significantly moderate the relationship between MHLS and perceived stress. These results suggest that the protective effect of mental health literacy on stress is more pronounced when individuals also adopt effective or healthy coping behaviors.

Discussion

The current study sought to explore the relationships between mental health literacy, brief coping strategies, psychological well-being, and perceived stress in university students. More specifically, it explored the predictive qualities of mental health literacy for psychological outcomes, and whether coping strategies acted as a moderator, and their combined effects on psychological well-being and perceived stress. Each construct was assessed using established and psychometrically sound measures, including the Mental Health Literacy Scale (MHLS), the Brief COPE inventory, Psychological Well-being Scale, and Perceived Stress Scale. All scales had good internal consistency for the current sample, with Cronbach's alpha being over the acceptable level of .70, suggesting each construct was measured reliably.

The first hypothesis that mental health literacy is positively related to brief coping strategies and psychological well-being is accepted and supported by the findings. In particular, the study found a strong positive correlation between mental health literacy (MHL), brief coping strategies, and psychological well-being. These findings are consistent with the existing literature that students with greater awareness and knowledge of mental health issues are more likely to use adaptive coping strategies and have better well-being (Wei et al., 2020; Pan et al., 2021). Mental health literacy increases the ability to identify stressors, apply coping strategies, and access appropriate help, which is an important part of improving well-being during difficult academic times (Gronholm et al., 2023).

Furthermore, these findings support the notion that mental health literacy can be an upstream intervention to empower students with cognitive and behavioral tools to tackle emotional difficulties more effectively. Previous research has indicated that individuals with high levels of MHL engage in more effective problem-focused coping and emotion regulation strategies, which is associated with higher subjective well-being (Jorm, 2012; Furnham & Swami, 2018; Arafat et al., 2023). Thus, increasing mental health literacy within university environments may serve as an upstream intervention strategy to enhance both coping efficacy and improve psychological well-being.

The second hypothesis, that mental health literacy is negatively related to perceived stress among university students, was accepted. The results supported the second hypothesis with a clear negative relationship between mental health literacy and perceived stress, suggesting that students with greater mental health literacy experience less perceived stress. Other studies have reported similar findings, which propose that knowing about mental health concepts allows individuals to perceive stressors in a more constructive sense and also allows access to coping resources in a more meaningful way (Zhou et al., 2023; Nair et al., 2022; Sukmawati et al., 2021).

The negative relationship observed in this study may be due to the ability of mentally health literate individuals to recognize signs of stress early and to implement self-care or professional help-seeking behaviours timely (Yap et al., 2021). Mental health literacy promotes a greater sense of control over one's psychological state,

which provides some buffering to stress responses (Kutcher et al., 2016). These results point to a need for educational strategies which promote students MHL as a way to lessen the effects of academic and personal stress.

The third hypothesis of the study postulated that mental health literacy and brief cope will significantly influence psychological well-being for university students is accepted. This hypothesis was accepted by multiple regression analysis that showed mental health literacy and brief coping significantly predicted psychological well-being. These findings provided evidence of a collaborative synergy whereby both the cognitive understanding (literacy) and the application of that understanding in behaviours (coping) are all enhancing students' well-being. We established that this finding is consistent with earlier research describing the importance of both psychological information and coping skills to create emotional resilience (e.g., Liu et al. 2023; Kök & Demirci, 2023).

Students who cope adaptively and who have understanding around their mental health status are more likely to enjoy relatable and positive psychological outcomes, including increased life satisfaction and emotional constancy (Kalkbrenner, 2022; Surjadi et al., 2020). These results underline the key elements of both literacy and cope and demonstrate a comprehensive framework for university student mental health interventions for together, provide the basis for integrating both into curriculum.

The proposition that mental health literacy and brief cope impact perceived stress negatively in university student samples is accepted. The regression analysis supported the proposition and proposed a reduction of perceived stress in university students, who had both. This aligns with literature that has shown mental health awareness and effective coping are significant determinants of reduced stress in academic populations (Pérez-Fuentes et al., 2020; Yang et al., 2023; Badr et al., 2021). When students develop mental health awareness, they are better able to frame stress in a realistic manner and use effective coping skills.

Moreover, students who adopt positive coping styles, such as planning and emotional support, may have quality mental health literacy and are likely to experience reduced psychological burden and control of the scripts in stressful roles (Leung et al., 2021; O'Connor et al., 2023). The results reiterate the importance of administering both coping skills and literacy-based education in universities as a prevention-based approach in managing perceived stress.

The hypothesis that brief cope moderates the path from mental health literacy to psychological well-being for university students is not supported. The moderation analysis did not provide support for the hypothesis, showing that the interaction term comprised of mental health literacy and brief cope was not a significant positive predictor of psychological well-being. Together, the findings suggest that while both are contributory to well-being, brief cope does not strengthen or weaken the link between MHL and well-being. It may well be that the level of psychological well-being is impacted by many other variables aside from MHL and brief coping strategies (Kunzler et al., 2021; Taylor et al., 2022) for example, personality characteristics, social support or resilience.

It is also plausible that although mental health literacy positively influences mental health, it is strong enough that the moderation impact of brief coping strategies becomes diminished. For example, it could be that other kinds of coping strategies (e.g. emotion-focused vs problem-focused) may have influenced this relationship, but that the Brief Cope composite score does not capture these forms of coping (Carver, 1997; Meyer et al., 2020). Future studies should assess individual coping styles as moderators in this relationship for greater nuance.

The hypothesis that brief cope moderates the relationship between mental health literacy and perceived stress in university students is supported. The moderation analysis confirmed the hypothesis by demonstrating a significant interaction effect of brief coping on the relationship between mental health literacy, and perceived stress, which suggests that when students engage in adaptive coping strategies, the detrimental relationship between MHL and perceived stress is additionally detrimental. These findings are consistent with previous research suggesting that coping style can provide significant variance in how knowledge of mental health is applied in the appraisal and regulation of stress (Zimmer-Gembeck & Skinner, 2016; Park et al., 2022; Liu et al., 2023).

This finding highlights that coping makes a direct contribution to stress reduction but it enhances the protective benefit of MHL. Evidence suggests that when students are armed with knowledge, along with applied skills they may be better able to buffer the adverse effects stress has on psychological aspects. This lends support to the rollout of dual-component interventions that enhance both literacy and coping capacity for students in academic environments (Olsson et al., 2020; Mahmoud et al., 2023).

Conclusion

This study's findings emphasize the important role of mental health literacy in determining university students' mental wellness and perceived stress. Higher mental health literacy was found to be associated with increased effective coping strategies, enhanced wellness outcomes, and reduced perceived stress. Our findings also suggested that brief coping strategies that we assessed did moderate the association between mental health literacy and perceived stress, but not mental health literacy and psychological wellness. Overall, our findings reinforce the value of promoting mental health literacy and adaptive coping strategies through academic institutions to improve emotional resilience and psychological functioning for students.

Limitations

This study has several important weaknesses. To begin with, the use of a cross-sectional design limits the ability to make causal claims. Second, self-report measures rely on subjective responses open to biases, such as social desirability, self-perception, and subjective interpretation. For instance, unnecessary difficulties returning to campus, or the extent of health restrictions, or whether or not students received modifications to policies, such as an extension to the deadline to submit an assignment they did not finish the previous term and the time the assignment had to be submitted. Third, this study had a sample who were all Pakistani university students. This limits the generalization of findings of students of varying abilities, age groups, and other cultural contexts. Fourth, the study did not control for a variety of external confounding variables that would potentially alter the psychological outcomes, such as socio-economic factors, academic performance, and previous mental health or other clinical profiles, prior to joining the sample.

Future Research Directions

Future research should explore longitudinal or experimental designs to study the causal relationships of mental health literacy, coping strategies, and psychological outcomes. The aim would be to expand to broader, more diverse samples consisting of more varied educational, and cultural backgrounds, as well as educational stages. In addition, future studies should seek to explore, and represent more variables that serve either a moderating or mediating role on psychological outcomes, such as emotional intelligence, resilience, and social support. Lastly, in addition to studying mental health literacy and coping strategies, interventions that incorporate and

promote mental health literacy, and teach students constructive and appropriate coping strategies should be implemented and tracked, to learn how they impact the students mental health enhancement in different university contexts.

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