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Academic well-being amongst university students: the roles of mindfulness and epistemic beliefs on psychological well-being

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ABSTRACT

Grounded in theory that psychological well-being predicts academic well-being, this cross-sectional study surveyed 84 students at Indonesian and Malaysian universities. Validated self-report scales assessed psychological well-being, academic well-being, mindfulness, and epistemic beliefs. Regression revealed psychological well-being explained 55.6 % of variance in academic well-being ($\beta = 0.749$, $p < .001$). Mindfulness correlated moderately with psychological well-being ($\beta = 0.59$, $p < .001$), whereas overall epistemic beliefs were non-significant; however, Certain Knowledge and Simple Knowledge showed small yet significant associations ($\beta = 0.21$, $p = .041$). Hayes PROCESS mediation confirmed a strong direct relationship between psychological and academic well-being ($\beta = 0.942$, $p < .001$). Indirect pathways through mindfulness ($\beta = -0.104$, 95 % CI [-0.220, 0.013]) or epistemic beliefs ($\beta = 0.000$, 95 % CI [-0.022, 0.026]) were minimal. The correlational pattern suggests cultivating present-moment awareness and nuanced views of knowledge may bolster psychological health and, consequently, academic adjustment.

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Introduction

A converging body of work demonstrates that university students who report higher psychological wellbeing also display higher academic wellbeing (Franzen et al., 2021; Indreswari et al., 2022; Tran et al., 2023; Zhafira & Palupi, 2022). Consistent with Ryff and Keyes (1995), we define psychological wellbeing as a sixfactor state comprising autonomy, environmental mastery, personal growth,

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positive relations, purpose in life, and self-acceptance. Academic well-being, meanwhile, encompasses students' academic satisfaction, perceived efficacy, and sense of institutional connectedness (Renshaw & Bolognino, 2016). Because robust psychological wellbeing fosters motivation, resilience, and engagement (Datu et al., 2023; Rusk, 2022), it is theoretically positioned as a direct positive predictor of academic well-being.

Although the psychological wellbeing and academic well-being association is well established, its boundary conditions remain unclear. We therefore consider two individual difference variables that could *mediate* this linkage. First, *mindfulness*—a presentmoment, nonjudgemental attentional stance – has been shown to alleviate stress (Sousa et al., 2021) and cultivate adaptive motivation (Hutmacher et al., 2022), thereby boosting psychological well-being (Egan et al., 2022; McKay & Walker, 2021; Steyn et al., 2016; Verhaeghen, 2021). Second, *epistemic beliefs* represent learners' conceptions of what knowledge is and how it is acquired (Guilfoyle et al., 2020). Two pivotal epistemic beliefs subdimensions are Certain Knowledge (CK, the view that knowledge is fixed) and Simple Knowledge (SK, the view that knowledge is made of discrete facts) (Delijar & Emaliana, 2021; Wiley et al., 2020). Empirical evidence links more *flexible* epistemic beliefs to superior critical thinking, academic engagement, and lower anxiety (Amatullah et al., 2021; Merrynda et al., 2022; Özbey & Tarlacı, 2024), suggesting an indirect pathway to enhanced psychological well-being and ultimately academic well-being.

Therefore, the model guiding the present study stipulates that (1) higher psychological well-being should directly predict higher academic well-being; (2) greater mindfulness should correspond to higher psychological well-being because mindful students regulate affect and cognitive load more effectively (Holyoke et al., 2022; Schwind et al., 2022); (3) less absolutist epistemic beliefs (lower CK/SK) should likewise predict higher psychological well-being via increased cognitive flexibility and self-efficacy (Jung et al., 2020; Poole, 2014; Turashvili & Japaridze, 2012).

Accordingly, our analytic framework positions mindfulness, CK and SK as *parallel mediators* between psychological well-being and academic well-being, extending prior work that has typically examined these predictors in isolation (Vidal-Meliá et al., 2022).

Guided by this framework, the study tests two null hypotheses: H_{01} —psychological well-being does *not* predict academic well-being; H_{02} —mindfulness plus CK and SK do *not* mediate the psychological well-being and academic well-being relationship. Rejecting either null would highlight the practical value of integrating mindfulness training and epistemic belief development into university wellbeing initiatives. Figure 1 presents the study's conceptual model; accordingly, the following hypotheses are formulated.

H_{01} : Psychological well-being does not correlate with academic well-being.

H_{a1} : Psychological well-being correlates with academic well-being.

H_{02} : Mindfulness and epistemic beliefs do not correlate with psychological well-being.

H_{a2} : Mindfulness and epistemic beliefs correlate with psychological well-being.

H_{a3} : Mindfulness correlates with psychological well-being.

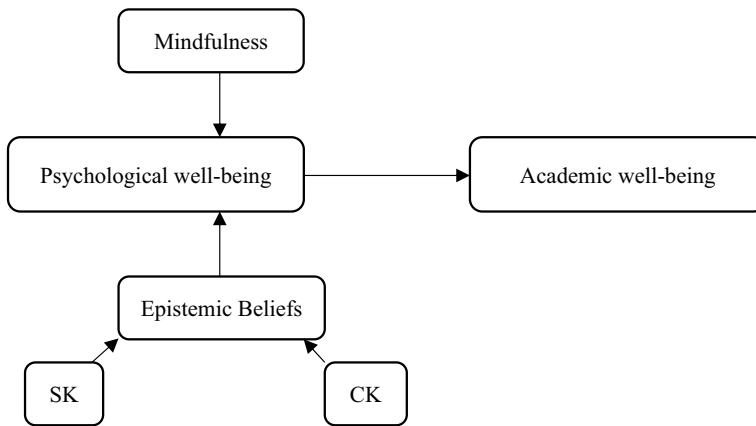


Figure 1. Conceptual model of the research.

H_{a4}: Epistemic beliefs correlate with psychological well-being.

Literature review

Mindfulness and psychological well-being

The majority of the literature acknowledges two primary schools of thought on mindfulness: Eastern and Western (Langer, 1992; Weick & Sutcliffe, 2006). Because the Western perspective (Langer, 1992) has been more thoroughly developed in organizational and managerial literature (Bjurström & Oly Ndubisi, 2012), this study adopts that approach. According to the Eastern perspective, mindfulness involves nonjudgmental observation, nonconceptual awareness, and impartial watchfulness (Weick & Sutcliffe, 2006), and it is often cultivated through meditation. By contrast, the Western viewpoint focuses on cognitive differentiation, including making new distinctions, rethinking environmental objects, forming new categories, and seeking alternative points of view (Langer, 1992). This perspective emphasizes differentiating concepts and modes of thought, rather than meditative practice (Bjurström & Oly Ndubisi, 2012; Weick & Sutcliffe, 2006).

In education, growing evidence suggests that mindfulness is positively associated with psychological well-being. For instance, Holyoke et al. (2022) report that mindful teaching strategies in college classrooms foster a supportive environment that may enhance students' psychological health and engagement with course materials. Likewise, Schwind et al. (2022) found that faculty members who practice mindfulness show improved well-being and teaching quality. These findings underscore the importance of environmental mastery, an element of psychological well-being, as proposed by Steyn et al. (2016). Their work indicates that students who regularly practice mindfulness tend to report higher levels of psychological well-being, reflecting enhanced interpersonal relationships and adaptive coping skills. Similarly, Abbas et al. (2022) highlight that individuals' interactions with their environment (e.g. natural settings) can bolster psychological well-being, suggesting the beneficial links between

mindfulness and personal health. Overall, the literature suggests that mindfulness relates to psychological well-being, although the underlying mechanisms still warrant further exploration.

Epistemic beliefs and psychological well-being

Epistemic beliefs – learners' conceptions of what knowledge is and how it is acquired – have long been recognized as critical determinants of learning processes (Guilfoyle et al., 2020). In this study we foreground two foundational epistemic beliefs subdimensions: (1) Certain Knowledge (CK) – the belief that knowledge is absolute, fixed, and authority-bound; and (2) Simple Knowledge (SK) – the belief that knowledge consists of discrete, context-free facts that can be grasped quickly (Delijar & Emaliana, 2021; Wiley et al., 2020). These *absolutist* stances contrast with more *sophisticated* views that regard knowledge as evolving, complex, and evidence-based.

Growing empirical evidence links flexible epistemic beliefs to adaptive academic and affective outcomes. Students endorsing sophisticated EBs employ deeper processing strategies, display stronger critical thinking skills, and achieve higher grades (Amatullah et al., 2021; Merrynda et al., 2022). Crucially, such flexibility also appears to bolster psychological wellbeing by reducing uncertainty-related anxiety and enhancing feelings of personal growth—two core Ryff dimensions (Özbey & Tarlacı, 2024). In contrast, CK and SK have been associated with elevated stress and maladaptive coping when learners encounter ambiguous or conflicting information (Jung et al., 2020; Poole, 2014). This rigidity can undermine environmental mastery and autonomy, thereby eroding psychological well-being.

Mechanistically, less absolutist epistemic beliefs foster cognitive reappraisal and openness to alternative viewpoints, processes that mirror mindfulness-related attentional flexibility (McKay & Walker, 2021). By enabling students to interpret academic challenges as opportunities for inquiry rather than threats to certainty, sophisticated EBs may indirectly support academic competence and institutional connectedness – key components of academic wellbeing (Sujarwanto et al., 2021). Accordingly, we posit that *lower* CK/SK scores (i.e. more sophisticated epistemic beliefs) will correlate positively with PWB and, through that pathway, with academic wellbeing.

Relationship between psychological well-being and academic well-being

Psychological well-being can play a central role in students' academic functioning, with mindfulness and epistemic beliefs often framed as critical correlates within this relationship. Ryff (1989) conceptualizes psychological well-being through autonomy, self-acceptance, environmental mastery, personal growth, positive relations, and purpose in life. These dimensions inform how students interpret experiences and manage learning tasks. By bolstering emotional resilience and cognitive clarity, high psychological well-being may enhance academic outcomes. Mindfulness, for example, supports adaptive stress management, emotional regulation, and reflective decision-making (Hattu, 2021; Yusainy & Lawrence, 2014), all of which align with the components of psychological well-being and may help students persist through academic challenges.

Similarly, epistemic beliefs shape how learners acquire and apply knowledge (Guilfoyle et al., 2020). Students with more sophisticated epistemic beliefs typically engage in deeper processing, employ critical thinking, and show greater learning autonomy (Delijar & Emaliana, 2021). These processes align with psychological well-being constructs such as self-efficacy and personal growth. Hence, when mindfulness and epistemic beliefs are developed in conjunction with psychological well-being, students may more effectively regulate academic stress, sustain motivation, and optimize their learning strategies.

Although these factors are often discussed as potential mediators linking psychological and academic well-being, the cross-sectional nature of most existing studies makes it difficult to conclude direct causality. Instead, the literature implies that psychological well-being, mindfulness, and epistemic beliefs are interrelated and collectively support students' academic experiences. For instance, mindfulness-based interventions have been associated with higher academic achievement (Lin & Mai, 2018; McCloskey, 2015), and strong epistemic beliefs may fortify academic self-efficacy, a dimension integral to well-being. Consequently, the notion that psychological well-being possibly correlates with academic well-being, in part through mindfulness and epistemic beliefs, has garnered growing attention. Yet, further research is required to discern how these constructs interplay and whether any causal relationships exist.

Methods

Respondent demography and sampling

This study involved a total of 84 respondents ($M_{age} = 21.32$, $SD = 2.78$) from Indonesian and Malaysian universities (see Table 1). To determine an acceptable sample size, we performed a post-hoc power analysis with a medium effect size ($f^2 = 0.15$), $\alpha = 0.05$, and power $(1-\beta) = 0.80$, which suggested approximately 77–85 participants for multiple regression with 2–4 predictors. Ultimately, 84 participants who met the inclusion criteria were recruited, ensuring the study met the suggested range.

A convenience sampling method was used due to limited access and practical constraints in reaching a broader population. Inclusion criteria were that participants had to be (1) active students at the vocational, undergraduate, master's, or doctoral levels, and (2) willing to complete the questionnaire. Exclusion criteria included (1) incomplete responses and (2) unwillingness to participate. The final sample consisted of 62 female

Table 1. Respondent demography.

Category	Number	Percentage
Level		
Vocational	4	4.7%
Bachelor	70	83.3%
Master	6	9.5%
Doctoral	4	2.3%
Field		
Socials	8	9.5%
Education	61	71.4%
Social Science	4	4.7%
Other	13	15.4%
Gender		
Women	62	73.8%
Men	22	26.2%
Total	84	100%

respondents (73.8%) and 22 male respondents (26.2%). The higher proportion of female participants reflects the characteristics of the study programmes where data collection took place, particularly in the field of Education, which tends to have more female students. Therefore, the demographic distribution does not represent all student populations, and generalization must be made with caution.

Ethical considerations

This research was conducted in accordance with the ethical standards outlined by the hosting institutions. Ethical approval was granted by the Ethics Committee of the Faculty of Cultural Studies, Brawijaya University (Approval No. 01162/UN10.F1201/B/PP). Participants were informed about the purpose of the study, data confidentiality, and the voluntary nature of their involvement. They provided informed consent prior to completing the questionnaires and were free to withdraw at any stage without penalty.

Design

This study employed a cross-sectional correlational design (Creswell & Creswell, 2018) to examine associations among academic well-being, psychological well-being, mindfulness, and epistemic beliefs. Data were collected once from each participant, and no variable was manipulated, which precludes any causal inferences about the relationships among variables.

Variables and instruments

Four main variables were investigated:

First, **Academic Well-being (KA)** acts as the dependent variable. It is measured with the College Student Subjective WellBeing Questionnaire (CSSWQ; Renshaw & Bolognino, 2016, p. 16 items). Items are rated on a 6-point Likert scale (1 = 'strongly disagree' to 6 = 'strongly agree'); scores are averaged, so higher means indicate greater AWB. Cronbach's $\alpha = .89$. Second, **Psychological Well-being (KP)** acts as the independent variable. It is Assessed with the 18-item Ryff Scales (Ryff & Keyes, 1995). Seven-point Likert responses are averaged; higher scores denote better PWB ($\alpha = .85$). Third, **Mindfulness (M)** acts as the moderating variable. It is indexed by the 39item FiveFacet Mindfulness Questionnaire (Baer et al., 2006; $\alpha = .90$). Respondents use a 1–5 Likert format; facet scores are summed and averaged, with larger values reflecting greater mindfulness. Fourth, **Epistemic Beliefs (EB)** act as the moderating variable. It is captured via the 39item Epistemic Beliefs Questionnaire (Emaliana, 2017). We focus on two subscales – Certain Knowledge (CK) and Simple Knowledge (SK). Items are rated 1–5, averaged per subscale; lower scores = more sophisticated beliefs. Cronbach's α s: CK = .81, SK = .78.

Data collection

The questionnaires were administered online via Google Forms. Participants took approximately 15–20 minutes to complete all items. Responses were anonymous, and participants were debriefed about the research objectives. Incomplete questionnaires were excluded to maintain data integrity.

Statistical analysis

Data analyses were first conducted using the Statistical Package for the Social Sciences (SPSS) version 27. Preliminary checks on normality, linearity, and homoscedasticity were performed to ensure assumptions for parametric tests were met. To test the relationships between the main variables in this study, two types of regression analyses were conducted. First, simple linear regression analysis was used to evaluate the relationship between psychological well-being and academic well-being, reported with F , R^2 , regression coefficients (β), and p -values. Second, multiple linear regression analysis was used to evaluate the contribution of the predictors of mindfulness and epistemic beliefs to psychological well-being, reported with F , R^2 , β , and p -values also.

Next, to explore the possibility of mediation effects, a mediation analysis was conducted using the PROCESS macro (version 4.3) Model 4 by Hayes (2018). This analysis explored whether mindfulness and epistemic beliefs acted as mediators in the relationship between psychological well-being (independent variable) and academic well-being (dependent variable). A bootstrap procedure with 5,000 samplings was used to generate 95% confidence intervals for the mediation effects, recommended for studies with small sample sizes. All mediation analyses were reported with direct and indirect effect values, as well as confidence intervals (CI) to determine the significance of the mediation effects. Thus, the results of these analyses provide a deeper understanding of the mechanisms involved in the relationships between the variables studied.

Results

The relationship between psychological well-being and academic well-being

Linear regression analysis was conducted to examine the association between students' Psychological Well-being (KP) and Academic Well-being (KA). The following hypotheses were tested:

H₀₁: Psychological well-being does not correlate with academic well-being.

H_{a1}: Psychological well-being correlates with academic well-being.

Table 2 shows that the linear regression model produces $F(1, 82) = 104.88$, $p < .001$, indicating that KP is a significant explanatory variable for KA in this model. The coefficient of determination (R^2) value of 0.556 indicates that KP explains about 55.6% of the variance in KA. Although this R^2 value does not reach the 0.7 threshold which is often considered an indication of a very strong model, this result still shows a moderate relationship between KP and KA. The standardized regression coefficient (β) is 0.749 with $p < .001$, indicating a significant contribution of KP to KA.

Table 2. Regression model summary.

Predictor	R	R^2	$F(1, 82)$	p
β (KP $\rightarrow$ KA)	0.749	0.556	104.88	<.001

This finding aligns with Zhaifra and Palupi (2022), who reported that college students' academic hardiness correlates positively with their psychological well-being. The Durbin-Watson statistic (1.83) falls within the acceptable range of 1–3, indicating no significant autocorrelation in the residuals. Figure 2 illustrates that the distribution of residuals appears normal, and Figure 3 (QQ plot) confirms that the residuals closely follow a straight diagonal line, suggesting that normality and linearity assumptions are met.

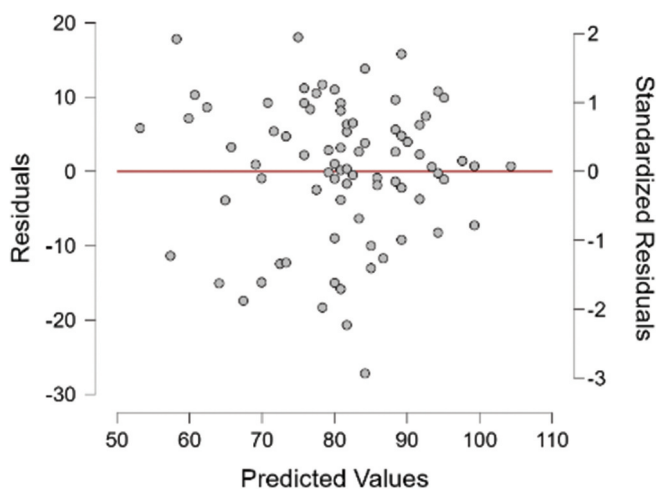


Figure 2. Residual vs. Predicted plot.

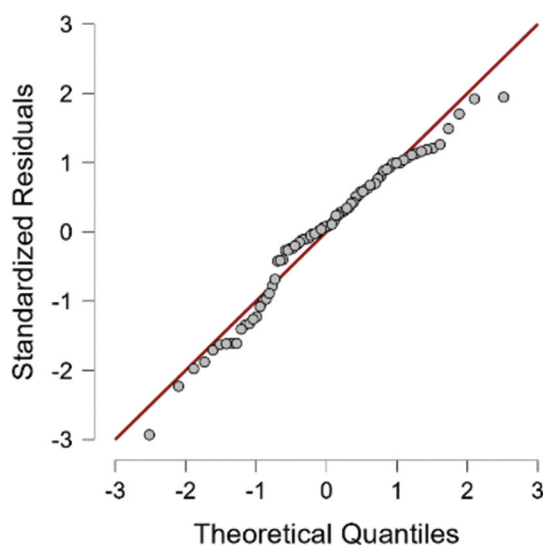


Figure 3. Q-Q plot of standardized residuals.

The relationship between mindfulness and epistemic beliefs on psychological well-being

After confirming a robust **association** between KP and KA, we performed **multiple regression** to investigate whether **Mindfulness (M)** and **Epistemic Beliefs (EB)** correlate with psychological well-being. The pertinent hypotheses were:

H₀₂: Mindfulness and Epistemic beliefs do not correlate with psychological well-being.

H_{a2}: Mindfulness and Epistemic beliefs correlate with psychological well-being.

H_{a3}: Mindfulness correlates with psychological well-being.

H_{a4}: Epistemic beliefs correlate with psychological well-being.

Table 3 present the multiple regression model using M and EB (summed scores) as predictors of KP which is statistically significant with $F(2, 81) = 12.746, p < .001$. The overall model yields $R = 0.643$ and $R^2 = 0.414$, indicating that around 41.4% of variance in KP can be explained by M and EB. Although this R^2 value does not reach the 0.7 threshold, this result still provides a moderate contribution in explaining variation in KP. The standardized regression coefficient for M is $\beta = 0.59 (p < .001)$, suggesting that mindfulness is positively and significantly related to psychological well-being. By contrast, EB as a total score is not statistically significant ($\beta = 0.12, p = .172$) in predicting KP. Therefore, H_{a2} is partially supported (only mindfulness contributes significantly), confirming H_{a3} but not providing support for H_{a4} when EB is considered holistically.

Additional analyses on EB dimensions

Given the theoretical interest in certain EB subdimensions (Table 4), we further explored Certain Knowledge (CK) and Simple Knowledge (SK). CK and SK were entered together in

Table 3. Multiple regression model for mindfulness (M) and Epistemic Beliefs (EB) predicting psychological well-being (KP).

Predictor	R	R ²	F	F(2,81)	p	β	p(β)
M, EB	0.643	0.414	0.393	12.746	<.001	–	–
M						0.59	<.001
EB						0.12	.172

Table 4. Coefficient analysis of regression model.

Predictor	β	SE	t	p
(Intercept)	46.745	8.718	5.362	<.001
Mindfulness	0.565	0.201	6.540	<.001
Epistemic Beliefs	–0.719	1.094	–2.848	.006
Certain Knowledge & Simple Knowledge	0.489	1.069	2.881	.005
Fix Ability	0.060	1.085	0.461	.646
Omniscient Authority	0.276	1.399	1.365	.176

Table 5. Direct and indirect effects of psychological well-being (KP) on Academic well-being (KA) through mindfulness (M) and Epistemic Beliefs (EB).

Effect	β	SE	95% CI Lower	95% CI Upper	p
Total effect (KP $\rightarrow$ KA)	0.838	0.082	0.675	1.001	<.001
Direct effect (KP $\rightarrow$ KA)	0.942	0.103	0.737	1.147	<.001
Total indirect effect	−0.104	0.059	−0.222	0.016	–
KP $\rightarrow$ M $\rightarrow$ KA	0.000	0.011	−0.022	0.026	–
KP $\rightarrow$ EB $\rightarrow$ KA	−0.104	0.058	−0.220	0.013	–

a separate model to see whether any dimension might uniquely correlate with KP. Results show that SK has a small but statistically significant coefficient ($\beta = 0.21, p = .041$), whereas CK does not reach significance ($\beta = 0.10, p = .210$). However, these findings should be interpreted cautiously given the limited sample size and cross-sectional design.

To gain a more comprehensive understanding of how academic well-being (KA) influences psychological well-being (KP), a mediation analysis was conducted using Hayes’ PROCESS Macro Model 4. This analysis allowed the identification of the role of mindfulness and epistemic beliefs as parallel mediators in bridging the relationship between KA and KP.

The role of mindfulness and epistemic beliefs as mediators in bridging relationship between academic well-being and psychological well-being

The results of the Hayes’ PROCESS Macro Model 4 in Table 5 show that psychological well-being (KP) has a significant total effect on academic well-being (KA), $\beta = 0.838, SE = 0.082, p < 0.001$. This means that, overall, psychological well-being contributes positively to students’ academic well-being. Moreover, the direct effect of KP on KA is also found to be significant, $\beta = 0.942, SE = 0.103, p < 0.001$. It means that psychological well-being directly predicts academic well-being, without considering the role of the mediator. Meanwhile, the analysis of the indirect effect shows that the contribution of KP to KA through mindfulness and epistemic beliefs is not significant in total, $\beta = -0.104, 95\% CI [-0.222, 0.016]$. Since the confidence interval includes zero, there is no statistically significant mediation effect. Specifically, the mediation through epistemic beliefs was not significant ($\beta = 0.000, 95\% CI [-0.022, 0.026]$), and the mediation through mindfulness was also not significant ($\beta = -0.104, 95\% CI [-0.220, 0.013]$) even though the effect approaches the significance threshold. Thus, psychological well-being contributes significantly to academic well-being directly, but not through the mediation of mindfulness or epistemic beliefs in this model.

Discussion

Academic well-being as a multidimensional construct

Academic well-being in this research was operationalized through four key dimensions: academic satisfaction, academic efficacy, school connectedness, and gratitude. Consistent with prior literature, these dimensions emerged not only as distinct facets but also as interrelated components that collectively shape the academic experience (Franzen et al., 2021; Tran et al., 2023; Yuen & Wu, 2024). Academic satisfaction was found to be

significantly and positively correlated with psychological well-being. As suggested by Franzen et al. (2021), lower academic satisfaction often parallels heightened levels of depression, anxiety, and stress. Our data amplify this point, indicating that when students exhibit diminished academic satisfaction, they are more vulnerable to negative emotional states that can hamper overall psychological health (Tran et al., 2023). Conversely, those reporting a higher level of academic satisfaction described more optimism and resilience, thereby bolstering their capacity to manage stressors in both academic and personal domains. Nonetheless, given the cross-sectional design of this study, these correlations should be interpreted as associations rather than evidence of causality.

Beyond satisfaction, academic efficacy – students' belief in their capability to meet academic requirements – emerged as another crucial facet. When learners perceive themselves as able to accomplish tasks successfully, they often demonstrate enhanced motivation, efficient time management, and a readiness to tackle challenges (Mohtasham et al., 2023). Our analyses showed that academic efficacy was positively related to psychological well-being, indicating that self-perceived competence may function as a protective factor against stress and anxiety. This finding aligns with earlier research positing that self-efficacy is a fundamental contributor to both academic achievement and mental health (Salami, 2010; Turashvili & Japaridze, 2012). Here again, while the effect sizes for these associations were moderate, caution is warranted in making causal inferences.

School connectedness, another dimension of academic well-being, also exhibited robust links to psychological well-being. Students who felt integrated within their institution – through supportive relationships with peers, instructors, and staff – reported higher levels of subjective well-being (Buenconsejo et al., 2024; Yuen & Wu, 2024). Our results reinforce this viewpoint; the sense of belonging derived from meaningful interactions appears to serve as a buffer against stress, depressive symptoms, and the risk of academic burnout (Indreswari et al., 2022). This aligns with the notion that social embeddedness and cohesion within a learning environment can foster emotional security, thereby fortifying students against psychological distress. Despite these strong associations, the limitations of a cross-sectional approach mean that the direction of these relationships remains open to further investigation.

Gratitude emerged as a final but equally pivotal component of academic well-being in this study. The results concur with Ramis & Cheong (2023), demonstrating that individuals who cultivate gratitude towards their educational opportunities often exhibit higher levels of positive affect and lower levels of psychological distress. The strong correlation between gratitude and psychological well-being (Hemarajareswari & Gupta, 2021) may be attributed to the reframing of academic challenges as opportunities for growth, which in turn helps students cope more effectively with setbacks. As such, educators and student support services could consider designing interventions to nurture gratitude, as it may serve as a powerful catalyst for emotional resilience and overall well-being. Nonetheless, future longitudinal or experimental research would be needed to confirm whether gratitude leads to improved well-being or vice versa.

Linking academic well-being to psychological well-being

One of the central findings of this study is the moderately positive association between academic well-being and psychological well-being. Each dimension of academic

wellbeing – academic satisfaction, academic efficacy, school connectedness, and gratitude – correlates moderately strongly with measures of psychological well-being such as emotional resilience, life satisfaction, and reduced symptoms of depression and anxiety. These findings expand upon existing research, suggesting that a supportive academic context and constructive personal attitudes synergistically contribute to improved mental health outcomes (Buenconsejo et al., 2024; Tran et al., 2023). However, we emphasize that these observed relationships cannot establish cause-and-effect pathways.

Furthermore, our regression analyses (depicted in Figure 1) indicate that academic well-being not only relates to psychological well-being but also explains a notable portion of variance in students' overall mental health. This result corroborates Indreswari et al. (2022), who found that students with strong psychological well-being are less prone to academic burnout. Our results dovetail with the perspectives of Senger & Gallagher (2024), who highlighted that fostering students' psychological resilience – through interventions targeted at coping strategies, emotional regulation, and stress management – can effectively mitigate burnout and preserve academic motivation. Taken together, these findings underscore the critical importance of adopting a holistic approach in educational settings that attends to both academic and psychological dimensions. Importantly, our cross-sectional method does not permit definitive causal conclusions, underscoring the need for more rigorous experimental or longitudinal designs.

The role of mindfulness in psychological well-being

Mindfulness emerged in our analyses as a pivotal factor intimately linked to psychological well-being, a conclusion supported by multiple studies (Holyoke et al., 2022; Schwind et al., 2022). By training students to focus on the present moment and adopt a nonjudgmental stance, mindfulness practices can serve as a potent strategy to manage stress, alleviate anxiety, and promote emotional stability. Our findings extend previous work by illustrating that students who engage in mindfulness activities – such as guided meditation, breathing exercises, or reflective journaling – report not only heightened levels of mental clarity but also an enhanced ability to cope with academic pressures. This relationship held consistent across our sample, signifying the broad applicability of mindfulness interventions in diverse educational contexts. Nevertheless, the absence of a longitudinal or experimental component limits our capacity to ascertain whether mindfulness precedes improved well-being or vice versa.

Moreover, given that mindfulness fosters self-awareness, it may also improve academic efficacy by enabling students to better recognize and subsequently address their cognitive and emotional barriers. The resulting enhanced self-regulation can reduce procrastination, improve study habits, and boost overall academic performance. Our analysis supports these dynamics, showing that students with higher mindfulness scores also reported greater academic satisfaction. These observations align well with the perspective that an integrated educational model—one which includes mindfulness as a core skill – can optimize learning processes and emotional wellness simultaneously (Holyoke et al., 2022).

Nuanced effects of epistemic beliefs

While the aggregate measure of epistemic beliefs did not reveal a strong direct correlation with psychological well-being, certain subdimensions – particularly

Simple Knowledge – did show a small yet significant relationship. This pattern resonates with the findings of Özbey & Tarlacı (2024), who noted that students' conceptualization of knowledge can indirectly shape their motivation, engagement, and stress responses. A belief in knowledge as a fixed, simplistic construct may hinder critical thinking, impede resilience, and weaken academic efficacy, thereby exerting subtle effects on psychological well-being over time. In interpreting these associations, we reiterate the cross-sectional limitations that preclude definitive statements about directionality.

These observations underscore the importance of addressing epistemic beliefs in educational interventions. While mindfulness and gratitude practices can directly bolster emotional and psychological health, challenging maladaptive beliefs about knowledge might further reinforce students' resilience. For example, instructional approaches that encourage inquiry-based learning and promote epistemic sophistication – e.g. emphasizing the evolving nature of knowledge – may indirectly enhance well-being by strengthening cognitive flexibility. Although our findings are preliminary in this domain, they advocate for more nuanced pedagogical strategies that consider students' beliefs about knowledge alongside other psychosocial factors.

This study's outcomes largely corroborate prior investigations emphasizing the role of positive emotional states, resilience, and self-regulation in bolstering academic performance and psychological well-being (Franzen et al., 2021; Salami, 2010; Turashvili & Japaridze, 2012). However, our findings provide additional clarity by underscoring the significance of gratitude and mindfulness. While earlier works have identified these constructs as contributors to well-being (Hemarajareswari & Gupta, 2021; Holyoke et al., 2022; Schwind et al., 2022), our research integrates them into a more comprehensive model, highlighting how they might intersect with other academic dimensions. In many cases, the standardized effect sizes we observed were moderate, aligning with the findings of previous studies on well-being correlates; however, more rigorous designs are needed to verify these patterns.

Moreover, the nuanced associations between epistemic beliefs and psychological well-being parallel those reported in Özbey & Tarlacı (2024), signifying that such beliefs should not be overlooked when designing supportive educational interventions. These observations refine our understanding of the academic well-being – psychological well-being nexus, indicating that the interplay among satisfaction, efficacy, connectedness, gratitude, mindfulness, and epistemic beliefs is intricate. The findings from Buenconsejo et al. (2024), Ramis & Cheong (2023), and Senger & Gallagher (2024) also align well with our results, collectively suggesting that supportive environments and positive psychological states can mitigate various risk factors, such as academic burnout, anxiety, and depression.

The moderately strong interrelations observed in this study suggest multiple pathways for practical intervention. First and foremost, universities can prioritize promoting academic well-being by creating supportive infrastructures – mentoring programmes, peer support networks, and mental health services – that directly target students' sense of school connectedness (Buenconsejo et al., 2024; Yuen & Wu, 2024). Encouraging students to foster gratitude, such as through reflective exercises or campus-wide initiatives, can also be a potent way to boost both academic and psychological well-being (Ramis & Cheong, 2023). For example, brief gratitude interventions that encourage students to

note positive aspects of their educational journey may shift perspectives, reduce stress, and enhance motivation.

Second, integrating mindfulness training into curricula could be instrumental in equipping students with effective coping strategies. Evidence suggests that even brief mindfulness sessions, such as short guided meditations before exams or reflective journaling in weekly tutorials, can yield tangible benefits in stress reduction and emotional regulation (Holyoke et al., 2022; Schwind et al., 2022). Such interventions could be particularly impactful in the final years of study, a period typically characterized by heightened academic pressure (Indreswari et al., 2022; Senger & Gallagher, 2024). Nevertheless, institutions should recognize that these recommendations are based on cross-sectional associations, and experimental research could further validate their efficacy.

Third, addressing epistemic beliefs through pedagogical reforms might further enrich the academic climate. Workshops and seminar courses that emphasize knowledge construction, critical analysis, and intellectual curiosity could gradually reshape simplistic views of learning, in turn boosting both academic enthusiasm and resilience (Özbey & Tarlaç, 2024). In essence, concerted efforts to refine curriculum design, student support services, and campus culture can collectively enhance the student experience, reduce burnout, and promote holistic well-being.

On a theoretical level, this study extends the conceptualization of academic well-being by incorporating gratitude and mindfulness as salient factors. While the literature has historically focused on academic satisfaction, efficacy, and school connectedness (Franzen et al., 2021; Mohtasham et al., 2023), our integrative approach underscores the essential role that affective constructs play in shaping students' academic experiences. This model offers a nuanced perspective that highlights how psychological resources – mindfulness, gratitude, resilience – intersect with traditional academic constructs, such as self-efficacy and connectedness, to influence outcomes like psychological well-being, academic performance, and engagement.

Additionally, the spotlight on epistemic beliefs broadens the conversation around student learning. Our findings suggest that beliefs about knowledge – particularly if simplistic – can indirectly undermine well-being by limiting students' ability to adapt to complex learning demands. The interplay among epistemic beliefs, mindfulness, and academic satisfaction points to a multifaceted paradigm where cognitive, emotional, and motivational elements converge. This underscores the value of adopting an integrated theoretical framework that accounts for both psychosocial and cognitive-epistemic factors in predicting student well-being. Yet, further longitudinal or intervention-based research is essential to determine whether shifting epistemic beliefs actively leads to improvements in psychological well-being.

Despite the meaningful insights gleaned, this study has several limitations that warrant cautious interpretation of the results. First, cross-sectional designs do not allow for inferences about causality or directionality of relationships between variables, as the data only provide a snapshot of relationships at a specific point in time. However, mediation analyses using cross-sectional data are still widely used in research, as we have done using Hayes' PROCESS macro in this analysis. However, future longitudinal or experimental studies would provide a clearer picture of how these variables evolve over time or under specific interventions. Second, we employed a convenience sampling method, limiting our ability to generalize these

findings to the broader student population. Respondents might also overestimate or underestimate their well-being levels due to social desirability or personal perception gaps. Third, the sample had approximately three times as many female participants as males, raising concerns about sample homogeneity and further restricting generalizability. Although diverse in terms of age and field of study, the sample was drawn from a limited number of institutions, meaning that varying cultural and institutional contexts might differentially influence the constructs of interest. Future investigations may benefit from more diverse and balanced samples, randomized data collection, and larger sample sizes to validate the generalizability of these results. Fourth, although the effect sizes for psychological well-being and academic well-being were moderately strong, some subdimensions of epistemic beliefs yielded only modest effects. This highlights the need for further research to clarify how different facets of epistemic beliefs interact with other psychological constructs. Examining these variables across multiple contexts may also provide a broader understanding of how interventions (e.g. mindfulness-based programmes) could potentially support students' well-being and academic experiences. Finally, while we integrated multiple constructs – academic efficacy, satisfaction, connectedness, gratitude, mindfulness, and epistemic beliefs – other potentially relevant factors (e.g. personality traits, academic workload, socio-economic status) were not exhaustively examined. Their omission might leave parts of the well-being landscape unexplored, presenting opportunities for future research.

Conclusion

In sum, this study sheds light on the intricate and multifaceted nature of the associations between academic well-being and psychological well-being in higher education contexts. Our findings affirm that higher levels of academic satisfaction, academic efficacy, school connectedness, and gratitude are robustly correlated with enhanced psychological well-being. Moreover, mindfulness stands out as a particularly influential factor, potentially serving as both a coping mechanism and a catalyst for improved mental health outcomes. Epistemic beliefs, while less uniformly impactful, reveal nuanced relationships that reinforce the importance of addressing how students conceive of and engage with knowledge.

These insights have significant practical, theoretical, and policy-related implications. From a practical standpoint, they point to the potential value of curricular and extracurricular interventions focusing on mindfulness, gratitude, and supportive community-building as means of enhancing student well-being. Theoretically, they expand the conceptual frameworks typically employed to understand academic well-being, highlighting the role of emotion-focused constructs alongside traditional cognitive-motivational variables. Finally, from a policy perspective, our study underscores the potential benefits of investing in campus-wide mental health initiatives and inclusive pedagogical practices aimed at fostering both academic success and psychological resilience. Nonetheless, caution is required in interpreting these findings due to the cross-sectional and non-randomized nature of the study. By integrating these strategies, institutions can better equip students to navigate the demands of higher education while maintaining a positive and flourishing sense of self.

Building on the insights generated by this study, several avenues for future investigation emerge. Longitudinal research designs and experimental studies are critical for verifying whether the associations we observed reflect causative relationships. Monitoring shifts in academic well-being over time could offer valuable evidence on the effectiveness of targeted interventions – such as mindfulness training or gratitude-focused activities – and clarify how sustained engagement with these interventions impacts both mental and academic outcomes.

Additionally, qualitative or mixed-methods research might further illuminate the nuanced processes by which academic well-being translates into psychological well-being. In-depth interviews or focus groups could uncover specific coping strategies, interpersonal dynamics, or personal narratives that survey data might overlook. Understanding these detailed experiences would guide more tailored and context-sensitive initiatives, ensuring that interventions align with students' lived realities.

Finally, exploring moderating or mediating factors – such as personality, cultural values, or institutional policies – would deepen our comprehension of how different subsets of students respond to academic stressors and supportive measures. Given the partial correlations found with certain subdimensions of epistemic beliefs, it might be fruitful to investigate more fine-grained distinctions (e.g. beliefs about the certainty or source of knowledge) to see how these interact with constructs like mindfulness, gratitude, and academic efficacy. Such refinement could lead to more targeted and thus more effective educational strategies.

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