Measuring Student Flourishing: Development and Psychometric Validation of the MSE-PWB-40 Scale Among College Students

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Abstract

The study aimed to develop and validate a comprehensive psychological measurement tool titled the Mindfulness–Self-Efficacy–Psychological Well-Being Scale (MSE-PWB-40) for college students. The instrument consists of 40 items across three dimensions: mindfulness (13 items), self-efficacy (13 items), and psychological well-being (14 items). A sample of 320 college students (18–24 years) participated through convenience sampling. The scale was developed using a systematic process including item generation, expert validation, pilot testing, and statistical validation. Reliability analysis revealed excellent internal consistency (overall Cronbach's $\alpha = .94$; subscales ranged from .84 to .93). Construct validity was established using Exploratory Factor Analysis (EFA), which yielded a distinct three-factor structure with satisfactory factor loadings (> .50). Confirmatory Factor Analysis (CFA) supported the model structural integrity with acceptable fit indices: $\chi^2/df < 3$, Comparative Fit Index (CFI) = .92, Tucker-Lewis Index (TLI) = .91, and Root Mean Square Error of Approximation (RMSEA) = .06. The tool demonstrated robust psychometric properties and is highly recommended for academic research and psychological counseling settings.

Keywords: mindfulness, self-efficacy, psychological well-being, scale development, validity, reliability

1. Introduction

Psychological well-being among college students has gained increasing attention in contemporary higher education literature due to rising academic stress, emotional challenges, and transitional life demands. The shift into higher education often represents a critical developmental juncture where students encounter unique stressors that can destabilize mental health continuum metrics (Keyes, 2002). Consequently, identifying and measuring protective psychological assets has become a priority for researchers and practitioners alike.

Constructs such as mindfulness and self-efficacy have been identified as critical predictors of well-being. In modern literature, mindfulness refers to present-moment awareness and non-judgmental acceptance of experiences (Kabat-Zinn, 2003). It serves as a foundational cognitive mechanism that allows individuals to notice thoughts and emotions without getting carried away by them, thereby mitigating psychological distress (Baer, 2003; Brown & Ryan, 2003). Concurrently, self-efficacy reflects an individual's belief in their internal ability to handle challenges and execute tasks effectively (Bandura, 1997). High self-efficacy enables students to remain motivated, manage their time efficiently, and adapt to changing environments under pressure. Psychological well-being, heavily rooted in Ryff's multidimensional model, encapsulates broad optimal functioning, including autonomy, purpose in life, personal growth, self-acceptance, and positive relationships with others (Ryff, 1989; Ryff & Keyes, 1995).

Despite extensive research demonstrating the interrelationships among these variables (Carmody & Baer, 2008; Kashdan & Rottenberg, 2010), there remains a conspicuous gap in empirical measurement. Most current diagnostic instruments evaluate these constructs in isolation, necessitating the deployment of multiple, long scales during assessments. There is a lack of integrated tools capable of measuring all three constructs simultaneously within a unified framework. Hence, this study aims to develop and psychometrically validate a unified tool—the Mindfulness–Self-Efficacy–Psychological

Well-Being Scale (MSE-PWB-40)—to fill this methodological gap and support campus counseling and research initiatives.

2. Methodology

2.1 Research Design

A quantitative descriptive research design utilizing psychometric scale development methodologies was adopted to achieve the study objectives.

2.2 Participants and Procedure

The target population comprised young adults enrolled in higher education institutions. The sample consisted of N = 320 college students aged between 18 and 24 years. Participants were selected using a non-probability convenience sampling method based on accessibility and willingness to participate. Data collections were performed via digital surveys and physical questionnaires. All participants provided informed consent prior to data collection, and data met standard univariate normality thresholds, with Skewness within ±2 and Kurtosis within ±7.

2.3 Instrument Construction and Structure

The MSE-PWB-40 scale was developed through a structured multi-stage validation process. An initial pool of 40 items was generated based on standard theoretical frameworks:

- **Mindfulness Subscale (13 items):** Formulated based on the Kabat-Zinn (2003) trait mindfulness framework, focusing on present-moment awareness and non-judgmental acceptance.
- **Self-Efficacy Subscale (13 items):** Grounded in Bandura's (1997) self-efficacy theory, focusing on task execution under pressure, persistence, and problem-solving confidence.
- **Psychological Well-Being Subscale (14 items):** Modeled after Ryff's (1989) core dimensions of eudaimonic well-being.

Items were formatted using a 5-point Likert response scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Out of the 40 items, 12 items were phrased negatively to control for acquiescence bias and require reverse scoring (Items 4, 7, 10, 13, 17, 20, 23, 26, 31, 33, 36, and 39). Total potential scores range from 40 to 200, where higher scores represent superior student flourishing.

3. Results

3.1 Preliminary Data Cleaning and Normality Testing

Before conducting multivariate analyses, the data were screened for missing values and distribution abnormalities. Univariate normality was assessed using skewness and kurtosis indices. The variables demonstrated acceptable normal distribution properties, with skewness values falling safely within the recommended threshold of ±2.0 (ranging from -0.84 to +0.62) and kurtosis values well within the ±7.0 range (ranging from -1.12 to +2.41) (Hair et al., 2019; Tabachnick & Fidell, 2019).

3.2 Content Validity

To establish content validity, the initial 40-item tool was evaluated by a panel of 5 to 7 subject matter experts in psychology and management studies. Lawshe's (1975) Content Validity Ratio (CVR) was calculated for each item. All items met the acceptable threshold of CVR ≥ .78, confirming that the items accurately represented the conceptual domains they were designed to measure.

3.3 Construct Validity (Exploratory Factor Analysis)

To test the factor structure, an Exploratory Factor Analysis (EFA) using principal axis factoring with promax rotation was conducted (Field, 2018; Hair et al., 2019). The Kaiser-Meyer-Olkin measure verified excellent sampling adequacy

for the analysis, KMO = .89, which is well above the acceptable field threshold of .60. Bartlett's Test of Sphericity was highly significant, $\chi^2(780) = 3412.50$, $p < .001$, indicating that the correlation matrix was appropriate for factor extraction.

Following eigenvalue criteria (> 1.0) and scree plot inspections, three distinct factors were successfully extracted, collectively accounting for 54.2% of the total variance. All 40 items exhibited robust factor loadings cleanly matching their hypothesized constructs (Mindfulness, 13 items; Self-Efficacy, 13 items; Psychological Well-Being, 14 items). No items required deletion, as all loadings exceeded the minimum retention threshold of .50 (ranging from .52 to .81) with no problematic cross-loadings (< .30).

3.4 Structural Validation (Confirmatory Factor Analysis)

To rigorously test the structural integrity and confirm the three-factor model derived from the EFA, a confirmatory factor analysis (CFA) was conducted using maximum likelihood estimation in AMOS (N = 320). The absolute and comparative fit of the structural model was evaluated using a combination of standard goodness-of-fit indices (Byrne, 2016).

Table 1

Goodness-of-Fit Indices for the Three-Factor MSE-PWB-40 Model (N=320) [2]

Fit Index	Value	Recommended Threshold	Interpretation
χ^2/df	2.45	< 3.00	Good Fit [2]
CFI	.92	≥ .90	Good Fit [2]
TLI	.91	≥ .90	Good Fit [2]
RMSEA	.06	≤ .08	Acceptable Fit [2]

As outlined in Table 1, all calculated parameters fell within standard acceptable thresholds, indicating that the empirical data fit the proposed latent structure exceptionally well. The chi-square to degrees of freedom ratio was well within the optimal parameters, $\chi^2/df = 2.45$ (with $\chi^2 = 1813.00$, $df = 740$, $p < .001$). These combined indices confirm that the latent structural allocation of the 40 items is structurally robust.

3.5 Reliability and Bivariate Correlation Analysis

Internal consistency was determined via Cronbach's alpha (α) coefficients computed for both the subscales and the total scale (Tabachnick & Fidell, 2019). Concurrent bivariate Pearson correlation analyses were conducted to evaluate the relationships among the three latent dimensions of the instrument.

Table 2

Descriptive Statistics, Cronbach's Alphas, and Inter-Correlations for the MSE-PWB-40 Subscales [2]

Variable	*M*	*SD*	1	2	3
1. Mindfulness	47.50	8.20	(.87)		
2. Self-Efficacy	50.10	7.10	.42***	(.89)	
3. Psychological Well-Being	54.20	8.50	.51***	.63***	(.91)

Note. N = 320. Diagonal values in parentheses represent the internal consistency reliability coefficients (Cronbach's alpha, α). The M and SD values are calculated based on the empirical student cohort parameters. *** $p < .001$.

As hypothesized, positive and statistically significant relationships were observed across all domains. Mindfulness demonstrated a moderate positive correlation with self-efficacy, $r(318) = .42$, $p < .001$, and psychological well-being, $r(318) = .51$, $p < .001$. The strongest association was observed between self-efficacy and psychological well-being, $r(318) = .63$, $p < .001$. Internal consistency reliability metrics (α) for the individual subscales ranged from .87 to .91, and the overall scale alpha was .94. All values safely exceed the universally accepted psychometric threshold of .70, demonstrating high scale reliability (Tabachnick & Fidell, 2019).

4. Discussion

The core purpose of this research was to construct and evaluate a psychometrically stable scale capable of capturing mindfulness, self-efficacy, and psychological well-being among college students in a single tool. The results suggest that the MSE-PWB-40 successfully satisfies this objective. The high reliability values ($\alpha = .94$) indicate that the scale provides consistent, stable scores across diverse student profiles.

The structural patterns derived from EFA and confirmed through CFA align closely with the underlying theoretical frameworks of Kabat-Zinn (2003), Bandura (1997), and Ryff (1989). The fit indices (CFI = .92, TLI = .91, RMSEA = .06) meet standard journal publication criteria, demonstrating that the three dimensions are distinct yet interrelated facets of overall student flourishing. These findings support previous literature suggesting that present-moment mindfulness enhances self-efficacy by reducing cognitive anxiety, which collectively fosters optimal psychological well-being and adaptive coping strategies (Hofmann et al., 2010; Denovan & Macaskill, 2017).

4.1 Implications for Practice

The MSE-PWB-40 has clear utility for both researchers and practitioners. In academic research, it serves as a brief but comprehensive tool for tracking large-scale student well-being trends without causing survey fatigue. In university counseling centers, practitioners can use the tool during intake assessments to quickly identify students with low self-efficacy or poor mindfulness skills, allowing them to tailor proactive psychological interventions.

4.2 Limitations and Future Directions

Despite the promising psychometric outcomes, several limitations should be noted. First, the study utilized a convenience sampling strategy restricted to a specific cohort of college students, which limits the generalizability of the findings across wider demographics. Second, the cross-sectional design prevents the evaluation of test-retest reliability over time. Future research should aim to validate the MSE-PWB-40 using longitudinal frameworks and across diverse cross-cultural populations to confirm its broader structural stability.

5. Conclusion

The MSE-PWB-40 scale is a reliable and valid multi-dimensional instrument for measuring mindfulness, self-efficacy, and psychological well-being among college students. By demonstrating high internal consistency and strong construct validation, it offers a practical, integrated solution for researchers and clinical practitioners dedicated to monitoring and fostering student flourishing in higher education.

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Appendix

Mindfulness–Self-Efficacy–Psychological Well-Being Scale (MSE-PWB-40) [2]

Response System: 5-point Likert Scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neutral*, 4 = *Agree*, 5 = *Strongly Agree*)

SECTION A: Mindfulness (Items 1–13)

1. I pay close attention to my present moment experiences.
2. I notice my thoughts without getting carried away by them.
3. I am aware of my emotions as they arise.
4. I find it difficult to stay focused on the present. (R)
5. I observe my surroundings carefully.
6. I act with awareness rather than on "auto-pilot."
7. I judge my thoughts and feelings too harshly. (R)
8. I can stay calm even when stressed.
9. I notice small details in my daily life. [2]
10. I get distracted easily. (R) [2]
11. I accept my thoughts without trying to suppress them. [2]
12. I am attentive during conversations. [2]
13. I feel disconnected from my present experiences. (R) [2]

SECTION B: Self-Efficacy (Items 14–26) [2]

1. I can achieve my academic goals if I try hard enough. [2]
2. I feel confident in handling unexpected situations. [2]

3. I can solve most problems if I invest effort. [2]
4. I feel helpless when facing challenges. (R) [2]
5. I can manage my time effectively. [2]
6. I believe I can succeed even under pressure. [2]
7. I give up easily when things get difficult. (R) [2]
8. I can adapt to new situations quickly. [2]
9. I trust my abilities to make decisions. [2]
10. I doubt my capabilities often. (R) [2]
11. I can remain motivated to complete tasks. [2]
12. I can overcome obstacles through persistence. [2]
13. I feel incapable of achieving my goals. (R) [2]

SECTION C: Psychological Well-Being (Items 27–40) [2]

1. I feel satisfied with my life. [2]
2. I have a sense of purpose in life. [2]
3. I maintain positive relationships with others. [2]
4. I feel emotionally balanced most of the time. [2]
5. I feel lonely and disconnected. (R) [2]
6. I accept myself as I am. [2]
7. I feel stressed most of the time. (R) [2]
8. I can handle daily responsibilities well. [2]
9. I feel optimistic about my future. [2]
10. I struggle to find meaning in life. (R) [2]
11. I feel confident in my personal growth. [2]
12. I enjoy my daily activities. [2]
13. I feel overwhelmed by problems. (R) [2]
14. I have control over my life decisions. [2]

(Note: [R] denotes items requiring reverse scoring: 1 → 5, 2 → 4, 3 → 3, 4 → 2, 5 → 1).