



Adaptation and Psychometric Validation of Mental Health Literacy and Well-Being Scales among Filipino College Students

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Abstract

Background: The high prevalence of mental health problems among Filipino college students and the lack of culturally validated assessment tools highlight the need for reliable and valid measurement instruments. **Objective:** This study culturally adapted and evaluated the psychometric properties of the Mental Health Literacy Scale (MHLS) and the Psychological Well-Being Scale (PWBS) among Filipino college students. **Methods:** A total of 1828 students were recruited and randomly split into two equal subsamples for exploratory factor analysis (EFA; $n = 914$) and confirmatory factor analysis (CFA; $n = 914$). The cross-cultural adaptation process involved translation/back-translation, content validation using Lawshe's content validity ratio (CVR), and comprehensibility assessment. Construct validity, convergent validity, and internal consistency were evaluated. **Results:** Results demonstrated that a 12-item, 4-factor model of the MHLS exhibited adequate fit ($\chi^2/df = 2.84$, RMSEA = 0.046, CFI = 0.99, SRMR = 0.036) and high reliability (Cronbach's $\alpha = 0.82$). Similarly, a 12-item, 6-factor version of the PWBS demonstrated good fit ($\chi^2/df = 2.07$, RMSEA = 0.035, CFI = 0.98, SRMR = 0.026) and strong internal consistency ($\alpha = 0.91$). Structural equation modeling revealed that mental health literacy significantly predicted psychological well-being ($\beta = 0.79$, $p < .001$). **Conclusion:** These validated 12-item scales provide concise, reliable, and culturally appropriate tools for mental health screening and intervention evaluation in Philippine higher education settings.

Keywords: Mental health literacy, Psychological well-being, Filipino college students, SDG 3: Good Health and Well-Being, SDG 4: Quality Education

What was Known

- Mental health problems among college students in the Philippines have become increasingly widespread, highlighting the need for reliable tools to assess mental health literacy and eudaimonic well-being.
- Standard Western measurement tools often exhibit poor structural fit when applied directly in non-Western populations without rigorous cross-cultural adaptation.

What's New and Next

- This study successfully validated the MHLS and PWBS for Filipino college students.
- Future research and institutional interventions can utilize these instruments to screen students efficiently, design targeted mental health literacy initiatives, and assess student flourishing across Philippine universities.

Introduction

Students everywhere recognize that the stage of transition to university plays a critical role in psychological well-being ⁽¹⁾. In the Philippines, epidemiological data indicate alarming rates of depression (up to 86%) and anxiety (80%) among tertiary students, with overall psychological distress prevalence estimated at 40.2% ⁽²⁾. Recent national surveys confirm that academic pressure, financial strain, and future career uncertainty remain primary drivers of student distress, while youth suicide attempt rates rose from 3% in 2013 to 7.5% in 2021 ^(1,3).

This problem is exacerbated by the Philippine mental health system itself; there is a significant shortage of mental health professionals (approximately 500 psychiatrists and 1,600 psychologists for over 100 million people) ⁽⁴⁾ and many mental health clinics are concentrated in urban centers, with insufficient reach for a large portion of the country. Only 5% of the national health budget in the Philippines is allocated to mental health ⁽⁴⁾. Consequently, higher education institutions must serve as frontline environments for early identification, mental health promotion, and primary intervention ⁽⁵⁾. Implementing effective campus-based programs requires brief, psychometrically sound, and culturally adapted measurement scales.

Mental Health Literacy: From Global Concept to Local Measurement

Mental health literacy (MHL), originally conceptualized by Jorm (1997), encompasses knowledge and beliefs regarding mental disorders that assist in their recognition, management, and prevention ^(5,6). Core components include recognizing specific disorders, understanding risk factors and etiologies, knowing where to seek professional help, and maintaining attitudes that facilitate appropriate help-seeking ⁽⁷⁾. In the Philippines, MHL presents unique cultural nuances.

Although students often demonstrate moderate conceptual awareness, studies reveal gaps in recognizing specific diagnostic criteria and evidence-based treatments ^(8,9,10). Furthermore, help-seeking is frequently influenced by spiritual beliefs or cultural attributions, leading individuals to consult family members, religious leaders, or local healers prior to seeking formal psychiatric assistance ⁽⁸⁾.

Because MHL constructs vary significantly across cultural contexts, directly applying Western-developed scales often leads to poor factorial fit ⁽¹¹⁾. Adapting scales from regional neighbors with shared cultural values, such as Thailand ⁽¹²⁾, offers a promising alternative. However, psychometric properties must be empirically verified before clinical or research implementation in the Philippines.

Psychological Well-Being: A Eudaimonic Perspective

Complementing the focus on symptom reduction is the promotion of positive psychological functioning. Positive psychology distinguishes between hedonic well-being (positive affect and life satisfaction) and eudaimonic well-being (self-realization, optimal functioning, and personal growth) ⁽¹³⁾. Carol Ryff's multi-dimensional framework posits six core dimensions of eudaimonic flourishing: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance ⁽¹⁴⁾.

Although Ryff's Scales of Psychological Well-Being (PWBS) are widely used internationally ⁽¹⁵⁾, their factorial structure has generated ongoing debate. High inter-factor correlations in Western samples have led some researchers to question the distinctiveness of the six dimensions ⁽¹⁶⁾. In Southeast Asian populations, validation studies have yielded mixed results, supporting six-factor, four-factor, or two-factor models depending on the specific demographic and item length ^(16,17,18). These inconsistencies highlight the necessity of validating an adapted PWBS structure specifically tailored to Filipino university students.

Mental Health Literacy as a Predictor of Well-Being

While MHL is widely assumed to enhance well-being, empirical findings regarding their direct relationship remain mixed. Some studies report weak or non-significant correlations between general MHL and global well-being ^(19,20,21), whereas others demonstrate that resource-oriented MHL (knowing how and where to access care) significantly reduces psychological distress and enhances subjective happiness ^(20,21). Evaluating the structural relationship between adapted MHL and well-being constructs in a Filipino sample is critical for clarifying these mechanisms.

The Present Study: A Framework for Scale Adaptation and Validation

This study aimed to culturally adapt and evaluate the psychometric properties of the Mental Health Literacy Scale (MHLS) and the short-form Psychological Well-Being Scale (PWBS) among Filipino college students. Specifically, the objectives were to: (1) establish content and linguistic equivalence through a systematic cross-cultural adaptation process; (2) evaluate construct validity and internal consistency using exploratory factory analysis (EFA) and confirmatory factor analysis (CFA) in independent subsamples; and (3) test a structural equation model examining the predictive effect of mental health literacy on psychological well-being.

Materials and Methods

1. Research Design

This study utilized a two-phase methodological design: Phase 1 focused on cross-cultural adaptation and content validation, while Phase 2 evaluated psychometric properties using a cross-sectional survey design following guidelines by Ambuehl and Inauen ^[22].

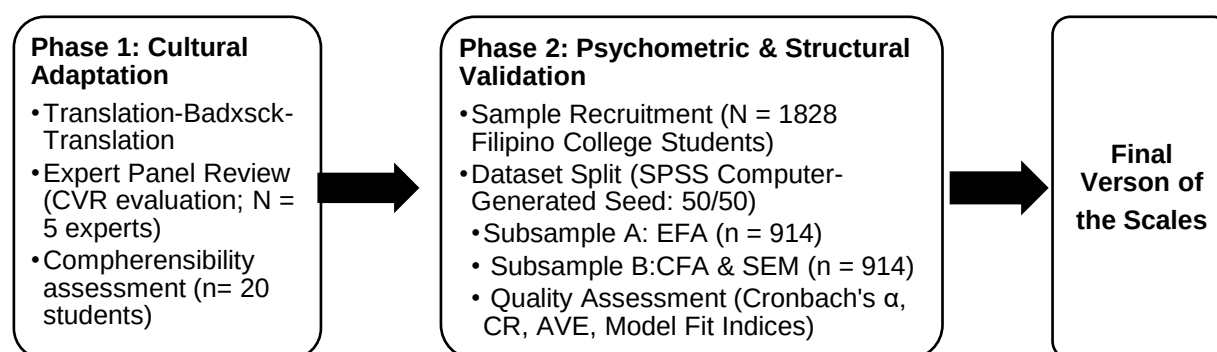


Figure 1 The Flowchart of Cultural Adaptation and Psychometric Validation Process

1.1 Phase 1: Translation and Cultural Adaptation

The English version of the MHLS developed by Chuenphitthayavut et al. ⁽¹²⁾ (15 items) and the 18-item short-form PWBS ⁽²³⁾ were translated into Filipino by two independent professional bilingual translators ^(24,25). A third independent translator, blinded to the original scales, back-translated the Filipino drafts into English. Reconciliations were performed to resolve minor semantic discrepancies ⁽²⁶⁾.

An expert panel of five behavioral scientists and psychometricians evaluated the translated items using Lawshe's content validity ratio (CVR) ⁽²⁶⁾. Experts rated each item as 1 = Not necessary, 2 = Useful but not essential, or 3 = Essential. Items meeting the threshold criteria were retained or refined ⁽²⁷⁾.

A pilot sample of 20 college students assessed item comprehensibility using a binary scale (1 = Clear/Comprehensible, 0 = Unclear/Requires Revision). Items scoring below 1.00 were refined based on qualitative student feedback.

1.2 Phase 2: Psychometric Validation

A total sample of $N = 1,828$ upper-division (3rd and 4th year) college students was recruited from four higher education institutions in Nueva Ecija, Philippines (two public universities: Central Luzon State University, Gapan City College; two private universities: Our Lady of Fatima University-Cabanatuan, Wesleyan University-Philippines). Proportional stratified random sampling was used based on institutional enrollment ratios.

Third- and fourth-year students were selected due to documented academic stress, career transition anxieties, and heightened vulnerability to mental health challenges⁽²⁸⁾. The sample size was determined using target population estimates ($N = 1,828$), a 95% confidence level, a 5% margin of error, and an assumed 50% response proportion, yielding a minimum required sample of 342⁽²⁹⁾. The achieved sample for CFA ($N = 914$) significantly exceeds standard CFA requirements ($N:q$ parameter ratio $> 10:1$)^(29,30). Inclusion criteria were: active enrollment in 3rd or 4th year undergraduate programs and residency in Nueva Ecija. Excluded criteria included 1st and 2nd-year students and non-residents.

2. Instruments

The English version 15-item MHLS developed by Chuenphitthayavut et al. (2024) was adapted and validated in this study. The scale has a 5-point Likert scale questionnaire (1 - strongly disagree) to 5 - strongly agree). The score on the MHLS indicates a level of mental health literacy. The questionnaire is structured into five components: 1) knowledge of how to seek mental health information 2) knowledge of risk factors and causes 3) knowledge of self-treatment 4) knowledge of professional help available 5) attitudes that promote recognition and help⁽¹²⁾.

The 18-item PWBS short form by Ryff and Keyes (1995) covers six dimensions (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self-acceptance) with three items per domain. Items are scored on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with reverse-coded items adjusted prior to analysis.

3. Data Analysis

The total dataset ($N = 1,828$) was split into two equal subsamples using a computer-generated random seed in SPSS (version 26.0): Subsample A ($n = 914$) for EFA and Subsample B ($n = 914$) for CFA and structural equation modeling (SEM).

For the EFA, the principal axis factoring with Promax rotation was conducted on Subsample A. Factor retention was based on eigenvalues > 1.0 , scree plot examination, and parallel analysis. Items were removed if factor loadings were < 0.50 , cross-loadings exceeded 0.30, or communalities were < 0.40 . Moreover, for the CFA and SEM, maximum likelihood estimation in LISREL 8.80 / AMOS was performed on Subsample B. Model fit was evaluated using multiple fit indices: chi-square to degrees of freedom ratio ($\chi^2/df < 3.0$), comparative fit index (CFI ≥ 0.95), Tucker-Lewis index (TLI ≥ 0.95), root mean square error of approximation (RMSEA ≤ 0.06), and standardized root mean square residual (SRMR ≤ 0.08)^(31,32).

Internal consistency was assessed using Cronbach's alpha ($\alpha \geq 0.70$) and composite reliability (CR ≥ 0.70)^(33,34). Convergent validity was established through standardized factor loadings (≥ 0.50) and average variance extracted (AVE ≥ 0.50)^(35,36). Discriminant validity was established when the square root of each construct's AVE exceeded its inter-construct correlations.

Results

1. Translation-Back-Translation, Content Validity and Comprehensibility

Content validity and comprehensibility ratings for the Filipino-translated scales are summarized in Tables 1 and 2. For the MHLS, CVR values ranged from 0.60 to 1.00, and comprehensibility scores ranged from 0.95 to 1.00. Six items with CVR scores of 0.60 (Items 1, 2, 3, 7, 8, 10) were reworded for contextual clarity based on expert feedback. For the PWBS, CVR values ranged from 0.60 to 1.00, and comprehensibility ranged from 0.95 to 1.00. Minor phrasing adjustments were implemented for Items 3, 4, 7, 11, and 15 to ensure natural Filipino syntax.

Table 1 Translation and Back-Translation, CVR and Comprehensibility Score of MHLS

Subscales	Original (English)	Translated (Filipino)	Back-Translated (English)	CVR	Comprehensibility Mean
Knowledge of how to seek mental health information	1. "I know how to educate myself about mental health issues".	1. "Alam ko kung paano turuan ang aking sarili tungkol sa kalusugang pangkaisipan."	1. "I know how to educate myself about mental health."*	0.6	1.00
	2. "I know how to access resources to research mental health issues."	2. "Alam ko kung paano makahahanap ng impormasyon tungkol sa mga problema sa kalusugang pangkaisipan."	2. "I know how to find information about mental health issues.*	0.6	1.00
	3. "I know of several reliable mental health resources or websites."	3. "Alam ko ang ilang mapagkakatiwalaang mapagkukunan impormasyon o mga website tungkol sa kalusugang pangkaisipan."	3. "I know some reliable sources or websites for mental health information." *	0.6	1.00
Knowledge of risk factors and causes	4. "I know how to avoid stressful situations."	4. "Alam ko kung paano iwasan ang mga sitwasyong nakaka-stress."	4. "I know how to avoid stressful situations."	1.0	1.00
	5. "Lack of adequate rest can result in mental health problems."	5. "Alam ko na ang kulang sa pahinga ay pwedeng magdulot ng problema sa kalusugang pangkaisipan."	5. "I understand that lack of rest can lead to mental health problems."	1.0	1.00
	6. "I understand that family background is often one of the factors that predisposes most people to mental health problems."	6. "Nauunawaan ko na ang problema sa pamilya ay kadalasang sanhi ng problema sa kalusugang pangkaisipan."	6. "I understand that family problems often cause mental health issues."	1.0	1.00

Table 1 Translation and Back-Translation, CVR and Comprehensibility Score of MHLS (Cont.)

Subscales	Original (English)	Translated (Filipino)	Back-Translated (English)	CVR	Comprehensibility Mean
Knowledge of self-treatment	7. "I learn to understand the cause and how to end suffering to reduce my discomfort."	7. "Natututo akong intindihin at solusyunan ang aking pinagdaraanang para mabawasan ang aking mga agam-agam."	7. "I'm learning to figure out what's causing my stress and how to deal with it so I can feel better."*	0.6	1.00
	8. "I learn how to control my emotions with the advice of a psychologist."	8. "Natututo akong kontrolin ang aking emosyon sa tulong ng isang mental health professional (e.g. guidance counselor, psychologist, psychiatrist, etc.)"	8. "I am learning to manage my emotions with the help of a mental health professional (e.g., guidance counselor, psychologist, psychiatrist, etc.)".*	0.6	0.95
	9. "I know how to set aside time for hobbies or relaxation."	9. "Alam ko kung paano maglaan ng oras para sa paglilibang at pagpapahinga."	9. "I know how to allocate time for relaxation and recreation."	1.0	1.00
	10. "Scheduling work to finish early helps me reduce anxiety."	10. "Ang pag-schedule ng trabaho para matapos ng maaga ay nakakatulong para mabawasan ang aking pagkabalisa (anxiety)."	10. "Scheduling work to finish early helps reduce my anxiety."*	0.6	1.00
Knowledge of professional help available	11. "I know of a mental health facility where I can go for counseling."	11. "Alam ko ang isang pasilidad pangkalusugan pagkaisipan kung saan maaari akong pumunta para humingi ng tulong o magpa-counsel."	11. "I know a mental health facility where I can go for help or counseling."	1.0	1.00

Table 1 Translation and Back-Translation, CVR and Comprehensibility Score of MHLS (Cont.)

Subscales	Original (English)	Translated (Filipino)	Back-Translated (English)	CVR	Comprehensibility Mean
	12. I can see a psychologist or psychiatrist for initial help.	12. Maaari akong pumunta sa isang guidance counselor, psychologist o psychiatrist para humingi ng tulong.	12. I can go to a guidance counselor, psychologist, or psychiatrist for help."	1.0	1.00
Attitudes that promote recognition and helping	13. "A psychologist can give me advice on social adjustment."	13. "Ang isang guidance counselor o psychologist ay maaaring magbigay sa akin ng payo tungkol sa social adjustment."	13. "A guidance counselor or psychologist can give me advice on social adjustment."	1.0	1.00
	14. "I think that when stress starts, it's a good idea to consult a mental health professional."	14. "Kapag nagsisimula ang stress, magandang ideya ang kumonsulta sa isang mental health professional."	14. "When stress starts, it's a good idea to consult a mental health professional."	1.0	1.00
	15. "People with mental illness should learn how to tolerate their discomfort with the support of a psychologist."	15. "Ang mga taong may problema sa pagiisip ay dapat matutong harapin ang kanilang nararamdaman sa tulong ng isang guidance counselor o psychologist."	15. "People with mental health issues should learn to address their feelings with the help of a guidance counselor or psychologist."*	1.0	0.95

Note: *Items with a CVR score below 1.0 and/or a comprehensibility score below 1.0 were revised based on expert recommendations.

Table 2 Translation and Back-Translation, CVR and Comprehensibility Score of PWBS

Subscales	Original (English)	Translated (Filipino)	Back-Translated (English)	CVR	Comprehensibility Mean
Self-Acceptance	1. "I like most parts of my personality."	1. "Gusto ko ang karamihan sa mga bahagi ng aking personalidad."	1. "I like most aspects of my personality."	1.0	1.0
	2. "When I look at the story of my life, I am pleased with how things have turned out so far."	2. "Kapag tinitingnan ko ang kwento ng aking buhay, masaya ako sa kung ano ang kinalabasan ng aking buhay."	2. "When I look back at my life's story, I'm happy with how things turned out."	1.0	1.0
	3. "In many ways I feel disappointed about my achievements in life."	3. "Maraming beses na nadidismaya ako sa aking mga naaabot sa buhay."	3. "I frequently feel disappointed with my achievements."*	1.0	0.95
Purpose in Life	4. "Some people wander aimlessly through life, but I am not one of them."	4. "May mga taong walang direksyon sa buhay, ngunit hindi ako isa sa kanila."	4. "Some people have no direction in life, but I'm not one of them."*	0.6	0.95
	5. "I sometimes feel as if I've done all there is to do in life."	5. "Minsan nararamdaman ko na nagawa ko na ang lahat ng dapat gawin sa buhay."	5. "Sometimes I feel like I've already done everything I need to do in life."	1.0	1.0
	6. "I live life one day at a time and don't really think about the future."	6. "Namumuhay ako nang paisa-isang araw at hindi ko masyadong iniisip ang hinaharap."	6. "I live one day at a time and don't think much about the future"*	0.6	1.0
Environmental Mastery	7. "The demands of everyday life often get me down".	7. "Madalas akong napapagod sa mga gawain araw-araw."	7. "I often get tired from daily tasks".*	1.0	0.95
	8. "In general, I feel I am in charge of the situation in which I live."	8. "Sa pangkalahatan, pakiramdam ko ako ang may kontrol sa sitwasyon sa aking buhay."	8. "Overall, I feel like I'm in control of my life."	1.0	1.0

Table 2 Translation and Back-Translation, CVR and Comprehensibility Score of PWBS (Cont.)

Subscales	Original (English)	Translated (Filipino)	Back-Translated (English)	CVR	Comprehensibility Mean
	9. "I am good at managing the responsibilities of daily life."	9. "Magaling ako sa pamamahala ng aking mga responsibilidad sa pang-araw-araw na buhay."	9. "I am good at managing my daily responsibilities."	1.0	1.0
Personal Growth	10. "For me, life has been a continuous process of learning, changing, and growth."	10. "Para sa akin, ang buhay ay isang tuloy-tuloy na proseso ng pagkatuto, pagbabago, at paglago."	10. "For me, life is a continuous process of learning, changing, and growing."	1.0	1.0
	11. "I gave up trying to make big improvements or changes in my life a long time ago."	11. "Matagal na akong sumuko sa pagsubok na magkaroon ng malalaking pagbabago o pag-unlad sa aking buhay."	11. "I gave up trying to make major changes or progress in my life a long time ago"*	1.0	0.95
	12. "I think it is important to have new experiences that challenge how I think about myself and the world."	12. "Sa tingin ko mahalaga ang magkaroon ng mga bagong karanasang humahamon sa aking pag-iisip tungkol sa aking sarili at sa mundo."	12. "I believe it's important to have new experiences that challenge my thinking about myself and the world."	1.0	1.0
Positive Relations with Others	13. "I have not experienced many warm and trusting relationships with others."	13. "Hindi ako nagkaroon ng maraming malapit at mapagkakatiwalaang relasyon."	13. "I haven't formed many close and trustworthy relationships."	1.0	1.0
	14. "Maintaining close relationships has been difficult and frustrating for me."	14. "Mahirap para sa akin na panatilihin ang maayos at malapit na relasyon sa aking kapwa."	14. "It's hard for me to maintain good and close relationships with others."	1.0	1.0

Table 2 Translation and Back-Translation, CVR and Comprehensibility Score of PWBS (Cont.)

Subscales	Original (English)	Translated (Filipino)	Back-Translated (English)	CVR	Comprehensibility Mean
	15. "People would describe me as a giving person, willing to share my time with others."	15. "Iniisip ng mga tao na ako ay mapagbigay at handang maglaan ng oras para sa iba"	15. "People think I am generous and willing to make time for others."*	1.0	0.95
Autonomy	16. "I tend to be influenced by people with strong opinions."	16. "Madali akong maimpluwensyahan ng mga opinyon ng ibang tao."	16. "I am easily influenced by other people's opinions."	1.0	1.0
	17. "I have confidence in my own opinions, even if they are different from the way most other people think."	17. "May kumpiyansa ako sa aking sariling mga opinyon, kahit na iba ito sa iniisip ng karamihan."	17. "I have confidence in my own opinions, even if they're different from what most people think."	1.0	1.0
	18. "I judge myself by what I think is important, not by the values of what others think is important."	18. "Hinuhusgahan ko ang sarili ko base sa kung ano ang mahalaga sa akin, hindi sa iniisip ng iba."	18. "I judge myself based on what's important to me, not on what others think."	1.0	1.0

Note: *Items with a CVR score below 1.0 and/or a comprehensibility score below 1.0 were revised based on expert recommendations.

2. Exploratory Factor Analysis

The EFA (n=914) for MHLS verified the suitability of the data for factor extraction (KMO = 0.851, $\chi^2(105) = 4042.43$, $p < .001$). Item 8 exhibited cross-loadings (> 0.30) across multiple factors and low communality (< 0.40), leading to its removal prior to CFA (see table 3).

Table 3 Exploratory Factor Analysis of the MHLS

Item	Factor1	Factor2	Factor3	Factor4	Factor5
1. "I know how to educate myself about mental health."			0.681		
2. "I know how to find information about mental health issues."			0.789		
3. "I know some reliable sources or websites for mental health information."			0.767		
4. "I know how to avoid stressful situations."		0.739			
5. "I understand that lack of rest can lead to mental health problems."				0.760	
6. "I understand that family problems often cause mental health issues."				0.823	
7. "I'm learning to figure out what's causing my stress and how to deal with it so I can feel better."		0.751			
8. "I am learning to manage my emotions with the help of a mental health professional (e.g., guidance counselor, psychologist, psychiatrist, etc.)"	0.565	0.371			
9. "I know how to allocate time for relaxation and recreation."		0.698			
10. Scheduling work to finish early helps reduce my anxiety.		0.585			
11. "I know a mental health facility where I can go for help or counseling."	0.713				
12. "I can go to a guidance counselor, psychologist, or psychiatrist for help."	0.822				
13. "A guidance counselor or psychologist can give me advice on social adjustment."	0.557				
14. "When stress starts, it's a good idea to consult a mental health professional."					0.857
15. "People with mental health issues should learn to address their feelings with the help of a guidance counselor or psychologist."					0.815
Eigenvalues	4.84	1.63	1.47	1.13	0.79
% of Variance Explained	32.24%	10.84%	9.80%	7.53%	5.28%
Cumulative % of Variance Explained	32.24%	43.08%	52.88%	60.41%	65.69%

Note: * - Item was removed due to poor factor loading and/or cross loading issue; (R) - the item was reversed scored

The EFA (n=914) for PWBS revealed interpretable six-factor structure [$KMO = 0.799$; $\chi^2(153) = 3498.014$, $p < .001$] indicating adequate suitability for factor analysis and factor extraction. The factors represent the autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance subscales. None of the items was eliminated prior to CFA analysis as their scores exceed 0.40, and none of the items also loaded on more than one factor (see Table 4).

Table 4 Exploratory Factor Analysis of the PWBS

Item	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
1. "I like most aspects of my personality."	0.499					
2. "When I look back at my life's story, I'm happy with how things turned out."	0.752					
3. "I frequently feel disappointed with my achievements."(R)		0.454				
4. "Some people have no direction in life, but I'm not one of them."	0.857					
5. "Sometimes I feel like I've already done everything I need to do in life." (R)				0.760		
6. "I live one day at a time and don't think much about the future." (R)				0.823		
7. "I often get tired from daily tasks". (R)				0.895		
8. "Overall, I feel like I'm in control of my life."	0.568					
9. "I am good at managing my daily responsibilities."	0.643					
10. "For me, life is a continuous process of learning, changing, and growing."			0.755			
11. "I gave up trying to make major changes or progress in my life a long time ago."(R)		0.406				
12. "I believe it's important to have new experiences that challenge my thinking about myself and the world."			0.757			
13. "I haven't formed many close and trustworthy relationships." (R)		0.961				

Table 4 Exploratory Factor Analysis of the PWBS (Cont.)

Item	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
14. "It's hard for me to maintain good and close relationships with others." (R)		0.927				
15. "People think I am generous and willing to make time for others."						0.933
16. "I am easily influenced by other people's opinions." (R)					0.470	
17. "I have confidence in my own opinions, even if they're different from what most people think."					0.747	
18. "I judge myself based on what's important to me, not on what others think."					0.641	
Eigenvalues	3.481	2.953	1.510	1.235	0.999	0.862
% of Variance Explained	19.34%	16.41%	8.39%	6.86%	5.55%	4.79%
Cumulative % of Variance	19.34%	35.75%	44.14%	51.00%	56.55%	61.34%

Note: * - Item was removed from due to poor factor loading and/or cross loading issue; (R) - the item was reversed scored

3. Confirmatory Factor Analysis, Cronbach's Alpha AVE and CR

In the CFA (n = 914), the initial 15-item MHLS model was refined. Items 14 and 15 showed inadequate standardized factor loadings (< 0.50) and high residual variance. Consequently, Factor 5 ("Attitudes promoting recognition and help-seeking") was removed, resulting in a 12-item, 4-factor model.

As presented in Table 5, the final 12-item, 4-factor MHLS demonstrated good construct fit ($\chi^2(39) = 110.73$, $\chi^2/df = 2.84$, RMSEA = 0.046 [90% CI: 0.035, 0.058], SRMR = 0.036, CFI = 0.99, TLI = 0.98). Factor loadings ranged from 0.55 to 0.81. Subscale composite reliability (CR) values ranged from 0.70 to 0.86, and average variance extracted (AVE) ranged from 0.50 to 0.67, confirming convergent validity. Overall internal consistency for the 12-item scale was strong ($\alpha = 0.82$).

Table 5 The Final Version of MHLS – Quality Assessment using CFA, AVE, CR and Cronbach's Alpha

Factor	Items	CFA Factor Loadings	AVE	CR	Cronbach's Alpha
Knowledge of professional help available	“11. I know a mental health facility where I can go for help or counseling.”	0.81	0.67	0.86	0.75
	“12. I can go to a guidance counselor, psychologist, or psychiatrist for help.”	0.73			
	“13. A guidance counselor or psychologist can give me advice on social adjustment.”	0.65			
Knowledge of self-treatments	“4. I know how to avoid stressful situations”	0.55	0.52	0.81	0.70
	“7. I'm learning to figure out what's causing my stress and how to deal with it so I can feel better.”	0.59			
	“9. I know how to allocate time for relaxation and recreation.”	0.69			
	“10. Scheduling work to finish early helps reduce my anxiety.”	0.56			
Knowledge of how to seek mental health information	“1. I know how to educate myself about mental health.”	0.59	0.50	0.75	0.75
	“2. I know how to find information about mental health issues.”	0.69			
	“3. I know some reliable sources or websites for mental health information.”	0.61			
Knowledge of risk factors and causes	“5. I understand that lack of rest can lead to mental health problems.”	0.77	0.53	0.70	0.72
	“6. I understand that family problems often cause mental health issues.”	0.69			
Cronbach's alpha for the full 12-item MHLS = 0.82					

For the PWBS, six reverse-scored items (Items 3, 4, 7, 11, 15, and 16) exhibited low standardized factor loadings (< 0.50) in the CFA and were eliminated. The resulting 12-item, 6-factor structure (2 items per dimension) demonstrated superior model fit ($\chi^2(39) = 80.76$, $\chi^2/df = 2.07$, RMSEA = 0.035 [90% CI: 0.024, 0.045], SRMR = 0.026, CFI = 0.98, TLI = 0.97).

As shown in Table 6, standardized factor loadings ranged from 0.71 to 0.83. Subscale CR values ranged from 0.80 to 0.87, and AVE values ranged from 0.54 to 0.61, establishing convergent validity. Individual domain Cronbach's alphas ranged from 0.79 to 0.86, with total scale reliability reaching $\alpha = 0.91$.

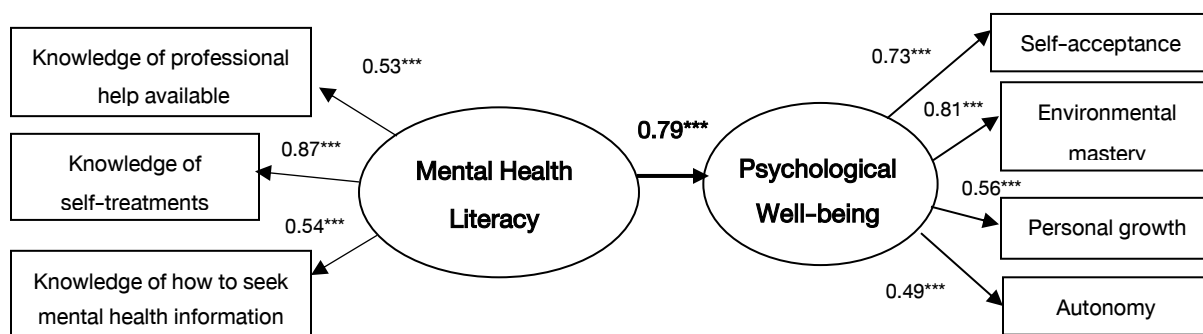
Table 6 The Final Version of PWBS – Quality Assessment using CFA, AVE, CR and Cronbach's Alpha

Factor	Items	CFA Factor Loadings	AVE	CR	Cronbach's Alpha
Self-Acceptance	“1. I like most aspects of my personality.”	0.74	0.56	0.82	0.81
	“2. When I look back at my life's story, I'm happy with how things turned out.”	0.79			
Purpose in Life	“5. Sometimes I feel like I've already done everything I need to do in life.”	0.77	0.59	0.85	0.83
	“6. I live one day at a time and don't think much about the future.”	0.81			
Environmental Mastery	“8. I am learning to manage my emotions with the help of a mental health professional (e.g., guidance counselor, psychologist, psychiatrist, etc.).”	0.80	0.61	0.87	0.86
	“9. I know how to allocate time for relaxation and recreation.”	0.83			
Personal Growth	“10. For me, life is a continuous process of learning, changing, and growing.”	0.71	0.54	0.80	0.79
	“12. I believe it's important to have new experiences that challenge my thinking about myself and the world.”	0.76			
Positive Relations with Others	“13. I haven't formed many close and trustworthy relationships.”	0.75	0.57	0.84	0.82
	“14. It's hard for me to maintain good and close relationships with others.”	0.80			
Autonomy	“17. I have confidence in my own opinions, even if they're different from what most people think.”	0.73	0.55	0.83	0.81
	“18. I judge myself based on what's important to me, not on what others think.”	0.78			

Cronbach's alpha for the full 12-item PWBS = 0.91

The structural equation model evaluating the relationship between MHL and PWB demonstrated acceptable incremental fit (CFI = 0.98, IFI = 0.98, SRMR = 0.030). The absolute fit index ($\chi^2/\text{df} = 36.23$, RMSEA = 0.110) indicated potential model strain. However, elevated RMSEA values are documented artifacts in structural models with small degrees of freedom ($\text{df} < 10$) and large sample sizes^(30,37,38). Thus, the incremental indices support structural interpretation.

Mental health literacy significantly predicted psychological well-being ($\beta = 0.79$, $p < .001$). Among MHL dimensions, Knowledge of Self-Treatment was the strongest indicator ($\lambda = 0.87$, $p < .001$). Among well-being dimensions, Environmental Mastery ($\lambda = 0.81$, $p < .001$) and Self-Acceptance ($\lambda = 0.73$, $p < .001$) exhibited the strongest structural loadings.



Note: *** $p < .001$

Figure 2 Causal relationship model between mental health literacy (MHL) and psychological well-being (PWB) of Filipino College Students

Discussion

This study established the psychometric properties and cultural adaptation of abbreviated 12-item versions of the MHLS and PWBS among Filipino college students. By employing rigorous translation, expert content validation, EFA, and CFA across independent subsamples ($n = 914$ each), the findings demonstrate that shortened scales provide valid, reliable, and practical measurement in Philippine higher education contexts.

The final 12-item, 4-factor structure of the MHLS demonstrated strong structural fit and reliability ($\alpha = 0.82$). Notably, Factor 5 ("Attitudes promoting recognition and help-seeking") was removed during CFA due to low factor loadings. In the Filipino cultural context, help-seeking attitudes are strongly mediated by informal social networks, family cohesion, and spiritual coping. Direct attitude statements derived from Western framework models may not fully capture how Filipino youth conceptualize psychological vulnerability. Similar item deletions have been reported

in prior cross-cultural MHL validations in Southeast Asia, where structural models performed better when focusing primarily on knowledge components (seeking information, self-treatment, professional resources, and risk factors) ^(11,12).

The 12-item, 6-factor version of the PWBS demonstrated excellent model fit (CFI = 0.98, RMSEA = 0.035) and high internal consistency ($\alpha = 0.91$). Importantly, removing six reverse-scored items significantly improved factorial clarity and construct validity. Methodological literature has repeatedly shown that negatively worded items in translated scales frequently produce response bias or cognitive misalignment, particularly among non-native English speakers ^(16,39).

Our findings confirm that Ryff's six theoretical dimensions (Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance) remain distinct and operationally applicable in a collectivist Southeast Asian culture when measured using positively phrased, culturally refined items. This provides evidence against assertions that eudaimonic dimensions collapse into a single higher-order factor in non-Western populations ^(16,40).

The structural model revealed a strong positive effect of MHL on psychological well-being ($\beta = 0.79$, $p < .001$). Specifically, Knowledge of Self-Treatment ($\lambda = 0.87$) was the primary driver within MHL, while Environmental Mastery ($\lambda = 0.81$) was the strongest well-being indicator. These results suggest that when students possess actionable knowledge to manage daily stress and navigate help resources, their sense of personal control and psychological flourishing increases substantially ^(20,21).

Several limitations should be noted. First, the sample was restricted to upper-division college students in Nueva Ecija, which limits direct generalizability to lower-division undergraduates, non-student youth, or clinical populations across other geographic regions of the Philippines. Second, the cross-sectional design precludes definitive causal inferences regarding the longitudinal trajectory of MHL and well-being. Third, reliance on self-report instruments introduces potential social desirability bias. Future research should conduct multi-group invariance testing across gender, socio-economic status, and geographic regions, while employing longitudinal designs to evaluate intervention outcomes over time.

Conclusion

This study successfully adapted and validated 12-item versions of both the Mental Health Literacy Scale (MHLS) and the Psychological Well-Being Scale (PWBS) for Filipino college students. Both instruments exhibited strong factor structures, high internal consistency, and robust convergent validity. By providing concise, psychometrically sound, and culturally appropriate measures, these 12-item scales reduce participant burden and provide practical tools for institutional mental health screening, large-scale epidemiological surveys, and the evaluation of campus wellness initiatives in Philippine universities.

Ethical Approval Statement

The study has been approved by Srinakharinwirot University Ethics Committee (Protocol No.: SWUEC-672291) and Central Luzon State University Ethics Review Committee (Code No.: 2024-431). The human participant's part of the study followed the ethical principles of the Declaration of Helsinki (2013).

Author Contributions

MACM and UI - Conception of idea; data acquisition; data analysis and interpretation; manuscript drafting; manuscript revision; final manuscript approval. MACM, UI, & KPM - Data analysis and interpretation; manuscript drafting; manuscript revision; final manuscript approval.

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Conflicts of Interest

The authors declare that there are no conflicts of interest.

Supplementary Materials

1. Final Validated Mental Health Literacy Scale (MHLS)

Factor / Subscale	Original Scale Items & Statements	Scoring Key & Method	Subscale Calculation Formula	Verbal Interpretation Range
Knowledge of How to Seek Information	• MHL1: "I know how to educate myself about mental health." • MHL2: "I know how to find information about mental health issues." • MHL3: "I know some reliable sources or websites for mental health information."	Direct Scoring 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree	$(MHL1 + MHL2 + MHL3) / 3$	
Knowledge of Self-Treatments	• MHL4: "I know how to avoid stressful situations." • MHL7: "I'm learning to figure out what's causing my stress and how to deal with it so I can feel better." • MHL9: "I know how to allocate time for relaxation and recreation." • MHL10: "Scheduling work to finish early helps reduce my anxiety."	Direct Scoring (Same 1–5 scale)	$(MHL4 + MHL7 + MHL9 + MHL10) / 4$	1.00 – 1.80: Very Low 1.81 – 2.60: Low 2.61 – 3.40: Moderate 3.41 – 4.20: High 4.21 – 5.00: Very High
Knowledge of Risk Factors & Causes	• MHL5: "I understand that lack of rest can lead to mental health problems." • MHL6: "I understand that family problems often cause mental health issues."	Direct Scoring (Same 1–5 scale)	$(MHL5 + MHL6) / 2$	

1. Final Validated Mental Health Literacy Scale (MHLS) (Cont.)

Knowledge of Professional Help Available	• MHL11: "I know a mental health facility where I can go for help or counseling." • MHL12: "I can go to a guidance counselor, psychologist, or psychiatrist for help." • MHL13: "A guidance counselor or psychologist can give me advice on social adjustment."	Direct Scoring (Same 1–5 scale)	(MHL11 + MHL12 + MHL13) / 3
OVERALL MHL SCORE	All 12 MHL Items Combined	Direct Scoring (All items positively phrased)	Sum of all 12 MHL Items / 12

2. Final Validated Psychological Well-Being Scale (PWBS)

Factor / Subscale	Original Scale Items & Statements	Scoring Key & Method	Subscale Calculation Formula	Verbal Interpretation Range
Self-Acceptance	• PWB1: "I like most aspects of my personality." • PWB2: "When I look back at my life's story, I'm happy with how things turned out."	Direct Scoring 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree	(PWB1 + PWB2) / 2	1.00 – 1.80: Very Low 1.81 – 2.60: Low 2.61 – 3.40: Moderate 3.41 – 4.20: High 4.21 – 5.00: Very High
Purpose in Life	• PWB5: "Sometimes I feel like I've already done everything I need to do in life." • PWB6: "I live one day at a time and don't think much about the future."	Reverse Scoring Required Recoded Value = (1=5, 2=4, 3=3, 4=2, 5=1)	(PWB5_recoded + PWB6_recoded) / 2	

2. Final Validated Psychological Well-Being Scale (PWBS) (Cont.)

Environmental Mastery	• PWB8: "I am learning to manage my emotions with the help of a mental health professional..." • PWB9: "I know how to allocate time for relaxation and recreation."	Direct Scoring (Same 1–5 scale)	(PWB8 + PWB9) / 2
Personal Growth	• PWB10: "For me, life is a continuous process of learning, changing, and growing." • PWB12: "I believe it's important to have new experiences that challenge my thinking about myself and the world."	Direct Scoring (Same 1–5 scale)	(PWB10 + PWB12) / 2
Positive Relations with Others	• PWB13: "I haven't formed many close and trustworthy relationships." • PWB14: "It's hard for me to maintain good and close relationships with others."	Reverse Scoring Required Recoded Value = (1=5, 2=4, 3=3, 4=2, 5=1)	(PWB13_recoded + PWB14_recoded) / 2
Autonomy	• PWB17: "I have confidence in my own opinions, even if they're different from what most people think." • PWB18: "I judge myself based on what's important to me, not on what others think."	Direct Scoring (Same 1–5 scale)	(PWB17 + PWB18) / 2
OVERALL PWBS SCORE	All 12 PWBS Items Combined	Mixed Scoring (Recode PWB5, PWB6, PWB13, & PWB14 first)	Sum of all 12 Recoded Items / 12

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