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A Confirmatory Factor Analysis on the Risk Factors for Mental Health Challenges among University Students in Calabarzon: Basis for a Dual Continua Wellness Initiative (DCWI)

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Abstract

University students face escalating mental health challenges influenced by complex interactions among individual psychological vulnerabilities, interpersonal relational difficulties, and systemic environmental stressors. This study employed a mixed-methods approach utilizing the Counseling Center Assessment of Psychological Symptoms–62 (CCAPS-62) alongside comprehensive client intake data from university guidance and counseling centers to examine these multifaceted risk factors among Filipino university students (N = 1014). Confirmatory Factor Analysis (CFA) tested a hypothesized three-factor model comprising individual, interpersonal, and systemic risk domains. Results revealed robust factor loadings across all domains ($p < .001$) with significant covariances ($r = 0.928–0.968$), confirming the interconnected nature of these risk constructs; however, model fit indices (CFI = 0.650, TLI = 0.629, RMSEA = 0.103) suggest opportunities for measurement refinement. Gender analysis highlighted significant disparities, with female students reporting elevated psychological distress and healthier emotion-focused coping, while males exhibited underreporting and avoidance behaviors. Word cloud analyses of presenting problems identified academic pressures, emotional distress, and relational concerns as dominant themes. The strongest risk associations emerged for childhood trauma ($\varepsilon^2 = 0.084–0.148$), self-injury ($\varepsilon^2 = 0.085–0.189$), suicide attempts ($\varepsilon^2 = 0.102–0.187$), family difficulties ($r^2 = 0.107–0.209$), and disability registration ($r = 0.387–0.646$). These findings underscore the necessity for integrated, gender-sensitive intervention programs simultaneously addressing psychological symptoms, social connectedness, and institutional barriers. The proposed Dual Continua Wellness Initiative (DCWI) provides an evidence-based framework for comprehensive mental health support in resource-constrained university settings.

Keywords: *university student mental health; confirmatory factor analysis; risk factors; CCAPS-62; Filipino students; intervention programs; dual continua model*

1. Introduction

University students face escalating mental health challenges influenced by complex interactions among individual psychological vulnerabilities, interpersonal relational difficulties, and systemic environmental stressors. Health issues related to mental wellness among university students in the Philippines have recently become crucial. Studies have uncovered alarmingly elevated rates of anxiety, depression, and psychological distress among students. While figures before the COVID-19 pandemic showed only 35–47% of Filipino students presenting symptoms of depressive or anxiety disorders, these exacerbated considerably during lockdown periods and schooling disruptions (Serrano, 2023). The gradual decline in student mental health status assumes relevance alongside systemic obstacles in providing mental health services, where approximately 3–5% of national budget allocation goes to psychiatric care, creating substantial gaps through which emerging adults navigate academic pressure and sociocultural transitions that can be largely overwhelming (Alejadria et al, 2022).

The mental health of university students remains multifactorial, uniquely affected by a mix of personal vulnerabilities, social relationships, and systemic forces within the academic environment (Mofattheh, 2020). Recent evidence shows a troubling rise in mental health dysfunction among undergraduate students, affecting a large section with distress ranging from depression and anxiety to interpersonal sensitivity and overwhelming hopelessness (Chu et al., 2022; García et al., 2024; Shan et al., 2022). This amalgamation of risks is amplified by interplaying factors unique to the university experience: academic demands, financial

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pressures, social adjustments, and demands associated with emerging adulthood (Harith et al., 2022). Despite the mass of services universities create, interventions focusing on distressed individuals often work little in changing the mental well-being of the larger population, particularly as many students do not seek help due to stigma (Ribeiro et al., 2024).

Risk factors at the individual level are established concerning gender, with female students at 42% more likely to develop anxiety disorders than male counterparts (Serrano et al., 2023). Academic stress is not the sole cause; students tend to engage in maladaptive coping styles such as procrastination, which correlates highly ($r = 0.67$, $p < 0.01$) with psychological distress and low well-being levels during hybrid learning (Genonimo et al., 2025). Neurocognitive literature suggests these patterns may be established through impairments in executive functioning from insufficient sleep, with 68% of students in Manila reporting below six hours during exam periods (Alejandria et al., 2025). Meanwhile, research has begun highlighting the intersectionality of sexual orientation and mental health, though localization in the Philippines remains scant.

Interpersonal risk factors—such as social isolation, lack of supportive networks, and strained personal relationships—exert a profound influence on student mental well-being. The compounding effect of interpersonal stress is evident among health professions students, where burnout dimensions like emotional exhaustion and depersonalization have been positively associated with lifestyle factors including higher screen time, snacking frequency, and BMI, while sleep duration and physical activity showed inverse relationships with these burnout markers (AgangAng et al., 2025). These findings suggest that relational and lifestyle factors are deeply intertwined in the distress experienced by students in high-pressure academic environments.

The impact of social isolation has been particularly pronounced during the pandemic. Son et al. (2020) reported that 86% of students experienced reduced contact with others, leading to heightened isolation and anxiety. Similarly, Wang et al. (2020) found elevated rates of anxiety and depression among university students, with interpersonal risk factors exacerbating these conditions. The connection between social isolation and psychological distress has been consistently documented across multiple studies (Browning et al., 2021; Alsubaie et al., 2019).

Beyond interpersonal dynamics, systemic risk factors—including gender, socioeconomic status, academic pressures, and stigma—further compound student mental health challenges, reinforcing the need for comprehensive interventions that address both relational and structural dimensions of distress (Browning et al., 2021; Wathelet et al., 2020; Mofatteh, 2020; Chen & Luccok, 2022).

Confirmatory Factor Analysis (CFA) provides a rigorous, theory-driven approach to validate measurement models underlying these risk factors. Through CFA, researchers can test how well observed indicators represent latent constructs specific to mental health risks, ensuring construct validity and measurement precision (Longo et al., 2020; Faradiba et al., 2023). Unlike exploratory methods, CFA allows hypothesis testing about factor structure based on existing theory, crucial for confirming dimensionality of mental health risk factors in specific populations. Recent studies demonstrate that CFA models offer strong evidence of convergent and discriminant validity across diverse populations, supporting its use in validating instruments in mental health research (Longo et al., 2020).

This study addresses the need for a validated multifactorial risk model among Filipino university students in CALABARZON. Specifically, it sought to: determine psychological distress levels of students and compare significant differences between two universities; assess risk factors using client intake forms; identify underlying dimensions of individual risk factors (academic stress, personal history, coping mechanisms); determine the latent structure of interpersonal risk factors (family support, peer relationships, social isolation); investigate the factor structure of systemic risk factors (institutional support, academic policies, access to mental health services); assess the combined influence of individual, interpersonal, and systemic risk factors; develop a comprehensive model integrating these domains; create an intervention program using the Dual Continua Model based on CFA findings; and provide evidence-based recommendations translating CFA findings into actionable strategies for universities and policymakers.

2. Review of Related Literature

2.1 Individual Risk Factors: Psychological Vulnerabilities and Personal History

Research consistently identifies individual risk factors that contribute to mental health challenges

among university students. Gender differences are particularly well-documented: female students report higher rates of anxiety, depression, and psychological distress compared to their male counterparts (Son et al., 2020; Wathelet et al., 2020; Prowse et al., 2021). Sheldon et al. (2021) further found that female students experienced more severe negative effects during crises, underscoring the need for gender-sensitive interventions. At the same time, suicide research highlights distinct risk patterns—females are more likely to attempt suicide, whereas males are more likely to die by suicide—indicating differentiated pathways of vulnerability that require tailored attention (Miranda et al., 2019).

The intersection of gender with other psychosocial variables adds further nuance to these risk profiles. For example, a study of dormitory-based medical students revealed that females reported higher stress and emotional exhaustion, while males exhibited slightly higher depersonalization alongside weight-related risk tendencies (AgangAng et al., 2025). Taken together, these gendered patterns emphasize the importance of interventions that address both the internalizing symptoms more commonly reported by female students and the externalizing or avoidant behaviors that may signal distress in male students.

Socioeconomic status represents another major individual risk factor. Students from lower socioeconomic backgrounds demonstrate greater vulnerability to adverse mental health outcomes, particularly during stressful events such as the COVID-19 pandemic (Browning et al., 2021; Wathelet et al., 2020). Pre-existing health conditions similarly increase psychological distress vulnerability (Browning et al., 2021; Chen & Lucock, 2022). Coping strategies and lifestyle choices further shape mental health outcomes; maladaptive coping mechanisms such as avoidance and procrastination correlate significantly with psychological distress ($r = 0.67$, $p < 0.01$), while reduced physical activity predicts increased depressive symptoms (Prowse et al., 2021; Hamza et al., 2020).

Academic stressors represent a substantial domain of individual risk. Students under high cognitive load during intense academic demand periods report elevated psychological distress (Browning et al., 2021; Wathelet et al., 2020; Sundarasen et al., 2020). The transition to remote learning compounded these stressors, increasing anxiety and depression (Chen & Lucock, 2022). Lopes and Nihei (2021) demonstrated that increased cognitive load during remote learning impaired concentration and learning outcomes. The cumulative relationship between cognitive load and academic stressors significantly predicts anxiety, with academic performance worry and economic pressures emerging as key contributors (Herbert et al., 2020; Mofatteh, 2020).

2.2 Interpersonal Risk Factors: Social Connections, Family Dynamics, and Relational Stress

Interpersonal risk factors profoundly impact university student mental health. Social isolation demonstrates particularly strong effects: Son et al. (2020) reported that 86% of students experienced reduced social contacts during the pandemic, leading to increased isolation and anxiety. Wang et al. (2020) confirmed elevated anxiety and depression proportions among university students, with interpersonal risk factors exacerbating these conditions. Browning et al. (2021) found that female students and those from lower socioeconomic backgrounds suffered greater psychological impacts due to inadequate social support.

Social support systems play a crucial protective role. Alsubaie et al. (2019) identified lack of social support as a major contributor to mental health issues, calling for university orientation programs promoting social networks. Sheldon et al. (2021) emphasized interventions addressing interpersonal challenges across different socioeconomic backgrounds. Mofatteh (2020) recognized stigma and social isolation as key interpersonal risk factors, advocating for interventions promoting social support and mindfulness. Hamza et al. (2020) similarly advanced integrated approaches addressing psychosocial factors to enhance student mental health outcomes.

Family dynamics and peer relationships emerge as particularly influential. Wathelet et al. (2020) documented how financial and housing issues potentiate mental health problems through interpersonal stress mechanisms. Chen and Lucock (2022) found that financial stress and societal stigma contribute to increased psychiatric symptoms. The intersectionality of gender and socioeconomic status further shapes interpersonal risk exposure, with targeted support needed for vulnerable groups (Browning et al., 2021).

2.3 Systemic Risk Factors: Institutional, Financial, and Environmental Pressures

Systemic risk factors encompass the broader environmental and institutional contexts that shape student mental health. A thematic synthesis of contemporary challenges in Philippine health professions education highlights how systemic pressures—including clinical placement scarcity, program viability tensions under licensure cultures, and resource constraints—operate as an interconnected system that directly affects both learner preparedness and faculty well-being (Bermido et al., 2025). Within this framework,

academic leadership emerges as a central mediating function, tasked with balancing systemic demands against the psychosocial needs of students and educators.

Gender and socioeconomic status also function as systemic determinants, with female students and those from lower-income families demonstrating heightened vulnerability to psychological distress during crises (Browning et al., 2021; Wathelet et al., 2020). Pandemic-related disruptions further illustrate these risks: Mofatteh (2020) documented how arrested social interactions accelerated mental health decline among previously unimpaired students, while Ni et al. (2020) found that excessive engagement with pandemic-related news correlated with increased anxiety and depression.

Academic and financial pressures add additional systemic layers. Sheldon et al. (2021) identified academic demands and economic strain as aggravating factors for anxiety and depression, underscoring the need to address these barriers in mental health support strategies. Similarly, Alejandria et al. (2025) reported that 68% of Manila students slept fewer than six hours during exam periods, reflecting the pervasive impact of systemic academic pressures on student well-being.

Stigma and cultural considerations further compound systemic risk in student mental health. Pressures on the Philippine health workforce pipeline are intensifying globally, as the country continues to serve as a major supplier of nurses and caregivers while facing deepening domestic challenges such as maldistribution and retention issues. These structural strains create stressful and under-resourced learning environments for students (Atento et al., 2025a).

At the individual level, financial stress and societal stigma have been shown to contribute to increased psychiatric symptoms among students (Chen & Lucock, 2022). Cultural differences and resource availability also play a significant role in shaping mental health outcomes internationally, with evidence pointing to the need for culturally tailored interventions that account for diverse contexts and experiences (Campbell et al., 2022).

Protective factors operate systemically as well. Ni et al. (2020) observed that supportive environments reduce mental health risks during crises. Hamza et al. (2020) emphasized lifestyle factors including exercise and substance use, underscoring the need for healthy behavior promotion as avenues for improving student wellbeing.

2.4 Theoretical Framework: The Dual Continua Model of Mental Health

Professional effectiveness among counselors The dual continua model of mental health, proposed by Keyes (2002, 2005), posits that mental health and mental illness represent two distinct yet related dimensions rather than opposite ends of a single continuum. Mental illness encompasses psychopathology such as depression and anxiety, while mental health involves flourishing characterized by emotional vitality, effective functioning, and positive psychological attributes. Ryff's (1989) six wellbeing dimensions—self-acceptance, positive relations, autonomy, environmental mastery, purpose in life, and personal growth—operationalize the mental health continuum.

Empirical validation emerged from Keyes's (2005) analysis of MIDUS survey data (N = 3,032 adults), where confirmatory factor analysis supported two orthogonal factors over a unidimensional alternative. Westerhof and Keyes (2010) extended this to a Dutch sample (N = 1,663 adults aged 18-87), confirming age-related divergences and distinct predictors: marital status and employment buffer illness, while gender and migration influence flourishing.

In educational contexts, the dual continua model has proven especially robust for adolescents and emerging adults. Suldo and Shaffer (2008) demonstrated its utility in schools by employing quadrant-based profiling that predicted academic outcomes beyond the mere absence of symptoms. The framework's relevance to holistic intervention design is further reinforced by conceptual work in health analytics, which argues that patient- or student-centered outcomes are best achieved when data integration is paired with empathy—ensuring that wellbeing is defined not simply as the absence of distress but as a positively measured state (Atento et al., 2025b). This perspective directly supports the DCWI's aim to cultivate flourishing alongside symptom reduction.

Empirical findings underscore this orthogonality: Antaramian et al. (2010) reported that 17–20% of youth were flourishing despite experiencing distress, with correlations between wellbeing and distress ranging from $r = -0.40$ to -0.50. More recently, meta-analyses synthesizing over 100 studies affirm consistent low-to-moderate negative correlations ($r = -0.35$), while also showing that wellbeing explains unique variance in outcomes such as life satisfaction and resilience

(Margraf et al., 2024). Together, these findings highlight the model's capacity to advance both theoretical understanding and practical interventions by recognizing wellbeing as a distinct, measurable dimension of mental health.

Interventions grounded in the dual continua model integrate symptom reduction with wellbeing promotion. Wang et al. (2025) validated this approach in a 246-student sample (64% female, M age = 22), showing autonomy improvements ($p = .03$) orthogonal to symptom relief. Cultural adaptations remain important; Khumalo et al. (2022) confirmed model fit in African samples via CFA but advocated contextual wellbeing indicators.

2.5 Evidence-Based Interventions: Cognitive Behavioral and Positive Psychology Approaches

Cognitive Behavioral Therapy (CBT) represents a structured, time-limited psychotherapeutic approach targeting maladaptive cognitions and behaviors. Core strategies include cognitive restructuring—identifying and challenging distorted thoughts—and behavioral activation to counteract avoidance patterns (Cuijpers et al., 2023). Recent meta-analyses confirm CBT's moderate-to-large effects, with standardized mean differences ranging from 0.37 to 0.73 for depression and anxiety, outperforming waitlist controls in 70-80% of randomized controlled trials (O'Toole, 2025). For depression, CBT emphasizes activity scheduling and thought records, yielding sustained reductions in Hamilton Depression Rating Scale scores across 28 RCTs (Zhang et al., 2025). Third-wave variants like mindfulness-based CBT integrate acceptance techniques, enhancing relapse prevention (Zhang et al., 2025). In university settings, brief CBT modules targeting academic procrastination yield functioning improvements, integrating with dual continua models for comorbid distress-wellbeing gains (Wang et al., 2025).

Positive Psychology Interventions (PPIs) shift focus from pathology remediation to cultivating strengths, positive emotions, and meaning, drawing from Seligman's PERMA model. Recent meta-analyses confirm PPIs yield small-to-moderate reductions in depression ($g = -0.34$) and anxiety ($g = -0.28$) symptoms among non-clinical and distressed populations (Pan et al., 2022). Gratitude-based PPIs, such as "three good things" journaling, significantly lower distress in clinical samples, with pre-post decreases in Depression Anxiety Stress Scale scores ($p < .001$) and concurrent wellbeing gains (AlHugail, 2025). Strengths-oriented strategies, including VIA character strengths exercises, promote personal growth and environmental mastery, yielding medium wellbeing uplifts ($g = 0.50$) while attenuating distress in university students facing academic stress (Ng et al., 2025). Self-compassion PPIs reduce rumination and elevate positive relations (Carr et al., 2025). Digital and group-format PPIs scale effectively for youth distress, boosting hope and compassion ($g = 0.55–0.70$) while diminishing mood problems (Pan et al., 2022). In Asian university contexts, 8-week positive education programs reduced psychological distress ($p < .05$) and promoted flourishing, aligning with dual continua frameworks (Ng et al., 2025).

2.6 Synthesis and Gaps

The literature establishes that university student mental health is shaped by interdependent individual, interpersonal, and systemic risk factors. Individual vulnerabilities including gender, socioeconomic status, pre-existing conditions, and maladaptive coping interact with interpersonal dynamics such as social isolation, family conflict, and peer relationships, all embedded within systemic contexts of institutional policies, financial pressures, and cultural stigma. The dual continua model provides a robust theoretical framework distinguishing mental illness from mental wellbeing, supporting interventions that simultaneously target symptom reduction and flourishing promotion. CBT and PPIs offer evidence-based strategies applicable to university populations, with emerging support for integrated approaches.

Despite substantial research, critical gaps remain. Few studies have examined these risk factors collectively using confirmatory factor analysis to validate multidimensional measurement models, particularly in non-Western developing country contexts. Longitudinal research tracking long-term outcomes beyond immediate crisis periods is scarce. The intersectionality of multiple risk factors—how gender, socioeconomic status, sexual orientation, and disability status interact to amplify vulnerabilities—requires further investigation. Cultural adaptations of the dual continua model and evidence-based interventions for Filipino university populations remain underdeveloped. This study addresses these gaps by conducting confirmatory factor analysis on individual, interpersonal, and systemic risk factors among Filipino university students in CALABARZON, providing empirical foundation for culturally tailored, multidimensional interventions.

3. Methodology

3.1 Research Design

This study employed a mixed-methods approach utilizing confirmatory factor analysis (CFA) to test a hypothesized three-factor measurement model of risk factors for mental health challenges among university students. CFA is a statistical technique

used to test whether data fit a hypothesized measurement model based on theoretical expectations, functioning as a confirmatory test of theory-driven constructs (Brown, 2015; Idris et al., 2025). The hypothesized model comprised three latent factors: individual risk factors (anxiety, depression, maladaptive coping, stigma), interpersonal risk factors (loneliness, family conflict, social rejection sensitivity), and systemic risk factors (financial stress, academic distress, limited mental health access).

3.2 Participants and Setting

Respondents were drawn from two universities in CALABARZON, Philippines: one private university (University 1) with senior high school, college, and graduate students (n = 662), and one government-run college (University 2) with 253 respondents. Additionally, Client Intake Form data from 99 counseling center clients at University 1 were included. Total sample size was N = 1014 respondents.

For confirmatory factor analysis, adequate sample size is critical to ensure reliable and valid results. The combined sample of 915 respondents (excluding intake-only clients) exceeds recommended minimums for CFA, which generally require at least 200 participants for stable parameter estimates, with 300–500+ recommended for accuracy and generalizability (Kline, 2016; MacCallum et al., 1999).

3.3 Measures

Client Intake Interview Form. The Counseling and Testing Center conducts intake interviews with students referred by faculty members. This form, in use since 2021, determines student eligibility and appropriateness for counseling services. The researcher utilized 99 intake forms from SY 2021-2022 to present, with permission from the university's Vice President for Academic Affairs and the Counseling and Testing Center.

Standardized Data Set (SDS). The SDS comprises standardized data materials used by Center for Collegiate Mental Health (CCMH) counseling centers during routine clinical practice. Developed from intake materials of over 50 counseling centers with input from more than 100 centers, the SDS contains eight major components including demographic questions and instruments collecting information related to treatment provided to students receiving services.

Counseling Center Assessment of Psychological Symptoms–62 (CCAPS-62). The CCAPS-62 was developed by Counseling & Psychological Services at the University of Michigan in 2001 to create a high-quality, multidimensional assessment instrument affordable and clinically useful for college counseling centers. The instrument is managed by the Center for Collegiate Mental Health at Penn State University. The CCAPS-62 contains eight subscales assessing distinct areas of distress: Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Family Distress, Hostility, and Substance Use. Students respond on a 5-point Likert scale ranging from "not at all like me" to "extremely like me" based on the preceding two weeks. The instrument demonstrates strong psychometric properties with regularly updated peer-based norms drawn from very large samples (current norms based on 488,190 students seeking counseling services at US institutions from 2022-2024).

3.4 Data Collection and Analysis

Following topic development and adviser approval, the researcher conducted literature review and selected methods. Data collection involved distributing surveys to university students selected as respondents. Relevant permissions were obtained from university offices and the Research Ethics Review Committee of the university, which is accredited by the Philippine Health Research Ethics Board. Informed consent was obtained from all participants.

Confirmatory Factor Analysis was utilized to test and validate the hypothesized factor structure of risk factors. Based on theoretical models, CFA assessed relationships between latent constructs and their observed indicators measured through CCAPS-62 subscales and SDS items. Analysis involved estimating factor loadings representing how well each observed variable relates to the underlying latent factor, and assessing model fit indices to evaluate how closely the hypothesized factor structure matched the actual data.

Additional analyses included Mann-Whitney U tests comparing psychological distress between universities, Kruskal-Wallis H tests examining associations between demographic variables and CCAPS-62 subscales, Spearman correlations for continuous variables, and cross-tabulations with contingency coefficients for categorical variables. Effect sizes were calculated using epsilon squared (ε^2) for Kruskal-Wallis, r for Mann-Whitney U, and

r^2 for Spearman correlations. Word cloud analyses of presenting problems and free-time activities were generated from client intake data.

Assumption checks confirmed data suitability for factor analysis. Bartlett's Test of Sphericity yielded a chi-square (χ^2) statistic of 8926 with 36 degrees of freedom ($p < .001$), rejecting the null hypothesis of an identity matrix and confirming substantial correlations among variables. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.890 overall, indicating meritorious sampling adequacy, with individual subscales ranging from 0.782 (Distress Index) to 0.969 (Eating Concerns).

3.5 Ethical Considerations

All ethical guidelines from the American Psychological Association and Psychological Association of the Philippines were followed. Ethical review approval was obtained from the university's Research Ethics Review Committee, accredited by the Philippine Health Research Ethics Board. Informed consent was obtained from all participants, with assurance of confidentiality and voluntary participation.

4. Results and Discussion

4.1 Preliminary Analyses and Assumption Checks

Prior to conducting confirmatory factor analysis, data suitability was assessed. Bartlett's Test of Sphericity yielded a chi-square (χ^2) statistic of 8926 with 36 degrees of freedom ($p < .001$), rejecting the null hypothesis of an identity matrix and confirming substantial correlations among variables. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.890 overall, indicating meritorious sampling adequacy. Individual subscales ranged from 0.782 (Distress Index) to 0.969 (Eating Concerns), confirming data factorability.

4.2 Psychological Distress Levels and University Comparisons

University 1 students exhibited elevated Family Distress ($M = 2.021$, $SD = 0.687$, 87th percentile), ranking highest among CCAPS-62 subscales and signaling profound relational strains within family systems exceeding national norms. Social Anxiety ranked fifth at University 1 ($M = 2.182$, $SD = 0.771$, 61st percentile) but topped University 2 ($M = 2.151$, $SD = 0.775$, 60th percentile), indicating moderate-to-high interpersonal inhibition consistent across both institutions. Eating Concerns were clinically significant at both universities (University 1: $M = 1.753$, $SD = 0.873$, 81st percentile; University 2: $M = 1.574$, $SD = 0.777$, 78th percentile). Frustration/Anger showed elevated irritability across cohorts (University 1: $M = 1.481$, $SD = 1.102$, 75th percentile; University 2: $M = 1.414$, $SD = 0.938$, 73rd percentile). Substance/Alcohol Use demonstrated concerning patterns, particularly at University 1 ($M = 0.929$, $SD = 1.100$, 71st percentile). Overall Distress Index fell below clinical cutoffs (University 1: $M = 1.637$, $SD = 1.023$, 45th percentile; University 2: $M = 1.497$, $SD = 0.804$, 38th percentile).

Mann-Whitney U tests revealed significant differences between universities in four of nine psychological distress domains. Family Distress showed the most substantial difference ($U = 46100$, $p < .001$, mean difference = 0.667). Academic Distress also demonstrated significant variation ($U = 61438$, $p < .001$, mean difference = 0.40). Eating Concerns differed significantly ($U = 76988$, $p = .006$, mean difference = 0.222), and Depression scores revealed a statistically significant though smaller difference ($U = 79411$, $p = .036$, mean difference = 0.154). No significant differences emerged for Social Anxiety, Generalized Anxiety, Substance/Alcohol Use, Frustration/Anger, or the overall Distress Index.

4.3 Demographic Associations with Risk Factors

Program Enrollment. Significant associations emerged between students' academic program and mental health indicators. Strong associations were found with school-related problems ($p = 0.047$), weight concerns ($p = 0.002$), weight feedback ($p = 0.027$), sexual activity ($p = 0.041$), STD protection ($p = 0.026$), abusive relationships ($p = 0.028$), and seatbelt/helmet use ($p = 0.041$). Contingency coefficients ranged from 0.399 to 0.550 for these associations.

Gender. Female students reported elevated psychological distress, particularly anxiety and depression, and engaged in more emotion-focused coping mechanisms including socialization and hobbies. Male students exhibited greater avoidant behaviors and maladaptive coping strategies including substance use, with evidence of underreporting due to stigma and masculine role expectations.

Academic Status. Academic status (regular, irregular, transferee) demonstrated significant correlations with family difficulties, parental support, tobacco use, feeling safe at home, and protective behaviors while traveling. Students with irregular or transferee status reported greater family difficulties and less parental support ($p = .003$), higher tobacco use ($p = .008$), and lower safety perceptions.

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Prior Counseling History. Students who had previously received counseling demonstrated significant associations with family-related challenges, academic issues, bullying experiences (school and elsewhere), body image concerns, substance use (tobacco and alcohol), and abuse or unsafe experiences including unwanted sexual contact, abusive relationships, and feeling unsafe at home.

4.4 Individual Risk Factors

University 1. Gender demonstrated significant small effects on multiple CCAPS-62 subscales: Social Anxiety ($H = 13.37$, $p = .004$, $\varepsilon^2 = 0.0208$), Generalized Anxiety ($H = 10.3$, $p = .016$, $\varepsilon^2 = 0.016$), Depression ($H = 8.06$, $p = .045$, $\varepsilon^2 = 0.0125$), Substance/Alcohol Use ($H = 44.65$, $p < .001$, $\varepsilon^2 = 0.0693$), Frustration/Anger ($H = 8.0$, $p = .046$, $\varepsilon^2 = 0.0124$), and Distress Index ($H = 9.87$, $p = .02$, $\varepsilon^2 = 0.0153$). Sexual orientation showed significant small-to-moderate effects across all subscales except Academic Distress, with Substance/Alcohol Use showing the largest effect ($\varepsilon^2 = 0.0626$, $p < .001$).

Childhood trauma experiences exhibited the largest effects across all mental health domains ($\varepsilon^2 = 0.084–0.148$, all $p < .001$), followed by self-injury behaviors ($\varepsilon^2 = 0.085–0.189$), suicide attempts ($\varepsilon^2 = 0.102–0.187$), and medication use for mental health ($\varepsilon^2 = 0.040–0.102$). Students who had taken medication for mental health concerns consistently reported higher distress across all CCAPS-62 subscales, with moderate-to-large effect sizes. History of psychiatric hospitalization demonstrated moderate-to-large effects across all domains, notably Depression ($\varepsilon^2 = 0.0976$), Substance/Alcohol Use ($\varepsilon^2 = 0.1364$), and Frustration/Anger ($\varepsilon^2 = 0.1064$).

Non-suicidal self-injury showed moderate-to-large effects across all subscales, with particularly strong associations with Generalized Anxiety ($\varepsilon^2 = 0.1603$), Depression ($\varepsilon^2 = 0.1636$), Frustration/Anger ($\varepsilon^2 = 0.1742$), and Distress Index ($\varepsilon^2 = 0.1889$). Suicidal ideation demonstrated large effects on Generalized Anxiety ($\varepsilon^2 = 0.1532$), Depression ($\varepsilon^2 = 0.171$), Frustration/Anger ($\varepsilon^2 = 0.1506$), and Distress Index ($\varepsilon^2 = 0.1858$). Suicide attempt history showed large effects on Depression ($\varepsilon^2 = 0.17$), Generalized Anxiety ($\varepsilon^2 = 0.1622$), Frustration/Anger ($\varepsilon^2 = 0.1678$), and Distress Index ($\varepsilon^2 = 0.1872$).

University 2. Similar patterns emerged with traumatic events demonstrating large effects on Distress Index ($\varepsilon^2 = 0.1517$, $p < .001$) and Depression ($\varepsilon^2 = 0.1383$, $p < .001$). Suicide attempts showed moderate-to-large effects on Depression ($\varepsilon^2 = 0.1392$, $p < .001$), Distress Index ($\varepsilon^2 = 0.1319$, $p < .001$), and Frustration/Anger ($\varepsilon^2 = 0.1316$, $p < .001$). Alcohol consumption yielded a large effect on Substance/Alcohol Use ($\varepsilon^2 = 0.2072$, $p < .001$). Family history of mental illness presented moderate effects on Family Distress ($\varepsilon^2 = 0.0914$, $p < .001$), Generalized Anxiety ($\varepsilon^2 = 0.0495$, $p = .005$), and Depression ($\varepsilon^2 = 0.0458$, $p = .007$). Low engagement in studies showed medium negative correlations with Academic Distress ($r_s = -0.246$, $p < .001$), Depression ($r_s = -0.243$, $p < .001$), and Distress Index ($r_s = -0.242$, $p < .001$).

4.5 Interpersonal Risk Factors

University 1. Difficulties with family members showed the strongest associations across all mental health domains ($r^2 = 0.107–0.209$), followed by loneliness ($r^2 = 0.108–0.220$) and post-interaction anxiety ($r^2 = 0.059–0.236$). Considering seriously injuring another person demonstrated moderate effects across multiple domains, with the largest associations on Frustration/Anger ($\varepsilon^2 = 0.1221$), Substance/Alcohol Use ($\varepsilon^2 = 0.1145$), and Eating Concerns ($\varepsilon^2 = 0.0949$). Intentionally causing serious injury to another person showed moderate-to-large effects, notably on Substance/Alcohol Use ($\varepsilon^2 = 0.1296$) and Eating Concerns ($\varepsilon^2 = 0.1181$). Unwanted sexual contact demonstrated moderate effects across domains, with Substance/Alcohol Use ($\varepsilon^2 = 0.1025$) and Frustration/Anger ($\varepsilon^2 = 0.0975$) showing the largest associations.

Feeling lack of companionship correlated significantly with Depression ($r_s = 0.469$, $r^2 = 0.220$) and Distress Index ($r_s = 0.444$, $r^2 = 0.197$). Feeling lonely or socially disconnected showed strong associations with Depression ($r_s = 0.499$, $r^2 = 0.249$) and Distress Index ($r_s = 0.475$, $r^2 = 0.226$). Sensitivity to criticism correlated with Generalized Anxiety ($r_s = 0.371$, $r^2 = 0.138$), Social Anxiety ($r_s = 0.351$, $r^2 = 0.123$), and Distress Index ($r_s = 0.329$, $r^2 = 0.108$). Post-interaction anxiety demonstrated strong associations with Generalized Anxiety ($r_s = 0.481$, $r^2 = 0.231$) and Distress Index ($r_s = 0.486$, $r^2 = 0.236$).

University 2. Family difficulties ($r_s = 0.398$, $r^2 = 0.158$) and loneliness ($r_s = 0.342$, $r^2 = 0.117$) emerged as the strongest interpersonal predictors. Sensitivity to criticism ($r_s = 0.32$, $r^2 = 0.102$) and post-interaction anxiety ($r_s = 0.282$, $r^2 = 0.079$) showed medium effects. Unwanted sexual contact demonstrated moderate effects on multiple domains,

with Frustration/Anger showing the largest association ($\varepsilon^2 = 0.1029$).

4.6 Systemic Risk Factors

University 1. Disability registration showed the largest effects (r = 0.387–0.646), followed by international student status (r = 0.316–0.524) and working student status (r = 0.325–0.513). Current academic status demonstrated small-to-moderate effects across domains, with Substance/Alcohol Use showing the largest association ($\varepsilon^2 = 0.0718$, $p < .001$). Financial situation (current and growing up) showed consistent small-to-moderate correlations with multiple distress domains. Access to mental health support on campus demonstrated small protective effects across subscales. Hours spent on social media correlated positively with distress ($r_s = 0.146–0.235$). First-generation student status showed minimal associations.

University 2. Housing/living arrangements exhibited large effects on Family Distress ($\varepsilon^2 = 0.203$, $p = .002$), Depression ($\varepsilon^2 = 0.152$, $p = .045$), and Frustration/Anger ($\varepsilon^2 = 0.168$, $p = .021$). Hours spent on social media showed moderate effects ($r_s = 0.252–0.388$). Financial situation demonstrated small but consistent effects. Access to mental health support showed small protective correlations with Depression ($r_s = -0.184$, $p = .003$) and Substance/Alcohol Use ($r_s = -0.161$, $p = .009$).

4.7 Qualitative Findings: Word Cloud Analyses

Presenting problems word cloud analysis identified "results," "anxiety," "depression," "QIDS," "problems," "family," and "due" as the most frequent terms. Additional prominent terms included "stress," "academic," "issues," "school," "personal," "performance," and "relationship," indicating students face multiple challenges related to academic pressures, emotional issues, family conflicts, and relational struggles.

Free-time activities word cloud revealed "sleep," "watch," "play," "movies," "games," and "music" as most prominent, indicating students prioritize rest and entertainment. Additional activities included "read," "social," "crochet," and "exercise," suggesting a broader range of hobbies including social and individual wellness-focused activities. The presence of "scrolling," "phone," and "browsing" indicated substantial digital technology and social media engagement during free time.

Family description word cloud revealed bifurcated perceptions: "parents," "family," "happy," "alone," "broken-family," and "busy" dominated. Terms such as "separated," "problems," "controlling," "invalidating," and "abroad" reflected emotional neglect, family dysfunction, or parental migration. Positive terms including "good," "okay," "functional," and "healthy" appeared less frequently. The prominence of "alone" suggested feelings of emotional isolation despite family membership.

4.8 Confirmatory Factor Analysis

University 1. All factor loadings were statistically significant ($p < .001$). For individual factors, Distress Index showed the strongest loading (estimate = 1.0224, SE = 0.0285, Z = 35.87), followed by Frustration/Anger (0.9822, SE = 0.0337, Z = 29.16) and Generalized Anxiety (0.9692, SE = 0.0303, Z = 31.97). Depression (0.8731, SE = 0.0267, Z = 32.64) and Substance/Alcohol Use (0.7350, SE = 0.0383, Z = 19.18) also demonstrated robust loadings. Unhealthy coping strategies (0.3213, SE = 0.0408, Z = 7.89) and stigma concerns (0.1476, SE = 0.0349, Z = 4.23) showed smaller but significant loadings. Self-esteem loaded negatively (-0.2797, SE = 0.0344, Z = -8.12).

For interpersonal factors, difficulties with family members showed the strongest loading (0.7344, SE = 0.0532, Z = 13.80), followed by conflicts with romantic partners (0.5044, SE = 0.0394, Z = 12.80) and feeling lonely or socially disconnected (0.5048, SE = 0.0370, Z = 13.65). Post-interaction anxiety (0.5125, SE = 0.0379, Z = 13.52) and lack of companionship (0.5012, SE = 0.0394, Z = 12.72) also loaded significantly. Social support (-0.3157, SE = 0.0354, Z = -8.90) and relationship quality (-0.3783, SE = 0.0367, Z = -10.31) loaded negatively.

For systemic factors, Academic Distress showed the strongest loading (0.6009, SE = 0.0253, Z = 23.73), followed by financial situation—growing up (0.3015, SE = 0.0450, Z = 6.70) and financial situation—current (0.2667, SE = 0.0362, Z = 7.37). Tuition stress (0.2528, SE = 0.0464, Z = 5.44), cost of living stress (0.1978, SE = 0.0410, Z = 4.82), and academic competition (0.2372, SE = 0.0345, Z = 6.88) demonstrated significant loadings. Access to mental health support (-0.1416, SE = 0.0294, Z = -4.81) and academic performance rating (-0.2153, SE = 0.0264, Z = -8.15) loaded negatively.

Factor covariances were high: Individual with Interpersonal (r = 0.928, SE = 0.0110, Z = 84.4, $p < .001$), Individual with Systemic (r = 0.960, SE = 0.0171, Z = 56.3, $p < .001$), and Interpersonal with Systemic (r = 0.968, SE = 0.0222, Z = 43.5, $p < .001$). Model fit indices were moderate: CFI = 0.650, TLI = 0.629, RMSEA = 0.103 (90% CI [0.0999, 0.105]).

See Table 1 summarizing factor loadings for University 1 in Section 8

University 2. Factor loadings were significant across domains. Frustration/Anger (0.8008, SE = 0.0476, Z = 16.81), Distress Index (0.8013, SE = 0.0345, Z = 23.21), and Generalized Anxiety (0.7565, SE = 0.0409, Z = 18.48) loaded highest on individual factors. Sensitivity to criticism (0.5358, SE = 0.0651, Z = 8.23) and post-interaction anxiety (0.5316, SE = 0.0524, Z = 10.14) loaded strongly on interpersonal factors. Academic Distress (0.6395, SE = 0.0489, Z = 13.08) and financial situation—current (0.3849, SE = 0.0574, Z = 6.71) led systemic factors.

See Table 2 summarizing factor loadings for University 2 in Section 8

Combined Model. Factor loadings remained robust across the combined sample. Distress Index (0.9874, SE = 0.0232, Z = 42.64), Frustration/Anger (0.9390, SE = 0.0282, Z = 33.26), Generalized Anxiety (0.9273, SE = 0.0249, Z = 37.20), and Depression (0.8254, SE = 0.0218, Z = 37.91) demonstrated the strongest individual factor loadings. Interpersonal loadings included Social Anxiety (0.6010, SE = 0.0219, Z = 27.44), Family Distress (0.5081, SE = 0.0242, Z = 20.99), and post-interaction anxiety (0.4820, SE = 0.0316, Z = 15.23). Systemic loadings featured Academic Distress (0.5885, SE = 0.0218, Z = 27.00), financial situation—growing up (0.2696, SE = 0.0360, Z = 7.49), and tuition stress (0.2528, SE = 0.0464, Z = 5.44).

Factor covariances were very high: Individual with Interpersonal (r = 0.951, SE = 0.00964, Z = 98.6, p < .001), Individual with Systemic (r = 0.968, SE = 0.01587, Z = 61.0, p < .001), and Interpersonal with Systemic (r = 0.976, SE = 0.02252, Z = 43.3, p < .001). Model fit remained moderate (CFI = 0.658, TLI = 0.635, RMSEA = 0.0981, 90% CI [0.0958, 0.100]).

See Figure 1 (Path Diagram for Combined Model) in Section 8

Model Fit Summary. Across all models, factor loadings confirmed the hypothesized three-factor structure with all indicators loading significantly on their intended latent constructs (p < .001). However, fit indices indicated room for improvement. Modification indices revealed substantial cross-loading potential, particularly for Academic Distress (MI = 67.76 on Interpersonal), Social Anxiety (MI = 42.44 on Systemic), Family Distress (MI = 62.16 on Systemic), Depression (MI = 31.19 on Individual), and self-esteem (MI = 41.81 on Individual). These patterns suggest the three-factor structure, while theoretically coherent, may not fully capture the complex interrelationships among risk domains.

4.9 Discussion

This study employed confirmatory factor analysis to test a three-factor model of risk factors for mental health challenges among Filipino university students, examining individual, interpersonal, and systemic domains. The findings provide partial support for the hypothesized multidimensional structure while revealing important complexities in how these risk domains intersect.

Interpretation of Major Findings

Multidimensional Risk Structure

The CFA results confirmed statistically significant factor loadings across all three domains, indicating that individual psychological vulnerabilities, interpersonal difficulties, and systemic pressures each contribute meaningfully to student mental health challenges. The high factor covariances (r = 0.928–0.968 in the combined model) suggest substantial overlap among these domains, consistent with ecological systems perspectives that view individual functioning as embedded within relational and institutional contexts (Bronfenbrenner, 1979). Students experiencing elevated individual distress—such as anxiety, depression, or maladaptive coping—are substantially more likely to also report interpersonal difficulties and perceive greater systemic barriers.

However, model fit indices (CFI = 0.650–0.700, RMSEA = 0.098–0.103) indicate that the three-factor structure, while theoretically coherent, does not optimally represent the empirical data. Modification indices revealed substantial cross-loading potential, particularly for Academic Distress, Social Anxiety, Family Distress, Depression, and self-esteem. These patterns suggest that mental health experiences among university students do not neatly compartmentalize into distinct individual, interpersonal, and systemic categories. Rather, phenomena such as academic distress simultaneously reflect personal cognitive appraisals, social comparisons with peers, and institutional pressures—spanning all three domains. This finding aligns with recent critiques of overly rigid factor structures in mental health measurement and supports calls for more flexible modeling approaches such as bifactor or hierarchical models (Rodriguez et al., 2016; [Needs source:

methodological literature on bifactor models in mental health]).

Individual Risk Factors: Trauma and Self-Harm as Dominant Predictors

Among individual risk factors, childhood trauma, non-suicidal self-injury, and suicide-related experiences demonstrated the largest effects across mental health outcomes. Childhood trauma showed large effects on Depression (ε^2 = 0.138–0.148), Generalized Anxiety (ε^2 = 0.114–0.139), and overall Distress Index (ε^2 = 0.148–0.152) across both universities. These findings align with extensive literature documenting the enduring neurobiological and psychological consequences of early adversity (Moradi et al., 2022; Briere & Scott, 2022). Trauma exposure functions as a transdiagnostic risk factor, heightening vulnerability to diverse forms of psychopathology through mechanisms such as altered stress reactivity, emotion dysregulation, and disrupted attachment patterns (Schäfer et al., 2023).

The systemic nature of these vulnerabilities is further contextualized by broader workforce analyses, which identify the Philippine health education pipeline as fragile and under considerable pressure. Challenges such as uneven educational quality and faculty constraints may exacerbate student distress well before clinical training begins, compounding the risks associated with early adversity (Atento et al., 2025a).

The strong associations between self-injury, suicidal ideation, and suicide attempts with multiple distress domains (ε^2 up to 0.189) underscore the severity and pervasiveness of psychological suffering among students engaging in self-harm. These findings align with research demonstrating that NSSI and suicidality rarely occur in isolation but rather cluster with depression, anxiety, substance use, and interpersonal difficulties (Whitlock et al., 2021; Liu et al., 2022). The large effect sizes observed for Frustration/Anger in relation to self-injury (ε^2 = 0.174) suggest that emotion dysregulation—particularly difficulties managing anger and frustration—may be a key mechanism linking distress to self-harm behaviors.

Gender differences emerged consistently, with female students reporting elevated psychological distress and greater use of emotion-focused coping, while male students exhibited underreporting and avoidance behaviors including substance use. These patterns mirror established epidemiological findings (Sheldon et al., 2021; Prowse et al., 2021) and likely reflect both genuine differences in distress experience and gender-specific reporting biases shaped by masculine norms discouraging emotional expression (Yadav et al., 2025). The significant association between sexual orientation and multiple distress domains (ε^2 = 0.046–0.116) points to minority stress processes whereby stigma, discrimination, and identity concealment compound psychological vulnerability among LGBTQ+ students (Jiménez-Villamizar, 2023).

Interpersonal Risk Factors: Family Conflict and Loneliness as Central.

Interpersonal risk factors demonstrated robust associations across all mental health domains, with family difficulties showing the strongest effects (r^2 up to 0.209). This finding highlights the continuing salience of family relationships for Filipino university students, consistent with cultural values emphasizing family connectedness and interdependence (Alejandria et al., 2022). Family conflict, lack of parental support, and family mental health history appear to create cascading vulnerabilities, disrupting emotion regulation, undermining self-concept, and reducing access to supportive resources during developmental transitions (Guo et al., 2021; Sheeber et al., 2020).

Loneliness and social disconnection emerged as equally potent interpersonal risk factors, with strong associations with Depression (r_s = 0.469–0.499) and Distress Index (r_s = 0.444–0.475). These effects exceed those observed for many clinical symptoms, underscoring the fundamental human need for belonging and social connection (Cacioppo et al., 2020). For university students navigating new social environments, perceived isolation may be particularly distressing, triggering hypervigilance to social threat, withdrawal from opportunities for connection, and erosion of self-worth (Maes et al., 2021). The significant loadings for post-interaction anxiety and sensitivity to criticism suggest that social evaluative concerns may drive avoidance behaviors that perpetuate loneliness.

Interpersonal violence and harassment experiences demonstrated moderate-to-large effects across domains, with unwanted sexual contact (ε^2 = 0.067–0.103) and harassment experiences (ε^2 = 0.078–0.133) associated with elevated distress, substance use, and anger. These findings align with trauma literature documenting the broad-spectrum impacts of interpersonal victimization, including post-traumatic stress, depression, substance misuse, and relational difficulties (Campbell et al., 2020; Peterson et al., 2022). The significant associations with academic distress suggest that trauma-related concentration difficulties and avoidance may impair educational functioning, creating secondary stressors that compound psychological burden.

Systemic Risk Factors: Institutional Vulnerabilities

Among systemic factors, disability registration showed the largest effects (r = 0.387–0.646),

indicating that students with disabilities experience substantially elevated distress across multiple domains. This pattern likely reflects both direct impacts of disability-related challenges and secondary stressors including accessibility barriers, stigma, and inadequate institutional accommodations (Madaus et al., 2020; Solís García et al., 2024). The strong associations with Academic Distress and Frustration/Anger suggest that students with disabilities may face additional academic hurdles and experience frustration when institutional supports prove insufficient.

International student status similarly demonstrated large effects (r = 0.316–0.524), consistent with literature documenting acculturative stress, social isolation, language barriers, and financial pressures facing students studying abroad (Wei et al., 2021; Hyun et al., 2019). The elevated Social Anxiety and Depression scores among international students likely reflect both the challenges of navigating unfamiliar social contexts and reduced access to familiar support networks.

Working student status showed moderate-to-large effects across domains, with particularly strong associations with Substance/Alcohol Use and Frustration/Anger. Balancing employment with academic responsibilities creates role strain, time pressure, and reduced opportunities for self-care and social connection (Richardson et al., 2020; Burke & Weathers, 2021). For some students, substance use may serve as a maladaptive coping strategy for managing work-academic stress, while frustration and anger may reflect the cumulative burden of competing demands.

Housing and living arrangements demonstrated large effects in University 2, with students in unstable or unsatisfactory housing reporting elevated Family Distress, Depression, and Frustration/Anger. This finding highlights housing as a fundamental determinant of mental health, with implications for sleep quality, privacy, safety, and social connection. The strong association with Family Distress may reflect that housing problems often co-occur with family conflict or limited family support.

Financial stress—both current and during childhood—showed consistent small-to-moderate associations across distress domains. These findings align with extensive research documenting the mental health impacts of financial insecurity, including chronic stress, reduced access to health-promoting resources, and limitations on social participation (Eisenberg et al., 2019; Richardson & Rothstein, 2021). The significant loadings for tuition and cost of living stress suggest that financial concerns specific to higher education contexts create unique pressures that may be modifiable through institutional policy changes.

Qualitative Findings

Word cloud analyses enriched quantitative findings by capturing students' own language around presenting problems, free-time activities, and family experiences. The prominence of academic terms ("results," "performance," "academic") alongside emotional distress ("anxiety," "depression") and relational concerns ("family," "relationship") confirms that students experience these domains as interconnected rather than separate. The frequent mention of "QIDS" (a depression screening tool) suggests that students are increasingly familiar with mental health terminology and may be more willing to discuss symptoms in clinical language.

Free-time activities emphasized restorative pursuits ("sleep," "movies," "music") alongside substantial digital engagement ("scrolling," "phone," "browsing"). This pattern suggests that students recognize the need for rest and recovery but may default to passive digital consumption rather than active, socially connected, or physically engaging leisure activities known to promote wellbeing (Caldwell, 2020). The presence of "exercise" and "social" as smaller terms indicates that some students engage in health-promoting activities, presenting opportunities for peer modeling and intervention.

Family descriptions revealed striking ambivalence, with "happy" and "alone," "broken-family," and "busy" appearing prominently. Terms like "controlling," "invalidating," and "abroad" capture diverse family stressors including emotional neglect, conflict, and parental migration—the latter reflecting a common Filipino experience where parents work overseas, creating both economic opportunity and relational disruption (Aguilar & Perez, 2025). The persistence of "alone" despite family membership underscores that physical presence does not guarantee emotional connection, highlighting the importance of perceived support quality over family structure.

Implications for Intervention

The multidimensional risk structure validated in this study supports comprehensive intervention approaches addressing individual, interpersonal, and

systemic domains simultaneously. The Dual Continua Wellness Initiative (DCWI) proposed in this research operationalizes this integrated approach by combining cognitive-behavioral techniques for distress reduction with positive psychology interventions for wellbeing promotion, consistent with Keyes's (2002, 2005) dual continua framework.

The dominant effects of trauma, self-injury, and suicidality suggest that university counseling services must prioritize trauma-informed assessment and intervention. Universal screening for trauma history and current self-harm risk should be integrated into intake procedures, with clear protocols for risk assessment and crisis response. Evidence-based trauma interventions including Cognitive Processing Therapy and Eye Movement Desensitization and Reprocessing should be available, and counselors should receive training in recognizing and responding to complex trauma presentations (Golub et al., 2021; Schäfer et al., 2023).

The strong associations with family difficulties indicate that family-inclusive approaches may enhance intervention effectiveness. While traditional university counseling focuses on individual students, incorporating family consultations, multi-family therapy groups, or psychoeducation for families could address relational contributors to distress (Guo et al., 2021). For students from families with mental health histories, psychoeducation about genetic vulnerabilities and early symptom recognition may facilitate earlier intervention and reduce guilt or shame.

The prominence of loneliness and social disconnection calls for interventions targeting social connectedness at multiple levels. Peer support programs, mentoring initiatives, and structured social activities can create opportunities for connection, while social skills training may benefit students with social anxiety who struggle to initiate relationships. Universities should also assess campus climate and belongingness, addressing structural barriers that exclude or marginalize particular student groups (Lipson et al., 2025).

Systemic findings highlight the need for institutional policy changes beyond individual counseling services. Financial aid expansion, emergency assistance programs, and financial literacy workshops can mitigate financial stress. Flexible academic policies, workload management support, and accommodations for students with disabilities or mental health conditions can reduce academic distress. Improving access to mental health services through telehealth, extended hours, and stigma reduction campaigns can address utilization barriers (Lipson et al., 2022).

The gender differences observed underscore the importance of gender-sensitive programming. For female students, interventions may focus on managing elevated anxiety and depression while leveraging existing coping strengths. For male students, approaches must address underreporting, stigma, and avoidance by creating non-threatening engagement opportunities—such as psychoeducation embedded in required courses, peer-normed messaging about help-seeking, and activities that normalize emotional expression (Yadav et al., 2025). The elevated distress among LGBTQ+ students calls for affirming services, inclusive policies, and campus climates that reduce minority stress.

Limitations

Several limitations warrant consideration. First, the cross-sectional design precludes causal inference about relationships among risk factors and mental health outcomes. Longitudinal research is needed to establish temporal precedence and examine developmental trajectories.

Second, the moderate model fit indices (CFI = 0.650–0.700) indicate measurement model misspecification. As detailed in the CFA revision document, substantial cross-loadings suggest that the three-factor structure does not optimally capture the complexity of student mental health experiences. Alternative modeling approaches—including bifactor models with a general distress factor and specific domain factors, or hierarchical models with second-order factors—may better represent the data. The modification indices provide empirical guidance for model respecification, suggesting that items such as Academic Distress, Social Anxiety, and Family Distress may function as bridging constructs spanning multiple domains.

Third, the sample was drawn from two universities in one Philippine region, limiting generalizability to other institutions or regions. University 1 students demonstrated significantly higher distress in several domains than University 2 students, indicating institutional variation that may reflect differences in student demographics, campus climate, or available resources.

Fourth, reliance on self-report measures introduces potential response biases including social desirability, recall error, and common method variance. The underreporting patterns observed among male students suggest that self-report may differentially underestimate distress in certain groups.

Fifth, the Client Intake Form sample was relatively small (n = 99) and drawn only from University 1, limiting power for subgroup analyses and generalizability of qualitative findings. The word cloud analyses, while informative, provide only surface-level thematic representation without the depth of formal qualitative analysis.

Sixth, the study did not examine protective factors or resilience processes that may buffer risk. Future research should investigate how factors such as social support, coping efficacy, and institutional engagement moderate the relationships identified here.

Future Research Directions

The measurement challenges identified in this study suggest several priorities for future research. First, psychometric studies should explore alternative factor structures, including bifactor models and exploratory structural equation modeling, to identify empirically optimal representations of mental health risk among Filipino students. Cross-validation in independent samples is needed to establish measurement invariance across institutions, regions, and student subgroups.

Second, longitudinal studies tracking students across their university careers can elucidate how risk factors evolve, how they interact over time, and which intervention timing maximizes benefit. Experience sampling methods could capture daily fluctuations in distress and wellbeing, revealing dynamic processes obscured by cross-sectional designs.

Third, intervention research should evaluate the DCWI and other integrated approaches using randomized controlled designs with long-term follow-up. Mediation analyses can test whether changes in hypothesized mechanisms (e.g., emotion regulation, social connectedness, financial self-efficacy) account for intervention effects.

Fourth, qualitative research exploring students' lived experiences of risk and resilience can enrich understanding of how individual, interpersonal, and systemic factors intersect in everyday life. Narrative approaches may reveal culturally specific meanings and coping resources not captured by standardized measures.

Fifth, comparative research across diverse institutional contexts—including public and private universities, urban and regional campuses, and institutions with varying mental health resources—can identify modifiable institutional factors that shape student mental health outcomes. Cross-national studies could examine whether the factor structure and risk patterns observed here generalize to other cultural contexts or reflect Filipino-specific dynamics.

Finally, implementation science research examining how evidence-based interventions are adopted, adapted, and sustained in resource-constrained university settings can bridge the research-practice gap and inform scalability efforts.

5. Conclusions and Recommendations

5.1 Conclusions

This study examined the multidimensional structure of risk factors for mental health challenges among Filipino university students through confirmatory factor analysis of a hypothesized three-factor model comprising individual, interpersonal, and systemic domains. The findings support several conclusions aligned with the study objectives.

First, significant differences in psychological distress emerged between the two universities, with University 1 students demonstrating higher levels of family distress, academic distress, eating concerns, and depression. These institutional variations suggest that mental health profiles are shaped not only by individual student characteristics but also by campus-specific contexts, resources, and cultures. The comparable levels of social anxiety, generalized anxiety, substance use, and frustration/anger across institutions indicate that certain distress domains may be more uniformly distributed among student populations regardless of institutional context.

Second, assessment of risk factors using client intake forms revealed meaningful associations between demographic characteristics and mental health indicators. Program enrollment was significantly associated with school-related problems, body image concerns, sexual health behaviors, and safety practices, suggesting that academic environments may shape risk profiles through discipline-specific stressors and social norms. Gender differences were pronounced, with female students reporting elevated psychological distress and healthier coping patterns, while male students exhibited underreporting and avoidance behaviors including substance use. These patterns underscore the need for gender-sensitive assessment and intervention approaches.

Third, the underlying dimensions of individual risk factors were confirmed through CFA, with robust loadings for anxiety, depression, frustration/anger, substance use, and maladaptive coping. Childhood trauma demonstrated the largest effects across all mental health domains, followed by self-injury behaviors, suicide attempts, and medication use for mental health. These findings position trauma and self-harm as dominant transdiagnostic risk factors requiring prioritized clinical attention. Demographic factors including gender and sexual orientation showed smaller but significant effects, indicating that social identities shape risk through both direct and interactive pathways.

Fourth, the latent structure of interpersonal risk factors was validated, with family difficulties, loneliness, and post-interaction anxiety showing the strongest associations with mental health outcomes. Interpersonal violence and harassment experiences demonstrated moderate effects across multiple domains, highlighting the pervasive impacts of relational trauma. The protective loadings for social support and relationship quality confirm that positive interpersonal connections buffer against distress, supporting interventions that strengthen social networks and belongingness.

Fifth, the factor structure of systemic risk factors was investigated, revealing that disability registration, international student status, and working student status showed the largest effects across mental health domains. Housing/living arrangements, financial stress, and access to mental health support demonstrated consistent associations with distress, confirming that institutional and environmental contexts meaningfully shape student mental health. The protective loadings for academic performance, engagement, and mental health service access suggest modifiable systemic targets for intervention.

Sixth, the combined influence of individual, interpersonal, and systemic risk factors was assessed through CFA, which confirmed significant factor loadings across all domains with high intercorrelations ($r = 0.928–0.968$). This pattern indicates substantial overlap among risk domains, supporting ecological perspectives that view mental health as embedded within nested systems of influence. However, model fit indices (CFI = 0.650–0.700, RMSEA = 0.098–0.103) suggest that the three-factor structure, while theoretically coherent, does not optimally represent the empirical data. Modification indices revealed substantial cross-loading potential, particularly for academic distress, social anxiety, family distress, depression, and self-esteem, indicating that these constructs span multiple domains and may function as bridging mechanisms connecting individual, interpersonal, and systemic levels.

Seventh, a comprehensive model integrating individual, interpersonal, and systemic risk factors was developed through CFA, providing empirical foundation for holistic understanding of mental health risks among Filipino university students. The path diagram analyses confirmed the multidimensional risk structure and supported the need for assessment protocols addressing all three domains.

Eighth, the Dual Continua Wellness Initiative (DCWI) was developed based on the CFA findings, operationalizing the dual continua model through a 6-week intervention combining cognitive-behavioral techniques for distress reduction with positive psychology strategies for wellbeing promotion. The program targets eight key result areas through evidence-based strategies including CBT groups, peer support networks, financial literacy workshops, and stigma reduction campaigns.

Ninth, evidence-based recommendations translating CFA findings into actionable strategies for universities and policymakers were formulated, emphasizing integrated, multidisciplinary approaches addressing psychological symptoms, social connectedness, and institutional barriers simultaneously.

5.2 Recommendations

For University Counseling and Mental Health Services

Implement integrated, multidisciplinary intervention programs that concurrently address psychological, academic, interpersonal, and systemic challenges. Establish multidisciplinary teams (counseling, academic advising, financial aid) and promote cross-campus collaboration. Regular needs assessment and feedback mechanisms should adapt services dynamically.

Prioritize evidence-based interventions (CBT, ACT, positive psychology) targeting anxiety, depression, coping skills, and emotion regulation. Implement self-esteem and resilience workshops. Launch stigma reduction campaigns through peer advocacy and mental health literacy programs. Ensure trauma-informed assessment and intervention protocols are integrated into all services.

Develop programs to enhance social connectedness including social skills training, conflict resolution, and communication workshops. Establish peer support groups and community-building initiatives. Provide family-inclusive counseling options and incorporate relational health

education in orientation and ongoing programming. Promote activities fostering belonging and supportive networks.

Advocate for systemic policy changes including financial aid expansion, scholarships, and emergency funds. Improve accessibility of mental health services through telehealth, extended hours, and streamlined referral pathways. Implement flexible academic scheduling and workload management accommodations for students with mental health conditions or disabilities. Increase awareness of available resources through targeted outreach.

Adopt multidimensional assessment tools capturing all risk domains in intake procedures. The CCAPS-62 provides validated measurement of psychological symptoms, while supplemental assessments should address interpersonal functioning, financial stress, academic engagement, and trauma history. Train counseling staff in multifactorial risk evaluation and intervention planning.

Implement the Dual Continua Wellness Initiative (DCWI) as a structured 6-week intervention for students screening positive for distress. Ensure counselors receive training in CBT and positive psychology techniques. Monitor outcomes through pre/post CCAPS-62 and Psychological Wellbeing Scales, tracking quadrant shifts and clinical cut-off reductions.

Conduct holistic intake assessments systematically addressing all risk domains. Train staff in recognizing overlapping risk factors and using comprehensive screening instruments. Design integrative treatment plans combining psychotherapy, family counseling, and resource linkage. Establish interdepartmental communication protocols to coordinate care across services.

University Administration and Policymakers

Allocate resources for mental health services commensurate with student needs, recognizing that the 3–5% of national health budgets currently allocated to psychiatric care is insufficient. Advocate for increased funding at institutional and governmental levels.

Develop campus-wide mental health strategies that extend beyond counseling centers to include academic affairs, student affairs, housing services, and financial aid. Create mental health task forces with cross-departmental representation to coordinate comprehensive approaches.

Implement policies reducing systemic stressors including flexible academic deadlines for students experiencing mental health crises, expanded financial aid programs, affordable housing initiatives, and accessible healthcare services. Address workload expectations and assessment practices that contribute to academic distress.

Establish data collection and evaluation systems to track student mental health trends, identify emerging needs, and evaluate intervention effectiveness. Create norms for CCAPS-62 based on local data to inform clinical interpretation and resource allocation.

Invest in prevention and early intervention through universal mental health screening, mental health literacy curricula, and resilience-building programs integrated into orientation and general education requirements. Target outreach to high-risk groups including students with disabilities, international students, working students, and LGBTQ+ students.

6. References

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7. Data Availability Statement

The dissertation on which this article is based, along with supplementary materials (including full statistical outputs, instruments, and intervention materials), is publicly available on the Open Science Framework:

Atento, A. G. (2026). *Miriam Grace Malabanan Dissertation files*.

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8. Tables and Figures

Table 1. Confirmatory Factor Analysis Results for University 1 (Individual, Interpersonal, and Systemic Factors)

	Factor Loadings				
Factor	**Indicator**	**Estimate**	**SE**	**Z**	**p**
Individual Risk Factors	Use Coping Strategies You Feel Are Unhealthy	0.3213	0.0408	7.89	<.001
	Worry About Stigma If I Disclose Mental Health Struggles To The University	0.1476	0.0349	4.23	<.001
	Generalized Anxiety	0.9692	0.0303	31.97	<.001
	Eating Concerns	0.6749	0.0289	23.38	<.001
	Social Media Use Negatively Affects Your Mood Or Well-Being	0.2682	0.0364	7.36	<.001
	Depression	0.8731	0.0267	32.64	<.001
	Frustration Anger	0.9822	0.0337	29.16	<.001
	Substance Alcohol Use	0.7350	0.0383	19.18	<.001
	Distress Index	1.0224	0.0285	35.87	<.001
	Self-Esteem	-0.2797	0.0344	-8.12	<.001
Interpersonal Risk Factors	Feel Lonely Or Socially Disconnected	0.5048	0.0370	13.65	<.001
	Feel Upset Or Anxious After Social Interactions	0.5125	0.0379	13.52	<.001
	Sensitive Are You To Criticism Or Rejection From Others	0.3678	0.0415	8.86	<.001
	Interpersonal Relationships Negatively Affect Your Mental Health	0.3802	0.0412	9.22	<.001
	Current Level Of Social Support From Friends And Family	-0.3157	0.0354	-8.90	<.001
	Feel Lack Companionship Or Feel Left Out	0.5012	0.0394	12.72	<.001
	Overall Quality Of Your Relationships With Peers/Friends, Roommates, Or Romantic Partners	-0.3783	0.0367	-10.32	<.001
	Experienced Conflicts Or Difficulties With Peers/Classmates	0.5916	0.0541	10.93	<.001

	Experienced Conflicts Or Difficulties With Family Member	0.7344	0.0532	13.80	<.001
	Conflicts Or Difficulties With Romantic Partners	0.5042	0.0653	7.72	<.001
	Experienced Conflicts Or Difficulties With Roommates	0.4540	0.0632	7.19	<.001
	I Feel A Sense Of Belonging In My University Community	-0.2381	0.0381	-6.25	<.001
	Family Distress	0.4893	0.0244	20.07	<.001
	Social Anxiety	0.6091	0.0261	23.34	<.001
	Participate In Social Activities	-0.0588	0.0378	-1.56	0.119
	Have Emotional Help And Support I Need From My Family	-0.4977	0.0533	-9.34	<.001
Systemic Risk Factors	Financial Situation- Growing Up	0.3295	0.0448	7.36	<.001
	Academic Distress	0.6009	0.0253	23.73	<.001
	Access Mental Health Support On Campus	-0.1102	0.0323	-3.42	<.001
	Adequate Are Your Financial Resources For University Life	-0.1738	0.0351	-4.95	<.001
	How Stressful Cost Of Living	0.2175	0.0495	4.40	<.001
	How Stressful Tuition & Fees	0.2319	0.0509	4.56	<.001
	Feel Academic Competition With Peers Affects Your Mental Health?	0.2251	0.0427	5.27	<.001
	Stressful Do You Find Your Academic Workload	0.1703	0.0401	4.24	<.001
	How Would You Rate Your Academic Performance?	-0.2647	0.0338	-7.83	<.001
	How Engaged Do You Feel In Your Studies?	-0.2564	0.0345	-7.43	<.001
	Strive For Perfection In Your Academic Work	-0.0685	0.0345	-1.98	0.047
	Financial Situation-Now	0.3015	0.0450	6.70	<.001

Table 2. Confirmatory Factor Analysis Results for University 2 (Individual, Interpersonal, and Systemic Factors)

Factor	Indicator	Estimate	SE	Z	p
Individual	use coping strategies you feel are unhealthy	0.18037	0.0477	3.7828	<.001
	worry about stigma if I disclose mental health struggles to the university	0.12024	0.0558	2.1534	0.031
	Generalized Anxiety	0.75645	0.0409	18.4752	<.001
	Eating Concerns	0.33008	0.0367	8.9964	<.001
	Depression	0.46265	0.0310	14.9411	<.001
	Frustration Anger	0.80082	0.0476	16.8113	<.001
	Substance Alcohol Use	0.34283	0.0476	7.2070	<.001
	DISTRESS INDEX	0.80129	0.0345	23.2087	<.001
	self-esteem	-0.16771	0.0413	-4.0633	<.001
Interpersonal	feel lonely or socially disconnected	0.50616	0.0547	9.2528	<.001
	feel upset or anxious after social interactions	0.53158	0.0524	10.1390	<.001
	sensitive are you to criticism or rejection from others	0.53578	0.0651	8.2331	<.001
	interpersonal relationships negatively affect your mental health	0.39006	0.0586	6.6598	<.001
	current level of social support from friends and family	-0.22681	0.0516	-4.3951	<.001
	overall quality of your relationships with peers/friends, roommates, or romantic partners	-0.28336	0.0544	-5.2070	<.001
	experienced conflicts or difficulties with Peers/classmates	-0.25596	0.0764	-3.3521	<.001
	experienced conflicts or difficulties with Family Member	-0.44064	0.0796	-5.5327	<.001
	experienced conflicts or difficulties with Roommates	-0.00527	0.1151	-0.0458	0.964
	I feel a sense of belonging in my university community	-0.14848	0.0635	-2.3382	0.019
	Family Distress	0.45066	0.0546	8.2603	<.001
	Social Anxiety	0.42137	0.0427	9.8754	<.001
	participate in social activities	-0.05177	0.0562	-0.9214	0.357
	Have emotional help and support I need from my family	-0.40653	0.0884	-4.6012	<.001
Systemic	financial situation- growing up	0.31371	0.0707	4.4392	<.001
	Academic Distress	0.41979	0.0458	9.1688	<.001
	access mental health support on campus	-0.25855	0.0703	-3.6755	<.001
	adequate are your financial resources for university life	-0.07990	0.0497	-1.6080	0.108
	How stressful Cost of Living	0.28194	0.0834	3.3819	<.001
	How stressful Tuition & Fees	0.15564	0.0675	2.3044	0.021
	feel academic competition with peers affects your mental health?	0.30489	0.0660	4.6195	<.001
	stressful do you find your academic workload	0.24523	0.1698	1.4446	0.149
	How would you rate your academic performance?	-0.18175	0.0430	-4.2257	<.001
	How engaged do you feel in your studies?	-0.22081	0.0512	-4.3167	<.001
	strive for perfection in your academic work	-0.12198	0.0653	-1.8682	0.062
	financial situation	0.35079	0.0711	4.9371	<.001

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Table 3. Factor Covariances and Model Fit Indices for Combined Sample

Factor Covariances

		Estimate	SE	Z	p
Individual	**Individual**	1.000[a]			
	Interpersonal	0.951	0.00964	98.6	<.001
	Systemic	0.968	0.01587	61.0	<.001
Interpersonal	**Interpersonal**	1.000[a]			
	Systemic	0.976	0.02252	43.3	<.001
Systemic	**Systemic**	1.000[a]			

[a] fixed parameter

Test for Exact Fit

χ^2	df	p
5798	591	<.001

Fit Measures

			RMSEA 90% CI	
CFI	TLI	RMSEA	Lower	Upper
0.658	0.635	0.0981	0.0958	0.100

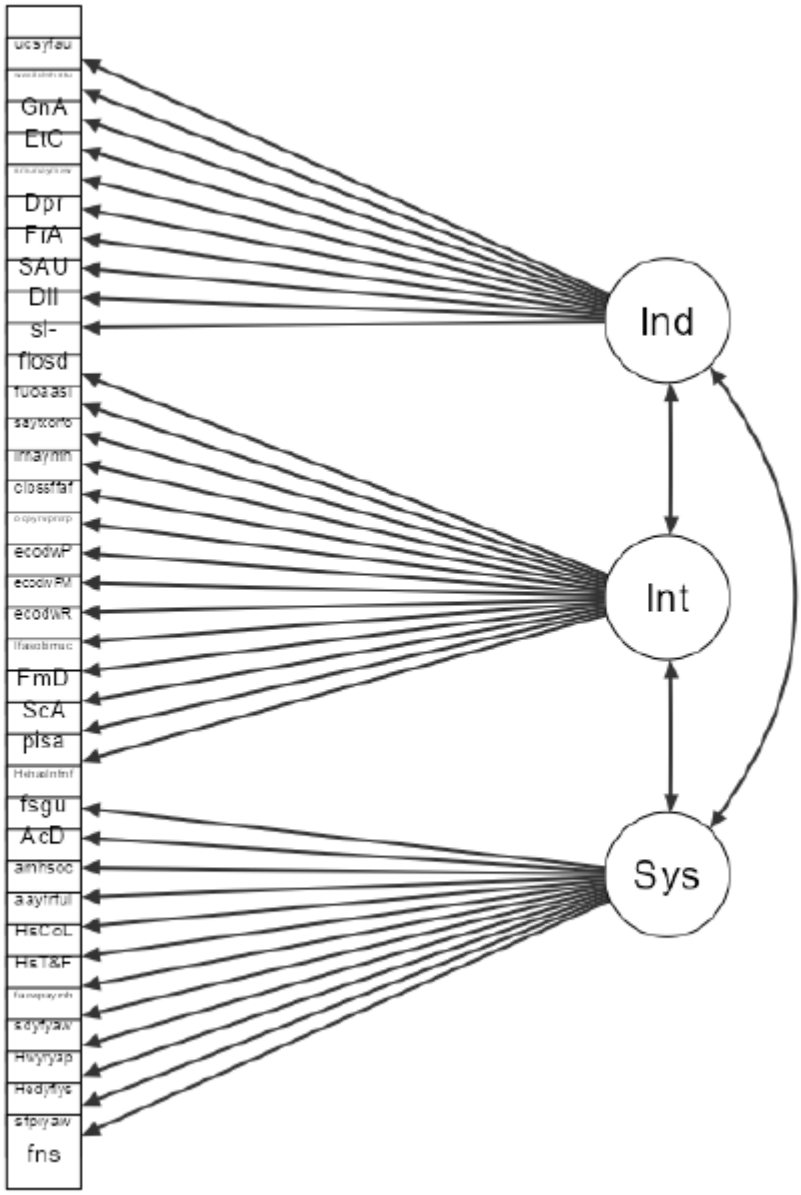

Figure 1. Path Diagram of Three-Factor Model (Combined Sample)

