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Research Article

Mental Health Literacy among Health Sciences Students: A Causal-Comparative Study

Mharch Justine M. Gunong, Allysa Denise G. Gamit, Kimberly S. Lacap, Robert V. Generalo, Jerald Q. Vergara, Kimberly Ann S. Cantilero*

National University, Philippines

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**Corresponding author:*
E-mail:
kscantilero@nu-clack.edu.ph

ABSTRACT

This study examined mental health literacy (MHL), defined as the knowledge and beliefs about mental disorders that facilitate individuals' recognition, management, and prevention of such conditions. This study recruited 326 undergraduate health sciences students from a private university in the City of San Fernando, Pampanga, Philippines. A -comparative design was employed, utilizing the Mental Health Literacy Scale (MHLS) to assess students' knowledge, attitudes, and help-seeking behaviors related to mental well-being. An independent samples t-test revealed no significant difference in MHL scores between female students (M = 123.00, SD = 12.40) and male students (M = 122.00, SD = 13.40), $t(324) = 0.812$, $p = .417$, Cohen's $d = 0.09$, indicating a negligible effect size. However, a one-way analysis of variance (ANOVA) indicated a statistically significant difference in MHL based on academic programs, $F(3, 122) = 5.96$, $p < .001$. Tukey's post hoc comparisons showed that psychology students (M = 127.00, SD = 12.70) had significantly higher MHL scores than students in nursing ($p < .001$) and medical laboratory science ($p = .004$), but not pharmacy ($p = .60$). These findings suggest that while sex assigned at birth does not significantly influence MHL, academic exposure does. The results highlight the importance of integrating mental health literacy into all health sciences curricula to equip future healthcare professionals with the competencies necessary to support mental well-being in both personal and clinical contexts. This fosters sustainable well-being and strengthens the resilience and responsiveness of the healthcare system.

Keywords: *Comparative study, Counseling, Health sciences, Mental health, Students*

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Background

In recent years, mental health has emerged as a pivotal concern within academic institutions, particularly among students in the health sciences who must navigate not only demanding academic environments but also the psychological burden of preparing for future caregiving roles. University students are consistently reported to experience higher levels of psychological distress than their non-university counterparts, owing to academic overload, evolving social roles, financial uncertainty, and emotional transitions (Rababah et al., 2020). These challenges are especially pronounced among health sciences students, where elevated rates of stress, anxiety, and depressive symptoms have been documented. Some studies report prevalence rates as high as 85% for anxiety and over 50% for depression among undergraduates in the field (Fauzi et al., 2021). This landscape underscores the urgent need to foster mental health literacy (MHL), a foundational competence for both personal well-being and professional readiness in the healthcare sector.

Mental health literacy refers to the knowledge and beliefs about mental disorders that facilitate their recognition, management, or prevention (Sokoll, 2024). It encompasses the ability to identify symptoms, understand causes and treatment options, reduce stigma, and encourage appropriate help-seeking behaviors. The concept has evolved to include a broader set of competencies necessary for maintaining mental well-being. Higher levels of MHL are associated with better psychological outcomes and improved resilience across multiple domains (Morgado et al., 2022). The National Institutes of Health identifies four core dimensions of MHL: understanding mental health maintenance, recognizing mental disorders and treatment options, reducing stigma, and improving help-seeking efficacy (Nobre et al., 2021). For students training to become healthcare professionals, MHL is not merely an academic asset; it is an ethical imperative. Without sufficient literacy in this domain, future providers may struggle to recognize psychological distress, delay seeking support, or unintentionally perpetuate stigma within clinical settings.

Despite legislative progress in the Philippines, most notably through Republic Act No. 11036, or the Mental Health Law of 2019, which aims to institutionalize mental health services and protect the rights of service users, public discourse around mental health remains fragmented. Cultural narratives continue to associate psychological disorders with personal weakness, spiritual affliction, or moral failing (Martinez et al., 2020). These beliefs, often reinforced by traditional gender norms and familial expectations, contribute to help-seeking hesitancy, particularly among males, who are socially conditioned to suppress emotional expression (Cox et al., 2024; Oliverio, 2024). While females are frequently observed to exhibit greater emotional awareness and more favorable attitudes toward mental health, these patterns have not been consistently confirmed in the Philippine academic setting, particularly among health sciences students.

Recent local studies have begun to illuminate issues of equity and exposure in mental health education across institutional contexts. Argao et al. (2021) found that while Filipino college students generally exhibit average MHL levels, those enrolled in public universities score significantly higher than their counterparts in private institutions. This suggests potential disparities in curricular design, access to support services, or institutional prioritization of mental health. Similarly, Rey et al. (2022) reported that Filipino adults in Metro Manila demonstrated only moderate MHL, characterized by general awareness but marked by uncertainty and limited confidence in understanding mental health issues. Together, these findings imply that educational exposure alone may not suffice unless mental health is meaningfully and consistently embedded in the learning environment. They also raise important questions about how institutional settings, resource allocation, and academic program structure contribute to uneven mental health literacy outcomes.

Furthermore, often an underexamined determinant of MHL is the specific academic program students are enrolled in. While existing research frequently contrasts health-related and non-health-related fields, few studies ex-

plore differences within the health sciences-themselves. However, programs such as psychology, nursing, pharmacy, and medical laboratory science differ significantly in how they incorporate mental health into their curricula. Psychology students, for example, typically receive more comprehensive instruction on mental health concepts, while students in allied health programs often encounter these topics only in applied or clinical contexts. This inconsistency highlights a critical gap in current health sciences education. Although all students are expected to care for patients holistically, not all are equally prepared to identify or respond to mental health issues in clinical practice or their personal lives. These discrepancies are more than academic; they affect how future healthcare professionals will recognize, engage with, and advocate for mental well-being. This raises a central research problem: there is limited empirical understanding of how mental health literacy varies across academic programs within the health sciences, particularly in the Philippine context. Without such insight, institutions may overlook meaningful curricular gaps and miss opportunities to design more equitable, integrated approaches to mental health education.

Despite growing national and global efforts to normalize mental health discussions, empirical research on MHL among Filipino health sciences students remains limited. Much of the existing literature focuses on prevalence rates and stigma but often fails to disaggregate MHL into its essential components, knowledge, attitudes, and help-seeking behaviors. Moreover, few studies have examined how individual characteristics, such as sex assigned at birth and academic program, influence students' mental health literacy. This lack of disaggregated, program-level data hinders the development of targeted, culturally responsive interventions aimed at strengthening psychological competencies in the next generation of healthcare professionals.

This study responds to that critical gap by employing a causal-comparative design to assess the mental health literacy levels of undergraduate students enrolled in nursing, medical laboratory science, pharmacy, and psychology programs at a private university in the Philippines. Guided by Jorm's theoretical model, the study focuses on two independent variables, sex assigned at birth and academic program, and investigates how these factors influence students' MHL scores. The aim is not only to identify statistically significant differences but to generate actionable insights that can inform institutional strategies for curriculum design, mental health programming, and student support services. By equipping future healthcare providers with the knowledge, attitudes, and behaviors necessary to manage mental health—both personally and professionally—academic institutions can help cultivate a workforce that is clinically competent, emotionally resilient, and socially responsive.

Methods

Research Design

This study employed a quantitative method, specifically the comparative design, to examine differences in mental health literacy (MHL) among health sciences students based on sex assigned at birth and academic program. This design involves analyzing and contrasting different groups, systems, or approaches to gain deeper insights and draw conclusions. This research design is widely used across social sciences, health sciences, and humanities, particularly in cross-national comparisons (Devi, 2023). The study compared MHL scores across students grouped by sex assigned at birth and health sciences discipline, including undergraduate degrees in nursing, medical laboratory science, pharmacy, and psychology.

Research Locale

The study was conducted at a private university in the City of San Fernando, Pampanga, Philippines, which was selected for its diverse population of health sciences students. Data collection took place in a designated area on campus that provided privacy and minimal distractions. Coordination with university administrators ensured that participation did not interfere with students' academic responsibilities.

Participants and Sampling

The sample consisted of 326 undergraduate students enrolled in nursing, medical laboratory science, pharmacy, and psychology programs. A priori power analysis using G*Power 3.1.9.7 determined that a minimum of 210 participants was required to detect medium effect sizes ($\alpha = 0.05$, power = 0.95). A purposive sampling technique was employed to ensure representation. This non-probability sampling technique is used primarily to select participants based on specific criteria determined by the researcher's expertise and knowledge (Obilor, 2023). Here are the following criteria: (a) age 18 to 25, (b) undergraduate student, and (c) either studying nursing, medical laboratory science, pharmacy, or psychology.

Research Instrument

Mental health literacy was measured using the 35-item Mental Health Literacy Scale (MHLS), which measures recognition of mental disorders, knowledge of help-seeking options, risk factors, self-treatment strategies, and attitudes toward mental health (O'Connor & Casey, 2015). The items are rated on a four-point Likert scale, from 1 (very unlikely/unhelpful) to 4 (very likely/helpful). Moreover, several items are rated on a five-point Likert scale ranging from 1 (strongly disagree/definitely unwilling) to 5 (strongly agree/definitely willing). To control for response bias, items 10, 12, 15, 20, 21, 22, 23, 24, 25, 26, 27, and 28 are reverse-scored. Total scores range from 35 to 160, with higher scores indicating greater mental health literacy. The instrument demonstrates high reliability ($\alpha = 0.87$) and test–retest reliability ($r = 0.80$, $p < .001$). With the original author's permission, a few contextual modifications were made to align with DSM-5 terminology and the Philippine cultural context. For instance, items 5 and 8 were updated to reflect DSM-5 criteria, and Australia-specific references were modified to suit the Filipino cultural context. These changes preserved the instrument's reliability while enhancing its relevance for local respondents. The scale was also used and validated across diverse undergraduate populations, including Filipino learners (Mahmoodi et al., 2022; Batiancila et al., 2023; Kılınç et al., 2025).

Data Gathering Procedure

The data collection process followed systematic phases. The researchers first sought approval from their research instructor to conduct the study. After securing initial approval, formal letters were sent to the university administration and the heads of the selected programs to request permission to survey students. These letters outlined the study's purpose, methodology, ethical considerations, and data privacy measures to ensure transparency and institutional compliance. Upon obtaining approval, the researchers identified participants using a purposive sampling technique. This approach allowed the researchers to gather data from each group, increasing the study's validity and generalizability. The total sample size was determined through a priori power analysis, ensuring an adequate number of participants for meaningful statistical comparisons. To uphold ethical standards, this study followed the Declaration of Helsinki, which ensures the protection, dignity, and rights of all participants. Informed consent forms were sent to the identified participants through official university communication channels and direct messaging platforms. The consent form included details on the study's objectives, voluntary participation, confidentiality, anonymity, and the right to withdraw at any time. Respondents were required to provide their consent before proceeding with the survey. Once consent was obtained, the researchers distributed the survey questionnaire link, which included the validated Mental Health Literacy Scale (MHLS). Minor adjustments were made to align certain items with updated diagnostic criteria, following expert recommendations. Participants were instructed to complete the survey honestly and thoroughly within the given timeframe, ensuring accurate data collection for the study.

Ethical Considerations

This study was conducted following the ethical principles outlined in the Declaration of Helsinki. All procedures involving human participants were conducted following guidelines to ensure the safety, dignity, and rights of the respondents. The researchers adhered to the principles of autonomy, beneficence, and non-

maleficence. Informed consent was obtained from all participants, who were assured of their right to withdraw at any time without consequence. No personally identifiable information was collected. The study was conducted in full compliance with the Philippine Data Privacy Act of 2012, and all data were used exclusively for academic purposes. The data was kept on a password-protected device available only to the researchers and was deleted upon the publication of the study.

Data Analysis

Quantitative data were analyzed using both descriptive and inferential statistics to address the study's research statements. Data cleaning, coding, and analysis were conducted using Jamovi software, a statistical application used in various research disciplines. Descriptive statistics, including frequency and percentage distributions, were used to summarize categorical demographic variables such as sex assigned at birth and academic programs. The mean and standard deviation were computed to describe the mental health literacy levels of the respondents. To determine whether significant differences in MHL exist based on sex assigned at birth, an independent samples t-test was performed. The normality assumptions were first checked using Shapiro-Wilk (p = 0.30), Kolmogorov-Smirnov (p = 0.34), and Anderson-Darling tests (p = 0.11), all of which indicated that the data were normally distributed. This test assessed the mean difference (MD) in MHL scores between male and female students while considering the variance in each group. Additionally, a one-way analysis of variance (ANOVA), specifically Welch's ANOVA, was used to examine differences in MHL scores across academic programs: nursing, medical laboratory science, pharmacy, and psychology. Welch's ANOVA was chosen to accommodate potential violations of homogeneity of variances through Levene's test (p = 0.04). When the ANOVA indicated a significant difference, post hoc comparisons using Tukey's test were conducted to identify which specific program groups differed from each other.

Results

Table 1 presents the sex differences in mental health literacy scores among students. It shows that female respondents (n=201) had a slightly higher mean score (M=123.00, SD=12.40) than male respondents (n=125), who had a mean score of 122.00 (SD=13.40). However, this difference was not statistically significant (p=0.417), indicating that sex assigned at birth does not significantly influence mental health literacy (MHL) among students. One possible explanation for this minimal difference is the increasing efforts to ensure equal access to mental health education across all student groups, regardless of sex. Educational initiatives, institutional support services, and open discussions, both in the classroom and online, may contribute to balanced mental health awareness.

Table 1. Differences in Mental Health Literacy Scores among Students based on Sex Assigned at Birth

Variables	Female[a]		Male[b]		*t* (324)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Mental Health Literacy	123.00	12.40	122.00	13.40	0.812	0.417	0.09

Note. N=326. M=mean; SD=standard deviation
an=201. bn=125

This is supported by Popat and Tarrant (2022), who emphasized the role of social media in normalizing mental health conversations and providing platforms for shared learning and emotional support. Moreover, the findings of Argao et al. (2021) also concluded that no significant sex-based differences in MHL among Filipino students. While cultural norms often portray males as less emotionally expressive, these expectations may not directly affect their ability to learn or understand mental health concepts. The accessibility of digital platforms and mental health content may have helped bridge this gap (Oliverio, 2024). The growing digital literacy among youth, coupled with the rise of online mental health resources,

enables individuals of all sexes to access, learn, and engage with mental health information at similar levels (Sharma et al., 2021). As such, the lack of significant difference in MHL by sex likely reflects the democratizing influence of technology, institutional support, and evolving societal attitudes toward mental health.

Table 2. Differences in Mental Health Literacy Scores among Students based on Program

Variables	Medical Laboratory		Nursing[b]		Pharmacy[c]		Psychology[d]		*F* (3,122)	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Mental Health Literacy	120.00	12.20	121.00	12.30	124.00	13.50	127.00	12.70	5.96	<.001

an=60. bn=141. cn=39. dn=86
*p <.05. **p <.01. **p <.001

Table 2 presents the differences in mental health literacy among students based on their academic programs. Psychology students had the highest mean mental health literacy (M=127.00, SD=12.70), followed by pharmacy (M=124.00, SD=13.50), nursing (M=121.00, SD=12.30), and medical laboratory science (M=120.00, SD=12.20). A one-way ANOVA revealed that these differences were statistically significant, $F(3,122)=5.96$, $p < .001$, suggesting that academic program is a key factor in shaping students' MHL levels. These results align with the findings of Miles et al. (2024), who observed that psychology students tend to score higher in MHL compared to their peers in other disciplines. Payne and Leslie (2025) explained that this advantage stems from psychology curricula, which include deeper discussions of mental well-being and intervention strategies. Similarly, Dela Cruz et al. (2023) reported that pharmacy students exhibited more positive attitudes toward mental health, likely due to their exposure to clinical settings where medication management and mental illness are addressed. By contrast, the lower MHL among nursing and medical laboratory science students supports the findings of Gül and Akpinar (2023), who noted persistent knowledge gaps in mental health among health sciences students and emphasized the need for more specialized content in their training. This suggests that academic exposure, not just being in a health-related field, is critical in developing mental health literacy. Moreover, broader factors like stigma can still influence how literacy translates into behavior. Judilla et al. (2025) noted that while many students can recognize mental disorders, they often hesitate to seek help. Gasingan (2023) similarly found that stigma discourages professional help-seeking, even when individuals are aware of their mental health issues. These findings reinforce the idea that MHL development should go beyond knowledge and address application. Furthermore, Alibudbud (2022) emphasized that students with higher mental health literacy show more positive attitudes toward individuals with mental illness, highlighting the behavioral benefits of curriculum integration. In line with this, Maravilla and Tan (2021) and Ma et al. (2022) both advocate for embedding mental health education across academic programs to reduce stigma, improve awareness, and promote well-being at both individual and institutional levels.

Table 3. Tukey's Post-Hoc Comparison of Mental Health Literacy Scores Across Programs

Comparison	Mean Difference	t-value	p-value	Interpretation
Psychology vs. Medical Laboratory	7.19	3.41	0.004	Significant
Psychology vs. Nursing	6.55	3.82	< 0.001	Significant
Psychology vs. Pharmacy	3.00	1.24	0.60	Not Significant

Comparison	Mean Difference	t-value	p-value	Interpretation
Pharmacy vs. Nursing	3.55	1.57	0.40	Not Significant
Pharmacy vs. Medical Laboratory	4.19	1.63	0.37	Not Significant
Nursing vs. Medical Laboratory	0.635	0.329	0.99	Not Significant

A Tukey's post-hoc comparison of mental health literacy scores across programs was made to determine the specific differences among the program groups. Psychology students scored significantly higher in MHL compared to medical laboratory science students (MD = 7.19, p = 0.004) and nursing students (MD = 6.55, p < 0.001). These findings suggest that the psychology curriculum may provide more comprehensive education on mental health, possibly due to its focus on human behavior, psychopathology, and mental health interventions. Medical laboratory science students, on the other hand, may be less exposed to mental health topics, as their training is primarily centered on laboratory diagnostics and technical procedures (Etukudoh & Obeta, 2021). Similarly, while nursing programs involve patient care, they may emphasize clinical and physiological health over mental health concepts (Yang et al., 2024). There was no significant difference in MHL between psychology and pharmacy students (MD = 3.00, p = 0.60), which may reflect shared academic exposure to mental health topics. Pharmacy students typically study psychopharmacology and psychiatric medication management, which supports their understanding of mental illness and treatment (Javelot et al., 2021). Moreover, Batarseh et al. (2022) emphasized that pharmacists, as accessible healthcare providers, are often able to recognize and manage mental health conditions, reinforcing their foundational MHL. Other comparisons, pharmacy and nursing students (MD = 3.55, p = 0.40), pharmacy and medical laboratory science (MD = 4.19, p = 0.37), and nursing and medical laboratory science (MD = 0.635, p = 0.988) were not statistically significant. These results indicate that students in nursing, pharmacy, and medical laboratory science programs have comparable levels of MHL. Devraj et al. (2019) found similar patterns, noting that students from these health-related fields generally demonstrated recognition of mental disorders, but differences in depth and intervention knowledge may exist. These post hoc results reinforce that psychology students possess significantly higher MHL compared to those in nursing and medical laboratory science. In contrast, pharmacy students may benefit from mental health-related content within their curriculum, resulting in comparable scores to psychology students.

Discussion

The present study assessed the mental health literacy levels of health sciences students and determined whether differences existed based on sex assigned at birth and academic program. Rooted in the need to understand better how future health professionals perceive and comprehend mental health issues, the study focused on students enrolled in nursing, medical laboratory science, pharmacy, and psychology programs. This research addressed the gap in the literature concerning MHL among health sciences students in the Philippine setting. The findings showed no significant difference in mental health literacy levels between male and female students. This is consistent with the findings of Argao et al. (2021) among Filipino students and university students (El-Nayal & Alaeddine, 2020). This suggests that sex assigned at birth does not significantly influence the students' ability to access, understand, and apply mental health knowledge. This finding aligns with broader societal trends where mental health awareness efforts (Lee et al., 2020), educational initiatives (Neto & Maugi, 2022), and digital access (Sharma et al., 2021; Popat & Tarrant, 2022; Oliverio, 2024) have begun to level the playing field in terms of mental health literacy across sexes. Moreover, the results indicated a significant difference in mental health literacy based on academic program. Psychology students

scored significantly higher in mental health literacy than their counterparts in nursing and medical laboratory science. This finding underscores the idea that exposure to psychology-related coursework or clinical training has a meaningful impact on students' understanding of mental health (Shim et al., 2022; Miles et al., 2020). It further emphasized the role of academic preparation in shaping mental health competence among future healthcare professionals. By investigating mental health literacy within specific academic programs, the study contributes to the growing body of knowledge that recognizes program-level differences in preparedness for addressing mental health concerns. While psychology students understandably performed best, the evidence that other health sciences students scored lower highlights a crucial gap. These results suggest that mental health literacy should not be confined to psychology curricula but integrated across all health sciences programs as a foundational competency.

While the findings provide important insights into the mental health literacy of health sciences students, it is important to acknowledge the scope and limitations of the study. The sample was limited to four academic programs within a single private university in the Philippines, which may restrict the generalizability of the results to broader populations. Additionally, only sex assigned at birth and academic program were examined. At the same time, potentially influential variables such as age, socioeconomic background, year level, or prior exposure to mental health education were not included. These limitations suggest that while the results contribute meaningfully to the understanding of mental health literacy in the context of health sciences education, further studies are necessary to explore a broader range of influencing factors and to confirm these findings in more diverse academic and institutional settings.

Conclusion and Recommendations

Mental health literacy (MHL) is a critical competency in healthcare education, particularly for health sciences students who are expected to support clients' physical and psychological well-being in their future clinical roles. Moreover, it is also vital to support health sciences students' mental well-being to empower them to navigate academic pressures with resilience, self-awareness, and compassion. This study contributed to the growing discourse on mental health in higher education by examining differences in MHL among Filipino undergraduate students across four health sciences programs, while also exploring potential disparities based on sex assigned at birth. Findings revealed that students enrolled in the psychology program scored significantly higher on a validated MHL scale compared to those in nursing and medical laboratory science, indicating a potential advantage from more intensive exposure to mental health topics. In contrast, no significant differences were observed based on sex, suggesting that academic training may exert a greater influence on students' mental health literacy than gendered social factors. The study highlights the critical need to integrate MHL into the curricula of all health sciences. These findings align with the United Nations' Sustainable Development Goal (SDG) 3: Good Health and Well-being by promoting better awareness and prevention of mental health issues among emerging health professionals. Increased MHL equips students with the competencies necessary for the identification, care, and management of mental health, making them more skilled and compassionate health professionals. Moreover, the incorporation of MHL into higher education programs supports SDG 4: Quality Education through equitable, inclusive, and promoting lifelong learning that can enhance learners' overall health care delivery.

These findings underscore the importance of addressing mental health literacy at the curricular level. Programs such as nursing and medical laboratory science, which showed lower MHL scores, may benefit from integrating more structured mental health content into existing courses. This could include focused units on mental health in patient care, short modules within clinical subjects, or partnerships with psychology faculty to enrich learning materials. Such adjustments do not require major curricular overhauls but can be implemented through gradual revisions that align with existing course outcomes. More broadly,

the results highlight a need for curriculum developers to ensure that mental health literacy is embedded as a cross-cutting theme throughout health sciences education. Doing so would support long-term improvements in both student well-being and professional readiness. Institutions should also consider faculty development programs that equip instructors to address mental health topics confidently and sensitively, regardless of discipline. University-wide policies may further reinforce MHL by recognizing it as a core competency across all programs, ensuring consistent exposure regardless of specialization. Psychology departments, given their curricular strength in this area, are well-positioned to collaborate with other health disciplines in designing content, conducting workshops, and supporting student-led initiatives. Future research should expand on these findings by including more institutions and exploring factors such as prior exposure to mental health education, access to resources, and socioeconomic background. Longitudinal studies are also encouraged to track how MHL develops over time and its potential impact on clinical decision-making and patient outcomes. Ultimately, enhancing MHL within the curriculum is not only feasible but necessary to produce health professionals who are both clinically competent and psychologically informed.

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