

Use of AI tools among allied healthcare students: Academic integrity, online learning integrity, and nomophobia as predictors

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ABSTRACT

The swift convergence of generative artificial intelligence (GenAI), online instruction, and mobile dependence has transformed higher education, introducing both innovations and ethical problems for allied health training. Although individual studies on AI adoption, digital ethics, and device dependence exist, a significant empirical gap remains regarding how psychological reliance on mobile devices (nomophobia) and virtual-specific ethics jointly drive GenAI adoption among healthcare students, where ethical lapses directly impact clinical competence. To address this gap, this study examined the predictive roles of academic integrity, online learning integrity, and nomophobia in the use of AI tools among allied healthcare students at a higher education institution. Employing a quantitative cross-sectional design, the researchers collected data via convenience sampling among 300 full-time allied health students in Central Luzon, Philippines. The study used four research tools to gather pertinent data for the investigation, including an online survey administered during the second semester of the 2025-2026 academic year. Both descriptive and inferential statistics were employed using SPSS 23. Descriptive results showed high academic integrity, moderate AI usage and nomophobia, but low online learning integrity. Correlation analyses showed that AI tool use was positively associated with online learning integrity, nomophobia, and academic integrity. Multiple linear regression demonstrated that the model significantly predicted AI usage. Online learning integrity was the strongest predictor, followed by academic integrity and nomophobia. These results show that ethical digital engagement and mobile connectedness actively propel AI integration; ultimately, achieving SDG 4 objectives within healthcare education requires moving beyond prohibitive policies toward anticipatory digital governance, robust AI literacy, and ethical models that prepare future professionals for a digitally driven medical environment.

Keywords: use of AI tools, academic and online learning integrity, nomophobia, allied healthcare students, SDG 4 (quality education), Olongapo City

INTRODUCTION

The convergence of generative artificial intelligence (GenAI), online instruction, and ubiquitous mobile technology has fundamentally transformed higher education, introducing both pedagogical innovations and multifaceted ethical dynamics into allied health training. Ruano-Borbalan (2025) enthused that AI's influence is growing, but its power in education has yet to be realized. Francis et al. (2025) also argued that while GenAI can provide considerable benefits regarding automation and output, that integration must be managed with care. Within health sciences education, where academic standards directly translate to professional competence and patient safety, four key constructs have emerged at the forefront of contemporary research: the use of

AI tools, classic academic integrity, online learning integrity, and nomophobia (no-mobile-phone phobia). For instance, Ekaterina et al. (2025) highlighted in their study that project-based learning can promote originality and reduce AI-generated plagiarism. Bittle and El-Gayar (2025) also indicated that although GenAI can boost educational involvement and output, it can also pose a risk of academic dishonesty. At the same time, previous papers by Ugwu (2026) and Khakpaki (2025) found that serious issues of plagiarism, academic misconduct, excessive dependence on AI-produced content, biases, data privacy, transparency, and low evaluation authenticity are prevalent in healthcare education. As healthcare programs increasingly adopt blended learning models and clinical simulation technologies, understanding how students use digital tools while upholding ethical standards has become a critical institutional priority. Zgambo

et al. (2025) noted that while AI's efficiency drives healthcare students to adopt it, they refrain from it due to moral concerns. On the other hand, Hardie et al. (2026) and Nikolopoulou (2024) claimed that, while there is growing openness to gen AI, a body of work remains regarding the ethical and educational challenges in the pedagogical practices in higher education. Du Plessis and Plaatjes (2025) also noted that GenAI, such as ChatGPT, has advantages and disadvantages regarding academic integrity. Similarly, Lund et al. (2025) indicated that students' ethical values are the strongest predictors of perceived misconduct and actual AI use. Nevertheless, on a global scale, embedding GenAI in allied health coursework offers adapted learning support, automated diagnostic reasoning, and rapid literature synthesis. Basil et al. (2026) provided an overview of the current integration of GenAI in health profession education and pointed out the associations among opportunities, challenges, facilitators, and barriers. Similarly, Pham et al. (2025) added that GenAI bolsters customized and self-directed learning; however, its cooperative role is under-explored. Kovalainen et al. (2025) also reported that AI is increasingly used in health science education, where it can individualize learning and the development of diagnostic skills. However, unchecked adoption elicits serious concerns about cognitive passivity, overreliance, and the possible erosion of the clinical judgment required for direct patient care (Sorn et al., 2026; van Zyl, 2026). Concurrently, while allied health trainees consistently demonstrate strong commitments to foundational academic integrity, the expansion in virtual learning spaces has exposed distinct ethical vulnerabilities (Abdelwanis et al., 2026; Guruswami et al., 2023). Unproctored digital environments frequently see a marked drop in integrity driven by screen-mediated detachment, perceived lack of oversight, and easy access to unauthorized online aids during remote evaluations (Malhotra & Chhabra, 2026; Meulmeester et al., 2021; Pleasants & Pleasants, 2022).

Adding to these instructional challenges is the rising prevalence of nomophobia among healthcare-related students. Because smartphones serve as primary access points for point-of-care applications, drug reference databases, and immediate communication, students experience elevated anxiety and psychological distress when disconnected from their devices (Nawaz, 2024; Radtke et al., 2022; Shabani et al., 2025). While mobile connectivity allows real-time access to clinical information, heavy reliance on devices leads to continuous digital distraction, split attention, and cognitive strain (Ciğerci & Özpınar, 2026; Shanmugasundaram & Tamilarasu, 2023). Despite growing literature on these issues individually, a significant empirical gap remains in understanding how reliance on psychological devices and digital-specific ethics jointly influence the adoption of GenAI in healthcare education, where ethical missteps carry real-life clinical consequences.

The need to evaluate GenAI, digital ethics, and mobile device dependence is underscored by recent Philippine literature showing that local tertiary students actively adopt emerging technologies. At the same time, they navigate distinct ethical and psychological challenges. Empirical evidence indicates that Filipino health sciences and nursing trainees show strong intentions and positive cognitive-

affective attitudes toward adopting conversational AI platforms such as ChatGPT for academic tasks, diagnostic reasoning, and literature synthesis (Penuela et al., 2025). However, this rapid integration introduces critical institutional vulnerabilities; local studies reveal that heightened AI reliance among university students is strongly associated with elevated risks of unauthorized content duplication and diminished classic academic integrity awareness (Secreto et al., 2025). Rather than intentional misconduct, non-compliant digital behaviors frequently stem from an institutional policy vacuum, in which students use generative tools without clear guidelines, boundaries for online collaboration, or structured ethical frameworks (Lorzano et al., 2025). Adding to these ethical dynamics is the widespread prevalence of smartphone dependency among Filipino learners, where severe nomophobia and continuous mobile connectivity induce elevated psychological stress, cognitive distraction, and split attention (Buctot et al., 2021). Although these studies independently highlight AI adoption intentions, localized attitudes, integrity risks, and smartphone reliance, a critical empirical gap remains regarding how psychological device reliance and virtual-specific ethics jointly drive GenAI usage among allied healthcare trainees.

Essential to this evolving educational domain is the United Nations SDG 4 (quality education), which calls for inclusive, equitable, and lifelong learning opportunities that offer students relevant digital skills and instill principles of global citizenship, ethics, and sustainability. Achieving the core vision of SDG 4 in higher health education requires establishing high-quality learning environments in which the incorporation of technology strengthens cognitive capabilities without compromising academic discipline, clinical competence, or moral soundness.

This study directly tackles this empirical divide through appraising these four variables simultaneously within an allied health cohort. Hence, the following aims are presented: first, it establishes a clear conceptual distinction between general scholarly integrity and domain-specific online learning integrity, revealing that traditional moral commitments do not automatically prevent ethical lapses in virtual environments. Second, it delivers predictive clarity by demonstrating that ethical engagement in digital spaces and psychological dependence on mobile devices actively drive, rather than hinder, AI tool use. Ultimately, these findings provide allied health administrators and educators with insights to transition away from reactive, prohibitive policies toward proactive digital governance, structured AI literacy, and balanced digital wellness frameworks within training.

METHODOLOGY

Research Design

This study applied a quantitative, non-experimental cross-sectional research design utilizing bivariate correlation and multiple linear regression analyses (Creswell & Creswell, 2018). The cross-sectional approach was selected because it allows for the simultaneous assessment of students' use of AI tools, academic integrity, online learning integrity, and nomophobia at a single point in time without manipulating

the natural study environment (Polit & Beck, 2021). This snapshot methodology is notably useful in allied health research for efficiently capturing emerging digital trends, psychological states, and ethical behaviors throughout a representative cohort of healthcare trainees.

Participants

The population for this investigation comprises students from a local higher education institution in Central Luzon, Philippines, enrolled in courses within the College of Allied Health Studies. Allied health students were specifically selected as the target cohort due to the unique ethical and digital demands of healthcare education. First, unlike general academic disciplines, academic integrity lapses in health training carry severe real-world ramifications, as compromised learning directly jeopardizes future clinical competence and patient safety. Second, allied health curricula rely heavily on mobile-based point-of-care reference tools, clinical applications, and online learning management systems, making these trainees particularly susceptible to device dependence (nomophobia) and challenges related to virtual integrity. Finally, the rapid adoption of GenAI in medical case synthesis and clinical decision-making makes this population an ideal lens for examining how dependence on digital ethics and technology intersects. A total of 300 students participated in an online survey during the second semester of the 2025-2026 academic year. The participants were chosen via convenience sampling, and the data-gathering period ran from December 2025 to January 2026. Convenience sampling was deemed appropriate for this investigation due to its efficiency, time-frame feasibility, and suitability for online survey administration among an accessible, homogeneous student population facing identical digital instruction platforms (Creswell & Creswell, 2018). While non-probability sampling limits population-wide generalizability, it offers a valid and reliable approach to examining emerging digital behaviors, predictive relationships, and ethical patterns within specific higher education cohorts (Polit & Beck, 2021).

To be part of the investigation, the inclusion criteria for the participants were as follows:

- (a) bona fide student of the participating institution;
- (b) studying full-time;
- (c) taking an allied health course (e.g., BS nursing or BS midwifery);
- (d) willing to participate in the online survey.

Exclusion from the study included students who were part-time, not enrolled in allied health courses, and unwilling to participate in the online survey.

The sample comprised participants aged 18-31 years, with those aged 21-25 years predominated (49.7%). The majority were female (74%) and resided in a city (59.7%), with a GPA of 85-89% from the previous semester.

The study was conducted in accordance with recognized ethical standards for research involving human participants. All efforts were made to ensure ethical integrity. Participants were informed about the purpose of the study, that their participation was purely voluntary, and that informed consent was obtained. Confidentiality and anonymity were maintained

throughout the research process. The study also adheres to the principles outlined in the Declaration of Helsinki.

Instrumentation

To gather vital information for the study, the investigation used four research tools in the data-gathering process.

The primary dependent variable students' engagement with GenAI was measured using the scale conceptualized and validated by Ventura and Lopez (2024). This instrument assesses the frequency, purpose, and system integration of GenAI applications (e.g., ChatGPT, Claude, and automated literature synthesis tools) in academic coursework and clinical case preparation. The scale consisted of 30 items divided into two parts namely: "awareness of use of AI tools" and "extent of use on the AI tools". They are rated on a 4-point Likert scale from 1 (*not aware*) to 4 (*very aware*), with higher composite scores indicating greater routine use of AI technologies for academic tasks.

General scholarly ethics was evaluated using the academic integrity instrument adapted from Ramdani (2018). Grounded in standard models of scholarly honesty, this scale measures students' attitudes, self-reported adherence, and perceived moral obligation toward core academic standards specifically, behaviors related to exams, individual assignments, and traditional research authorship. It is a 17-item scale with five factors namely: honesty, fairness, respect, trust, and responsibility. The responses were scored on a 5-point Likert scale ranging from 1 (*very inappropriate*) to 5 (*very appropriate*), with higher mean (M) scores indicating stronger individual commitments to classic academic honesty.

To capture domain-specific ethics unique to virtual and technology-mediated instruction, the study applied the online learning integrity scale developed by Ayoub/Al-Salim and Aladwan (2021). Unlike general academic ethics tools, this instrument specifically evaluates student conformity and ethical vulnerabilities in remote, unproctored digital environments including unauthorized collaboration during online assessments, inappropriate use of digital tools during remote exams, and screen-mediated detachment. This is a 20-item scale with three latent variables which includes: academic integrity of the online learning students, academic performance, and academic learning quality. The items were anchored on a 6-point Likert scale ranging from 1 (*very low*) to 6 (*very high*), with higher scores indicating greater moral character in virtual learning spaces.

Psychological device dependency was measured using the widely recognized nomophobia questionnaire (NMP-Q), originally developed and validated by Yildirim and Correia (2015). The NMP-Q is a 20-item instrument which evaluates the multi-dimensional structure of "no-mobile-phone phobia" specifically measuring four core dimensions: *not being able to communicate, losing connectedness, not being able to access information, and giving up convenience*. The tool uses a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*), with composite scores that categorize students' anxiety levels when they are disconnected from their smartphones.

Before data collection, the four instruments underwent pilot testing to assess their stability and correctness. The reliability testing employed Cronbach's alpha test and each

Table 1. Mean and standard deviation distribution of the variables

Variables	Minimum	Maximum	Kurtosis	Skewness	M	SD	Interpretation
Use of AI tools	1.43	4.00	-0.32	-0.06	2.94	0.538	Aware
Academic integrity	1.30	4.00	7.28	-2.01	3.58	0.405	Very appropriate
Online learning integrity	1.07	4.00	0.61	0.88	2.29	0.639	Low
Nomophobia	1.00	4.00	-0.49	0.01	2.62	0.713	Agree

Note. 1.00-1.75: Not aware, very inappropriate, very low, strongly disagree; 1.76-2.51: Slightly aware, inappropriate, low, disagree; 2.52-3.27: Aware, appropriate, high, agree; 3.28-4.00: Very aware, very appropriate, very high, strongly agree

Table 2. Correlation matrix between AI use, academic integrity, online learning integrity, and nomophobia

Variables	Use of AI tools	Academic integrity	Online learning integrity	Nomophobia
Use of AI tools	-	.192* (.000)	.467* (.000)	.333* (.000)
Academic integrity		-	.072 (.214)	.105 (.070)
Online learning integrity			-	.388* (.000)
Nomophobia				-

Note. * $p < .05$

tool has the following results: for the use of AI tools, the Cronbach's alpha coefficient was .968; as for the academic integrity of students the overall Cronbach's alpha result was .911; for the online learning integrity among students, a Cronbach's alpha result of .946 was obtained, and for the NMP-Q, the study garnered a Cronbach's alpha of .961. All coefficients obtained were above the .70 reliability threshold (George & Mallery, 2019).

Statistical Analysis

The statistical analysis for this study adopted a systematic, multi-tiered quantitative approach using JAMOV 2.5 Statistical software. First, descriptive statistics, including the mean (M) and standard deviation (SD), were computed to establish baseline operational profiles and the dispersion of data across all primary variables: use of AI tools, academic integrity, online learning integrity, and nomophobia.

Next is the bivariate correlational analysis using the Pearson product-moment correlation coefficient. This statistic was conducted to evaluate the direction, strength, and statistical significance of linear associations across all paired continuous variables.

Finally, a simultaneous multiple linear regression analysis was executed to determine the unique and collective predictive power of academic integrity, online learning integrity, and nomophobia (predictor variables) in explaining variance in the use of AI tools (outcome variable).

RESULTS

The main objective of the study is to assess the use of AI tools among allied health students and determine which among academic integrity, online learning integrity, and nomophobia predicts the use of AI tools.

An analysis of the descriptive statistics in Table 1 discloses notable trends across the evaluated allied health variables, characterized most significantly by a strong foundational devotion toward academic integrity ($M = 3.58$, $SD = 0.405$) interpreted as "very appropriate" alongside a worrying decline in online learning integrity ($M = 2.29$, $SD = 0.639$) interpreted by the scale as "low." The high M and low dispersion for academic integrity demonstrate that allied health respondents

consistently prioritize core ethical standards; however, the low score for online learning integrity indicates critical ethical vulnerabilities specific to virtual instructional environments, warranting immediate curricular intervention. Furthermore, respondents reported moderate familiarity with the use of AI tools ($M = 2.94$, $SD = 0.538$), interpreted on the scale as "aware." They also reported experiencing nomophobia ($M = 2.62$, $SD = 0.713$), which showed the widest variability among responses. Taken together, these outcomes show that while allied health trainees and professionals uphold strong general academic ethics, institutional systems ought to adapt urgently to address the unique behavioral and integrity challenges posed by distance learning, AI tools, and reliance on mobile devices.

An analysis of the correlation matrix in Table 2 shows several statistically significant relationships among the study variables, most notably a moderate positive correlation between the use of AI tools and online learning integrity ($r = .467$, $p = .000$), indicating that greater utilization of AI tools is aligned with higher reported integrity in virtual instructional settings. Additionally, online learning integrity demonstrated a statistically significant positive association with nomophobia ($r = .388$, $p = .000$). At the same time, the use of AI tools was significantly and positively correlated with both nomophobia ($r = .333$, $p = .000$) and general academic integrity ($r = .192$, $p = .000$). In contrast, general academic integrity did not display statistically significant relationships with either nomophobia ($r = .105$, $p = .070$) or online learning integrity ($r = .072$, $p = .214$). From an allied health perspective, these results show that digital technology behaviors, specifically AI engagement and mobile device dependency, are closely interconnected within the online learning space. In contrast, broader, traditional commitments to academic ethics operate relatively independently from technology-driven anxieties and virtual coursework behaviors.

A multiple linear regression analysis was conducted to examine the predictors of AI tool utilization among allied healthcare students, and the overall model proved to be statistically significant, $F(3, 296) = 35.80$, $p < .001$, accounting for 26.6% of the variance in AI tool usage ($R^2 = .266$) (Table 3). Among the evaluated variables, online learning integrity emerged as the strongest positive predictor ($B = 0.330$, 95% confidence interval [CI] [0.241, 0.420], $t = 7.27$, $p < .05$), demonstrating that students who demonstrate higher

Table 3. Predictors of use of AI tools among allied healthcare students

Predictor	B	Standard error	95% CI lower bound	95% CI upper bound	t	B
Use of AI tools	1.160	0.255	0.658	1.663	4.55*	1.160
Academic integrity	0.194	0.067	0.063	0.325	2.92*	0.194
Online learning integrity	0.330	0.045	0.241	0.420	7.27*	0.330
Nomophobia	0.124	0.041	0.044	0.205	3.04*	0.124

Note. $F(3, 296) = 35.8$; $p = .000$; $R^2 = 0.266$; * $p < .05$

adherence to moral standards in virtual environments are considerably more prone to engage with AI technologies. Additionally, nomophobia ($B = 0.124$, 95% CI [0.044, 0.205], $t = 3.04$, $p < .05$) and general academic integrity ($B = 0.194$, 95% CI [0.063, 0.325], $t = 2.92$, $p < .05$) were also statistically significant positive predictors. From an allied health education perspective, these results show that digital connectedness and ethical online engagement are key drivers of AI adoption, suggesting that educators should leverage students' ethical online frameworks to help promote responsible, transparent AI integration in allied health training and professional practice.

DISCUSSION

The empirical findings of this study illuminate a complex dynamic among allied healthcare students regarding engagement with digital technology, ethical standards, and mobile device dependence. Crucially, while baseline descriptive metrics revealed high overall commitment to classic academic integrity alongside a lower average adherence to digital learning integrity, bivariate and multivariate analyses demonstrated that technology-driven behaviors and virtual ethics significantly predict AI tool utilization. As noted by Kidega et al. (2026), there are no opportunities without challenges when integrating AI into higher education. The overall regression model accounted for 26.6% of the variance in AI tool usage, confirming that students' ethical orientation in virtual environments and their psychological reliance on mobile devices directly shape their interactions with emerging healthcare technologies. These baseline dynamics align directly with the mandate of SDG 4 (quality education), which calls on higher education institutions to support inclusive, high-quality learning environments that train future professionals with both advanced technical competencies and resilient ethical structures.

A central finding of this study is the marked structural divergence between classic academic integrity ($M = 3.58$) and online learning integrity ($M = 2.29$). Bivariate analysis further confirmed that general academic integrity showed no statistically significant correlation with online learning integrity ($r = .072$, $p = .214$) or nomophobia ($r = .105$, $p = .070$). The probable cause for this disparity lies in the psychological and environmental shifts that occur when moving from traditional physical classrooms to unproctored virtual learning spaces. In face-to-face academic settings, physical proctoring and immediate peer observation reinforce ethical compliance. Conversely, unproctored remote environments frequently experience a drop in integrity driven by screen-mediated detachment, a perceived lack of oversight, and easy access to unauthorized online aids during remote evaluations (Malhotra & Chhabra, 2026; Meulmeester et al., 2021; Pleasants &

Pleasants, 2022). Furthermore, Philippine literature underscores that tertiary students frequently navigate virtual learning environments within an institutional policy vacuum, where non-compliant digital behaviors stem from a lack of clear guidelines, boundaries for online collaboration, or structured ethical frameworks (Lorzano et al., 2025; Secreto et al., 2025). Consequently, strong underlying commitments to traditional scholarly honesty do not automatically prevent ethical vulnerabilities in virtual instructional spaces (Abdelwanis et al., 2026; Guruswami et al., 2023).

Across all multivariate analyses, online learning integrity emerged as the single most influential positive predictor of AI tool usage ($\beta = 0.330$, $p < .05$), showing the strongest bivariate correlation ($r = .467$, $p = .000$). This result is consistent with Hamzah et al. (2025), who highlighted the benefits of AI in enhancing online learning effectiveness, and Penuela et al. (2025), who reported strong intentions among Filipino health sciences students to adopt AI platforms for academic tasks. Interpreting this within the context of allied health training reveals that students who navigate online learning environments ethically do not avoid AI; rather, they proactively and transparently incorporate AI technologies into their academic routines (Abubakar et al., 2025; Ateeq et al., 2024). Rather than viewing generative tools as an avenue for illicit shortcuts or misconduct (Bittle & El-Gayar, 2025; Du Plessis & Plaatjies, 2025; Lund et al., 2025), ethically grounded trainees engage with GenAI for legitimate academic enhancement—such as medical case preparation, diagnostic reasoning support, automated output synthesis, and rapid literature retrieval (Francis et al., 2025; Kovalainen et al., 2025; Pham et al., 2025; Ruano-Borbalan, 2025). In healthcare education, where electronic health records (EHR), clinical decision support systems, and telehealth tools are rapidly becoming clinical standards, ethical engagement in virtual learning catalyzes constructive, transparent AI adoption (Amjad et al., 2023; Prabhu et al., 2025; Wah, 2025; Zendehbad et al., 2025). This finding directly advances SDG target 4.4 by demonstrating how ethical digital orientation fosters workplace-ready digital skills grounded in academic honesty.

The significant predictive role of nomophobia ($\beta = 0.124$, $p < .05$) and its positive correlations with both AI usage ($r = .333$, $p = .000$) and online learning integrity ($r = .388$, $p = .000$) highlight the psychological drivers behind digital tool adoption in modern healthcare training. The probable cause for this relationship stems from the pervasive reliance on mobile smartphones throughout health sciences coursework and clinical preparation. Mobile devices serve as primary access points for point-of-care applications, drug reference databases, and immediate clinical communication; consequently, students experience elevated anxiety and psychological distress when disconnected from their devices (Al Maghaireh et al., 2025; Nawaz, 2024; Radtke et al., 2022;

Shabani et al., 2025). Students who experience heightened nomophobia tend to maintain continuous mobile connectedness, leading them to use mobile-integrated AI tools as real-time coping mechanisms and efficiency tools to manage heavy academic loads (Giray et al., 2024; Sun et al., 2025). However, as highlighted in medical education literature, heavy device reliance and AI overdependence can lead to continuous digital distraction, split attention, cognitive strain, and negative health impacts (Ciğerci & Özpınar, 2026; Guillari et al., 2026; Janatolmakan et al., 2024; Korkmaz & Toraman, 2026; Shanmugasundaram & Tamilarasu, 2023). Left unchecked, overreliance on AI-generated content can raise concerns about cognitive passivity and the potential erosion of the clinical judgment required for direct patient care (Sorn et al., 2026; Ugwu, 2026; van Zyl, 2026).

Finally, while general academic integrity yielded a modest positive regression coefficient ($\beta = 0.194, p < .05$), its predictive influence was secondary to virtual-specific ethics. As observed by Alareifi (2026), students may demonstrate positive attitudes toward AI use while exhibiting varying levels of awareness of academic integrity in digital tasks. Furthermore, current assessment approaches in higher education remain susceptible to manipulation unless institutional policies evolve (Ekaterina et al., 2025; Kofinas et al., 2025). To fulfill the quality mandates of SDG 4 (specifically target 4.3 and target 4.7), allied health educators and institutional policymakers must move beyond strict prohibition toward structured digital education programs, proactive governance, and clear AI literacy frameworks (Espinoza Vidaurre et al., 2024; Evangelista, 2025; Hardie et al., 2026; Khakpaki, 2025; Li et al., 2025; Nikolopoulou, 2024; van Kessel et al., 2022; Zgambo et al., 2025). By leveraging students' existing online integrity, addressing the psychological dimensions of mobile device reliance, and establishing clear boundaries for AI integration, academic institutions can align their practices with international standards guiding future healthcare professionals to deploy AI tools ethically, effectively, and safely in both classroom settings and clinical practice (Basil et al., 2026).

CONCLUSIONS

In conclusion, this study shows that allied healthcare students' engagement with AI is primarily driven by their ethical behaviors in virtual learning environments and their psychological connectedness to digital devices, rather than traditional academic integrity alone. Because students who adhere to online learning ethics and have strong mobile connectivity are the most proactive adopters of AI tools, allied health educators must shift from prohibitive policies toward proactive digital governance. Integrating formal AI literacy, ethical guidelines for virtual platforms, and strategies for managing device dependency into allied health curricula will ensure that future healthcare professionals harness emerging technologies responsibly, transparently, and effectively in both academic and clinical settings.

Limitations of the Study

Despite providing valuable empirical insights into the interplay among digital ethics, mobile device dependency, and GenAI adoption, the study identified several methodological and contextual limitations. The primary limitation stems from the study's quantitative cross-sectional design. Data were captured at a single point in time during the first semester of academic year 2025-2026. Consequently, multiple linear regression established significant predictive relationships among online learning integrity, nomophobia, academic integrity, AI usage, temporal sequence and direct cause-and-effect relationships cannot be definitively established. Longitudinal or experimental designs are required to observe how students' ethical behaviors and reliance on mobile devices evolve as AI technologies advance throughout their clinical training. Second, Participants were recruited using convenience sampling from a single higher education institution in Central Luzon, Philippines. Although the sample size was sufficient for multivariate statistical testing and comprised a homogeneous cohort of allied health students facing identical institutional platforms, non-probability sampling limits the broad generalizability of the findings. Data collection relied entirely on online self-reported questionnaires. Research involving academic dishonesty, ethical compliance, and technology addiction is inherently susceptible to social desirability bias and self-assessment inaccuracies. Although participant anonymity and confidentiality were strictly maintained to mitigate response bias, students may still have underreported unethical digital practices or underestimated their daily screen time and AI use. Lastly, while the regression model accounted for a significant proportion of the variance in AI tool usage, GenAI adoption in health education is multi-faceted. The study did not explicitly account for potentially influential confounding variables, such as specific levels of digital/AI literacy among participants, individual instructors' policies regarding AI permissibility across courses, and socioeconomic status and personal access to paid or advanced AI subscriptions.

Implications of the Study

Based on the findings of the study, several actionable implications emerge for allied health education, clinical training, and institutional policy.

Curricular and instructional implications

Since students with high online learning integrity are the most active AI users, institutions should refrain from outright AI bans. Aligning with SDG target 4.4 (developing relevant digital skills for employment), educators should explicitly integrate structured AI literacy modules into health curricula. Training should focus on the responsible deployment of AI tools for clinical case synthesis, literature retrieval, and diagnostic reasoning, within clear ethical parameters.

Given that descriptive scores for online learning integrity were the lowest of all variables, instructional designers must redesign components of virtual courses. Clear ethical guidelines, scaffolded assessments, and proactive honor codes tailored specifically for remote platforms are needed to bridge the gap between students' high general academic ethics and their lower virtual compliance. Bridging the gap between

students' strong classical academic ethics and their lower levels of virtual compliance requires introducing proactive honor codes, scaffolded assessments, and virtual-specific ethics modules that advance SDG target 4.7 (fostering ethical digital citizenship and sustainable professional conduct).

Student well-being and digital health implications

With nomophobia showing significant positive links to both AI use and online learning integrity, allied health programs must acknowledge the psychological stress associated with constant digital connectivity. To support SDG target 4.3 in maintaining inclusive and supportive tertiary learning environments, academic institutions should implement digital wellness frameworks and structured reflection periods during clinical rotations. Implementing digital wellness workshops and establishing "unplugged" clinical reflection periods can help students manage device anxiety without sacrificing learning efficiency.

Institutional and policy implications

General academic integrity did not significantly correlate with online learning integrity, revealing a disconnect between traditional honor codes and digital behaviors. To uphold educational quality under SDG 4, institutional academic boards must update legacy integrity frameworks to clearly define permissible AI applications, acceptable boundaries for virtual collaboration, and standardized digital citation rules. Academic boards need to update honor codes to clearly define acceptable AI use, collaboration limits in virtual classrooms, and digital citation standards.

Clinical practice and workforce preparation

Modern healthcare relies heavily on EHR, clinical decision support systems, and telehealth. By leveraging students' high familiarity with AI and mobile devices, allied health programs can fulfill SDG target 4.4 by graduating a workforce capable of critically evaluating, ethically auditing, and safely deploying AI technology in direct patient care settings.

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