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Research Article

The Use of Generative AI in Clinical Learning Activities and Its Relationship on Student Nurses' Caring Practices

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ABSTRACT

This study examined the relationship between the use of Generative Artificial Intelligence (Generative AI) in clinical learning activities and the caring practices of student nurses. Guided by Watson's Theory of Human Caring, the research investigated caring behaviors across decision-making, holistic care, and helping-trusting relationships among 293 second- to fourth-year nursing students at Wesleyan University-Philippines during Academic Year 2024-2025. Using a quantitative descriptive-correlational design and stratified purposive sampling, the study included only students who had completed at least one semester of Related Learning Experience and had prior exposure to Generative AI for academic and clinical tasks. Data were gathered through a researcher-developed questionnaire with validated subscales, including an adapted Caring Behaviors Inventory (Cronbach's $\alpha = 0.86$ in the full dataset). Descriptive statistics showed that student nurses "often" used Generative AI across planning, writing, and review tasks, while caring practices remained consistently "high" across all measured domains. Assumption testing using Shapiro-Wilk confirmed that composite scores were approximately normally distributed, permitting the use of Pearson's r to analyze relationships between variables. Correlation results revealed no significant associations ($p > 0.05$) between the frequency of Generative AI use and caring practices, indicating that increased AI use did not predict changes in humanistic nursing behaviors. Uniformly high scores across caring dimensions also suggested potential ceiling effects, warranting cautious interpretation of nonsignificant results. The study concludes that while Generative AI supports academic tasks, it does not diminish core caring values among student nurses and highlights the need for ethical, balanced integration of AI in nursing education.

Keywords: Caring Practices, Clinical Learning Activities, Generative AI, Holistic Care, Nursing Education, Student Nurses

1. INTRODUCTION

The rapid advancement of artificial intelligence (AI) has reshaped health professions education worldwide, with generative artificial intelligence (Generative AI) emerging as a widely used tool that supports text generation, idea development, and cognitive processing in academic and clinical tasks. Within nursing education, students increasingly use Generative AI to assist in planning, writing, reviewing, and analyzing course requirements, including care plans, clinical case analyses, and reflective journals (Han et al., 2025; Topaz & Pruinelli, 2025). Research highlights both the benefits and challenges of these technologies: while AI tools can enhance clarity, efficiency, and cognitive scaffolding, scholars warn that excessive reliance may impede the development of independent judgment and critical interpersonal competencies essential to holistic nursing care (Seo et al., 2024; Sockolow et al., 2025). Although global discussions continue to expand, the integration of Generative AI in nursing education must also be understood within the socio-cultural and infrastructural realities of the Asia-Pacific region. Across the region, digital transformation in higher education is progressing unevenly, influenced by disparities in technological readiness, access to digital learning environments, and institutional capacity for adopting AI-enabled tools. These variations shape how nursing students encounter and depend on AI in their academic work. At the same time, Asia-Pacific nursing cultures place strong emphasis on relational orientation, compassionate presence, family-centered values, and respect for elders—cultural commitments that continue to define what it means to provide holistic and person-centered care. As nursing schools adopt AI-supported learning strategies, educators

are increasingly concerned with how technological efficiency can coexist with these longstanding regional expectations of humanistic, relational nursing practice.

This regional conversation aligns with emerging scholarship within the APCORE Online Journal, which has begun examining how AI-related innovations influence educational practice. For example, Nguyen (2025) discussed the growing presence of AI in service-learning pedagogies within Asia-Pacific higher education and highlighted the need to safeguard humanistic and community-oriented values even as institutions incorporate digital tools. Although not focused specifically on nursing, such scholarship points to the broader relevance of examining how AI integrates into culturally rooted educational systems.

2. MATERIALS AND METHODS

This study employed a quantitative descriptive–correlational design to examine associations between Generative AI use and caring practices among student nurses. Correlational methods are well suited for identifying relationships in natural educational settings without manipulating conditions (Cohen, 1988).

Research Locale and Participants

The study was conducted at Wesleyan University–Philippines, an institution known for its values-based, holistic nursing education philosophy aligned with caring theory (Watson, 2008; Ghanbari-Afra et al., 2022). A total of 293 second-, third-, and fourth-year nursing students participated, selected via stratified–purposive sampling to ensure representation across academic levels and clinical exposure.

To ensure adequate representation across academic levels while maintaining relevance to the study objectives, stratified purposive sampling was employed. In this approach, the Bachelor of Science in Nursing (BSN) levels—Levels 2, 3, and 4 served as predefined strata based on their differing degrees of clinical exposure and Generative AI utilization. Stratification ensured that each academic level was proportionately represented in the sample, thereby enhancing the comparability of responses across training stages.

Within each stratum, purposive selection was applied using explicit, predetermined inclusion criteria: (1) regular enrollment during the second semester of Academic Year 2024–2025; (2) completion of at least one semester of Related Learning Experience (RLE); and (3) documented use of Generative AI tools for clinical learning activities. These criteria restricted participation solely to students who had meaningful exposure to both clinical learning and AI-supported academic tasks, which was essential for addressing the research questions.

Applying uniform eligibility requirements within each stratum minimized researcher discretion and helped reduce potential selection bias by ensuring that all who met the criteria were invited to participate. This structured two-stage process supports both representativeness across academic levels and consistency in participant selection.

Instruments

Data were collected using a researcher-developed questionnaire composed of five sections: (1) demographic profile; (2) use of Generative AI in clinical learning activities across planning and research, writing and development, and review and editing; (3) caring practices measured through decision-making, holistic care, and helping–trusting relationships; (4) relationship between Generative AI use and caring practices; and (5) the proposed educational output. Items were rated using a 4-point Likert scale, a widely used method for capturing behavioral frequency and self-reported perceptions in nursing and social science research (Joshi et al., 2015).

Initial pilot testing yielded a Cronbach's alpha of 0.838, indicating acceptable reliability. However, because the caring behaviors scale constituted a core variable in the correlational analysis, internal consistency was recalculated using the full study sample. The reliability coefficient for the main dataset was 0.86, demonstrating robust internal consistency and strengthening confidence in the scale's measurement quality for the primary analyses.

Data Collection

Quantitative data were collected through the distribution of printed survey questionnaires to qualified nursing students across Levels 2, 3, and 4. Standardized protocols for classroom-based paper surveys were followed to ensure accessibility and minimize disruption to academic activities (Dillman et al., 2014). After securing approval from the College of Nursing and obtaining informed consent, the questionnaires were administered during scheduled class hours. Each participant was given approximately 20 minutes to complete the instrument, a typical timeframe for structured paper surveys in nursing education research (Polit & Beck, 2021).

Completed questionnaires were checked for completeness, legibility, and accuracy. This step aligns with best practices in survey research to ensure data quality prior to encoding (Dillman et al., 2014). Forms were numbered and securely stored to maintain respondent anonymity and data integrity.

Data Analysis

Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) to summarize demographic characteristics, levels of Generative AI use, and caring practices. Before conducting correlation analyses, the assumptions for treating Likert-type scores as continuous variables were evaluated. Although Likert data are ordinal, composite

scale scores with four or more items may be treated as approximately continuous when supported by empirical validation in educational and behavioral research. To assess the suitability of parametric tests, the distribution of composite scores for Generative AI use and caring practice dimensions was examined using the Shapiro–Wilk test, along with visual inspection of histograms and Q–Q plots. Results indicated that the composite scores were approximately normally distributed, and scatterplots demonstrated linear relationships among variables. Internal consistency of the Caring Behaviors scale was recalculated using the full study sample, yielding a Cronbach's alpha of 0.86, which confirms reliability for correlation analysis.

Given that the assumptions of normality, linearity, and reliability were satisfied, Pearson's r was used to examine the relationships between Generative AI use and caring practice dimensions. Interpretation of correlation strength followed established statistical conventions for behavioral research.

3. RESULTS AND DISCUSSION

Quantitative Findings and Interpretation

Survey responses from 293 nursing students were analyzed to describe their demographic profile, extent of Generative AI use in clinical learning activities, caring practices, and the relationship between Generative AI usage and caring behaviors. Descriptive statistics showed that respondents "often" used Generative AI across planning, writing, and review tasks, while caring practices across the domains of decision-making, holistic care, and helping–trusting relationships consistently fell within the "high" descriptive range. These findings are summarized in Tables 1–3.

Table 1

Descriptive statistics for the use of generative AI in clinical learning activities (n = 293)

Variable	Mean (M)	Standard Deviation (SD)	Interpretation
Planning and Research	3.16	0.55	Often
Writing and Development	3.14	0.57	Often
Review and Editing	3.18	0.53	Often

Student nurses reported consistent use of Generative AI across all academic phases, with all domain means falling within the "Often" descriptive range. The highest mean was observed in Planning and Research, indicating that students most frequently used Generative AI during the preliminary stages of academic tasks. Prior studies similarly report that learners tend to apply Generative AI more frequently in initial academic processes, such as information acquisition and organization, due to the structured and task-oriented nature of these phases (Han et al., 2025; Seo et al., 2024).

The means for Writing and Development and Review and Editing also fell within the same descriptive category, showing that students used Generative AI at comparable levels across stages of academic output preparation. Existing quantitative literature notes parallel patterns, where nursing students use AI tools consistently across different academic functions without major variability between task types (Han et al., 2025; Sockolow et al., 2025). These findings align with evidence that AI-supported academic tasks produce stable frequency patterns when measured through Likert-type usage scales (Han et al., 2025).

Overall, the uniformly high means across the three domains indicate that Generative AI use was frequent and consistent in this sample, without extreme variation between tasks. Such distribution patterns are characteristic of AI-usage studies where students report regular engagement across structured academic activities (Han et al., 2025; Seo et al., 2024). The descriptive results therefore reflect the statistical tendency of student populations to use Generative AI at similar frequencies across academic phases when measured quantitatively through self-report Likert scales.

Table 2

Descriptive statistics for caring practices in terms of decision-making, holistic care, and helping-trusting relationships (n = 293)

Caring Practice Dimension	Mean (M)	Standard Deviation (SD)	Interpretation

Decision-Making	3.57	0.45	Always
Holistic Care	3.60	0.42	Always
Helping-Trusting Relationship	3.64	0.40	Always

The consistently high means across caring dimensions indicate that student nurses continue to embody the core values of nursing practice despite their increasing use of Generative AI. Notably, Helping–Trusting Relationships scored the highest (M = 3.81), suggesting that students remain adept at building rapport, instilling trust, and demonstrating empathy—behaviors derived from Watson's carative factors emphasizing authentic presence, sensitivity, and human connection (Watson, 2008).

High scores in Decision-making and Holistic Care (both M = 3.79) reinforce the finding that Generative AI tools do not diminish students' capacity to integrate ethical reasoning, cultural sensitivity, and patient-centered care. These results support recent literature asserting that while Generative AI may assist with technical tasks, caring competencies emerge primarily from interpersonal experiences and reflective practice, not digital tool usage.

Overall, the findings demonstrate that Generative AI does not compromise the humanistic dimensions of nursing; instead, it allows students to better manage academic demands, leaving more cognitive space for relational and ethical aspects of care—consistent with global recommendations on responsible AI integration in nursing education (Topaz et al., 2024).

The consistently high caring scores observed in this cohort may also reflect cultural factors particular to Philippine and broader Asia Pacific nursing traditions. Caring in these contexts is deeply rooted in collectivist values, strong familial expectations, and moral duty, which emphasize emotional presence, respect, and compassion regardless of technological tools available to students. Because caring is culturally reinforced as a professional and personal virtue among Filipino student nurses, their caring behaviors may remain stable and resilient even as digital tools such as Generative AI become more integrated in academic work. This cultural stability likely contributed to the absence of significant correlations, as students' caring practices appear to be shaped more by sociocultural norms and professional value formation than by the frequency of AI use.

Table 3

Relationship between use of generative AI in clinical learning activities and caring practices (n = 293)

	Pearson Correlation			
Generative AI Use	Decision-Making	Holistic Care	Helping-Trusting Relationship	Interpretation
Planning & Research	-0.044	-0.044	0.011	Not Significant
Writing & Development	-0.058	-0.047	-0.016	Not Significant
Review & Editing	-0.043	-0.052	0.013	Not Significant

The correlation results show that all relationships between the three dimensions of Generative AI use and the three dimensions of caring practices are weak and statistically insignificant. Across all dimensions, the coefficients fall within the range –0.058 to 0.013, confirming that there is no meaningful linear association between how often students use Generative AI and how strongly they demonstrate caring practices. According to Cohen (1988), correlations below |.10| are interpreted as "trivial," supporting the conclusion that these relationships are statistically and practically insignificant.

These results imply that higher or lower use of Generative AI does not predict student nurses' capacity to demonstrate caring behaviors in terms of decision-making, holistic care provision, or helping–trusting relationships. This pattern indicates that caring behaviors—rooted in empathy, presence, ethical sensitivity, and relational engagement—are shaped more by personal disposition, clinical exposure, and professional value formation than by engagement with digital tools.

The findings align with Watson's Theory of Human Caring, which emphasizes that caring originates from human-to-

human interactions, intentionality, and moral commitment rather than cognitive or technical aids (Watson, 2008). They also support recent discussions in the literature suggesting that while Generative AI may enhance academic tasks such as planning, drafting, and editing, it does not substitute for the development of humanistic competencies in nursing (Karim & Ocampo, 2024; Topaz et al., 2024). Students appear to use Generative AI as an academic support tool, not as a mechanism for shaping their caring identity or clinical relational skills.

Overall, the insignificant correlations reaffirm that Generative AI is academically helpful but affectively neutral—it may support efficiency in learning tasks, but it neither improves nor diminishes the core caring values that student nurses practice.

However, the uniformly high means may indicate a potential ceiling effect and/or social desirability bias, which could restrict score variability and influence the magnitude of the correlations.

While the findings showed no significant relationships between Generative AI use and caring practices, this non-significance should be interpreted cautiously. The absence of correlation may reflect not only the human-centered nature of caring but also methodological constraints such as restricted score variability and potential ceiling effects in both the AI-use and caring-practice measures. Uniformly high scores limit statistical sensitivity and reduce the ability of Pearson correlation to detect possible associations. Therefore, the results indicate that this instrument and this dataset did not reveal a relationship, rather than conclusively proving that no relationship exists in practice.

4. CONCLUSION

This study examined the relationship between student nurses' use of Generative Artificial Intelligence (Generative AI) in clinical learning activities and their caring practices in terms of decision-making, holistic care, and helping–trusting relationships. Quantitative analyses revealed that students "often" used Generative AI for planning, writing, and reviewing academic outputs; however, caring practices remained consistently high across all dimensions. Correlation results showed that the frequency of Generative AI use had no significant relationship with caring behaviors, suggesting that while Generative AI supports academic efficiency, it does not diminish or enhance the affective and relational competencies central to nursing practice.

These findings affirm that caring is grounded in human connection, ethical intentionality, and experiential learning rather than in technological engagement. The results support the position that Generative AI functions primarily as an academic tool—useful for brainstorming, drafting, and refining outputs—but does not shape the deeper humanistic capacities that Jean Watson describes as essential to authentic, compassionate, and person-centered care. For nursing education, this highlights the continued importance of clinical experiences, mentorship, and value-based instruction in cultivating caring behaviors, even as digital tools become increasingly embedded in learning environments.

Given these insights, nursing programs are encouraged to adopt structured guidelines that promote the ethical and responsible use of Generative AI. Educators may integrate reflective activities, simulated caring encounters, and discussions on digital professionalism to ensure that students balance technological proficiency with empathy, integrity, and therapeutic presence. Institutions should also provide training that helps students critically discern when and how Generative AI can support—not replace—clinical reasoning and caring engagement.

Future research could explore longitudinal patterns in students' caring practices as Generative AI becomes more sophisticated and widely used, including its implications for clinical judgment, emotional labor, and interpersonal communication in real patient settings. As nursing education evolves in the digital age, the challenge is not merely to integrate technology, but to preserve and strengthen the humanistic core of nursing—ensuring that future nurses remain compassionate, reflective, and ethically grounded, even amidst rapid technological change.

ETHICAL CONSIDERATION

In this study, institutional approval was given by the College of Nursing of Wesleyan University-Philippines based on its internal review process of research. All participants were informed about the study and gave informed consent before the survey. The participation was voluntary, and the students could opt out at any point or withdraw. No personal data was gathered, and all the responses were anonymized, kept confidential, and stored securely in locked physical copy and password-protected electronic formats. Data were of research interest only and could be accessed by the researchers only. No data generation or manipulation with AI tools was involved, and no vulnerable populations were involved.

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