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# Relationship between learning attitude, self-efficacy, and caring behavior among nursing students in selected universities in Vietnam

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## ABSTRACT

***Objectives:*** *This study aims to examine the relationship between learning attitude, self-efficacy, and caring behavior among undergraduate nursing students in three selected public universities in Vietnam.* ***Methods:*** *A descriptive-correlational design was used with 428 nursing students from three public universities in southern Vietnam from December 2024 to February 2025. Standardized instruments were applied, including the R-SPQ-2F for learning attitudes, the Self-Efficacy for Learning and Performance Scale, and the Caring Behaviors Inventory (CBI-24). All tools were translated and culturally adapted for Vietnamese participants. Data analysis employed descriptive statistics, Pearson's correlation, and regression modeling.* ***Results:*** *Results showed moderate surface (M = 2.71, SD = 0.831 ) and deep (M = 3.32, SD = 0.7) learning approaches. Self-efficacy was rated as good in both self-learning (M = 2.63, SD = 0.48) and self-performance (M = 2.98, SD = 0.396). Caring behavior was consistently high across all domains, including being with (M = 4.85, SD = 0.746), doing with competence (M = 4.88, SD =* 0.81*), responding to needs (M = 5.01, SD = 0.81), and providing effective care (M = 4.89, SD =* 0.942*). Deep learning attitude was positively correlated with self-efficacy (r = 0.195–0.204, p < 0.001) and all caring behavior dimensions (r = 0.183–0.204, p < 0.001). Self-efficacy also correlated positively with caring behavior in both learning (r = 0.135–0.156) and performance domains (r = 0.135–0.165). Regression analysis confirmed a significant direct effect of self-efficacy on caring behavior (β = 0.3152, p < 0.001) and a smaller indirect effect mediated by learning attitude (estimate = 0.0378, p = 0.041), indicating partial mediation.* ***Conclusion****: The findings highlight the importance of strengthening self-efficacy and fostering deep learning approaches to enhance compassionate and competent nursing care. Future research should design interventions that integrate these elements into nursing curricula.*

***Keywords:*** *Learning Attitude, Self-Efficacy, Caring Behavior, Path Analysis.*

## INTRODUCTION

Nursing education plays a critical role in cultivating both the technical competence and caring behaviors that are essential to professional nursing practice[1,2]. From years of teaching experience in Vietnam,

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the researcher observed that students with positive learning attitudes and strong self-efficacy tend to be more engaged, self-directed, and capable of applying knowledge effectively in clinical settings. However, a persistent gap remains between students' technical skills and their ability to demonstrate psychosocial and emotional care during patient interactions. This imbalance underscores the importance of fostering learning attitudes that support deep learning rather than superficial memorization [3, 4, 5].

In nursing education, learning attitude is students' general approaches to learning include the surface approach - focusing on memorization and short-term recall for the purpose of studying only for exams, and the deep approach - focusing on understanding and meaning [6]. Self-efficacy is the nursing students' belief in their ability to organize and perform learning and performance tasks successfully. It reflects their confidence in achieving desired academic and clinical outcomes [7]. caring behavior defined as the nursing students' actions and attitudes that reflect concern for patients' well-being. It includes being with patients, demonstrating competence, responding to individual needs, and providing effective care [8].

Existing literature in Vietnam suggests that nursing students possess an inherent motivation for learning, but systemic barriers-such as limited mentorship, insufficient institutional support, and inadequate learning resources-often hinder the development of deep learning approaches[9]. Studies also indicated that self-efficacy among nursing students is moderate and influenced by clinical exposure, gender, and academic performance, highlighting the need for targeted interventions to build confidence and resilience [10]. International research further demonstrated that students with higher self-efficacy exhibit greater motivation, stronger learning attitudes, and better academic outcomes [11], and that self-efficacy is positively associated with caring behavior and negatively associated with learning burnout [12]. Additionally, caring behavior-considered the foundation of nursing education-is often constrained by stress, high workload, and overemphasis on technical procedures, conditions similarly observed in Vietnam [13].

Despite these insights, research in Vietnam has not yet fully explored how learning attitude and self-efficacy interact to influence caring behavior within a unified model. Understanding these relationships is crucial for designing evidence-based pedagogical strategies that strengthen deep learning, enhance student confidence, and promote compassionate patient care. Therefore, this study aims to examine the interrelationships among learning attitude, self-efficacy, and caring behavior among nursing students in Vietnam and to develop a predictive model of caring behavior based on these constructs.

## MATERIALS AND METHODS

**Study population:** The study population included nursing students studying full-time nursing program in three public universities in southern Vietnam.

*Inclusion criteria:* Full-time undergraduate nursing students currently enrolled in Bachelor of Nursing Program from the second to fourth year of the school year 2024-2025; the participants are between 18 to 25 years of age; and willingness to participate in the study.

*Exclusion criteria:* First year nursing students or students are not present at school

during the research period (temporarily absent from school).

**Study time:** From December 2024 to February 2025.

**Study design:** A cross-sectional descriptive.

**Sample size and sampling technique:**

A sample of 428 nursing students was determined by G*Power to achieve 0.8 power to detect an effect size of 0.12 at the 0.05 level of significance, with a 10% attrition rate considere [6].

The sample selection process involved the use of a combination of stratified random sampling and systematic random sampling. The stratified random sampling was used to divide the three selected universities in the Mekong Delta, in the south of Vietnam. At each university, the sample was further divided into 3 academic year levels, with each level of study being stratified. The systematic random sampling method was used within each academic year level, where participants were selected from a list of nursing students in that level year by applying a constant distance (system number k = N/n) and a random start (smaller coefficient k). If any nursing student declines to participate, the remaining students were selected randomly to be included in the study. By combining the stratified sampling method and the systematic random sampling method, the proportion of students selected at each academic year level and at each university will ensure that they do not differ too much.

**Instruments:** This study employed validated instruments adapted from established sources: the Revised Study Process Questionnaire (R-SPQ-2F) [6], the Self-Efficacy for Learning and Performance Scale [7], and the Caring Behaviors Inventory (CBI-24) [8].

The structured questionnaire consisted of three parts:

Part I – Learning Attitude: Adapted from the R-SPQ-2F, comprising 20 items measuring two domains - Deep Approach and Surface Approach - on a five-point Likert scale. The Cronbach's alpha coefficients were 0.80 for deep approach and 0.76 for surface approach, and were then classified based on their mean scores as follows: 4.21-5: Always or almost always true of me; 3.41-4.20: Frequently true of me; 2.61-3.40: True of me about half the time; 1.81-2.60: Sometimes true of me; 1-1.80: Never or only rarely true of me.

Part II – Self-Efficacy: The 8-item scale by Jackson (2018) [7], derived from the MSLQ, assessed learning and performance self-efficacy using a four-point Likert scale. The Cronbach's alpha coefficients were 0.93 and were then classified based on mean scores as follows: 3.25-4.00: Strongly Agree/ Very good; 2.5-3.24: Agree/ Good; 1.75-2.49; Disagree/ Poor; 1-1.74: Strongly Disagree/ Very poor.

Part III – Caring Behavior: The CBI-24 by Fenizia (2019) [8] measured four domains - Being with, Doing with competence, Responding to individual needs, and Providing effective care - on a six-point Likert scale. The Cronbach's alpha coefficients were 0.91 and were then classified based on mean scores as follows: 5.17-6.00: Always/ Very caring; 4.33-5.16: Often/ Caring; 3.50-4.32: Usually/ Somewhat Caring; 2.67-3.49: Sometimes/ Somewhat Uncaring; 1.83-2.66: Almost never/ Uncaring ; 1-1.82: Never/ Very Uncaring.

The instruments were translated into Vietnamese using the back-translation method (Cha et al., 2007) [14] to ensure cultural and linguistic equivalence. Pretesting with 30 nursing students confirmed clarity and comprehension. The Vietnamese versions achieved excellent reliability, with Cronbach's alpha coefficients of 0.8601 (learning attitude), 0.8631 (self-efficacy), and 0.962 (caring behavior).

**Data analysis:** Data was entered and processed on SPSS 26.0 software. A descriptive-correlational design to investigate the relationships between learning attitude, self-efficacy, and caring behavior. The research employed questionnaires and statistical analyses, including Pearson's correlation, multiple regression, and path analysis.

**Ethics approval:** The study strictly complies with ethical regulations in biomedical research and was approved by the Ethical Review Board at Trinity University of Asia before data gathering (Protocol Code: 2024-2nd-CNU-Nguyen-v2, August 9, 2024). All information provided was kept confidential and used only for scientific research purposes and for no other purpose.

## RESULTS

A total of 428 nursing students in three selected public universities in southernVietnam were recruited to the study. The majority of the respondents were female, comprising 68.9% of the total sample. Regarding year level, third-year students comprised the largest proportion (35.0%), followed by fourth-year students (33.4%) and second-year students (31.5%). The relatively even distribution among these year levels provides a balanced representation of students with varying levels of academic and clinical experience.

**Table 1. Current status of learning attitude, self-efficacy and caring behavior of nursing student respondents in selected universities in Vietnam (n = 428)**

| Indicators | | Mean | SD | Interpretation |
|---|---|---|---|---|
| **Learning attitude** | Surface approach | 2.71 | 0.831 | True of me about half the time |
| | Deep approach | 3.32 | 0.7 | True of me about half the time |
| | **Overall mean** | **3.02** | **0.61** | **True of me about half the time** |
| **Self-Efficacy** | Learning | 2.63 | 0.48 | Good |
| | Performance | 2.98 | 0.396 | Good |
| | **Overall mean** | **2.81** | **0.387** | **Good** |
| **Caring behavior** | Being with | 4.85 | 0.746 | Often/ Caring |
| | Doing with | 4.88 | 0.81 | Often/ Caring |
| | Responding | 5.01 | 0.81 | Often/ Caring |
| | Providing | 4.89 | 0.942 | Often/ Caring |
| | **Overall mean** | **4.89** | **0.942** | **Often/ Caring** |

The results from table 1 indicated that the overall level deep approach (M = 3.32, SD = 0.831) than surface approach (M = 2.71, SD = 0.7), indicating students engage in meaningful learning about half the time. The overall level of self-efficacy (M = 2.81, SD = ) 0.387, with slightly higher confidence in performance (M = 2.98, SD = 0.396) than in learning (M = 2.63, SD = 0.48). A high level of caring behavior (M = 4.89, SD = 0.942), with all domains rated as "Often/Caring," indicating that nursing students frequently demonstrate caring attitudes and behaviors in clinical practice.

**Table 2. Correlational analysis between learning attitude, self efficacy and caring behavior of nursing student respondents in selected universities in Vietnam (n = 428)**

| | | Learning attitude | Self-efficacy |
|---|---|---|---|
| Self-efficacy | Pearson's r | 0.204 | - |
| | P value | <0.001 | - |
| Caring behavior | Pearson's r | 0.183 | 0.20 |
| | P value | < 0 .001 | < 0 .0001 |

**. Correlation is significant at the 0.01 level (2-tailed).*

Legent: |Pearson's r|: 0.01 – 0.19: No or Negligible relationship; 0.20 – 0.29: Weak relationship; 0.30 – 0.39: Moderate relationship; 0.40 – 0.69: Strong relationship; ≥ 0.70: Very strong relationship.

Table 2 demonstrated statistically significant correlations among learning attitude, self-efficacy, and caring behavior of nursing students in selected universities in Vietnam. A weak positive correlation was observed between self-efficacy and learning attidude ($r = 0.204$, $p < 0.01$). In addition, a weak positive correlations were found between caring behavior and self-efficacy ($r = 0.20$, $p < 0.001$), and negligible positive between caring behavior and learning attitude ($r = 0.183$, $p < 0.01$).

**Table 3. Regression analysis on the significant relationship on caring behavior, learning attitude and self-efficacy of nursing student respondents in selected universities in Vietnam (n = 428)**

| Predictor Variables | B | SE B | β | t | p | Interpretation |
|---|---|---|---|---|---|---|
| Intercept | 3.502 | 0.302 | - | 11.580 | 0.000 | |
| Learning attitude | 0.172 | 0.060 | 0.137 | 2.862 | 0.004 | **Significant** |
| Self-efficacy | 0.315 | 0.095 | 0.159 | 3.325 | 0.001 | **Significant** |
| **Model Fit** | R<br>0.223 | $R^2$<br>0.05 | Adjusted $R^2$<br>0.045 | F<br>11.165 | | |

*Dependent variable: Caring behavior*

**. Correlation is significant at the 0.01 level (2-tailed).*

The regression analysis showed that both learning attitude (β = 0.137, p = .004) and self-efficacy (β = 0.159, p = .001) are significant predictors of caring behavior among nursing students. Although the model explained a modest portion of the variance ($R^2$ = 0.05), the results suggested that students with stronger learning attitudes and higher self-efficacy tend to demonstrate better caring behaviors.

**Table 4. The summary test for direct effect, indirect effect, and total effect of learning attitude, self-efficacy and caring behavior of nursing student respondents in selected universities in Vietnam (n = 428)**

| | | | | 95% C.I. (a) | | | |
|---|---|---|---|---|---|---|---|
| **Type** | **Effect** | **Estimate** | **SE** | **Lower** | **Upper** | **β** | **p Value** |
| Indirect | Self Efficacy ⇒ Learning Attitude ⇒ Caring Behaviour | 0.0378 | 0.019 | 0.019 | 0.074 | 2 | 0.041 |
| Component | Self Efficacy ⇒ Learning Attitude | 0.22 | 0.076 | 0.139 | 0.368 | 2.9 | 0.004 |
| | Learning Attitude ⇒ Caring Behaviour | 0.1717 | 0.06 | 0.137 | 0.289 | 2.9 | 0.004 |
| Direct | Self Efficacy ⇒ Caring Behaviour | 0.3152 | 0.095 | 0.159 | 0.5 | 3.3 | <0.001 |
| Total | Self Efficacy ⇒ Caring Behaviour | 0.353 | 0.095 | 0.178 | 0.538 | 3.7 | <0.001 |

*Note. Confidence intervals computed with method: Standard (Delta method)*

*Note. Betas are completely standardized effect sizes*

The regression analysis using the Delta method demonstrated that self-efficacy has both direct and indirect effects on caring behavior among nursing students. The indirect effect, mediated through learning attitude, is statistically significant (β = 2.0, p = 0.041). Self-efficacy strongly predicts learning attitude (β = 2.9, p = 0.004), and learning attitude significantly predicts caring behavior (β = 2.9, p = 0.004). The direct effect of self-efficacy on caring behavior is also strong and highly significant (β = 3.3, p < 0.001). When combined, the total effect remains very substantial (β = 3.7, p < 0.001), confirming that self-efficacy is a core determinant of caring behavior.

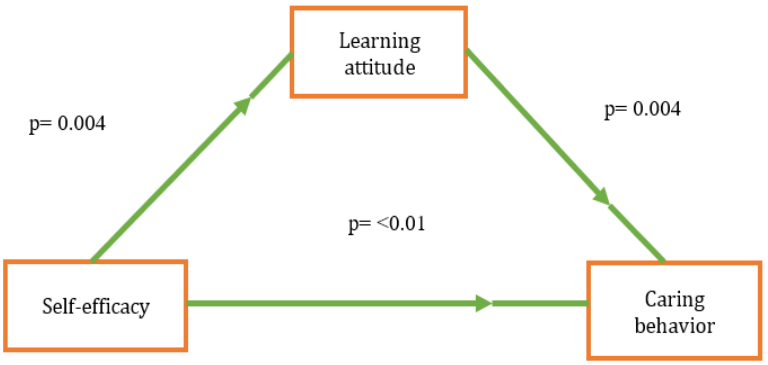


**Figure 1. Path analysis model on the caring behavior among nursing students in selected universities in Vietnam**

The model demonstrates a mediation effect where learning attitude acts as a mechanism through which self-efficacy influences caring behavior. The significant direct paths from self-efficacy to learning attitude and from learning attitude to caring behavior, along with the significant direct path from self-efficacy to caring behavior, suggest that self-efficacy impacts caring behavior both directly and indirectly through the student's learning attitude.

## DISCUSSION

**The levels of learning attitude, self-efficacy, and caring behavior among nursing students:** The findings of this study indicate that nursing students in selected Vietnamese universities tend to adopt a deep learning approach more frequently than a surface approach, as reflected in the higher mean score for deep learning (M = 3.32, SD = 0.7) compared with surface learning (M = 2.71, SD = 0.831). This study showed that Vietnamese nursing students tended to adopt a deep learning approach more than a surface approach, where deep learning is linked to stronger academic performance and better critical thinking, whereas surface learning predicts poorer outcomes [15, 16]. The inconsistency with results from Saudi Arabia [15] - where students used both approaches similarly - highlights that learning approaches are influenced by educational context. Because learning approaches can shift depending on instructional methods [17], nursing educators should design environments that promote deep engagement, reflection, and self-directed learning to strengthen competency development and improve patient care.

For self-efficacy, the findings showed that nursing students rated their performance higher (2.98 ± 0.396) than learning (2.63 ± 0.48), indicating stronger confidence in completing assigned academic tasks than in independently managing their own learning. The lower learning score suggests that students may still rely heavily on structured instruction, which is concerning given that self-directed learning is essential for adaptability in modern clinical environments. This gap aligns with previous studies showing that self-directed learning readiness is a significant predictor of clinical competence and academic outcomes [18, 19]. Strengthening learning through strategies such as problem-based learning, reflective practice, and student-led simulations may help enhance both academic success and clinical preparedness.

For caring behavior, the study indicates that nursing students demonstrated a high level of caring behavior, with an overall mean of 4.89, interpreted as "Often Caring." Among the caring components, caring responding had the highest mean (5.01 ± 0.81), suggesting that students frequently respond sensitively and promptly to patient needs-an essential competency reflecting empathy and professional engagement (Watson, 2008). Meanwhile, caring being with had the lowest score (4.85 ± 0.746), although still within the "Often Caring" range. Other components, including caring providing (4.89 ± 0.942) and caring doing with (4.88 ± 0.81), also scored highly, indicating consistent performance of both technical and relational aspects of care. These findings align with international literature showing that caring behaviors stem from a combination of technical competence and emotional presence [20]. Studies have similarly highlighted that caring is strengthened by supportive learning environments and higher clinical self-efficacy [21, 22]. Overall, the results reinforce that caring remains central to nursing practice, integrating both physical care and psychosocial support to promote patient well-being [23, 24].

**Relationships between learning attitude, self-efficacy and caring behavior, and construct a predictive model of caring behavior based on learning attitude and self-efficacy:** Regression analysis showed that learning attitude and self-efficacy together significantly explained approximately 5% of the variance in caring behavior among nursing students ($F = 11.165$, $p < 0.001$). Self-efficacy was the stronger predictor ($\beta = 0.159$, $p = 0.01$), followed by learning attitude ($\beta = 0.137$, $p = 0.04$). These results indicate that students who are confident in their academic and clinical abilities and who engage in deep, reflective learning are more likely to demonstrate compassionate, patient-centered care [25, 26].

Although the effect size is modest, the findings highlight that fostering a positive learning attitude can indirectly enhance caring behaviors by promoting critical thinking, reflection, and integration of theory into practice [27, 28]. Similarly, students with higher self-efficacy approach clinical tasks with confidence and resilience, supporting holistic and empathetic care in accordance with Bandura's Social Cognitive Theory [9,30].

These findings are consistent with prior research showing that both self-efficacy and learning attitudes contribute to the development of professional competence, ethical responsiveness, and caring disposition in nursing students, which are essential for establishing therapeutic nurse–patient relationships and ensuring quality patient care [27, 28].

The regression analysis using the Delta (Standard) method revealed a significant and multifaceted relationship between self-efficacy and caring behavior, both directly and indirectly through learning attitude. The direct effect of self-efficacy on caring behavior was strong and significant ($\beta = 0.3152$, $p < 0.001$), demonstrating that students' confidence in their abilities independently enhances compassionate and professional care. The indirect effect via learning attitude was also significant ($\beta = 0.0378$, $p = 0.041$), with self-efficacy positively predicting learning attitude ($\beta = 0.22$, $p = 0.004$), which in turn positively influenced caring behavior ($\beta = 0.1717$, $p = 0.004$). The total effect was substantial ($\beta = 0.353$, $p < 0.001$), highlighting the profound influence of self-efficacy on caring behavior.

These findings indicate that students with higher self-efficacy are more likely to adopt a deep learning approach, reflecting motivation, critical thinking, and reflective engagement, which translates into superior caring behaviors such as empathy, attentiveness, and proactive patient care. The results confirm that learning attitude plays a partial mediating role between self-efficacy and caring behavior, emphasizing the importance of fostering both constructs in nursing education [31, 32]. Implications for nursing curricula include integrating strategies that enhance self-efficacy and promote a positive learning attitude, such as problem-based learning, reflective practice, and human-human simulations. These interventions can strengthen students' autonomy, deep learning, and professional caring skills, ultimately improving patient-centered outcomes and the quality of nursing education.

## LIMITATIONS

This study has some limitations. Its used a descriptive-correlational design, which does not determine causal relationships between variables such as learning attitudes, self-efficacy, and caring behaviors. The purposive sampling of nursing students from selected universities limits the ability to generalize the results to other educational institutions or regions in Vietnam. Furthermore, data collection took place from December 2024 to February 2025, representing a specific learning period. Factors such as exam schedules or clinical rotations - may influence students' attitudes and self-efficacy during this time period. Data collection over multiple semesters may yield more representative results. Although learning attitude and self-efficacy were statistically significant predictors of caring behavior, the model explained only a small proportion of the variance ($R^2 = 0.05$). This indicates that the proposed model accounts for approximately 5% of caring behavior, suggesting limited explanatory power. Therefore, many other factors-such as clinical learning environment, teaching methods, role modeling, cultural influences, or personal characteristics-were not captured in this study. This limitation should be considered, and future research should incorporate additional variables or more comprehensive models to better explain caring behavior among nursing students.

## CONCLUSION

The study concluded that Vietnamese nursing students demonstrate a balanced use of both deep and surface learning approaches, with a slight preference for deep learning that reflects meaningful engagement with their studies. They exhibit a good level of self-efficacy, showing confidence in both their ability to learn independently and to perform academic and clinical tasks effectively. The students also display strong caring behaviors, particularly in being with, doing with competence, responding to individual needs, and providing effective care-indicating a solid grounding in the core values of nursing.

Furthermore, significant relationships were established among learning attitude, self-efficacy, and caring behavior. Specifically, a deep learning approach is positively associated with both self-efficacy and caring behavior, while self-efficacy directly and indirectly influences caring behavior. Overall, the findings affirm that enhancing students' self-efficacy and promoting deep learning strategies can strengthen caring behaviors and improve nursing education outcomes.

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## CONFLICT OF INTEREST

The authors report there are no competing interests to declare.

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