

ORIGINAL RESEARCH

# Legal Literacy Among Nursing Students in the Philippines: The Roles of Legal Education Exposure, Perceived Importance, and Confidence in Legal Application



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## Abstract

**Background:** Legal literacy remains an underdeveloped yet critical domain in Philippine nursing education. Despite the increasing complexity of healthcare, undergraduate curricula offer limited structured training in legal knowledge and its clinical application, potentially affecting students' readiness to navigate medico-legal challenges.

**Purpose:** This study aimed to examine a structural model of legal literacy among Filipino nursing students, focusing on the roles of legal education exposure, perceived importance of legal knowledge, and confidence in legal application.

**Methods:** This cross-sectional study employed purposive sampling and involved 300 undergraduate nursing students from multiple institutions. Legal literacy was conceptualized as nurses' capacity to understand and apply medico-legal principles in clinical decision-making and patient advocacy. Data were collected using a self-administered questionnaire developed for this study and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

**Results:** All constructs demonstrated high reliability ( $CR > 0.93$ ) and convergent validity ( $AVE > 0.76$ ). Legal Literacy was significantly predicted by perceived importance of legal knowledge ( $\beta = 0.389, p < 0.001$ ) and confidence in legal application ( $\beta = 0.256, p < 0.001$ ). Confidence partially mediated the relationship between perceived importance and legal literacy ( $\beta = 0.057, p = 0.013$ ). Legal education exposure showed an indirect effect on legal literacy through perceived importance ( $\beta = -0.118, p = 0.003$ ). The model explained 84.0% of the variance in legal literacy, with acceptable model fit and strong predictive relevance ( $SRMR = 0.042; Q^2 > 0.49$ ). Moderation by year level was not statistically significant.

**Conclusion:** The findings support a structural model of legal literacy that underscores the importance of both attitudinal valuation and confidence in application. Integrating legal education with experiential learning and strategies that enhance self-efficacy may strengthen legal readiness among nursing graduates.

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## **1. Introduction**

In the complex and evolving landscape of healthcare, nurses are increasingly called upon to demonstrate not only clinical competence but also legal and ethical awareness (Tuppal, 2025). Legal literacy—the understanding and application of laws relevant to healthcare practice—has emerged as a fundamental aspect of nursing professionalism. This knowledge is vital to safeguarding patient rights, ensuring lawful practice, and maintaining professional accountability. As frontline healthcare providers, nurses routinely make decisions with legal implications, from obtaining informed consent to reporting negligence, managing patient confidentiality, and advocating for patient safety. Therefore, nursing students must be adequately equipped with legal knowledge before they enter professional practice (Holden & Wood, 2012; Kjervik & Penticuff, 1992; Lambert, 2004; Tuppal, 2025).

The concept of legal literacy encompasses awareness, comprehension, and confidence in applying laws, institutional policies, and ethical principles that guide nursing responsibilities (LaChance, 2024; Vissandjée et al., 2017). Despite its importance, legal literacy remains underemphasized in many nursing curricula, particularly in developing countries like the Philippines, where educational resources, faculty readiness, and curricular structure vary widely across institutions. This results in inconsistent legal understanding among nursing students, which could potentially expose them and their patients to risks of malpractice, unethical conduct, or professional liability (Angue et al., 2025).

Legal errors in clinical practice are not uncommon and often stem from gaps in legal knowledge and awareness (Angue et al., 2025; Miziara & Miziara, 2022). Issues such as poor documentation, breach of confidentiality, improper delegation, and failure to obtain valid consent are examples of medico-legal concerns in which nurses are frequently involved (Bayuo et al., 2025; Mokhtar et al., 2018). For student nurses, the transition from academic learning to clinical exposure often reveals significant gaps in understanding legal boundaries. Hence, examining the factors that influence legal literacy in nursing education becomes not only timely but essential. In the Philippines, the professionalization of nursing is governed by Republic Act No. 9173, also known as the Philippine Nursing Act of 2002, which outlines the scope of nursing responsibilities, regulatory mechanisms, and educational standards. However, the integration of legal content into nursing curricula is often limited to a few units under “Nursing Jurisprudence and Ethics.” As such, exposure to legal topics is frequently minimal, theoretical, and sometimes disconnected from practical application. This raises concerns about whether nursing students are truly prepared to apply legal knowledge in actual clinical environments (Decker, 2025; Tuppal, 2025).

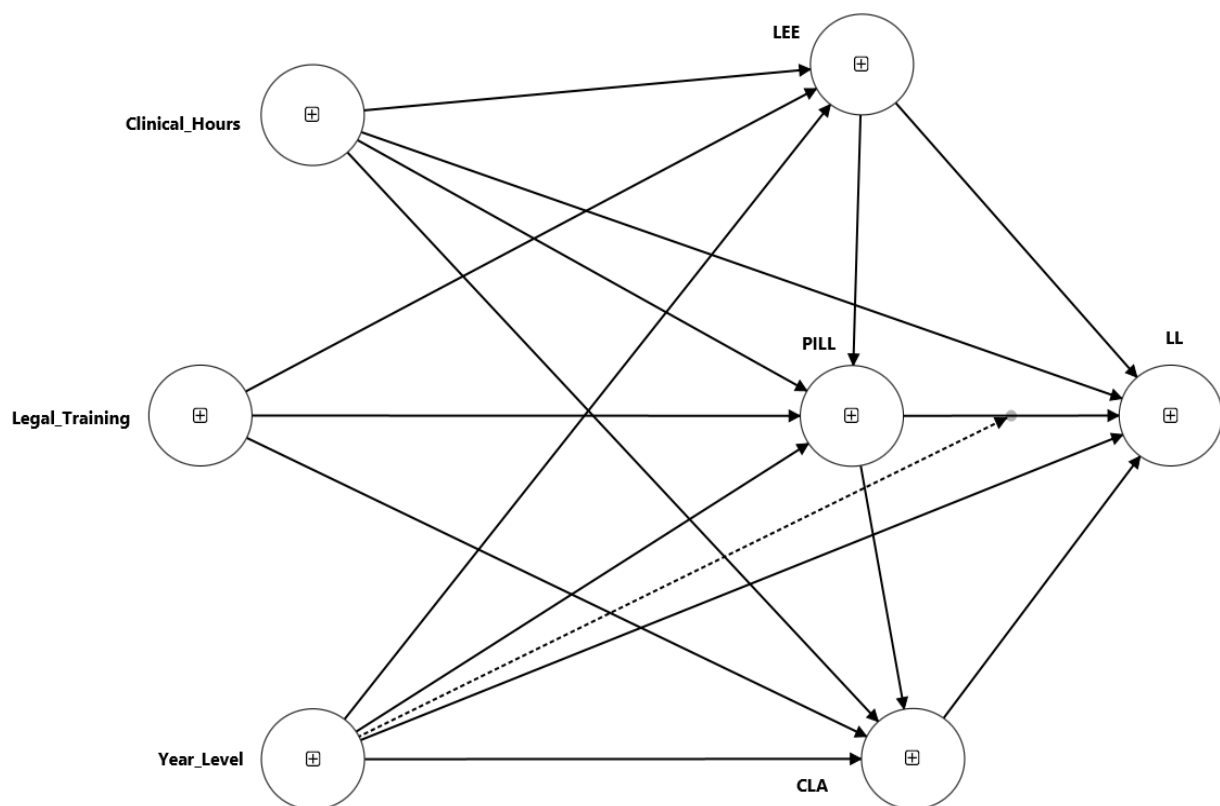
The Commission on Higher Education (CHED) outlines nursing competencies in its policies and standards, including some elements of legal and ethical practice. Still, a structured and outcomes-based approach to assessing legal literacy is lacking (Tuppal, 2025). In turn, many graduates enter the workforce with only a superficial understanding of legal concepts, often learning about the law only when faced with real-world consequences. Furthermore, nursing faculty themselves may not always have specialized training in health law, limiting their ability to convey complex legal topics with accuracy and contextual relevance (Decker, 2025; Tuppal, 2025).

The growing complexity of healthcare delivery in the Philippines further compounds the situation. With the implementation of the Universal Health Care (UHC) Law, nurses are expected to take on broader roles in community-based settings, where decisions are often made with minimal physician supervision (Bayuo et al., 2025). This calls for higher levels of autonomy and, correspondingly, more substantial legal competence. In this light, legal literacy is not merely a desirable skill but a professional necessity. Despite growing recognition of legal literacy as an essential nursing competency, existing studies remain largely descriptive, focusing on levels of legal knowledge or attitudes without examining how educational exposure, perceived importance, and application confidence interact as an integrated system (Cabanda et al., 2025; Özkan et al., 2025; Tamayo & Moncatar, 2025). Such approaches implicitly assume linear knowledge-to-application pathways and are methodologically limited in their ability to explain why adequate legal knowledge does not consistently translate into confident or effective legal practice. Consequently, there is a notable absence of empirically tested structural models that elucidate the direct and indirect relationships among these dimensions, particularly within low- and middle-income contexts such as the Philippines, where curricular variability and sociocultural factors may further shape the development of legal literacy among nursing students.

Therefore, this study aims to examine an integrated structural model of legal literacy among Filipino nursing students. Specifically, it examines the direct and indirect effects of legal education exposure, perceived importance of legal knowledge, and confidence in legal application on overall legal literacy, thereby contributing theoretically to nursing education research and practically to curriculum and policy development.

### 1.1 Proposed hypothesized model

The present study is anchored on a conceptual model that explores the structural relationships among legal education exposure, perceived importance of legal knowledge, confidence in legal application, and legal literacy among nursing students. Grounded in the assumption that knowledge, valuation, and efficacy drive behavior, the model incorporates cognitive, educational, and experiential dimensions that collectively shape legal literacy in healthcare settings. Additionally, the model integrates moderating and control variables—clinical hours, legal training attendance, and year level—to account for individual variability in experiential exposure and academic progression (see Figure 1).



**Figure 1.** Final structural model illustrating the path relationships among key constructs of legal literacy

This model (Figure 1) presents the hypothesized relationships among Legal Education Exposure (LEE), Perceived Importance of Legal Knowledge (PILL), Confidence in Legal Application (CLA), and Legal Literacy (LL), with Clinical Hours, Legal Training, and Year Level as exogenous predictors. The dotted line represents a moderation path (Year Level  $\times$  PILL  $\rightarrow$  LL).

At the core of the model is Legal Literacy (LL), conceptualized as nursing student's capacity to understand, apply, and respond to legal and ethical challenges in clinical practice. This outcome variable is influenced by three principal latent constructs: Legal Education Exposure (LEE), Perceived Importance of Legal Knowledge (PILL), and Confidence in Legal Application (CLA).

Legal Education Exposure (LEE) refers to the extent to which students are exposed to medico-legal content within the nursing curriculum. This construct serves as an exogenous latent predictor and is theorized to influence both PILL and LL. The underlying rationale is that formal

academic exposure to legal concepts fosters awareness, thereby increasing the perceived value of such knowledge and enhancing subsequent literacy.

Perceived Importance of Legal Knowledge (PILL) reflects the degree to which students regard legal understanding as a critical component of safe and competent nursing practice. It is posited to function as a mediator between LEE and Confidence in Legal Application (CLA), and a direct predictor of LL. This construct captures the motivational and evaluative dimensions of cognition that affect a student's willingness to engage with legal material meaningfully.

Confidence in Legal Application (CLA) represents the self-efficacy dimension—students' belief in their ability to apply legal knowledge in real-world clinical contexts. Rooted in Bandura's (1999) social cognitive theory, this construct is hypothesized to mediate the relationship between PILL and LL, suggesting that valuation of legal knowledge must be accompanied by confidence in its application to translate into actionable literacy.

To strengthen the explanatory power of the model, three contextual factors are integrated as either control or moderating variables: (1) Clinical Hours: Representing accumulated hands-on experience, this variable is introduced as a direct predictor of LL. Students with more clinical exposure are presumed to encounter more situations requiring legal and ethical decision-making, which may enhance their practical literacy; (2) Legal Training Attendance: This binary variable captures whether students have attended supplemental legal seminars or workshops. It is modeled as a control variable influencing LL, under the assumption that extramural legal education contributes positively to students' legal preparedness; (3) Year Level: Serving as a proxy for academic maturity, this variable is modeled both as a control variable and a moderator. As a moderator, Year Level interacts with PILL to determine whether academic progression strengthens or weakens the impact of perceived importance on actual literacy. This interaction is operationalized through the path.

The conceptual model thus integrates direct, indirect, and interaction effects, allowing for a nuanced understanding of how legal literacy develops among nursing students. The hypothesized relationships are tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4.0, a method appropriate for theory development, small-to-medium sample sizes, and complex models with multiple latent constructs and pathways.

## 1.2 Hypotheses

This section presents the results of the hypothesis testing based on the proposed structural model. The hypotheses were grouped according to their theoretical roles and tested using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results are organized into four subsections: direct effects, control/exogenous effects, moderation, and mediation. Each hypothesis is evaluated based on its standardized path coefficient ( $\beta$ ), t-value, and p-value to determine statistical significance.

### 1.2.1 Direct effects

Direct Effects evaluate the primary hypothesized relationships between the key latent variables, such as Legal Education Exposure (LEE), Perceived Importance of Legal Knowledge (PILL), Confidence in Legal Application (CLA), and Legal Literacy (LL).

- H1: Legal Education Exposure (LEE) positively influences Perceived Importance of Legal Knowledge (PILL).
- H2: Legal Education Exposure (LEE) positively influences Legal Literacy (LL).
- H3: Perceived Importance of Legal Knowledge (PILL) positively influences Confidence in Legal Application (CLA).
- H4: Perceived Importance of Legal Knowledge (PILL) positively influences Legal Literacy (LL).
- H5: Confidence in Legal Application (CLA) positively influences Legal Literacy (LL).

### 1.2.2 Control/exogenous effects

Control/Exogenous Effects examine the impact of external variables such as Clinical Hours, Legal Training, and Year Level on the core constructs of the model.

- H6: Clinical Hours positively influence Legal Education Exposure (LEE).

- H7: Clinical Hours positively influence Perceived Importance of Legal Knowledge (PILL).
- H8: Clinical Hours positively influence Confidence in Legal Application (CLA).
- H9: Clinical Hours positively influence Legal Literacy (LL).
- H10: Legal Training positively influences Legal Education Exposure (LEE).
- H11: Legal Training positively influences Perceived Importance of Legal Knowledge (PILL).
- H12: Legal Training positively influences Confidence in Legal Application (CLA).
- H13: Legal Training positively influences Legal Literacy (LL).
- H14: Year Level positively influences Legal Education Exposure (LEE).
- H15: Year Level positively influences Perceived Importance of Legal Knowledge (PILL).
- H16: Year Level positively influences Confidence in Legal Application (CLA).
- H17: Year Level positively influences Legal Literacy (LL).

### *1.2.3 Moderation*

Moderation analysis investigates whether Year Level moderates the relationship between PILL and LL, assessing whether the strength of this relationship varies across different levels of academic standing.

- H18: Year Level moderates the relationship between Perceived Importance of Legal Knowledge (PILL) and Legal Literacy (LL), such that the effect is stronger among higher-year students.

### *1.2.4 Mediation*

Mediation analysis tests whether CLA serves as a mediating mechanism through which PILL influences LL, providing insight into the process by which legal knowledge is internalized and applied by nursing students.

- H19: Confidence in Legal Application (CLA) mediates the relationship between Perceived Importance of Legal Knowledge (PILL) and Legal Literacy (LL).

## **2. Methods**

### *2.1. Research design*

This study employed a cross-sectional, quantitative research design using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine a predictive model of legal literacy among nursing students. PLS-SEM is suited for exploratory modeling, theory building, and analyzing complex relationships among latent variables (Hair et al., 2011; Hair et al., 2017).

### *2.2. Setting and participants*

The study was conducted in various nursing institutions in the Philippines from January to May 2025. A total of 300 undergraduate nursing students participated, comprising 90 second-year students (30.0%), 105 third-year students (35.0%), and 105 fourth-year students (35.0%). Participants were recruited through purposive sampling based on the following inclusion criteria: (1) current enrollment in a Bachelor of Science in Nursing program, (2) completion of at least one clinical rotation, and (3) provision of informed consent. Students were excluded if they were first-year nursing students with no clinical exposure, were on academic leave during the data collection period, were enrolled in bridging or non-traditional nursing programs, or submitted incomplete questionnaires.

A priori power analysis using G\*Power 3.1 indicated a minimum required sample size of 129 participants to detect a medium effect size ( $f^2 = 0.15$ ) at 95% statistical power and an alpha level of 0.05 with three predictors (Hair et al., 2011; Hair et al., 2017; Hair Jr et al., 2021). The final sample size of 300 participants was deemed adequate to ensure robust parameter estimation and stable model testing for PLS-SEM analyses, rather than for population-level generalization.

### *2.3. Measurement and data collection*

The questionnaire was self-administered and completed by participants either in printed or electronic form. The instrument consisted of 20 items organized into four latent domains: Legal Education Exposure (LEE; 5 items), Perceived Importance of Legal Knowledge (PILL; 5 items), Confidence in Legal Application (CLA; 5 items), and Legal Literacy (LL; 5 items). In addition,

demographic and contextual variables—including year level, accumulated clinical hours, and attendance in legal training—were collected as observed variables. Responses for each item were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Item scores within each construct were summed and averaged, with higher scores indicating greater levels of legal education exposure, perceived importance of legal knowledge, confidence in legal application, and legal literacy, respectively. For descriptive interpretation, mean scores were classified as follows: 1.00–1.80 (very low), 1.81–2.60 (low), 2.61–3.40 (moderate), 3.41–4.20 (high), and 4.21–5.00 (very high). For inferential analysis, latent construct scores were modeled using PLS-SEM, where indicator loadings and path coefficients were estimated simultaneously to assess measurement properties and structural relationships rather than relying solely on observed composite scores.

Instrument development was informed by a review of nursing jurisprudence literature and existing legal literacy frameworks. Content validity was established through expert review by five nursing educators with backgrounds in health law and nursing education. Following expert validation, the questionnaire underwent pilot testing with 30 undergraduate nursing students who were not included in the final sample. Pilot data were used to assess item clarity, response variability, and preliminary reliability. Items with ambiguous wording or low item–total correlations were reviewed and refined prior to full-scale administration.

Construct validity was examined using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Internal consistency reliability was supported by Cronbach's alpha and Composite Reliability (CR) coefficients exceeding recommended thresholds. Convergent validity was evidenced by Average Variance Extracted (AVE) values greater than 0.75, while the potential for item redundancy associated with high reliability coefficients was acknowledged as a methodological consideration.

Data were collected using both printed and electronic survey forms across multiple nursing institutions in different regions of the Philippines. Each participating institution designated a faculty coordinator or research liaison who facilitated participant recruitment, survey distribution, and collection in accordance with institutional guidelines. Printed questionnaires were administered during scheduled academic or clinical conference periods, while electronic surveys were distributed through secure online links for institutions that preferred digital data collection. To ensure consistency, all coordinators were provided with standardized instructions regarding survey administration and informed consent procedures.

Prior to participation, respondents received a clear explanation of the study objectives, procedures, and their rights as participants. Written informed consent was obtained before survey administration. Participation was voluntary, and respondents were assured of the confidentiality and anonymity of their responses. Completed questionnaires—whether printed or electronic—were securely collected, encoded, and stored for analysis, with access restricted exclusively to the research team.

#### 2.4. Data analysis

Data were analyzed using SmartPLS version 4.0 following a two-stage Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. Prior to model estimation, initial data screening was performed to ensure completeness and suitability for analysis. PLS-SEM was selected due to its appropriateness for theory development, prediction-oriented modeling, small-to-medium sample sizes, and complex models involving multiple latent constructs.

In the first stage, the measurement model was evaluated to assess the reliability and validity of the constructs. Indicator reliability was examined through outer loadings, with values of 0.70 or higher considered acceptable. Internal consistency reliability was assessed using Cronbach's alpha and composite reliability coefficients, both of which were required to meet or exceed the recommended threshold of 0.70. Convergent validity was evaluated using the Average Variance Extracted (AVE), with values of at least 0.50 indicating adequate construct convergence. Discriminant validity was assessed using the Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio, with HTMT values below 0.85 considered indicative of satisfactory discriminant validity.

In the second stage, the structural model was assessed to examine the hypothesized relationships among the latent variables. Path coefficients ( $\beta$ ), corresponding t-values, and p-values were estimated using a bootstrapping procedure with 5,000 subsamples. The explanatory

power of the model was evaluated using the coefficient of determination ( $R^2$ ), while effect sizes ( $f^2$ ) were examined to determine the relative contribution of each predictor. Predictive relevance was assessed using the Stone–Geisser  $Q^2$  statistic obtained through blindfolding procedures. Mediation effects were tested by examining the significance of indirect effects, while moderation was assessed using product indicator interaction terms, specifically evaluating the interaction between the perceived importance of legal knowledge and year level on legal literacy. All statistical significance levels were set at  $p < 0.05$ .

### 2.5. Ethical considerations

Ethical approval for the study was obtained from the University of Northern Philippines Ethics Review Committee (Protocol No. 2025-A29). Permission to conduct the study was secured from the participating institutions before data collection. Participation was entirely voluntary, and all respondents were provided with clear information regarding the study objectives, procedures, potential risks, and benefits before providing written informed consent. Participants were assured of confidentiality and anonymity. No personal identifiable information was collected, and all data were coded to protect participant identity. Survey responses were stored securely and accessed only by the research team. Participants were informed of their right to decline participation or withdraw from the study at any point without academic or professional consequences. All procedures were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki and relevant institutional guidelines.

## 3. Results

This section presents the study's findings from the analysis conducted using PLS-SEM. The results are organized to reflect the progression from descriptive statistics of the participants to the evaluation of the measurement and structural models. Subsequent analyses detail the mediation and moderation effects, the role of control variables, and the overall model fit. All statistical analyses were performed using SmartPLS 4.0, with bootstrapping procedures applied to determine the significance of the hypothesized relationships.

### 3.1. Characteristics of participants

Table 1 presents the profile characteristics of the 300 nursing student participants. The sample comprised 246 females (82.0%) and 54 males (18.0%), reflecting the typical gender distribution in nursing education. In terms of year level, 30.0% ( $n = 90$ ) were in their second year, while both third- and fourth-year students accounted for 35.0% each ( $n = 105$ , respectively). A majority of respondents (68.0%,  $n = 204$ ) reported attending legal training sessions, and a substantial proportion (90.0%,  $n = 270$ ) had accumulated more than 300 hours of clinical experience. These characteristics suggest a participant pool that is relatively mature in both academic and clinical exposure, supporting the validity of their insights into legal literacy and application in nursing practice.

### 3.2. Means and standard deviations of key constructs

Table 2 shows the means and standard deviations of the items under the four major constructs. The construct Legal Education Exposure (LEE) had the highest overall item means, with all statements averaging slightly above 4.00. This suggests that nursing students generally perceive strong exposure to medico-legal training in their academic and clinical curriculum. Specifically, the item *“My academic training prepares me to manage medico-legal issues”* received the highest mean ( $M = 4.02$ ,  $SD = 0.35$ ).

The Perceived Importance of Legal Knowledge (PILL) construct yielded moderate mean scores, with items averaging 3.58–3.61. The highest-rated item was *“Understanding laws improves patient safety”* ( $M = 3.61$ ,  $SD = 0.50$ ), indicating an appreciation for the protective role of legal awareness in nursing practice. Confidence in Legal Application (CLA) showed relatively lower means, ranging from 3.19 to 3.23. The item *“I am confident in discussing laws with my peers”* had the highest mean in this construct ( $M = 3.23$ ,  $SD = 0.42$ ), suggesting a need to enhance legal confidence among students despite their awareness. Meanwhile, the Legal Literacy (LL) construct yielded means between 3.42 and 3.48. The highest rated item was *“I can explain the significance of patient confidentiality”* ( $M = 3.48$ ,  $SD = 0.50$ ), while the lowest was *“I understand my legal responsibilities as a future health professional”* ( $M = 3.42$ ,  $SD = 0.49$ ).

**Table 1.** Profile characteristics of the nursing student participants

Variable	Frequency (f)	Percentage (%)
Gender		
Female	246	82
Male	54	18
Year Level		
2nd Year	90	30
3rd Year	105	35
4th Year	105	35
Attended Legal Training		
Yes	204	68
No	96	32
Clinical Hours		
>300 hours	270	90
≤300 hours	30	10

Overall, the results reflect moderate perceived importance and legal understanding, but less confidence in actual legal application, highlighting a potential gap between knowledge and practical legal readiness.

**Table 2.** Means and standard deviations of key constructs

Item	Mean ± SD	Interpretation
Legal Education Exposure		
1. My academic training prepares me to manage medico-legal issues.	4.02 ± 0.35	High
2. I have attended lectures or seminars on health law.	4.02 ± 0.37	High
3. Legal topics were included in my clinical training.	3.99 ± 0.36	High
4. My school provides adequate legal resources (e.g., modules, handouts).	4.01 ± 0.35	High
5. I have been exposed to laws related to patient rights and healthcare ethics during my education.	4.01 ± 0.34	High
Perceived Importance of Legal Knowledge		
1. Legal knowledge is just as important as clinical skills.	3.59 ± 0.50	High
2. Understanding laws improves patient safety.	3.61 ± 0.50	High
3. I value knowing the legal rights of patients.	3.58 ± 0.50	High
4. I believe all health professionals should study legal principles.	3.61 ± 0.50	High
5. I prioritize learning about medico-legal cases.	3.59 ± 0.51	High
Confidence in Legal Application		
1. I feel confident identifying legal issues in clinical scenarios.	3.19 ± 0.42	Moderate
2. I can distinguish between ethical and legal concerns.	3.19 ± 0.41	Moderate
3. I know how to respond to legal problems in healthcare.	3.21 ± 0.43	Moderate
4. I am confident in discussing laws with my peers.	3.23 ± 0.42	Moderate
5. I believe I can legally defend my decisions in clinical settings.	3.19 ± 0.42	Moderate
Legal Literacy		
1. I understand my legal responsibilities as a future health professional.	3.42 ± 0.49	High
2. I know the basic contents of the Philippine Nursing Law.	3.43 ± 0.50	High
3. I understand how informed consent works.	3.45 ± 0.50	High
4. I can explain the significance of patient confidentiality.	3.45 ± 0.50	High
5. I know when to report legal violations in healthcare.	3.47 ± 0.50	High

### 3.3. Measurement model evaluation results

Table 3 presents the outer loadings of each observed indicator on its corresponding latent construct. All loadings exceeded the acceptable threshold of 0.70, indicating strong indicator



reliability. The construct Confidence in Legal Application (CLA) showed outer loadings ranging from 0.859 to 0.890, while Legal Education Exposure (LEE) had values between 0.817 and 0.862.

Legal Literacy (LL) demonstrated very strong loadings, with indicators ranging from 0.891 to 0.911, reinforcing the coherence of its measurement. Similarly, Perceived Importance of Legal Knowledge (PILL) indicators loaded between 0.852 and 0.890. The single-item constructs, such as Clinical Hours, Legal Training, and Year Level, including the interaction term Year\_Level  $\times$  PILL, all had fixed outer loadings of 1.000, which is typical in PLS-SEM when treated as observed variables. These results support the validity and consistency of the reflective measurement model, confirming that each item reliably measures its corresponding latent variable (Hair et al., 2017).

**Table 3.** Outer loadings

Indicator	Outer Loading	Interpretation
CLA1 <- CLA	0.877	Acceptable
CLA2 <- CLA	0.890	Acceptable
CLA3 <- CLA	0.883	Acceptable
CLA4 <- CLA	0.876	Acceptable
CLA5 <- CLA	0.859	Acceptable
Clinical_Hours <- Clinical_Hours	1.000	Acceptable
LEE1 <- LEE	0.844	Acceptable
LEE2 <- LEE	0.843	Acceptable
LEE3 <- LEE	0.862	Acceptable
LEE4 <- LEE	0.817	Acceptable
LEE5 <- LEE	0.850	Acceptable
LL1 <- LL	0.911	Acceptable
LL2 <- LL	0.903	Acceptable
LL3 <- LL	0.891	Acceptable
LL4 <- LL	0.907	Acceptable
LL5 <- LL	0.906	Acceptable
Legal_Training <- Legal_Training	1.000	Acceptable
PILL1 <- PILL	0.858	Acceptable
PILL2 <- PILL	0.852	Acceptable
PILL3 <- PILL	0.890	Acceptable
PILL4 <- PILL	0.875	Acceptable
PILL5 <- PILL	0.855	Acceptable
Year_Level <- Year_Level	1.000	Acceptable
Year_Level x PILL -> Year_Level x PILL	1.000	Acceptable

Table 4 presents the internal consistency and convergent validity metrics of the latent constructs. All constructs exceeded the acceptable thresholds for Cronbach's alpha ( $\geq 0.70$ ), indicating strong internal consistency reliability. Values ranged from 0.911 (LEE) to 0.936 (LL). Similarly, the Composite Reliability (CR) values ranged from 0.931 to 0.956, well within the recommended range of 0.70 to 0.95, confirming high construct reliability without redundancy. Furthermore, the Average Variance Extracted (AVE) for all constructs exceeded the minimum threshold of 0.50, ranging from 0.768 to 0.831. This indicates that each construct explains more than 50% of the variance of its indicators, which confirms the convergent validity of the measurement model (Hair et al., 2011; Hair et al., 2017).

**Table 4.** Indicator reliability, internal consistency, and AVE

Construct	Cronbach's Alpha	Composite Reliability (CR)	AVE
Legal Education Exposure (LEE)	0.911	0.931	0.768
Perceived Importance (PILL)	0.914	0.937	0.790
Confidence in Legal Application (CLA)	0.923	0.945	0.810
Legal Literacy (LL)	0.936	0.956	0.831

### 3.4. Structural model evaluation

#### 3.4.1 Direct path analysis

The results of the structural model evaluation are summarised in Table 5. Four paths were statistically significant among the five direct hypotheses, with path coefficients ( $\beta$ ) ranging from 0.224 to 0.389. Specifically, H1 (LEE  $\rightarrow$  PILL) was significant with a negative effect ( $\beta = -0.118$ ,  $p = 0.003$ ), suggesting that increased exposure to legal education unexpectedly reduced the perceived importance of legal knowledge. However, H2 (LEE  $\rightarrow$  LL) was not significant ( $p = 0.097$ ). Significant positive paths were observed for H3: PILL  $\rightarrow$  CLA ( $\beta = 0.224$ ,  $p = 0.001$ ), H4: PILL  $\rightarrow$  LL ( $\beta = 0.389$ ,  $p < .001$ ) and H5: CLA  $\rightarrow$  LL ( $\beta = 0.256$ ,  $p < .001$ ).

Among the control variables, Clinical Hours significantly positively affected LEE, PILL, and CLA (H6–H8), but not LL (H9). Legal Training significantly predicted PILL, CLA, and LL (H11–H13), while its effect on LEE (H10) was negative but significant ( $\beta = -0.251$ ,  $p < .001$ ). Year Level was only significantly associated with LL (H17), suggesting that students' year in the program contributes modestly to their legal literacy ( $\beta = 0.126$ ,  $p = 0.009$ ).

#### 3.4.2 Moderation and mediation analysis

As presented in Table 5, the moderation effect of Year Level on the relationship between PILL and LL (H18) was not significant ( $\beta = 0.064$ ,  $p = 0.670$ ), indicating that the strength of the effect of perceived importance of legal knowledge on legal literacy does not vary significantly by year level. The mediation analysis (H19) revealed that Confidence in Legal Application significantly mediated the relationship between PILL and LL ( $\beta = 0.057$ ,  $p = 0.013$ ). This supports the notion that PILL enhances legal literacy indirectly by boosting students' confidence in legal application.

### 3.5. Model fit

The model fit was assessed to evaluate the adequacy of the proposed structural model in capturing the relationships among the study variables. Using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, model fit was primarily evaluated using the Standardized Root Mean Square Residual (SRMR), coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and effect size ( $f^2$ ).

**Table 5.** Direct, moderation, and mediation analysis

Hypothesis	Path	$\beta$	t-value	p-value	Supported
Direct Effects					
H1	LEE $\rightarrow$ PILL	-0.118	2.991	0.003	Yes
H2	LEE $\rightarrow$ LL	-0.074	1.658	0.097	No
H3	PILL $\rightarrow$ CLA	0.224	3.290	0.001	Yes
H4	PILL $\rightarrow$ LL	0.389	6.700	< .001	Yes
H5	CLA $\rightarrow$ LL	0.256	5.295	< .001	Yes
Control/Exogenous Effects					
H6	Clinical_Hours $\rightarrow$ LEE	1.515	36.143	< .001	Yes
H7	Clinical_Hours $\rightarrow$ PILL	0.505	6.029	< .001	Yes
H8	Clinical_Hours $\rightarrow$ CLA	0.843	10.593	< .001	Yes
H9	Clinical_Hours $\rightarrow$ LL	0.126	1.041	0.298	No
H10	Legal_Training $\rightarrow$ LEE	-0.251	4.517	< .001	Yes
H11	Legal_Training $\rightarrow$ PILL	-0.739	7.390	< .001	Yes
H12	Legal_Training $\rightarrow$ CLA	0.437	3.185	0.001	Yes
H13	Legal_Training $\rightarrow$ LL	0.126	2.930	< .001	Yes
H14	Year_Level $\rightarrow$ LEE	-0.052	0.437	0.001	No
H15	Year_Level $\rightarrow$ PILL	0.064	0.427	0.670	No
H16	Year_Level $\rightarrow$ CLA	-0.108	1.170	0.240	No
H17	Year_Level $\rightarrow$ LL	0.126	2.600	< .001	Yes
Moderation					
H18	Year_Level $\times$ PILL $\rightarrow$ LL	0.064	0.427	0.670	No
Mediation					
H19	PILL $\rightarrow$ CLA $\rightarrow$ LL (Mediation)	0.057	2.500	0.013	Yes

As shown in Table 6, the SRMR value of 0.042 indicates a good model fit, as it is well below the acceptable threshold of 0.08. This confirms that the model fits the observed data with minimal discrepancy between the predicted and observed correlations.

The coefficient of determination ( $R^2$ ) values further support the model's explanatory power. Legal Literacy (LL) yielded an  $R^2$  of 0.840, indicating that 84% of the variance in LL is explained by its predictors: Perceived Importance of Legal Knowledge (PILL), Confidence in Legal Application (CLA), Legal Education Exposure (LEE), Year Level, Clinical Hours, and Legal Training. This is considered substantial based on the guidelines by Cohen (1988). Similarly, PILL ( $R^2 = 0.716$ ) and LEE ( $R^2 = 0.756$ ) demonstrated substantial explanatory power, while CLA had a moderate  $R^2$  of 0.556.

For predictive relevance ( $Q^2$ ), the values for LL ( $Q^2 = 0.491$ ) and CLA ( $Q^2 = 0.682$ ) exceeded 0.35, indicating high predictive accuracy and relevance using the blindfolding technique (Hair et al., 2021).

Effect size ( $f^2$ ) analysis revealed that the most influential predictors were Clinical Hours ( $\rightarrow$  LEE,  $f^2 = 1.185$ ;  $\rightarrow$  PILL,  $f^2 = 0.360$ ;  $\rightarrow$  CLA,  $f^2 = 0.518$ ), and Legal Training ( $\rightarrow$  PILL,  $f^2 = 0.407$ ), which all demonstrated large effects. Medium effect sizes were found for PILL  $\rightarrow$  LL ( $f^2 = 0.158$ ), CLA  $\rightarrow$  LL ( $f^2 = 0.196$ ), and Legal Training  $\rightarrow$  LEE ( $f^2 = 0.134$ ). Several paths showed small (e.g., LEE  $\rightarrow$  PILL = 0.016) to negligible effects (e.g., Year Level  $\rightarrow$  PILL = 0.001). The moderation effect of Year Level  $\times$  PILL  $\rightarrow$  LL also showed no practical effect ( $f^2 < 0.001$ ), indicating that the moderation was statistically non-significant.

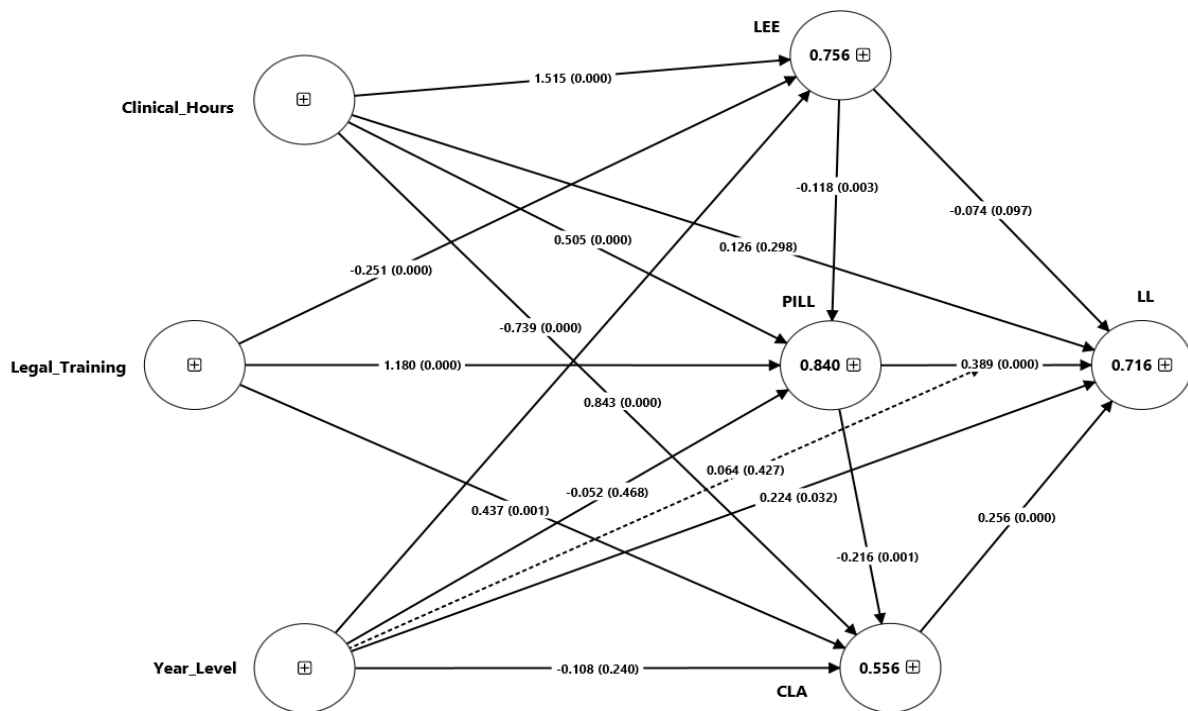
These results collectively support the robustness of the model in terms of fit, explanatory power, and predictive capability, particularly in understanding the determinants of legal literacy among nursing students.

**Table 6.** Model fit,  $R^2$ ,  $Q^2$ , and effect size ( $f^2$ ) from SmartPLS analysis

Fit Index / Construct	Value	Interpretation
Model Fit		
SRMR	0.042	Good fit (acceptable < 0.08)
Coefficient of Determination ( $R^2$ )		
$R^2$ (Legal Education Exposure - LEE)	0.756	Substantial
$R^2$ (Perceived Importance - PILL)	0.716	Substantial
$R^2$ (Confidence in Legal Application - CLA)	0.556	Moderate
$R^2$ (Legal Literacy - LL)	0.840	Substantial
Predictive Relevance ( $Q^2$ )		
$Q^2$ (LL)	0.491	Large predictive relevance
$Q^2$ (CLA)	0.682	Large predictive relevance
Effect Size ( $f^2$ )		
LEE $\rightarrow$ PILL	0.016	Small
LEE $\rightarrow$ LL	0.005	None to small
PILL $\rightarrow$ CLA	0.053	Small
PILL $\rightarrow$ LL	0.158	Medium
CLA $\rightarrow$ LL	0.136	Medium
Clinical_Hours $\rightarrow$ LEE	1.185	Large
Clinical_Hours $\rightarrow$ PILL	0.360	Large
Clinical_Hours $\rightarrow$ CLA	0.518	Large
Legal_Training $\rightarrow$ LEE	0.134	Medium
Legal_Training $\rightarrow$ PILL	0.407	Large
Legal_Training $\rightarrow$ CLA	0.093	Small to medium
Year_Level $\rightarrow$ LEE	0.001	None
Year_Level $\rightarrow$ PILL	0.001	None
Year_Level $\rightarrow$ CLA	0.006	None to small
Year_Level $\rightarrow$ LL	0.034	Small
Year_Level $\times$ PILL $\rightarrow$ LL	0.001	None

Figure 2 presents the final structural model assessing the relationships among the latent variables of Legal Education Exposure (LEE), Perceived Importance of Legal Knowledge (PILL), Confidence in Legal Application (CLA), and Legal Literacy (LL), with exogenous variables including Clinical Hours, Legal Training, and Year Level. The diagram displays standardized path

coefficients ( $\beta$ ), corresponding p-values, and the  $R^2$  values for each endogenous construct. The coefficient of determination ( $R^2$ ) for Legal Literacy (LL) was 0.716, indicating that 71.6% of the variance in LL is explained by its predictors—PILL, CLA, LEE, Clinical Hours, Legal Training, and Year Level. PILL had an  $R^2$  of 0.840, CLA had 0.556, and LEE had 0.756, demonstrating substantial explanatory power (Hair et al., 2021). Key statistically significant paths include: Clinical Hours  $\rightarrow$  LEE ( $\beta = 1.515$ ,  $p < .001$ ), Legal Training  $\rightarrow$  PILL ( $\beta = -0.739$ ,  $p < .001$ ), PILL  $\rightarrow$  CLA ( $\beta = 0.224$ ,  $p = .032$ ), PILL  $\rightarrow$  LL ( $\beta = 0.389$ ,  $p < .001$ ), CLA  $\rightarrow$  LL ( $\beta = 0.256$ ,  $p < .001$ ). These findings suggest that perceived legal knowledge and confidence in application are strong predictors of legal literacy, with legal education exposure and prior training indirectly influencing outcomes.



**Figure 2.** Structural model of legal literacy among nursing students showing path coefficients ( $\beta$ ), p-values, and  $R^2$  values for endogenous constructs

#### 4. Discussion

This study extends existing models of professional competence in nursing by empirically demonstrating that legal literacy is not a purely knowledge-driven outcome but a value- and confidence-mediated competence. While traditional competency frameworks in nursing emphasize the linear acquisition of knowledge, skills, and attitudes, the present findings refine these models by showing that perceived importance of legal knowledge and confidence in legal application function as critical proximal determinants of legal literacy, whereas curricular exposure alone is insufficient to produce applied legal competence (Hair Jr et al., 2021). The strong effect of perceived importance on legal literacy supports contemporary competency-based and social-cognitive models, which posit that learners are more likely to internalize and enact knowledge they regard as meaningful and professionally relevant. This finding aligns with recent nursing education literature emphasizing that professional competence emerges through the interaction of cognitive understanding, motivational valuation, and self-efficacy, rather than through content exposure alone (Antão et al., 2023). In this sense, legal literacy parallels other complex nursing competencies—such as ethical reasoning and patient advocacy—that require internal motivation and confidence to translate knowledge into action.

A notable and theoretically important finding is the negative association between legal education exposure and perceived importance of legal knowledge (Febrianty et al., 2025). Rather than contradicting existing theory, this result highlights a critical limitation of how legal education is often delivered in nursing programs (Antão et al., 2023). When legal content is presented in a

predominantly didactic, compliance-oriented, or fragmented manner—detached from clinical realities—it may inadvertently reduce students' perception of relevance. Recent studies in nursing and health professions education have documented similar patterns, wherein excessive emphasis on rule memorization, legal sanctions, or abstract doctrine leads to disengagement and surface learning, particularly when learners cannot clearly link legal principles to patient care and clinical decision-making (Bautista & Orte, 2021).

This finding suggests that exposure without contextualization may dilute perceived value, especially in environments where students are already cognitively overloaded by clinical and technical demands. From a social–cognitive perspective, repeated exposure to legal content that is experienced as rigid, punitive, or disconnected from practice may weaken outcome expectations and reduce intrinsic valuation. Thus, the negative path observed in this study does not imply that legal education is counterproductive, but rather that the mode of delivery matters more than the quantity of exposure.

The mediating role of confidence in legal application further refines professional competence models by demonstrating that valuation alone is insufficient unless learners believe they can competently apply legal knowledge in real-world settings. This supports recent evidence highlighting self-efficacy as a key mechanism through which educational inputs translate into safe and accountable nursing practice. Legal competence, therefore, should be conceptualized not as static knowledge possession but as situated capability, activated through confidence and reinforced through guided practice (Schwarzer et al., 2007; Wang et al., 2024).

Overall, the findings challenge purely linear models of nursing competence and support a structural, interactional view in which education, perception, and confidence jointly shape legal readiness. For nursing education, this implies that strengthening legal literacy requires moving beyond stand-alone jurisprudence courses toward integrated, experiential, and confidence-building approaches, such as case-based discussions, simulated medico-legal scenarios, and reflective clinical debriefings (LaChance, 2024; Wang et al., 2024).

## **5. Implications and limitations**

The findings underscore the need to integrate legal literacy across the nursing curriculum beyond stand-alone jurisprudence courses. Curriculum designers should embed medico-legal concepts into clinical subjects using case-based learning, simulations, and guided debriefings to strengthen perceived importance and application confidence. Clinical training programs may incorporate legally anchored mentorship and reflective discussions to translate exposure into competence. Faculty development initiatives should equip educators with pedagogical strategies for teaching applied legal reasoning. At the policy level, the results support the inclusion of standardized legal literacy competencies within national nursing education standards and continuing professional development frameworks.

However, this study has certain limitations. It employed a cross-sectional design and self-reported measures, which may limit causal inference and introduce response bias. Purposive sampling within selected institutions limits generalizability to the population. Although the instrument demonstrated strong psychometric properties, high reliability coefficients may indicate conceptual overlap among closely related items. Future research should employ longitudinal or mixed-methods designs and validate the model across diverse cohorts, including practicing nurses.

## **6. Conclusion**

The study successfully modeled legal literacy among nursing students using a theoretically grounded and statistically sound approach. Findings confirmed that the perceived importance of legal knowledge and confidence in legal application are critical levers in building legal literacy. Legal education exposure, while foundational, must be paired with strategies that foster internal motivation and practical readiness. This research contributes to the growing body of literature calling for reforms in nursing education to include legal and ethical preparedness. As healthcare environments grow more complex, litigious, and policy-driven, empowering nurses with legal literacy is both a professional necessity and a public health imperative. Nursing educators must ensure that legal education is not only taught but experienced, contextualized, and internalized throughout the learning journey.

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Finally, we dedicate this work to the continued advancement of nursing education in the Philippines, with the hope that this study contributes to the development of legally competent and empowered future nurses.

## Author contributions

C.P. Tuppall conceptualized the study, provided overall supervision, conducted the final critical revisions, and approved the version to be submitted. M.R.A. Atendido and A.B.C. Atendido contributed to the development of the research tool, coordinated data collection, and performed initial data encoding. L.K.A. Pellacœur assisted in manuscript drafting, formatting, and literature sourcing. A.I. Manzon and A.M.G. Rivera contributed to the statistical analysis and interpretation of findings. K.P. Pascua and A.A. Adiawan provided technical and theoretical support in aligning the survey items with Universal Health Care policy frameworks. B.K. Loo and M.M.G. Loo reviewed the final draft and offered insights for international relevance and contextual framing. C.P. Ejercito contributed to the validation process and reviewed ethical compliance. S.M.P. Tuppall, J.J.R. Olivar, and M.J.O. Cañon supported manuscript editing, reference management, and ensured completeness of annexed materials and documentation.

## Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this research. All authors have contributed to the study without any financial, professional, or personal relationships that could have influenced its outcome.

## Declaration of the use of Artificial Intelligence (AI)

The authors declare that generative artificial intelligence (AI) tools were used solely to assist with language refinement, grammar checking, and editorial clarity during manuscript preparation. All research design decisions, data collection, statistical analyses, interpretations, and conclusions were conducted and validated by the authors. The authors take full responsibility for the integrity, originality, and accuracy of the content of this manuscript.

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