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Correlation Between Knowledge and Practice of Basic Life Support (BLS) Among Nursing Students, Class of 2022, Academic Year 2025

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Abstract
Introduction: *Emergencies can occur anywhere and at any time without warning, making preparedness essential for everyone to know how to respond when faced with life-threatening situations. Basic Life Support (BLS) and Cardiopulmonary Resuscitation (CPR) are critical interventions that can help preserve life in emergency conditions.* ***Objective:*** *This study aims to determine the Correlation Between Knowledge and Practice of Basic Life Support (BLS) Among Nursing Students, Class of 2022, Academic Year 2025.* ***Method:*** *This research employed a quantitative correlational method with a cross-sectional approach. The sampling technique used was non-probability sampling with a total sampling method. Data were collected using a structured questionnaire. Univariate data analysis applied frequency distribution, while bivariate analysis used the Spearman Rank correlation test.* ***Results and Discission:*** *Based on the analysis using the Spearman Rank test, the correlation between the independent variable (BLS knowledge) and the dependent variable (BLS practice) showed a correlation coefficient r = 0.342 with a p-value = 0.000, which is smaller than the significance level of 0.05. This indicates a significant positive Correlation Between Knowledge and Practice of Basic Life Support (BLS) Among Nursing Students, Class of 2022, Academic Year 2025.* ***Conclusion:*** *The findings demonstrate a statistically significant positive Correlation Between Knowledge and Practice of Basic Life Support (BLS) Among Nursing Students, Class of 2022, Academic Year 2025.*

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Introduction

The American Heart Association (AHA, 2020) defines Basic Life Support (BLS) as the immediate emergency care provided to sustain life in critical situations such as cardiac arrest or respiratory arrest. Experiencing cardiac or respiratory arrest does not necessarily result in death, as the patient's survival can still be ensured through prompt and appropriate intervention (Pujiastuti & Amelia, 2024); (Dewi, 2020). BLS involves Cardiopulmonary Resuscitation (CPR) and a Primary Survey, which aims to systematically assess and manage the patient effectively (Abuejheisheh, Alshraideh, Amro, Hani, & Darawad, 2023); (Manono, 2022). The primary survey follows the A–B–C–D–E framework: Airway (A), Breathing (B), Circulation (C), Disability (D), and Exposure (E).

BLS is an essential, time-sensitive life-saving intervention that must be performed immediately for patients requiring cardiopulmonary resuscitation (Maria & Wardhani, 2023); (Efendi, Winani, & Hadi, 2024). Cardiac arrest can occur suddenly and anywhere, thus requiring immediate assistance from individuals who possess adequate knowledge and practical skills in BLS (Suleman, 2023); (Hidayati, 2020). In life-threatening conditions such as cardiac or respiratory arrest, it is crucial that the responder acts swiftly and appropriately. Conversely, providing aid without sufficient knowledge or following incorrect procedures can worsen the patient's condition (Hidayati, 2020; Greif et al., 2021).

According to the American Heart Association (AHA, 2020), approximately 350,000 adults in the United States experienced out-of-hospital cardiac arrest in 2019. Recent data from 2022 indicate that survival rates for out-of-hospital cardiac arrest remain critically low, with only 9.1% of patients surviving to hospital discharge (Cristy, Ryalino, Suranadi, & Hartawan, 2022); (Purwadi & Fatriadi, 2023). The prevalence of cardiac arrest in Indonesia remains uncertain due to the lack of comprehensive official data. However, the National Heart Center reported that an average of 3–5 cardiac arrest patients are brought to hospitals daily, with an estimated 10,000 cases annually—equivalent to around 30 cases per day, most of which occur among individuals with coronary heart disease. Likewise, data from Dr. Moewardi Hospital in Solo indicated that cardiac arrest ranked among the top 20 causes of death, increasing from 102 cases in November 2023 to 154 cases in May 2024.

The level of BLS knowledge across Asia varies widely: 43.7% in Iran, 39.2% in Saudi Arabia, 74.3% in Egypt, and 59.9% in Indonesia. A study by Utariningsih et al. (2022) involving Indonesian nursing students found that 59.9% of respondents had insufficient BLS knowledge, while 58.8% demonstrated low readiness to perform BLS. Similar findings were reported by Rahmawati et al. (2023), who found that 62.3% of nursing students in Jakarta had inadequate BLS knowledge and skills. The study also established a correlation between BLS knowledge and students' readiness to perform the procedure, indicating that adequate knowledge serves as the foundation for effective BLS performance (Putri, Rahmaniza, & Nadia, 2023)

In Timor-Leste, the World Health Organization (WHO, 2023), in collaboration with the Ministry of Health and the Guido Valadares National Hospital (HNGV), conducted the Timor-Leste National Basic Life Support Course (TL-NBLS). The two-day training, attended by approximately 400 participants, primarily nursing and midwifery students, focused on essential life-saving skills, including CPR techniques and patient management

based on the ABCDE protocol (Airway, Breathing, Circulation, Disability, Exposure). The program employed advanced simulation models to enhance experiential and practical learning

For young nursing students, acquiring BLS knowledge and practical competence is vital to ensure that they can provide timely and appropriate life-saving interventions. Simulation-based learning has been shown to strengthen students' critical thinking, confidence, and ability to perform CPR effectively in real-life emergencies (Utariningsih, Millizia, & Handayani, 2022); (Sekunda, Doondori, Kurnia, & Patmawati, 2022). A study conducted in Germany found that children aged 13–14 years were capable of performing CPR as effectively as adults, owing to structured educational programs that integrate theory and practice. Such programs improved skill retention, compression rate and depth, and confidence to act during medical emergencies

Furthermore, institutional engagement and school-based activities play a vital role in supporting the success of BLS programs. These initiatives help students develop preparedness to respond to medical emergencies both in schools and in their communities. Integrating BLS into academic curricula is therefore a strategic measure to enhance community capacity in managing cardiac arrest cases, thereby increasing survival rates. Research by Kurniawan et al. (2024) demonstrated that curriculum-integrated BLS training significantly improved both knowledge retention and practical skills among Indonesian nursing students compared to traditional training methods.

At the School of Nursing, data from the Head of the Class of 2022 indicate a total of 169 active students across four classes. Interviews with these students revealed that Basic Life Support (BLS) is perceived as an essential skill for saving lives, especially for individuals suffering from sudden cardiac arrest, underscoring the importance of CPR in maintaining normal respiration and circulation. However, preliminary assessments indicate gaps between theoretical understanding and practical application among nursing students. Despite recognizing the importance of BLS, many students report feeling unprepared to perform CPR in real emergency situations due to limited hands-on training opportunities and insufficient exposure to simulation-based learning

The discrepancy between knowledge and practical competence raises critical concerns about the readiness of future healthcare professionals to respond effectively during cardiac emergencies. This situation is further complicated by the lack of standardized BLS training protocols across nursing education institutions in Indonesia. Therefore, it is essential to assess the current level of BLS knowledge and skills among nursing students and identify factors that influence their readiness to perform life-saving interventions. Based on these conditions, this study aims to: (1) assess the level of Basic Life Support (BLS) knowledge among nursing students at the School of Nursing; (2) evaluate the level of BLS practical skills among nursing students at the School of Nursing; (3) identify factors that influence nursing students' readiness to perform BLS in emergency situations; (4) analyze the correlation between BLS knowledge and practical competence among nursing students; and (5) provide recommendations for improving BLS training programs in nursing education curricula.

Preliminary data analysis at ESE showed that the majority of students demonstrated moderate knowledge of BLS (38.0%), followed by good knowledge (33.1%) and low knowledge (28.9%). These findings motivated the researcher to conduct a study entitled: "Correlation Between Knowledge and Practice of Basic Life Support (BLS) Among Nursing Students, Class of 2022, Academic Year 2025."

Methods

This research employed a quantitative correlational design with a cross-sectional approach. The sampling technique used was non-probability sampling with the total sampling method. Data were collected using a structured questionnaire. For data analysis, univariate analysis was conducted using frequency and percentage distribution, while bivariate analysis was performed using the Spearman Rank correlation test to determine the relationship between the study variables.

Result and Discussion

1. Results

Univariate Analysis

Frequency Distribution Based on Gender

The frequency distribution of respondents' characteristics based on gender among students who possessed knowledge and practice of Basic Life Support (BLS) is presented below:

Table 1
Frequency Distribution Based on Gender

Gender	Frequency	Percent
Male	54	32.5
Female	112	67.5
Total	**166**	**100.0**

Based on Table 1, the frequency distribution of respondents according to sex shows that male respondents numbered 54 (32.5%), while female respondents numbered 112 (67.5%). This indicates that female participants constituted the majority compared to males in this study.

Frequency Distribution Based on Age

The frequency distribution of respondents' characteristics based on age among students with knowledge and practice of Basic Life Support (BLS) is presented below:

Table 2
Frequency Distribution Based on Age

Age (years)	Frequency	Percent
21–24	145	87.3
25–28	19	11.4
29–32	2	1.2
Total	**166**	**100.0**

Based on Table 2, the distribution of respondents by age shows that 145 respondents (87.3%) were between 21–24 years old, 19 respondents (11.4%) were aged 25–28 years,

and 2 respondents (1.2%) were aged 29–32 years. These findings indicate that the majority of respondents were aged 21–24 years, compared with those aged 25–32 years.

Frequency Distribution Based on Educational Level

The frequency distribution of respondents' characteristics according to their educational level among students who possessed knowledge and practice of Basic Life Support (BLS) is presented below:

Table 3
Frequency Distribution Based on Educational Level

Educational Level	Frequency	Percent
Higher Education	166	100.0
Total	**166**	**100.0**

Based on Table 3, all respondents (166 students, 100%) were enrolled in higher education. This indicates that every participant in the study was a university-level student

Frequency Distribution Based on Occupation

The frequency distribution of respondents' characteristics based on occupation among students with knowledge and practice of Basic Life Support (BLS) is presented below:

Table 4
Frequency Distribution Based on Occupation

Occupation	Frequency	Percent
Student	166	100.0
Total	**166**	**100.0**

As shown in Table 4, all respondents (166 students, 100%) were classified as students, confirming that the entire sample consisted of learners from the nursing school

Frequency Distribution Based on BLS Knowledge Level

The frequency distribution of respondents' characteristics based on their level of knowledge of Basic Life Support (BLS) is shown below:

Table 5
Frequency Distribution of BLS Knowledge Level

BLS Knowledge	Frequency	Percent	Valid Percent	Cumulative Percent
Good	54	32.5	32.5	32.5
Moderate	65	39.2	39.2	71.7
Poor	47	28.3	28.3	100.0
Total	**166**	**100.0**	**100.0**	—

Based on Table 5, 54 respondents (32.5%) demonstrated good knowledge, 65 respondents (39.2%) had moderate knowledge, and 47 respondents (28.3%) showed poor knowledge of BLS. These findings indicate that most respondents had a moderate level of BLS knowledge compared with those who had good or poor knowledge

Frequency Distribution Based on BLS Practice

The frequency distribution of respondents' characteristics based on their practice of Basic Life Support (BLS) is presented below:

Table 6
Frequency Distribution of BLS Practice

BLS Practice	Frequency	Percent	Valid Percent	Cumulative Percent
Good	57	34.3	34.3	34.3
Moderate	60	36.1	36.1	70.5
Poor	48	28.9	28.9	99.4
Missing	1	0.6	0.6	100.0
Total	**166**	**100.0**	**100.0**	—

As shown in Table 6, 57 respondents (34.3%) had good practice, 60 respondents (36.1%) demonstrated moderate practice, and 48 respondents (28.9%) had poor practice of BLS. This means that the majority of students exhibited a moderate level of BLS practice compared with those showing good or poor performance

Bivariate Analysis

The relationship between knowledge and practice of Basic Life Support (BLS) was analyzed using the Spearman Rank correlation test as shown below

Table 7
Cross-Tabulation Analysis Between Knowledge and Practice

Spearman's rho	Knowledge	Practice
Knowledge – Correlation Coefficient	1.000	0.866 **
Sig. (2-tailed)	–	0.000
N	166	166
Practice – Correlation Coefficient	0.866 **	1.000
Sig. (2-tailed)	0.000	–
N	166	166

Note: Correlation is significant at the 0.01 level (2-tailed)

Based on Table 7, the Spearman Rank correlation coefficient (r = 0.866) with a p-value = 0.000 (< 0.01) indicates a significant and strong positive correlation between BLS knowledge and BLS practice among students
This result demonstrates that students with higher levels of knowledge tend to exhibit better practice in performing Basic Life Support

2. Discussion

Based on Table 5, the frequency distribution of respondents' characteristics by level of BLS knowledge shows that respondents with good knowledge totaled 54 (32.5%), moderate knowledge 65 (39.2%), and poor knowledge 47 (28.3%). This indicates that the majority of respondents possessed moderate knowledge of BLS compared to those with good or poor knowledge levels

Based on Table 6, the frequency distribution of respondents' characteristics by level of BLS practice reveals that respondents with good practice totaled 57 (34.3%), moderate practice 60 (36.1%), and poor practice 48 (28.9%). This finding suggests that the majority of respondents demonstrated a moderate level of BLS practice compared to those with good or poor practice levels. According to the results of the Spearman Rank correlation test, the correlation coefficient obtained was rs = 0.866, with a p-value of 0.000 (< 0.05). This result indicates that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, signifying a strong positive and statistically significant correlation between the students' knowledge and practice of BLS

The findings of this study are consistent with research conducted by Al-Mohaissen (2017) in Saudi Arabia, which involved 2,955 health science students. The study revealed that 87.9% of participants had poor knowledge regarding BLS. Another study in Saudi Arabia involving 139 health students found that 5.7% had good knowledge, 7.9% had fair knowledge, and 49.6% had poor knowledge. Similarly, a study conducted by Anas (2016) examined the relationship between BLS knowledge and helping skills among 40 nursing students. The results showed that 75% of respondents had good knowledge, 20% had fair knowledge, and 5% had poor knowledge.

Other previous studies have also examined the level of BLS knowledge. For instance, Firdaus (2020) investigated the level of knowledge on Basic Life Support among health students at the University of Jember, reporting that the majority had a moderate level of knowledge. In another study, Sitanggang (2021) assessed the theoretical knowledge of Basic Life Support among medical students at the University of North Sumatra. The results indicated that the 2017 cohort had adequate knowledge, while students from the 2019 and 2020 cohorts were classified as having insufficient knowledge

In conclusion, the results of this study are supported by previous research indicating that although students possess a moderate level of knowledge and practice in BLS, there remains a significant need for continuous education and practical training to enhance their competence in performing life-saving procedures

Conclusions

Based on the research conducted at the Escola Superior de Enfermagem, the data analysis showed that, regarding BLS knowledge, 54 respondents (32.5%) had good knowledge, 65 respondents (39.2%) had moderate knowledge, and 47 respondents (28.3%) had poor knowledge. This indicates that the majority of respondents possessed a moderate level of knowledge about Basic Life Support (BLS) compared to those with good or poor knowledge levels. Furthermore, the results revealed a significant positive relationship between students' knowledge and their practice of BLS, implying that higher knowledge levels are associated with better practical performance among nursing students.

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