

## ASSESSING THE KNOWLEDGE OF FIRST AID MANAGEMENT AMONG NURSING STUDENTS

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### ABSTRACT

#### *Background*

First aid management is a critical component of nursing practice, as nurses are often the first healthcare professionals to encounter patients during emergencies. Immediate and appropriate first aid interventions can preserve life, prevent complications, and improve patient outcomes before advanced medical care is available. Despite its importance, several studies have reported that nursing students possess only moderate levels of first aid knowledge and limited confidence in applying life-saving skills. Strengthening first aid competency among nursing students is therefore essential to enhance emergency preparedness and patient safety.

#### *Objectives*

To assess the level of knowledge regarding first aid management among undergraduate nursing students.

#### *Methods:*

A quantitative descriptive cross-sectional study was conducted among nursing students enrolled in the 4th, 6th, and 8th semesters at Mustafa Kamal Institute of Nursing and Medical Sciences, Vehari. A total population of 105 students was identified, and a sample of 83 students was calculated using Slovin's formula; however, data were analyzed from 105 respondents who consented to participate. Data were collected using a structured, self-administered questionnaire consisting of demographic information and 32 knowledge-based items on first aid management. Each correct response was scored as two marks, with a total possible score of 64. Data were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations.

#### *Results:*

The overall mean knowledge score indicated a total first aid knowledge level of 72%, which falls within the "good knowledge" category. Students demonstrated strong knowledge in identifying emergency signs and understanding the ABC (Airway, Breathing, Circulation) protocol. Hemorrhage control and fracture immobilization were also relatively well understood. However, gaps were identified in burn management and critical life-saving skills such as cardiopulmonary resuscitation (CPR) and choking management. Practical application and self-perceived preparedness scores were notably lower for CPR

and the Heimlich maneuver, indicating a theory–practice gap and variability in students' confidence levels.

**Conclusion:**

The study concludes that while nursing students possess an acceptable level of theoretical knowledge regarding first aid management, deficiencies remain in practical application and confidence, particularly in life-saving interventions such as CPR. These findings highlight the need for enhanced practical training, simulation-based learning, and regular skills reinforcement within nursing curricula. Strengthening competency-based first aid education may improve students' preparedness to respond effectively to emergencies and ultimately enhance patient safety and outcomes.

**Keywords:** First aid management, nursing students, emergency care, knowledge assessment, preparedness, CPR.

## INTRODUCTION

### 1.1: Background

First aid is the immediate and temporary care provided to a person who is injured or suddenly becomes ill before professional medical assistance is available. It plays a critical role in preserving life, preventing the worsening of conditions, reducing complications, and promoting recovery during emergency situations. The importance of first aid has increased globally because accidents, disasters, and medical emergencies continue to contribute significantly to morbidity and mortality worldwide. According to the World Health Organization, many deaths occurring before reaching healthcare facilities could be prevented if immediate first aid measures were appropriately applied. Basic first aid skills such as cardiopulmonary resuscitation (CPR), fracture management, burn care, choking management, and bleeding control are therefore considered essential competencies for healthcare providers, especially nursing students who will become front-line healthcare professionals in the future. (Vijayata et al., 2021).

Globally, first aid education has become an important public health strategy because immediate emergency response can significantly reduce mortality and disability associated with accidents and injuries. Several studies have emphasized that first aid education improves individuals' confidence, preparedness, and ability to provide emergency care before the arrival of professional healthcare services. In educational institutions, nursing students are recognized as a crucial group that requires adequate first aid knowledge and competency because they are

future healthcare providers responsible for responding to emergencies in hospitals, communities, and disaster settings. emergency situations. (Li et al., 2026).

Nursing students play a significant role in healthcare delivery because they are often involved in direct patient care and emergency management during clinical training and professional practice. Their ability to provide immediate and appropriate first aid interventions is essential for patient safety and effective emergency care. Nevertheless, studies conducted in different countries have reported inadequate or moderate levels of first aid knowledge among nursing students. Research carried out among nursing students in Albania found that most students demonstrated only moderate knowledge regarding first aid management, indicating the need for improved educational methods and practical training opportunities. The study also revealed that students who had prior exposure to first aid information and training performed better in first aid-related assessments compared to those without training. Likewise, a study conducted among nursing students in Sulaimani City showed that senior nursing students had greater first aid knowledge compared to junior students due to increased exposure to clinical and educational experiences. These findings suggest that academic level, training exposure, and educational strategies significantly influence students' competency in first aid management. (Teta et al., 2025).

In addition to general first aid management, nursing students are also expected to possess knowledge related to specific emergency conditions and disaster situations. Disasters, road

traffic accidents, poisoning, burns, snakebites, and traumatic injuries continue to pose major public health concerns worldwide, especially in low- and middle-income countries. Nurses and nursing students are often among the first responders during such emergencies, making first aid preparedness an essential part of nursing education. A cross-sectional study conducted in Sri Lanka among nursing students revealed inadequate knowledge in identifying venomous snakes and applying appropriate first aid management for snakebites. The findings emphasized that although students possessed moderate understanding of first aid principles, many lacked sufficient practical knowledge required for effective emergency management. Similarly, disaster preparedness studies among nursing students highlighted that students with better disaster preparedness literacy demonstrated higher confidence and self-efficacy in applying psychological first aid during emergencies and disasters. These findings reinforce the importance of integrating emergency preparedness, disaster response, and specialized first aid education into nursing curricula to enhance students' competency and readiness in emergency situations. (Jayathilaka & Weeratunga, 2024).

The effectiveness of first aid management depends not only on theoretical knowledge but also on practical competency, confidence, and timely intervention during emergencies. Studies have consistently shown that structured educational programs and simulation-based learning significantly improve students' first aid knowledge and practical skills. Research conducted among nursing students receiving disaster and first aid training demonstrated a significant improvement in students' triage and first aid knowledge following educational interventions. The study concluded that both theoretical and practical training positively affected nursing students' competency in emergency management. Furthermore, studies assessing first aid training programs among school teachers found that structured educational interventions significantly improved participants' knowledge and practical skills related to first aid management. These findings indicate that practical training,

workshops, simulation exercises, and repeated exposure to emergency scenarios are effective methods for improving first aid competency among learners. Therefore, incorporating such strategies into undergraduate nursing education may strengthen nursing students' preparedness and ability to manage emergencies effectively. (Aslan et al., 2024)

Traumatic injuries represent another major area where first aid management plays a crucial role in improving patient outcomes. Immediate and proper first aid interventions can prevent long-term complications, disability, and mortality associated with trauma and accidents. Studies focusing on dental traumatic injuries among medical students and school students have highlighted the importance of early and appropriate first aid management for preserving function and preventing complications. Research conducted in Poland among medical students revealed inadequate knowledge regarding first aid management of dental traumatic injuries despite the high prevalence of such injuries among children and adolescents. Another study among secondary school students found poor understanding of emergency management of avulsed teeth and other traumatic dental injuries, emphasizing the importance of first aid education among young populations and healthcare trainees. These findings suggest that deficiencies in emergency management knowledge are not limited to general first aid but also extend to specialized emergency conditions requiring immediate intervention. Therefore, nursing students should be adequately trained in all aspects of emergency and first aid management to ensure comprehensive patient care during emergencies. (Tamara et al., 2025).

Despite the increasing emphasis on first aid education worldwide, evidence suggests that many nursing students still lack adequate knowledge and confidence in managing emergency situations effectively. Several factors may contribute to these deficiencies, including limited practical exposure, inadequate curriculum content, lack of simulation-based learning opportunities, and insufficient access to first aid training programs. Furthermore, differences in educational systems,

clinical experiences, and training methods across institutions may influence students' competency levels in first aid management. The growing burden of accidents, emergencies, and disasters globally highlights the urgent need for nursing students to possess strong first aid competencies before entering professional practice. Educational institutions therefore have a responsibility to ensure that nursing students are adequately prepared to provide immediate and effective emergency care through comprehensive educational strategies, practical training, and continuous assessment of competency (Star et al., 2024).

### 1.2. Problem statement:

First aid management is an essential skill for nursing students because they are future healthcare professionals who are expected to provide immediate care during emergencies. Adequate first aid knowledge helps in preserving life, preventing complications, and improving patient outcomes before advanced medical treatment is available. However, several studies have reported that many nursing and healthcare students possess only moderate or inadequate knowledge regarding first aid management. Research conducted among nursing students in Albania and Sulaimani City found that students lacked sufficient competency and practical exposure in emergency care management, while a study in Pakistan revealed that only a small percentage of healthcare students demonstrated high first aid knowledge. These findings suggest that many nursing students may not be adequately prepared to manage emergency situations effectively (Rasool et al., 2025).

Despite the importance of first aid management in nursing practice, deficiencies in practical skills, confidence, and emergency preparedness continue to exist among nursing students. Studies have shown that structured educational and training programs significantly improve students' competency in emergency management, indicating the need for stronger educational interventions within nursing curricula. Research among nursing students demonstrated significant improvement in first aid knowledge after training

programs, while studies among university students identified insufficient practical first aid skills despite positive attitudes toward emergency care. Therefore, assessing the knowledge of first aid management among nursing students is necessary to identify educational gaps and improve training strategies that can enhance students' preparedness and patient safety outcomes during emergencies (Li et al., 2025).

### 1.3: Significance

The significance of this study lies in its ability to evaluate the level of knowledge regarding first aid management among nursing students, who are future healthcare professionals expected to respond effectively during emergencies. First aid knowledge is essential because immediate and appropriate interventions can reduce complications, prevent disability, and save lives before advanced medical care becomes available. Previous studies have shown that many nursing and university students possess insufficient or moderate levels of first aid knowledge despite positive attitudes toward emergency care. Research conducted among nursing students in Sri Lanka revealed inadequate knowledge in identifying venomous snakes and managing snakebite first aid, emphasizing the need for improved educational strategies and training programs.

This study is also significant because its findings may contribute to strengthening nursing education and improving emergency preparedness among nursing students. Identifying gaps in first aid management knowledge can help nursing educators and curriculum developers design effective educational interventions, simulation-based learning, and practical training opportunities that enhance students' confidence and competency in handling emergencies. Studies have emphasized that timely and appropriate first aid management significantly improves patient outcomes and reduces mortality and morbidity associated with injuries and emergencies.

### 1.4: Objectives/Study Questions

To assess the knowledge of first aid management among nursing students.

## MATERIALS AND METHODS

### 3.1: Study Design:

This study was follow a quantitative research approach using a Descriptive Cross-sectional study research design. This design was used to assessing the knowledge of first aid management among nursing students in Mustafa Kamal Institute of Nursing and Medical Sciences Vehari.

### 3.2: Variables:

Knowledge of first aid management Techniques

#### 3.2.1: Dependent variables

Knowledge

#### 3.2 .2:Independent variables

First Aid management Techniques

### 3.3: Operational Definitions:

In this research survey, the knowledge regarding First Aid management among undergraduate nursing students will be assessed using a structured questionnaire. The questionnaire consists of 18 items divided into different sections related to First Aid management knowledge, techniques, and self-perceived preparedness.

Scoring Criteria

**Section B:** Knowledge Regarding First Aid Management

This section will assess the general knowledge of First Aid management among nursing students. The responses will be scored on a scale of 1-3 marks according to the correctness and appropriateness of the response.

Minimum possible score: 18

Maximum possible score: 54

Classification criteria for Section B:

I. Excellent Knowledge = 75% - 100%

II. Good Knowledge = >50% - <75%

III. Poor Knowledge = <50%

**Section C:** Knowledge of First Aid Management Techniques

This section will assess the students' knowledge regarding practical First Aid management techniques. Each item will be scored on a 1-5 marks scale.

Minimum possible score: 18

Maximum possible score: 90

Classification criteria for Section C:

IV. Excellent Knowledge of First Aid Management Techniques = 75% - 100%

V. Good Knowledge of First Aid Management Techniques = >50% - <75%

VI. Poor Knowledge of First Aid Management Techniques = <50%

**Section D:** Self-Perceived Preparedness Regarding First Aid Management

This section will assess the self-perceived preparedness of nursing students toward handling First Aid situations. Responses will be scored on a 0-3 marks scale.

Minimum possible score: 0

Maximum possible score: 54

Classification criteria for Section D:

VII. Excellent Self-Perceived Preparedness = 75% - 100%

VIII. Good Self-Perceived Preparedness = >50% - <75%

IX. Poor Self-Perceived Preparedness = <50%

### Total Knowledge Score

75% - 100% = Excellent Knowledge

50% - 74% = Good Knowledge

<50% = Poor Knowledge

### 3.4: Study Setting:

This study was conducted in Mustafa Kamal Institute of Nursing and Medical Science Vehari.

### 3.5: Study Population:

The target population for this study consists of among nursing students currently enrolled at KIMS College in the 4th, 6th, and 8th semesters. Each semester comprises 30 students, resulting in a total target population (N) of 105 students.

### 3.6: Sampling Technique:

A convenient non-probability sampling technique was utilized for sampling in this study.

### 3.7: Sample Size:

A total of 105 nursing students was be selected based on availability and consent. To ensure the study is statistically representative, the sample size was determined using Solvin's Formula, which is appropriate for a known, finite population.

**The Formula:**

$$n = \{1 + N(e)^2\}$$

**Where:**

**n** = Required Sample Size

**N** = Total Population (105)

**e** = Margin of Error (0.05, representing a 95% confidence level)

**The Calculation:**

Square the margin of error:  $0.05 \times 0.05 = 0.0025$

Multiply by the population:  $105 \times 0.0025 = 0.2625$

Add 1 to the denominator:  $1 + 0.2625 = 1.2625$

Divide the population by the denominator:  $n = 105 / 1.2625 = 83$

The calculated sample size is 83. For the purposes of this research, the number is rounded up to the nearest whole integer. Therefore, the final sample size for this study is **84 students**.

**3.8: Study Duration:**

The study was carried out Within 5 Months after approval of the ethical committee of institute.

**3.8.1: Inclusion Criteria:**

- Participants was be eligible to participate in this study if they meet the following specific criteria:
- Students must be officially enrolled in the undergraduate nursing program (BSN/Generic Nursing) at Mustafa Kamal Institute of Nursing and Medical Science Vehari.
- Only students currently in their 4th, 6th, or 8th semesters was be included, as these levels represent students with increasing exposure to clinical practice and emergency care training, including first aid management.
- Students who voluntarily provide informed consent to participate in the study and agree to complete the structured questionnaire assessing knowledge of first aid management.
- Students who have completed at least one clinical rotation, ensuring they have basic clinical exposure related to patient care and emergency situations where first aid knowledge may be required.
- Students who are present on campus during the data collection period or accessible

through official communication channels and are wasing to participate in the study.

➤ **3.8.2: Exclusion Criteria:**

- Potential participants was be excluded from the study if they meet any of the following criteria:
- Students enrolled in other health sciences or medical programs at Mustafa Kamal Institute of Nursing and Medical Science Vehari who are not part of the undergraduate nursing department.
- Students in their 1st, and 3rd semesters, as they may not yet have gained sufficient theoretical knowledge or clinical exposure related to first aid management and emergency care.
- Students who are unwasing to participate in the study or do not provide informed consent.
- Students who are absent during the data collection period or who do not complete the questionnaire related to knowledge of first aid management.

**3.9: Research Tool:**

Questionnaire: knowledge of first aid management among nursing students was used.

**3.10: Data Analysis:**

This chapter deals with the analysis of data from the current study "Assessing of the Knowledge of First Aid Management among Nursing Students." The demographic and other study variables was be presented in the form of frequencies, percentages, tables, and graphs.

**3.11. ETHICAL CONSIDERATION:**

The rules and regulations set by the ethical committee of Mustafa Kamal Institute of Nursing and Medical sciences was followed while conducting the research and the rights of the research participants were respected.

- Written informed consent attached was be taken from all the participants.
- All information and data collection was be kept confidential.
- Participants was be remained anonymous throughout the study.
- The subjects was be informed that there are no disadvantages or risk on the procedure of the study.

They were also informed that they were free to withdraw at any time during the process of the study.

### Results

This study assessed the knowledge of first aid management among nursing students. A total of 105 participants were included in the study, and all questionnaires were completed without any missing responses. The findings are presented according to demographic characteristics, knowledge regarding first aid principles, emergency response techniques, and overall knowledge levels among the participants.

The demographic data revealed that the majority of the respondents were between 20–25 years of age, accounting for 93 students (88.6%), while only 12 students (11.4%) belonged to the 26–30

years age group. This indicates that most participants were young nursing students in the early stage of adulthood. Regarding gender distribution, male students constituted 60 participants (57.1%), whereas female students accounted for 45 participants (42.9%). In relation to academic year, 39 students (37.1%) were from the 4th year, 35 students (33.3%) were from the 3rd year, and 31 students (29.5%) were from the 2nd year. These findings show that students from different academic levels participated in the study, with the highest representation from senior students.

Demographic Variables	Frequency (n)	Percentage (%)
<b>Age</b>		
20–25 years	93	88.6
26–30 years	12	11.4
<b>Total</b>	<b>105</b>	<b>100.0</b>
<b>Gender</b>		
Male	60	57.1
Female	45	42.9
<b>Total</b>	<b>105</b>	<b>100.0</b>
<b>Academic Year</b>		
2nd Year	31	29.5
3rd Year	35	33.3
4th Year	39	37.1
<b>Total</b>	<b>105</b>	<b>100.0</b>

The assessment of knowledge regarding basic first aid principles demonstrated varying levels of understanding among the participants. When asked whether first aid is the immediate care given to a person before medical help arrives, only 23 respondents (21.9%) answered correctly with “Yes,” while 28 respondents (26.7%) answered “No,” and more than half of the participants, 54 students (51.4%), selected “Don’t Know.” This indicates inadequate understanding of the fundamental definition of first aid among many participants.

Knowledge regarding the first step in emergency care was relatively better. A total of 60 students (57.1%) correctly identified checking airway, breathing, and circulation as the initial step in emergency care. However, 13 students (12.4%) answered incorrectly, while 32 students (30.5%) reported that they did not know the correct answer. These findings suggest that although more than half of the students possessed adequate knowledge regarding emergency assessment, a considerable proportion still lacked confidence or awareness.

In relation to bleeding management, 45 participants (42.9%) correctly stated that applying pressure on a wound helps control bleeding, while 22 respondents (21.0%) answered incorrectly and 38 respondents (36.2%) selected “Don’t Know.” Similarly, 64 participants (61.0%) agreed that continuous pressure should be applied to control external bleeding, whereas 19 students (18.1%) disagreed and 22 students (21.0%) did not know. These findings demonstrate that students had comparatively better knowledge regarding bleeding control techniques than other aspects of first aid management.

Knowledge concerning burn management showed moderate awareness among the participants. Nearly half of the respondents, 51 students (48.6%), correctly indicated that burns should be cooled with running water immediately after injury. However, 14 students (13.3%) answered

incorrectly and 40 students (38.1%) reported not knowing the correct response. These findings reveal that although some students possessed adequate knowledge of burn care, a substantial proportion still lacked essential information regarding appropriate burn management.

Regarding fracture management, 56 participants (53.3%) correctly stated that fractures should be immobilized before transporting the patient, while 13 participants (12.4%) answered incorrectly and 36 students (34.3%) selected “Don’t Know.” This indicates that more than half of the nursing students understood the importance of immobilization in fracture care, although a considerable number still demonstrated insufficient knowledge.

Knowledge Statements	Yes n (%)	No n (%)	Don't Know n (%)	Total
First aid is the immediate care given to a person before medical help arrives	23 (21.9%)	28 (26.7%)	54 (51.4%)	105
Checking airway, breathing, and circulation is the first step in emergency care	60 (57.1%)	13 (12.4%)	32 (30.5%)	105
Applying pressure on a wound helps control bleeding	45 (42.9%)	22 (21.0%)	38 (36.2%)	105
Continuous pressure should be applied to control external bleeding	64 (61.0%)	19 (18.1%)	22 (21.0%)	105
Burns should be cooled with running water immediately after injury	51 (48.6%)	14 (13.3%)	40 (38.1%)	105
Fractures should be immobilized before transporting the patient	56 (53.3%)	13 (12.4%)	36 (34.3%)	105
CPR should be started when a person has no pulse and is not breathing	45 (42.9%)	11 (10.5%)	49 (46.7%)	105
CPR should be started when a person has no pulse and is not breathing	55 (52.4%)	28 (26.7%)	22 (21.0%)	105

The findings related to cardiopulmonary resuscitation (CPR) revealed mixed levels of understanding among the respondents. In one item assessing whether CPR should be started when a person has no pulse and is not breathing, 45 students (42.9%) answered correctly, 11 students (10.5%) answered incorrectly, and 49 students (46.7%) selected “Don’t Know.” In another similar item, 55 students (52.4%) responded correctly, while 28 students (26.7%)

answered “No” and 22 students (21.0%) did not know. These findings suggest that although approximately half of the participants possessed correct knowledge regarding CPR initiation, many students still lacked adequate understanding of emergency resuscitation procedures.

Knowledge regarding choking management was comparatively low among the participants. Only 37 students (35.2%) correctly stated that a choking person can be helped by performing abdominal

thrusts, while 17 students (16.2%) answered incorrectly and 51 students (48.6%) reported that they did not know. This finding demonstrates poor awareness regarding choking interventions and indicates the need for additional training in this area.

Participants were also asked about their agreement with practical first aid interventions. Concerning the statement “Provide immediate CPR to a victim who is not breathing and has no pulse,” 23 respondents (21.9%) strongly agreed and 11 respondents (10.5%) agreed. In contrast, 45 respondents (42.9%) strongly disagreed and 22 respondents (21.0%) disagreed. These results indicate significant inconsistency in participants’ attitudes and practices related to CPR administration.

Similarly, for the statement “Apply direct pressure to control bleeding in case of open wounds,” 23 students (21.9%) strongly agreed and 19 students (18.1%) agreed, while 28 students (26.7%) strongly disagreed and 26 students (24.8%) disagreed. These findings suggest that although some students recognized the importance of direct pressure in bleeding management, others lacked confidence or correct practical understanding.

With regard to burn management practices, 44 students (41.9%) strongly agreed that burns should be cooled with running water immediately to reduce tissue damage, while 9 students (8.6%) agreed. Conversely, 14 students (13.3%) strongly disagreed and 22 students (21.0%) disagreed. This indicates that knowledge regarding burn care was better than some other first aid areas but still not uniformly adequate among all participants.

In fracture management practices, more than half of the respondents, 55 students (52.4%), strongly agreed that fractured limbs should be immobilized using splints before transporting the patient. However, 29 students (27.6%) strongly disagreed and 19 students (18.1%) disagreed. These findings demonstrate that although many nursing students were aware of proper fracture management, a significant proportion still lacked sufficient practical understanding.

Regarding choking interventions, 31 students (29.5%) strongly agreed with using abdominal thrusts (Heimlich maneuver) for choking victims. On the other hand, 27 students (25.7%) strongly disagreed and 28 students (26.7%) disagreed. These findings further emphasize inadequate practical knowledge related to choking management among nursing students.

Techniques Statements	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)	Total
Provide immediate CPR to a victim who is not breathing and has no pulse	45 (42.9%)	22 (21.0%)	4 (3.8%)	11 (10.5%)	23 (21.9%)	105
Apply direct pressure to control bleeding in case of open wounds	28 (26.7%)	26 (24.8%)	9 (8.6%)	19 (18.1%)	23 (21.9%)	105
Cool burns with running water immediately to reduce tissue damage	14 (13.3%)	22 (21.0%)	16 (15.2%)	9 (8.6%)	44 (41.9%)	105
Immobilize fractured limbs using splints before transporting the patient	29 (27.6%)	19 (18.1%)	2 (1.9%)	0 (0.0%)	55 (52.4%)	105
Use abdominal thrust (Heimlich maneuver) for choking victims	27 (25.7%)	28 (26.7%)	19 (18.1%)	0 (0.0%)	31 (29.5%)	105

Self-assessment of knowledge and confidence showed relatively positive perceptions among

participants. In assessing their knowledge of basic first aid principles, 55 students (52.4%) rated

themselves as “Very Good,” while 19 students (18.1%) rated themselves as “Good.” Only 25 students (23.8%) considered their knowledge “Poor.” Similarly, regarding knowledge of CPR and emergency response techniques, 48 students (45.7%) rated themselves as “Very Good,” while 21 students (20.0%) rated themselves as “Good.” However, 20 students (19.0%) still perceived their knowledge as poor.

The majority of participants also reported strong ability in identifying emergency signs such as bleeding, burns, choking, and unconsciousness. A total of 71 students (67.6%) rated their ability as “Very Good,” while 23 students (21.9%) considered it poor. Additionally, confidence in providing first aid during emergencies was high among many participants, with 67 students (63.8%) reporting “Very Good” confidence levels. Overall knowledge scores demonstrated that nursing students possessed varying levels of first aid knowledge. The majority of respondents, 55 students (52.4%), were categorized as having “Good Knowledge,” while 33 students (31.4%)

demonstrated “Excellent Knowledge.” However, 17 students (16.2%) were classified as having “Poor Knowledge.” These findings indicate that although more than half of the participants had satisfactory first aid knowledge, there remains a significant proportion of students with inadequate understanding of essential first aid management practices.

In summary, the study findings reveal that nursing students showed moderate to good knowledge regarding certain aspects of first aid management, particularly bleeding control, fracture immobilization, and identification of emergency signs. However, deficiencies were observed in critical areas such as CPR initiation, choking management, and understanding of basic first aid principles. The results highlight the need for continuous first aid education, practical training sessions, and emergency response workshops to improve students’ competence and preparedness in managing emergency situations effectively.

Total Knowledge Level	Frequency (n)	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Poor Knowledge	17	16.2	16.2	16.2
Good Knowledge	55	52.4	52.4	68.6
Excellent Knowledge	33	31.4	31.4	100.0
<b>Total</b>	<b>105</b>	<b>100.0</b>	<b>100.0</b>	—

#### 4.1 Discussion:

The present study assessed the knowledge of first aid management among nursing students and revealed that participants demonstrated moderate to good levels of knowledge in several aspects of emergency care. However, deficiencies were identified in important areas such as cardiopulmonary resuscitation (CPR), choking management, and basic first aid principles. Since nursing students are future healthcare providers who are expected to respond effectively during emergencies, adequate first aid knowledge is essential for improving patient outcomes and reducing mortality and complications associated with injuries and medical emergencies. These findings indicate the importance of strengthening first aid education and practical training among nursing students. (Vijayata et al., 2021; Li et al., 2026).

The demographic findings of this study indicated that the majority of participants were between 20–25 years of age (88.6%), and male students represented a slightly higher proportion (57.1%) compared to female students (42.9%). Most participants belonged to the 4th academic year, indicating that senior students were more represented in the study. Similar findings were reported in previous studies where senior nursing students demonstrated better first aid knowledge because of increased exposure to clinical training and emergency care experiences. The relationship between academic level and first aid knowledge suggests that knowledge and competency improve with educational progression and clinical exposure. Therefore, integrating first aid education earlier into nursing curricula may help junior students develop stronger emergency

management skills. (Star et al., 2024; Teta et al., 2025).

The current study revealed inadequate understanding regarding the basic definition of first aid, where more than half of the participants (51.4%) selected “Don’t Know” when asked whether first aid is immediate care provided before professional medical assistance arrives. This finding indicates gaps in foundational first aid knowledge among nursing students. Similar results were observed among university students in Yemen, where participants demonstrated poor first aid knowledge despite positive attitudes toward emergency care. Adequate understanding of basic first aid concepts is essential because it forms the foundation for effective emergency response and decision-making during critical situations. (Haza’a et al., 2025).

Regarding emergency assessment, more than half of the participants (57.1%) correctly identified airway, breathing, and circulation (ABC) assessment as the first step in emergency care. This finding demonstrates relatively satisfactory awareness regarding emergency assessment procedures. Previous studies conducted among healthcare-related students also reported better knowledge regarding emergency response principles compared to non-healthcare students. However, a considerable proportion of students in the present study still lacked adequate understanding of emergency assessment, indicating the need for continuous reinforcement of emergency care protocols through practical training and simulation exercises. (Li et al., 2026). The findings related to bleeding management showed comparatively better knowledge among participants. Approximately 61.0% of students correctly identified that continuous pressure should be applied to control external bleeding, while 42.9% recognized that applying direct pressure helps control bleeding from wounds. Similar findings were reported in studies where fracture and bleeding management received higher correct response rates compared to other first aid topics. The better performance in bleeding management may be associated with greater exposure to these procedures during clinical rotations and nursing practice

demonstrations. However, the presence of students who answered incorrectly or selected “Don’t Know” indicates that further educational reinforcement remains necessary. (Teta et al., 2025).

Knowledge regarding burn management and fracture immobilization was moderate among the participants. Nearly half of the respondents correctly identified that burns should be cooled with running water immediately after injury, while 53.3% understood the importance of immobilizing fractures before transportation. Similar findings were reported among healthcare students in Pakistan, where students demonstrated moderate levels of first aid knowledge. Studies have shown that students with greater clinical exposure and advanced academic years demonstrate better first aid knowledge and emergency preparedness. These findings suggest that practical experience contributes significantly to the development of emergency management competencies among nursing students. (Rasool et al., 2025).

One of the major findings of the current study was the inadequate knowledge regarding CPR and choking management. Nearly half of the respondents either answered incorrectly or selected “Don’t Know” regarding CPR initiation when a person has no pulse and is not breathing. Additionally, only 35.2% correctly identified abdominal thrusts as an intervention for choking victims. Similar deficiencies in CPR and emergency response knowledge were reported in previous studies among nursing students and university students. Educational intervention studies have demonstrated that CPR and emergency management skills significantly improve after structured training and simulation-based learning. The poor performance observed in CPR and choking management may therefore be related to insufficient practical training opportunities and limited exposure to emergency simulation exercises. (Aslan et al., 2024; Li et al., 2026).

The practical attitude-related findings of this study further highlighted inconsistencies in participants’ confidence and understanding of first aid practices. A large proportion of students strongly

disagreed with statements regarding immediate CPR administration and direct pressure application for bleeding control. These findings indicate that theoretical knowledge may not necessarily translate into practical confidence or readiness during emergencies. Previous studies concluded that educational interventions significantly improve both theoretical knowledge and practical first aid skills. Therefore, nursing education programs should focus not only on theoretical teaching but also on skill-based training and emergency simulations. (Vijayata et al., 2021; Aslan et al., 2024).

The self-assessment findings of this study revealed that many participants rated their knowledge and confidence as “Very Good,” particularly regarding identification of emergency signs and confidence in providing first aid. However, these self-perceptions were not fully consistent with the actual knowledge findings observed in several emergency care areas. Similar discrepancies between self-confidence and actual competency have been identified in previous studies among healthcare students. Confidence without adequate competency may place patients at risk during emergencies. Therefore, educational institutions should implement competency-based assessments to ensure that students possess both confidence and adequate practical skills. (Güden et al., 2026). Overall, the present study demonstrated that the majority of nursing students had good knowledge regarding first aid management, while a considerable proportion demonstrated excellent knowledge. However, deficiencies remained in essential emergency management areas, particularly CPR and choking interventions. These findings are consistent with previous literature indicating moderate levels of first aid knowledge among nursing students globally. The study highlights the importance of strengthening first aid education through structured curricula, practical workshops, simulation-based learning, and continuous competency evaluations. Improving first aid preparedness among nursing students is essential because they represent future healthcare professionals who will be responsible for responding effectively during emergencies and

protecting patient safety. (Teta et al., 2025; Rasool et al., 2025; Aslan et al., 2024).

### Conclusion

The present study assessed the knowledge of first aid management among nursing students and revealed that the majority of participants possessed moderate to good knowledge regarding emergency care and first aid management techniques. The findings showed that 52.4% of the participants had good knowledge, while 31.4% demonstrated excellent knowledge. However, 16.2% of the respondents were categorized as having poor knowledge. These findings indicate that although most nursing students had satisfactory understanding of first aid management, there are still important gaps that require improvement through educational interventions and practical training programs. The study emphasizes that first aid knowledge among nursing students remains an essential component of nursing education because nursing students are expected to respond effectively during emergency situations in both clinical and community settings.

The study findings demonstrated that nursing students possessed relatively better knowledge regarding bleeding control, fracture immobilization, and emergency identification. More than half of the respondents correctly identified airway, breathing, and circulation assessment as the first step in emergency care, while a considerable proportion also recognized the importance of applying pressure to control bleeding and immobilizing fractures before transportation. These findings suggest that students had some understanding of common emergency management procedures, likely due to exposure during clinical practice and nursing education. Similar findings have been reported in previous studies conducted among nursing students in Albania and Sulaimani City, where senior nursing students demonstrated better knowledge because of increased academic exposure and clinical experiences.

Despite satisfactory knowledge in some areas, deficiencies were identified in critical aspects of first aid management, particularly cardiopulmonary resuscitation (CPR), choking

management, and understanding of basic first aid principles. A large proportion of students either answered incorrectly or selected “Don’t Know” regarding CPR initiation and choking interventions such as abdominal thrusts. In addition, more than half of the participants lacked proper understanding regarding the basic definition of first aid. These findings indicate that theoretical knowledge alone may not be sufficient to prepare nursing students for real-life emergencies. Similar deficiencies have been reported in studies conducted among healthcare students in Pakistan, China, and Yemen, where students demonstrated inadequate practical competency despite having positive attitudes toward emergency care.

The findings of this study also highlighted the importance of practical training and simulation-based learning in improving first aid competency among nursing students. Although many participants rated their confidence and self-assessed knowledge as “Very Good,” their actual responses to several first aid questions revealed inconsistencies between confidence and practical understanding. This indicates that self-confidence alone does not guarantee competency in emergency management. Previous studies have similarly concluded that structured educational interventions, workshops, and simulation-based exercises significantly improve first aid knowledge and practical performance among nursing students and healthcare trainees. Therefore, nursing education programs should focus not only on theoretical instruction but also on repeated practical exposure to emergency scenarios.

The present study further concludes that academic exposure and clinical experiences positively influence students’ knowledge regarding first aid management. Senior students demonstrated better understanding of emergency management compared to junior students, supporting the idea that increased clinical practice contributes to improved competency. However, the presence of inadequate knowledge among some participants suggests that current educational strategies may still be insufficient in fully preparing nursing students to manage emergencies effectively. Continuous assessment, refresher courses, and

integration of emergency preparedness into undergraduate nursing curricula are therefore necessary to strengthen students’ readiness for clinical practice and disaster situations.

Overall, this study concludes that nursing students demonstrated moderate levels of first aid knowledge with strengths in certain emergency care areas and weaknesses in others. Although the majority of participants had good or excellent knowledge, significant deficiencies were observed in CPR, choking management, and foundational first aid concepts. The study highlights the urgent need for improved educational strategies, practical workshops, simulation-based learning, and continuous first aid training within nursing institutions. Strengthening first aid education among nursing students will enhance emergency preparedness, improve patient safety, reduce complications, and contribute to better healthcare outcomes during emergencies.

### 5.1 Recommendations

Based on the findings of the present study, several recommendations are proposed to improve the knowledge and competency of nursing students regarding first aid management. First, nursing institutions should strengthen first aid education within the undergraduate nursing curriculum by incorporating comprehensive theoretical and practical components related to emergency care management. Topics such as cardiopulmonary resuscitation (CPR), bleeding control, fracture management, choking interventions, burn care, and disaster preparedness should be emphasized throughout all academic years. Since the present study identified deficiencies in several critical emergency care areas, integrating structured first aid modules into nursing education may significantly improve students’ preparedness and confidence in handling emergency situations effectively.

Secondly, regular practical training sessions, workshops, and simulation-based learning activities should be organized for nursing students to improve their practical competency and emergency response skills. The study findings revealed inconsistencies between students’ self-confidence and actual practical knowledge

regarding first aid management. Therefore, hands-on training using mannequins, emergency drills, and simulated clinical scenarios may help bridge the gap between theoretical knowledge and practical application. Previous studies have demonstrated that simulation-based learning and repeated emergency practice significantly improve students' competency, confidence, and decision-making abilities during emergencies.

Another important recommendation is the organization of certified CPR and basic life support (BLS) training programs for nursing students on a regular basis. The findings of this study showed inadequate understanding regarding CPR initiation and choking management among several participants. Since CPR is a life-saving intervention that can significantly reduce mortality during cardiac arrest, nursing students should receive mandatory certification and periodic refresher courses in CPR and BLS techniques. Continuous practical exposure and repeated competency assessments can ensure that students retain the necessary skills required for emergency response in clinical settings.

The study also recommends that nursing educators and administrators encourage active participation in emergency preparedness activities, disaster management workshops, and community awareness programs related to first aid management. Participation in such activities can improve students' confidence, communication skills, teamwork, and ability to respond effectively during real-life emergencies. In addition, nursing students should be encouraged to participate in community health campaigns, awareness seminars, and voluntary emergency response initiatives to strengthen their practical exposure and social responsibility toward emergency care.

Furthermore, nursing institutions should evaluate and revise existing teaching strategies to ensure effective delivery of first aid education. Traditional lecture-based teaching methods alone may not adequately prepare students for emergency situations. Therefore, innovative teaching methods such as problem-based learning, case studies, audiovisual demonstrations, peer teaching, and interactive discussions should be incorporated into nursing education. Educational

technologies and e-learning platforms may also be utilized to provide accessible and continuous learning opportunities related to first aid management and emergency care practices.

Another recommendation is the need for continuous evaluation and assessment of nursing students' first aid knowledge and practical skills throughout their academic progression. Periodic examinations, skill assessments, and competency evaluations should be conducted to identify learning gaps and provide targeted educational support where necessary. Continuous monitoring can help educators determine whether students are adequately prepared to manage emergency situations before entering professional nursing practice.

The findings of this study also highlight the importance of conducting further research related to first aid management among nursing students and healthcare professionals. Future studies should include larger sample sizes, multiple nursing institutions, and comparative analyses between different academic levels or educational systems. Researchers should also investigate the relationship between practical training exposure, self-confidence, and actual emergency management competency among nursing students. Such studies may contribute to developing evidence-based educational strategies for improving emergency preparedness among healthcare students.

Finally, policymakers and healthcare education authorities should support the implementation of national guidelines and standardized first aid training programs within nursing institutions. Ensuring that all nursing students receive adequate emergency care education before graduation is essential for improving healthcare quality, patient safety, and emergency response outcomes. Strengthening first aid competency among nursing students will ultimately contribute to reducing mortality, preventing complications, and improving public health outcomes during emergencies and disasters.

## 5.2 Limitations of the Study

Several limitations were identified during the conduct of this study that should be considered

while interpreting the findings. First, the study was conducted in only one nursing institution, Mustafa Kamal Institute of Nursing and Medical Sciences Vehari, which limits the generalizability of the findings to other nursing colleges and healthcare institutions. Nursing students from different institutions may have varying educational experiences, curriculum structures, and clinical exposure that could influence their level of first aid knowledge. Therefore, the findings may not fully represent the knowledge levels of all nursing students in Pakistan or other regions. Future studies involving multiple institutions and larger populations are recommended to improve the generalizability of results.

Secondly, the study utilized a descriptive cross-sectional research design, which only assessed participants' knowledge at a single point in time. This design does not allow the determination of causal relationships between educational exposure and first aid knowledge. Additionally, students' knowledge levels may change over time with increased clinical practice, training programs, and academic progression. Longitudinal or experimental studies may provide more comprehensive information regarding the long-term effectiveness of educational interventions on first aid competency among nursing students.

Another limitation of the study was the use of a convenient non-probability sampling technique. Participants were selected based on availability and willingness to participate, which may have introduced selection bias into the study. Students who agreed to participate may have been more interested in first aid management or more confident in their knowledge compared to those who did not participate. Therefore, the sample may not accurately reflect the overall population of nursing students. Randomized sampling methods would provide more representative findings in future research studies.

The present study also relied on a structured self-administered questionnaire to assess knowledge regarding first aid management. Although questionnaires are useful for collecting data from large groups, participants may have guessed answers or provided socially desirable responses

rather than reflecting their actual understanding. Furthermore, the questionnaire primarily assessed theoretical knowledge and self-reported confidence rather than direct observation of practical skills. As a result, the findings may not fully represent students' actual competency in managing emergency situations. Future studies should include practical skill assessments, simulation exercises, and observational methods to evaluate both theoretical and practical competency more accurately.

Another limitation was that the study focused mainly on general first aid management techniques and did not comprehensively assess specialized emergency care areas such as disaster management, psychological first aid, advanced trauma care, or pediatric emergency interventions. Nursing students may have varying levels of competency in these specialized emergency areas, which were beyond the scope of the present study. Further research is recommended to explore knowledge and preparedness regarding specialized emergency situations among nursing students and healthcare trainees.

Additionally, time constraints and limited resources may have affected the depth of data collection and analysis. The study was conducted within a limited duration, which restricted opportunities for conducting repeated assessments, practical evaluations, or follow-up educational interventions. Financial and logistical limitations may also have influenced the sample size and availability of practical training facilities during the research process. Future studies with extended duration and greater institutional support may provide more comprehensive findings related to first aid competency and emergency preparedness among nursing students. Finally, cultural, educational, and institutional differences may also influence nursing students' knowledge and attitudes regarding first aid management. Since educational systems and training opportunities differ across institutions and countries, direct comparison of findings with international studies should be interpreted cautiously. Despite these limitations, the present study provides valuable information regarding the current level of first aid knowledge among nursing

students and highlights the importance of strengthening emergency care education within nursing curricula. The findings may serve as a foundation for future educational interventions, policy development, and research aimed at improving first aid competency and emergency preparedness among nursing students.

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