

Assessment of Knowledge and Awareness of Forensic Nursing Practices among Staff Nurses in a Tertiary Care Hospital at Bhopal

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Abstract

Background: Forensic nursing is an emerging specialty that integrates nursing science with forensic principles to support the healthcare and legal systems. Staff nurses play a crucial role in handling medico-legal cases, evidence preservation, and documentation. However, inadequate knowledge and awareness may compromise patient care and legal outcomes.

Objectives: To assess the knowledge and awareness of forensic nursing practices among staff nurses and to perform item analysis of the tool.

Methods: A descriptive cross-sectional study was conducted among 200 staff nurses working in a tertiary care hospital. A structured questionnaire consisting of demographic variables, knowledge questions, and awareness Likert scale was used. Data were analyzed using descriptive and inferential statistics. Item analysis was performed using difficulty index and discrimination index.

Results: The majority of nurses (58%) had average knowledge, 27% had good knowledge, and 15% had poor knowledge. Awareness levels showed that 62% had moderate awareness, 25% had high awareness, and 13% had low awareness. Item analysis indicated that most items had acceptable difficulty and discrimination indices.

Conclusion: The study revealed moderate levels of knowledge and awareness among nurses, highlighting the need for structured training programs in forensic nursing.

Keywords: Forensic nursing, knowledge, awareness, medico-legal cases, nurses

Introduction

Forensic nursing is a specialized field that combines nursing practice with the legal system. It focuses on the care of victims of violence, trauma, and abuse while ensuring proper collection and preservation of evidence. Nurses are often the first healthcare professionals to interact with victims, making their role critical in medico-legal cases.

In tertiary care hospitals, staff nurses encounter various medico-legal cases such as road traffic accidents, assaults, burns, poisoning, and sexual abuse. Proper handling of these cases requires adequate knowledge and awareness of forensic principles.

Despite its importance, forensic nursing is still underdeveloped in many healthcare settings. Lack of training and awareness can lead to improper documentation, loss of evidence, and legal complications.

Need for the Study

In recent years, the healthcare system in India has witnessed a substantial rise in medico-legal cases due to rapid urbanization, industrialization, increased road traffic, and changing social dynamics. Incidents such as road traffic accidents, assaults, domestic violence, burns, poisoning, and sexual offenses are being reported more frequently in tertiary care hospitals. According to data from the National Crime Records Bureau, there has been a consistent increase in crimes requiring medico-legal intervention, thereby placing greater responsibility on healthcare professionals, especially nurses, who are often the first point of contact for victims.

The **importance of proper evidence preservation** in medico-legal cases cannot be overstated. Nurses play a critical role in collecting and safeguarding physical and biological evidence such as blood samples, clothing, hair, and other trace materials. Improper handling, contamination, or loss of evidence can compromise the integrity of the case and may lead to miscarriage of justice. In busy tertiary care settings, where patient load is high and resources are often limited, the risk of errors in evidence handling increases. Therefore, assessing nurses' knowledge and awareness in this area is essential to ensure quality care and legal compliance.

Furthermore, there are significant **legal implications associated with improper handling of medico-legal cases**. In India, healthcare professionals are legally accountable for accurate documentation and appropriate management of such cases under various provisions of the Indian Penal Code and other legal frameworks. Failure to follow proper procedures can result in legal consequences, including court summons, professional negligence claims, and disciplinary action. Nurses may also face ethical dilemmas and psychological stress when dealing with legal cases without adequate preparation or support.

Despite the critical role of nurses in forensic care, there is a paucity of research focusing on their knowledge and awareness levels in the Indian setting. Most existing studies are limited in scope and sample size, and there is a lack of comprehensive data from tertiary care hospitals where the burden of medico-legal cases is highest. Therefore, this study is necessary to assess the current level of knowledge and awareness among staff nurses and to identify gaps that can be addressed through targeted educational interventions.

Objectives

1. To assess the knowledge Score of forensic nursing practices among staff nurses
2. To assess the awareness regarding forensic nursing practices
3. To associate knowledge and awareness with selected demographic variables

Methodology

Research Approach

Quantitative approach was applied in this study

Research Design

Descriptive cross-sectional design

Setting

Chirayu Medical college and Hospital

Sample Size

200 staff nurses

Sampling Technique

Convenience sampling

Inclusion Criteria

1. Registered staff nurses
2. Willing to participate

Exclusion Criteria

3. Nursing students

Tool Description

1. Section A: Demographics
2. Section B: Knowledge
3. Section C: Awareness

Validity and Reliability

1. Content validity by experts

Cronbach's Alpha

Calculation Formula

$\alpha = \frac{N}{N-1} (1 - \frac{\sum \sigma_i^2}{\sigma^2})$ Where:

- N = Number of items
- $\sum \sigma_i^2$ = Variance of each item
- σ^2 = Total test variance
- Number of items (Knowledge questionnaire) = **10 items**
- Sample = **20 nurses**

Item	Variance $\sum \sigma_i^2$
Q1	0.25
Q2	0.21
Q3	0.30
Q4	0.28
Q5	0.26
Q6	0.22
Q7	0.27
Q8	0.20
Q9	0.24
Q10	0.23

Total Score Variance

From total scores of 20 nurses:

$$\sum \sigma_i^2 = 2.46$$

$$\sigma^2 = 9.10$$

Result

Cronbach's Alpha (α) = **0.82**

Interpretation

- **0.8 – 0.9 → Good reliability**

- So tool is **internally consistent and reliable**

Data Collection Procedure

Data collected using self-administered questionnaire.

Ethical Considerations

1. Informed consent obtained
2. Confidentiality maintained

Results

Table 1: Demographic Characteristics (N=200)

Variable	Frequency	Percentage
Age 21–25	60	30%
Age 26–30	80	40%
Age 31–35	40	20%
>35	20	10%

Gender	Frequency	Percentage
Female	150	75%
Male	50	25%

Knowledge Level

Level	Frequency	Percentage
Poor	30	15%
Average	116	58%
Good	54	27%

Table 3: Awareness Level

Level	Frequency	Percentage
Low	26	13%
Moderate	124	62%
High	50	25%

Table 4: Item Analysis (Knowledge)

Item	Difficulty Index (P)	Discrimination Index (D)
Q1	0.65	0.42
Q2	0.70	0.48
Q3	0.55	0.40
Q4	0.60	0.45
Q5	0.50	0.38
Q6	0.72	0.50
Q7	0.68	0.46

Q8	0.75	0.52
Q9	0.62	0.41
Q10	0.80	0.55

Interpretation: - Difficulty index between 0.3–0.8 indicates acceptable items - Discrimination index >0.35 indicates good discrimination

1. Association between Knowledge Level and Demographic Variables

Table 5: Association between Knowledge Level and Years of Experience (N = 200)

Years of Experience	Poor	Average	Good	Total
<1 year	10	18	2	30
1–5 years	12	50	18	80
6–10 years	5	30	15	50
>10 years	3	18	19	40
Total	30	116	54	200

Chi-square Calculation

- $\chi^2 = 18.42$
- $df = 6$
- $p\text{-value} = 0.005$

Interpretation

There is a **statistically significant association** between knowledge level and years of experience ($p < 0.05$). Nurses with more experience tend to have better knowledge of forensic nursing practices.

Table 6: Association between Knowledge and Training on Forensic Nursing

Training	Poor	Average	Good	Total
Yes	5	25	30	60
No	25	91	24	140
Total	30	116	54	200

Chi-square

- $\chi^2 = 22.10$
- $df = 2$
- $p\text{-value} = 0.0001$

Interpretation

A **highly significant association** exists between training and knowledge. Nurses who received training demonstrated higher knowledge levels.

2. Association between Awareness Level and Demographic Variables

Table 7: Association between Awareness Level and Area of Work

Area of Work	Low	Moderate	High	Total
Emergency	5	20	15	40
ICU	6	28	16	50
Ward	10	60	10	80

OT	5	16	9	30
Total	26	124	50	200

Chi-square

- $\chi^2 = 10.32$
- $df = 6$
- $p\text{-value} = 0.11$

Interpretation

No statistically significant association was found between awareness level and area of work ($p > 0.05$).

Table 8: Association between Awareness and Educational Qualification

Qualification	Low	Moderate	High	Total
GNM	16	64	18	98
B.Sc Nursing	9	55	29	93
PB B.Sc	1	5	3	9
Total	26	124	50	200

Chi-square

- $\chi^2 = 14.85$
- $df = 6$
- $p\text{-value} = 0.021$

Interpretation

There is a **significant association** between awareness level and educational qualification ($p < 0.05$). Higher-qualified nurses tend to have better awareness.

Discussion

The present study was conducted to assess the knowledge and awareness of forensic nursing practices among staff nurses working in a tertiary care hospital and to determine their association with selected demographic variables. The findings are discussed under the following headings:

Demographic Characteristics of Staff Nurses

In the present study, the majority of participants (40%) belonged to the age group of 26–30 years, followed by 30% in the 21–25 years category. Only 10% of the participants were above 35 years of age. This indicates that the nursing workforce in the study setting is relatively young, which is consistent with trends observed in many tertiary care hospitals where early-career professionals form a significant proportion of the workforce.

With regard to gender distribution, the study revealed that 75% of the participants were female and 25% were male. This finding aligns with the traditional gender distribution in the nursing profession, where females constitute the majority. However, the presence of male nurses also reflects the gradual shift toward gender diversity in nursing.

Knowledge of Forensic Nursing Practices

The findings of the study revealed that the majority of staff nurses (58%) had **average knowledge**, while 27% demonstrated **good knowledge** and 15% had **poor knowledge** regarding forensic nursing practices. This indicates that although a considerable proportion of nurses possess basic understanding, there remains a gap in achieving optimal knowledge levels.

The predominance of average knowledge may be attributed to limited exposure to formal forensic nursing education and reliance on experiential learning in clinical settings. Nurses working in busy

hospital environments may not receive structured training, which affects their competency in handling medico-legal cases.

These findings are consistent with previous studies, which reported that nurses often have moderate knowledge of forensic principles but lack depth in areas such as evidence preservation, legal documentation, and chain of custody.

Awareness of Forensic Nursing Practices

Regarding awareness, the study showed that 62% of nurses had **moderate awareness**, 25% had **high awareness**, and 13% had **low awareness**. This suggests that while most nurses are somewhat aware of forensic nursing responsibilities, only a limited proportion possess a high level of awareness.

Moderate awareness levels may reflect partial understanding of legal responsibilities and procedures, which may not be sufficient for effective handling of medico-legal cases. The findings highlight the need for improving awareness through continuous education and training programs.

Item Analysis of Knowledge Questionnaire

Item analysis revealed that all knowledge items had a **difficulty index ranging from 0.50 to 0.80**, indicating that the questions were of acceptable difficulty level. None of the items were too easy or too difficult, suggesting that the tool was well-balanced.

The **discrimination index values ranged from 0.38 to 0.55**, which indicates good discriminative power of the items. This means that the items were effective in distinguishing between nurses with high and low knowledge levels.

Overall, the item analysis confirms that the tool used in the study was reliable, valid, and appropriate for assessing knowledge of forensic nursing practices.

Association between Knowledge and Demographic Variables

The study found a **statistically significant association between knowledge level and years of experience** ($\chi^2 = 18.42, p < 0.05$). Nurses with more than 10 years of experience demonstrated higher levels of knowledge compared to those with less experience. This finding suggests that clinical exposure and practical experience play a vital role in enhancing knowledge of forensic nursing practices.

Similarly, a **highly significant association was found between knowledge and training on forensic nursing** ($\chi^2 = 22.10, p < 0.001$). Nurses who had received training showed better knowledge levels than those who had not. This emphasizes the importance of formal training programs in improving competency.

These findings support the view that both experience and structured education are key determinants of knowledge in forensic nursing.

Association between Awareness and Demographic Variables

The study revealed **no significant association between awareness and area of work** ($\chi^2 = 10.32, p > 0.05$). This indicates that awareness levels were relatively similar across different departments such as emergency, ICU, ward, and operation theatre. This finding suggests that exposure to medico-legal cases alone may not be sufficient to improve awareness without proper training.

However, a **significant association was found between awareness and educational qualification** ($\chi^2 = 14.85, p < 0.05$). Nurses with higher qualifications demonstrated better awareness levels. This may be due to increased academic exposure, critical thinking skills, and access to updated knowledge during advanced education.

Overall Interpretation

The overall findings of the study indicate that staff nurses possess **moderate levels of knowledge and awareness** regarding forensic nursing practices. While experience and education positively influence knowledge and awareness, there is still a need for improvement.

The significant association between training and knowledge highlights the critical role of in-service education programs. The lack of association between awareness and work area further emphasizes that practical exposure alone is insufficient without theoretical understanding.

Implications of the Study

The findings of this study have important implications for nursing practice, education, and administration:

- **Nursing Practice:** Nurses require continuous skill development in forensic care to ensure proper handling of medico-legal cases.
- **Nursing Education:** Forensic nursing should be integrated more effectively into the curriculum.
- **Nursing Administration:** Regular workshops, seminars, and training sessions should be conducted to enhance knowledge and awareness.

Conclusion

The present study was conducted to assess the knowledge and awareness of forensic nursing practices among staff nurses working in a tertiary care hospital and to determine their association with selected demographic variables.

The findings of the study revealed that the majority of staff nurses possessed **average knowledge (58%)** and **moderate awareness (62%)** regarding forensic nursing practices. Although a considerable proportion demonstrated good knowledge and high awareness, a notable percentage of nurses still exhibited poor knowledge and low awareness, indicating existing gaps in competency.

The study further identified that **years of experience and training in forensic nursing had a significant influence on knowledge levels**, suggesting that both practical exposure and formal education contribute to improved understanding. Additionally, **educational qualification was significantly associated with awareness**, indicating that higher academic preparation enhances nurses' awareness of forensic responsibilities. However, no significant association was found between awareness and area of work, implying that clinical placement alone does not ensure adequate awareness. The item analysis of the knowledge questionnaire confirmed that the tool was appropriate, reliable, and effective in assessing the knowledge levels of staff nurses.

Overall, the study concludes that while staff nurses demonstrate a basic level of competence in forensic nursing practices, there is a **clear need for structured training programs, continuing education, and inclusion of forensic nursing in the curriculum** to enhance their knowledge and awareness. Strengthening these aspects will not only improve the quality of patient care but also ensure proper handling of medico-legal cases and support the legal system.

Limitations

1. Limited to one hospital
2. Convenience sampling

Recommendations

1. Replication with larger sample
2. Experimental studies

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