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RESEARCH ARTICLE

A Study to Assess the Effectiveness of Peer-to-Peer Collaborative Learning Regarding Knowledge on Forensic Nursing Among Student Nurses of Arulmigu Meenakshi College of Nursing at Kanchipuram

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Abstract: The aim of the study was to assess the effectiveness of peer-to-peer collaborative learning regarding knowledge on forensic nursing among the 50 student nurses of Arulmigu Meenakshi College of Nursing, and also to find the associate between the post-test knowledge on forensic nursing with the selected demographic data. Quantitative evaluation approach and descriptive research design with non probability convenient sampling technique was used for this study. The collected data were analyzed using both descriptive and inferential statistics. The demographic data of the student nurses revealed the following distribution: majority (76%) belonged to the age group of 19 - 20 years, while 24% were in the 21 - 22 years age group. With regard to gender, most of the participants were female (78%), whereas 22% were male. In terms of religion, the majority were Hindus (86%), followed by Christians (10%) and Muslims (4%). Regarding marital status, 90% of the participants were unmarried and only 10% were married, half of the respondents (50%) lived in urban areas, 38% were from rural areas, and 12% were from semi-urban areas. We found that 98% students had studied in English medium, while only 2% studied in Tamil medium. In the pre-test, 20% (n = 10) of the participants had inadequate knowledge, 48% (n = 24) had moderately adequate knowledge, and only 32% (n = 16) demonstrated adequate knowledge. Only 6% (n = 3) of the participants remained in the inadequate category, while 32% (n = 16) showed moderately adequate knowledge, and a majority of 62% (n = 31) achieved adequate knowledge. This clearly indicates the effectiveness of the peer-to-peer collaborative learning method in enhancing knowledge among student nurses regarding forensic nursing. The mean pre-test score was 15.8 with a standard deviation of 6.32, indicating a lower and more varied level of knowledge before the intervention. Following the peer-to-peer collaborative learning, the post-test mean score increased to 19.52, with a reduced standard deviation of 5.03. The mean difference between the pre-test and post-test scores was 3.72. The calculated t-value was 8.49 with degrees of freedom (df) = 49, the critical t-value at $p < 0.05$ is $\pm$ 2.009. Since the calculated t- value (8.49) is greater than the critical t-value (2.009), the result is highly significant. The findings revealed a statistically significant association between the level of knowledge regarding forensic nursing and selected demographic variables such as age, location of residence at $p < 0.05$.

Keywords: Student nurses, Forensic nursing, Collaborative learning, Quantitative evaluation, and pre-and post-tests.

INTRODUCTION

Nursing is widely regarded as one of the most noble and selfless professions in the world, deeply rooted in compassion, empathy, and the unwavering commitment to healing and human dignity. Often associated with Florence Nightingale, the pioneer who revolutionized nursing during the Crimean War, this field continues to evolve as society, technology, and medicine progress. Nurses are at the heart of healthcare systems, and their importance stretches from the general wards of hospitals to the intricate and high - stakes environment of operating rooms. They form the largest and most crucial segment of health care workers, including registered nurses, nurse practitioners, and nursing assistants, and their roles are only growing more vital with the expansion of the global health industry. As the demand for health care services rises, the appeal of nursing as a career continues to increase, offering not just job security but also a wide range of opportunities for specialization and advancement.

The term forensic nursing was officially introduced in 1992 during the first national convention for sexual assault nurses, a pivotal moment that led to the establishment of the International Association of Forensic Nurses (IAFN). Although forensic nursing existed in practice long before its official recognition, Virginia Lynch of the United States played a foundational role in conceptualizing and advocating for the field. In 1995, the American Nursing Association officially recognized forensic nursing as a specialty, reflecting the growing awareness of its necessity and potential impact. Its origins can be traced to the roles of police surgeons or medical officers in Europe, who provided care to victims and suspects within the legal system. Over time, nurses assumed these responsibilities,

bringing their expertise in patient care to the process of evidence collection and legal documentation.

Forensic nursing encompasses a broad range of responsibilities, from examining and treating survivors of sexual assault and domestic violence to collecting and preserving forensic evidence in emergency rooms. These nurses are often the first to interact with victims of crimes, and in chaotic hospital settings, their ability to recognize and preserve critical evidence can be pivotal. In many cases, traditional medical staff might overlook vital forensic details, either due to lack of training or the urgency of care. A trained forensic nurse ensures that no such evidence is lost or tampered with, thus supporting the legal process and potentially preventing criminals from evading justice. The value of forensic nursing is especially apparent in the face of rising crime rates, where proper collection and handling of evidence can make a significant difference in investigations and court proceedings. Their presence enhances the credibility and accuracy of forensic reports and helps to ensure justice for victims. Forensic nursing includes several areas of specialization, such as Sexual Assault Nurse Examiner (SANE), emergency room forensic nursing, legal nurse consulting, death investigation, evidence collection training, and working within law enforcement teams.

Peer learning is widely used in nursing schools during laboratory sessions, clinical simulations, case discussions, and even during real clinical rotations. It helps students connect theoretical knowledge with practical applications, develop critical thinking, and improve their clinical judgment. By discussing real-life scenarios and working together to solve problems, students learn to think like nurses and prepare for the complexities of patient care. Although peer learning typically complements traditional teaching methods, its benefits are well-documented. It increases engagement, encourages reflection, and promotes leadership development. When implemented thought fully, peer-to-peer learning contributes to a positive learning culture, encourages lifelong learning, and strengthens the collaborative spirit that is central to nursing. In conclusion, nursing continues to stand as one of the most indispensable and respected professions in society.

Objectives:

The primary aim of the study is to

1) assess the pre-test knowledge on forensic nursing among student nurses of Arulmigu Meenakshi College of Nursing at Kanchipuram,
2) evaluate the effectiveness of peer to peer collaborative learning regarding knowledge on Forensic Nursing among Student Nurses of Arulmigu Meenakshi College of Nursing at Kanchipuram
3) find the association between the post-test knowledge on Forensic Nursing with the selected demographic data.

HYPOTHESIS

H1: There will be a significant difference between pre test and post test knowledge on Forensic Nursing among student nurses of Arulmigu Meenakshi College of Nursing.

H2: There will be a significant association between the pretest and posttest knowledge on forensic nursing among Student Nurses of Arulmigu Meenakshi college of nursing.

MATERIALS AND METHODS

The methodology of the research study is defined as the way the data are gathered in order to answer the question to analyze the research problem. This chapter describe the research methodology involves a systematic procedure by which investigation starts from the initial identification of the problem to its final conclusion. The present study will be conducted to assess the effectiveness of peer to peer collaborative learning regarding knowledge on forensic nursing among student nurses of Arulmigu Meenakshi College of Nursing, Enathur, Kanchipuram. The current study will be conducted based on quantitative evaluative approach. A Quasi experimental research design, one group pre-test post-test was adopted for conducting the study to assess the effectiveness of peer to peer collaborative learning regarding knowledge on forensic nursing among student nurses of Arulmigu Meenakshi College of Nursing, Enathur, Kanchipuram.

Independent variable:

The independent variable of the present study was peer to peer approach.

***Dependent variable*:**

The dependent variable of the present study was knowledge on Forensic Nursing.

Sample:

Sample refers to a fraction or portion of element in a universe drawn out deliberately in a planned representative manner for studying interested characteristics of a large group of population (Polit). The sample comprise of 50 student nurses.

Sampling techniques:

Sampling technique is the process of selecting the study sample for the researcher. For this study the researcher was adopt non-probability convenient sampling technique.

Criteria for the selection of sample:

Inclusion criteria:

Student nurses, who were willing to participate, present at the time of data collection, and able to understand English.

Exclusion criteria:
Student nurses, who were exposed to the same kind of the study before trained basic forensic science.

Selection of instruments and tools:
Section A: Demographic variables

Section B: Structured knowledge questionnaire

Section - A: Demographic data
It deals with demographic variables such as age of the student, gender, religion, marital status, location of residence, educational medium.q

SECTIONB

STRUCTUREDKNOWLEDGEQUESTIONNAIRE

The questions were selected and four options were given below each questions. The structured questionnaire consisted of 25 multiple choice questions, and each questions had four options which included correct answers. The participants were free to choose any one option for each questions. The score was calculated by dividing the total number of obtained score by the total number of maximum score and expressed in percentage. Based on the scores the knowledge was graded.

S. No	Score	Percentage	Level of knowledge
1.	0-10	<50%	Inadequate
2.	11-20	51-70%	Moderately adequate
3.	21-25	>70%	Adequate

RESULTS

The frequency and percentage distribution of demographic variables among nursing students based on demographic variables are given in Table 1. Among the 50 student nurses, the majority (76%) belonged to the age group of 19 - 20 years, while 24% were in the 21–22 years age group. None of the participants fell within the 17–18 years category. With regard to gender, most of the participants were female (78%), whereas 22%were male, and no participants identified as other gender. In terms of religion, the majority were Hindus (86%), followed by Christians (10%) and Muslims (4%), with no representation from other religions. Regarding marital status, 90% of the participants were unmarried, and only 10% were married. When considering the location of residence, half of the respondents (50%) lived in urban areas, 38% were from rural areas, and 12% were from semi-urban areas. As for the medium of education, the vast majority (98%) had studied in the English medium, while only 2% had studied in Tamil medium.

Table 1. Frequency and percentage distribution of student nurses based on demographic variables (N = 50).

S. No	Demographic variable	Frequency (f)	Percentage (%)
1.	*Age*		
	17 - 18years	0	0%
	19 - 20years	38	76%
	21 -22years	12	24%
2.	*Gender*		
	Male	11	22%
	Female	39	78%
	Other	0	0%
3.	*Religion*		
	Muslim	2	4%
	Christian	5	10%
	Hindu	43	86%
	Other	0	0%
4.	*Marital status*		
	Married	5	10%
	Unmarried	45	90%
5.	*Location of residence*		
	Urban	25	50%
	Rural	19	38%
	Semi-urban	6	12%
6.	*Educational medium*		

	English Tamil	49 1	98% 2%

Table 2. Frequency and percentage distribution of level of knowledge regarding forensic nursing among student nurses (N = 50).

S. No	Level of knowledge	Pre-test		Post-test	
		F	%	F	%
1.	Inadequate	10	20%	3	6%
2.	Moderately adequate	24	48%	16	32%
3.	Adequate	16	32%	31	62%

Table 2 presents the frequency and percentage distribution of the level of knowledge regarding forensic nursing among student nurses before and after the peer-to-peer collaborative learning intervention. In the pre-test, 20% (n=10) of the participants had inadequate knowledge, 48% (N = 24) had moderately adequate knowledge, and only 32% (N = 16) demonstrated adequate knowledge. Following the intervention, the post-test results showed a significant improvement in knowledge levels. Only 6% (n=3) of the participants remained in the inadequate category, while 32% (N = 16) showed moderately adequate knowledge, and a majority of 62% (N = 31) achieved adequate knowledge. This clearly indicates the effectiveness of the peer-to-peer collaborative learning method in enhancing knowledge among student nurses regarding forensic nursing.

Table 3. Comparison between pre-test and post-test level of knowledge on Forensic Nursing (N = 50)

	Level of knowledge (N = 100)			
Descriptive statistics	**Pre-test**	**Post-test**	**Difference (post-pre)**	***t*-value**
Mean	15.8	19.5	3.72	T = 8.49 df = 49 Significant
Standard deviation	6.32	5.03	1.29	

**P < 0.05 – significant, **P < 0.01and ***P < 0.001 - Highly significant.*

Table 3. describes a comparison between the pre-test and post- test knowledge levels regarding the forensic nursing among 50 participants. The mean pre-tests core was 15.8 with a standard deviation of 6.32, indicating a lower and more varied level of knowledge before the intervention. Following the peer to peer collaborative learning, the post-test mean score increased to 19.52, with a reduced standard deviation of 5.03. This shows an improvement in knowledge and a slight decrease in variability among participants. The mean difference between the pre-test and post-tests core was 3.72. The calculated *t*-value was 8.49 with degrees of freedom (df) = 49, the critical t-value at $p < 0.05$ is ±2.009. Since the calculated *t*-value 8.49) is greater than the critical *t*-value (2.009), the result is highly significant. Hence H1 hypothesis is accepted. This suggests that the peer to peer collaborative learning was effective in improving the participants' knowledge regarding the Forensic nursing.

Association between level of knowledge regarding forensic nursing and selected demographic variables among student nurses (N = 50).

The findings revealed a statistically significant association between the level of knowledge regarding forensic nursing and selected demographic variables such as age, location of residence at $p<0.05$. Hence, the research hypothesis H2 was partially accepted.

CONCLUSION

This chapter gives brief account of the present study along with the conclusion drawn from the findings, recommendation and implication. The focus of the present study was to assesstheeffectivenessofpeertopeercollaborativelearning regardingknowledgeon forensic nursing among student nurses of Arulmigu Meenakshi College of Nursing at Enathur, Kanchipuram. The main of this present study was to assess the effectiveness of peer to peer collaborative learning regarding knowledge on forensic nursing among B.Sc. Nursing student in Arulmigu Meenakshi College of Nursing at Enathur Kanchipuram. The excavated results support revealed that there is a significant level of knowledge regarding forensic nursing.

REFERENCES

1. Adel, E., Löfmark, A., et al. (2021). First-year nursing students' collaboration using peer learning

during clinical practice education: An observational study. Nurse Education in Practice, 55, 103 169. https://doi.org/10.1016/j.nepr.2021.103169
2. Boersma, R. R. (2008). Looking closer: Forensic nursing. Nursing Management, 39 (4), 31. https://doi.org/10.1097/01.NUMA.0000318062.56339.21
3. Cerit, B., & Caliskan, M. A. (2021). The effect of training on the knowledge level of emergency nurses on forensic nursing (collecting, keeping and transferring biological evidences) in forensic cases. Journal of Emergency Nursing, 2, 161 - 165. https://doi.org/10.1016/j.jen.2008.02.003
4. Chander, P., Mathew, B., et. al (2025). Effectiveness of structured health education program on knowledge regarding forensic nursing among B.Sc. (Hons.) Nursing third- and fourth-year students of the College of Nursing, AIIMS Raipur. Journal of Family Medicine and Primary Care, 14(1), 317 - 321. https://doi.org/10.4103/jfmpc.jfmpc_1157_23
5. Feizi Nazarloo, L.,et.al (2017). Emergency department nurses' knowledge about forensic nursing. Journal of Holistic Nursing and Midwifery, 27, 27 - 36.
6. Healey, D. (2022). Bolshevik sexual forensics: Diagnosing disorder in the clinic and courtroom, 1917 - 1939. Cornell University Press.
7. Jagtap, N., & Patekar, M. B. (2020). Study on pattern of medico-legal cases in casualty of government hospital Kolhapur Maharashtra. IP International Journal of Forensic Medicine and Toxicological Sciences, 6, 75 - 77.
8. Kent-Wilkinson, A. (2011). Forensic nursing educational development: An integrated review of the literature. Journal of Psychiatric and Mental Health Nursing, 18(3), 236 - 246. https://doi.org/10.1111/j.1365-2850.2010.01667.x
9. Lee, H.C., & Pagliaro, E.M. (2013). Forensic evidence and crime scene investigation. Journal of Forensic Investigation, 1, 5.
10. Lim, L. T., Chen, W., Lew, T.W.K., Tan, J.M.S., Chang, S.K., Lee, D.Z.W., et al. (2022). Medico-legal dispute resolution: Experience of a tertiary-care hospital in Singapore. PLoS One, 17, e0276124. https://doi.org/10.1371/journal.pone.0276124
11. Lynch, V.A. (2006). Forensic nursing. Mos by St Louis, MO: Elsevier.
12. MacKinnon, K., Marcellus, L., Rivers, J., Gordon, C., Ryan, M., & Butcher, D. (2015). Student and educator experiences of maternal-child simulation-based learning: A systematic review of qualitative evidence protocol. JBI Database of Systematic Reviews and Implementation Reports, 13(1), 14 - 26. https://doi.org/10.11124/jbisrir-2015-1694
13. Nakayama, N., Ejiri, H., Arakawa, N., & Makino, T. (2023). Role of peer learning and self-efficacy in parasympathetic activity during the simulation learning process in nursing students. Nursing Open, 10(2), 552 - 559. https://doi.org/10.1002/nop2.1321
14. Pålsson, Y., Engström, M., Swenne, C. L., & Mårtensson, G. (2022). A peer learning intervention in workplace introduction - managers' and new graduates' perspectives. BMC Nursing, 21(1), 12. https://doi.org/10.1186/s12912-021-00791-0
15. Secomb, J. (2008). A systematic review of peer teaching and learning in clinical education. Journal of Clinical Nursing, 17(6), 703 - 716. https://doi.org/10.1111/j.1365- 2702.2007.01954.x
16. Topcu, E.T., & Kazan, E.E. (2018). The opinions of senior nursing students about forensic nursing. Egyptian Journal of Forensic Sciences, 8, 1 - 7.
17. Vande Motel, T.F., Needham, J., & Henderson, S. (2021). Facilitating learning on clinical placement using near-peer supervision: A mixed methods study. Nurse Education Today, 102, 104921. https://doi.org/10.1016/j.nedt.2021.104921
18. Vosoughi, M. N., et. al. (2022). An introduction to the TPSN model: a comprehensive approach to reducing the theory-practice gap in nursing. BMC Nursing, 21(1), 261. https://doi.org/10.1186/s12912-022-01030-w
19. Amar, A. F., &Sekula, L. K. (Eds.). (2015). A Practical Guide to Forensic Nursing: Incorporating Forensic Principles into Nursing Practice. Indianapolis, IN: Sigma Theta Tau International.
20. Andersen, T., & Watkins, K. (2018). The value of peer mentorship as an educational strategy in nursing. Journal of Nursing Education, 57(4), 217 - 224. https://doi.org/10.3928/01484834-20180322-05
21. Armitage, G., & Rowe, C. (2020). Peer learning in nursing education: A critical review of the literature. Nurse Education Today, 92, 104515. https://doi.org/10.1016/j.nedt.2020.104515
22. Babenko-Mould, Y., & Ferguson, K. (2017). Engaging students in peer learning: Perceptions and outcomes in a collaborative nursing education model. Journal of Nursing Education, 56(5), 287–294. https://doi.org/10.3928/01484834-20170421-08
23. Bailey, C., &Miters, M. (2019). The impact of inter professional education on collaborative practice in nursing. Nurse Education Today, 80, 15–20. https://doi.org/10.1016/j.nedt.2019.05.020
24. Callen, B. L., & Smith, C. M. (2020). Enhancing nursing students' knowledge of forensic nursing through case-based learning. Journal of Nursing Education, 59(3), 134–140. https://doi.org/10.3928/01484834-20200220-03
25. Doolen, J., Brewer, T. L., & Spiering, M. (2016). Implementation of peer learning in nursing education: Benefits and challenges. Journal of Professional Nursing, 32(2), 92–99. https://doi.org/10.1016/j.profnurs.2015.10.008