European Economic Letters
ISSN 2323-5233
Vol 16, Issue 2 (2026)
http://eelet.org.uk

"Knowledge and Skill Enhancement through BLS and ACLS Education among Nursing Officers"

Mr. Pawan Kumar,
Ph.D. Scholar, Nirwan University, School of Nursing Sciences Nirwan University, Jaipur (Raj.)

Dr. Rohit Avasthi,
Guide, School of Nursing Sciences Nirwan University, Jaipur (Raj.)

Corresponding author
Mr. Pawan Kumar Agarwal, Ph.D. Scholar, Nirwan University, School of Nursing Sciences Nirwan University, Jaipur (Raj.)

Abstract

Background: Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) are critical emergency care skills that significantly influence patient survival outcomes. Continuous education and training enhance nurses' competency and confidence in managing cardiac emergencies.

Methods: A quasi-experimental one-group pretest–posttest design was adopted. The study was conducted among 60 nursing officers at RUHS Hospital Jaipur,, Rajasthan. A structured questionnaire (25 items) assessed knowledge and a standardized checklist (20 items) assessed skill performance in simulated emergency settings. The intervention consisted of a two-day educational program including lectures, demonstrations, and return demonstrations.

Results: The mean pretest knowledge score was 12.43 ± 2.75, which increased to 20.18 ± 2.14 post-intervention. The mean skill score improved from 8.96 ± 3.11 to 17.62 ± 2.03 after training. A significant difference was observed between pretest and posttest scores for both knowledge and skill ($p < 0.001$). No significant association was found between pretest knowledge and demographic variables such as age, gender, or years of experience.

Conclusion: The educational intervention was highly effective in enhancing both knowledge and skill regarding BLS and ACLS among nursing officers. Regular training and periodic refresher courses are recommended to maintain competence and confidence in handling cardiac emergencies.

Keywords: Basic Life Support, Advanced Cardiac Life Support, Nursing Officers, Knowledge, Skill, Educational Intervention, Training Effectiveness.

Introduction

Sudden cardiac arrest remains one of the leading causes of mortality worldwide. Effective and timely cardiopulmonary resuscitation (CPR), as emphasized in BLS and ACLS protocols, plays a crucial role in improving survival rates[1]. Nursing officers, being frontline healthcare providers, must possess up-to-date knowledge and proficient skills in emergency cardiac management.

Despite the importance, studies reveal that many nurses lack adequate training or confidence in performing BLS and ACLS[2]. Structured educational programs bridge this gap by reinforcing theoretical understanding and practical competence. This study was undertaken to evaluate the effectiveness of such an educational intervention among nursing officers in Jaipur.

Objectives

1. To assess the pretest and posttest knowledge of nursing officers regarding BLS and ACLS.
2. To assess the pretest and posttest skill performance regarding BLS and ACLS.
3. To evaluate the effectiveness of the educational intervention.
4. To find the association between pretest knowledge and selected demographic variables.

Hypotheses

H_1: There will be a significant difference between the pretest and posttest knowledge and skill scores of nursing officers regarding BLS and ACLS after the educational intervention.

H_2: There will be a significant association between the pretest knowledge scores of nursing officers and their selected demographic variables.

METHODOLOGY

Research Design: Quasi-experimental one-group pretest–posttest design.
Setting: RUHS Hospital Jaipur, Rajasthan.
Sample Size: 60 nursing officers selected through convenient sampling.

Tools Used:

- **Section A:** Demographic data (age, gender, qualification, years of experience, prior BLS/ACLS training).
- **Section B:** Structured Knowledge Questionnaire (25 multiple-choice questions; total score 25).
- **Section C:** Skill Assessment Checklist (20 steps in simulated CPR scenario; total score 20).

Intervention: A two-day structured teaching and demonstration program based on AHA 2020 guidelines[1], including lectures, video demonstrations, and return demonstrations on mannequins.

Consent

Participants were invited via staff email, posters in wards, and department meetings. Written informed consent was obtained. Participation was voluntary and non-participation would not affect employment.

Ethical considerations- Ethical approval was obtained from the Institutional Ethics Committee of RUHS Hospital Jaipur, Rajasthan.

Data Analysis: Descriptive statistics and inferential statistics were used.

RESULTS

Table 1. Demographic Profile of Nursing Officers (n = 60)

S.N.	Variable	Frequency (f)	Percentage (%)
1	**Age (years)**		
	21–30	28	46.7
	31–40	20	33.3
	>40	12	20
2	**Gender**		
	Male	18	30
	Female	42	70

3	**Qualification**		
	GNM	24	40
	B.Sc. Nursing	28	46.7
	Post Basic B.Sc.	8	13.3
4	**Experience (years)**		
	<5	16	26.7
	5–10	26	43.3
	>10	18	30
5	**Previous BLS/ACLS training**		
	Yes	20	33.3
	No	40	66.7

Table -1. show that the majority of the nursing officers (46.7%) belonged to the 21–30 years age group, indicating a predominantly younger workforce. Most participants were female (70%), reflecting the general gender distribution in the nursing profession. Regarding educational qualification, 46.7% of the participants were B.Sc. Nursing graduates, while 40% had completed GNM, and 13.3% had Post Basic B.Sc. Nursing qualifications. In terms of professional experience, 43.3% had 5–10 years of work experience, followed by 30% with more than 10 years and 26.7% with less than 5 years of experience. Concerning prior exposure, only 33.3% of nursing officers had received previous BLS/ACLS training, whereas 66.7% had no prior training, indicating a substantial need for structured educational interventions.

Table 2. Comparison of Pretest and Posttest Knowledge Scores (n = 60)

Test	Mean	SD	Mean Difference	t-value
Pretest	12.43	2.75	7.75	16.92
Posttest	20.18	2.14		

*Significant at $p < 0.05$

Table 2. shows the mean pretest score of 12.43±2.75) indicates that before the intervention, nursing officers had moderate knowledge about BLS and ACLS. After the educational program, the mean posttest score increased significantly to 20.18 ±2.14, showing substantial improvement in knowledge levels. The mean difference of 7.75 reflects the net gain in knowledge after receiving structured teaching and demonstration. The calculated t-value of 16.92 exceeds the critical value at $p < 0.001$, which confirms that the increase in knowledge is statistically highly significant.

Table 3. Comparison of Pretest and Posttest Skill Scores (n = 60)

Test	Mean	SD	Mean Difference	t-value
Pretest	8.96	3.11	8.66	19.23
Posttest	17.62	2.03		

*Significant at $p < 0.05$

Table 3. Shows the mean pretest skill score of 8.96±3.11 indicates that prior to the intervention, most nursing officers had inadequate or limited practical skills in performing BLS and ACLS procedures. After receiving the structured teaching and hands-on training, the mean posttest skill score improved markedly to 17.62±2.03. The mean difference of 8.66 reflects a significant gain in practical performance skills following the educational program. The calculated t-value 19.23 at $p < 0.001$ indicates that this improvement is statistically highly significant, confirming the positive impact of the intervention.

The results show that none of the demographic variables showed a statistically significant association with pretest knowledge. Since all p-values are greater than 0.05, the differences observed are not statistically significant.

Discussion

The findings demonstrate a significant improvement in both knowledge and skill scores following the BLS and ACLS educational program. The results are consistent with previous studies such as those by Sankar et al.[2] and Kumar & Devi[3], which reported enhanced resuscitation competency among nurses after structured training sessions. There is no significant association between knowledge and demographic variables suggests that training benefits participants emphasizing the universal need for regular skill reinforcement.

Conclusion

The structured educational program effectively improved nursing officers' knowledge and practical competency in BLS and ACLS. Continuous professional education should be institutionalized, ensuring all nursing staff remains confident and prepared for emergency situations.

References

1. American Heart Association (AHA). *Guidelines for CPR and Emergency Cardiovascular Care. Circulation.* 2020.
2. Sankar M, et al. *Effectiveness of BLS Training Among Nurses. Indian Journal of Critical Care Nursing.* 202
3. Kumar H, Devi S. *Impact of ACLS Education on Clinical Competence of Nursing Officers. Nursing Journal of India.* 2024
4. Abbas A, Suwalka D, Kamal M. A study to assess the effectiveness of awareness programme on knowledge. GFNPSS Int J Multidiscip Res. 2025;6(6):2994–2997. Available from: https://www.researchgate.net/publication/394848079_GFNPSS-IJMR-6-6-25-11-A-Study-to-Assess-the-Effectiveness-of-Awareness-Programme-On-Knowledge#fullTextFileContent
5. Alotaibi O, et al. *Nurses' Knowledge and Skills in CPR: A Systematic Review. BMC Nursing.* 2022.
6. Sharma P, et al. *Effect of Structured Teaching on BLS Knowledge Among Healthcare Workers. International Journal of Nursing Education.* 2023.