



Research Paper

**A STUDY OF KNOWLEDGE AND PRACTICES OF NURSES REGARDING
CARDIOPULMONARY RESUSCITATION**

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Abstract

Purpose: To study the knowledge and practices of CPR among nurses and the factors associated with these levels of knowledge and practices.

Methods: The cross-sectional, observational study was conducted among nurses working in District Headquarter Hospital, Jhelum, from February 2020 to April 2020. After obtaining ethical approval and informed consent, randomly selected participants were asked to fill in a questionnaire that assessed the respondents' knowledge and practices of cardiopulmonary resuscitation, based upon the American Heart Association's guidelines for CPR. **Results:** Nurses who scored more than 75% on the questions about knowledge and practice were considered to have "excellent" knowledge and practice respectively. Similarly, those who scored 60-74%, 46-59% and less than 45% were considered as having "good", "fair" and "poor" knowledge and practices, respectively. Data obtained was entered into SPSS version 26 and analyzed for results. Out of 110 respondents, 76 (69.1%), 11 (10%), five (4.5%) and 18 (7.3%) nurses showed excellent, good, fair and poor knowledge of CPR respectively while 62 (56.3%), 13 (11.8%), 18 (16.4%) and 17 (15.5%) nurses scored excellent, good, fair and poor practices of cardiopulmonary resuscitation, respectively. 98.7% of nurses showing excellent knowledge and 96.8% of nurses exhibiting excellent practices of CPR had completed full course Basic Life Support training previously. **Conclusion:** This study found out that there is a dire need of regular in-service CPR training programmes and workshop for nurses in order to increase the quality of their knowledge and practice of CPR, therefore ensuring provision of optimal healthcare for the masses.

Key words: *Cardiopulmonary resuscitation, nurses, basic life support, emergency medicine, lifesaving procedures.*

INTRODUCTION

Cardiopulmonary resuscitation is an indispensable procedure for reversing life-threatening cardiac arrest, not only in the clinical setting but also in the non-clinical setting [1]. It is a skilled technique that must be learned theoretically as well as practically, and all healthcare workers must be proficient in it [2]. In the absence of effective cardiopulmonary resuscitation, reversible cardiac arrest can almost always turn out to be fatal [3]. On the other hand, appropriate and well-timed CPR can effectively prevent mortality as well as morbidity that might result from hypoxic injury to vital organs [4].

Therefore, American Heart Association strongly recommends that all healthcare workers and medical graduates must have regular resuscitation training to develop and maintain their ability to perform effective CPR [5]. Furthermore, such trainings are also necessary on a regular basis in order to ensure up-gradation of the knowledge of CPR in line with the latest changes in the relevant guidelines. Since nurses are an important part of the healthcare team, it's necessary for them to have updated knowledge and regular training regarding cardiopulmonary resuscitation [6].

Basic Life Support is a comprehensive medical emergency training programme; cardiopulmonary resuscitation is one of the main components of Basic Life Support. People who undergo BLS training on a regular basis have been shown to have better knowledge and practices of CPR than their colleagues who lack BLS certification [7].

This study was carried out in District Headquarter Hospital of Jhelum, Pakistan, which, being the only secondary care hospital in the district, caters to the healthcare needs of a population of more than 1.2 million and receives, on average, more than 700 patients in its emergency department on a daily basis [8]. With such a massive inflow of patients in the emergency department, having adequate knowledge of CPR for the nurses of this

hospital is imperative for the provision of quality medical care to the population. However, to-date, there has been no scientific study to assess the level of knowledge and practice of the healthcare workers of this hospital regarding cardio-pulmonary resuscitation. This study was undertaken to carry out this much-needed assessment of knowledge and practices of the nurse of District Headquarter Jhelum, to not only aid in policy-making on the subject of institution-based CPR trainings at a local level but also at a provincial and national level.

MATERIALS AND METHODS:

Study Design:

This study was a cross-sectional, observational study in which quantitative analysis of the knowledge and practices of nurses regarding cardio-pulmonary resuscitation was carried out from February 2020 to April 2020. Approval for the study was taken from the Manager Nursing Services of the said hospital.

Sampling:

The participants of this study were nurses working in different departments of District Head Quarter Hospital, Jhelum, Punjab who were selected by employing the random sampling technique.

Instrument:

After informed consent and assuring confidentiality of the respondents, the participants were required to fill in a questionnaire that tested their knowledge and practices of cardiopulmonary resuscitation based on the guidelines provided by American Heart Association [9]. Depending on the responses of the participants, their level of knowledge and practices were categorized into 3 subgroups. Research subjects who scored more than 75% correct answers were considered to have “excellent” knowledge and practice, those who scored 60-74% correct answers were considered to have

“good” knowledge and practice, those who scored 46-59% were considered to have “fair” knowledge and practices while the respondents who scored less than 45% were considered as to have “poor” knowledge and practices. The questionnaire also included questions regarding the CPR-related workshops and certifications, such as Basic Life Support. Other questions were about the qualifications of the respondents and the time duration of their clinical experience. The data was then entered into SPSS version 26 and statistically analyzed for the level of knowledge and practices of the respondents regarding cardiopulmonary resuscitation.

RESULTS:

A total of 110 nurses participated in this study.

Demographics:

As per the demographic data, out of these 110 participants, 8 (14.6%) were male and 102 (92.7%) were female. The youngest respondent was 18 years old while the oldest was 38 years old. The highest level of qualification of 89.1% of the participants was Diploma in Nursing, 5.5% of the participants held the degree of Bachelors of Science in Nursing, while 3% had completed the degree of Master of Science in Nursing. Only 74.5% of the participants had completed the course on Basic Life Support, while 24.5% had not. On the whole, 72% of the participants had less than 5 years' experience of working in a clinical setting, 18.5% had 6-10 years of experience, while 9.5% had 11-15 years' experience.

Knowledge and practices:

The knowledge of participants was better than their practice of CPR: 76 (69.1%) nurses had excellent knowledge of CPR, while 62 (56.3%) had excellent practice; 11 (10%) nurses had good knowledge and 13 (11.8%) had good practice; five (4.5%) nurses had fair knowledge while 18 (16.4%) had fair score in the practice section of the

questionnaire; 18 respondents (16.4%) scored poor in the knowledge section and 17 (15.5%) showed poor practice of cardiopulmonary resuscitation.

Co-Relation of knowledge and practices with BLS training:

Cross-tabulation of Basic Life Support training with CPR knowledge and practice showed that nurses who were certified in Basic Life Support training had better knowledge and practice of CPR than their counterparts who had not received Basic Life Support training. As shown in Table 1, out of 76 nurses who showed excellent knowledge of CPR, 98.7% were BLS certified, and 1.3% were not; from among 11 nurses who had good knowledge of CPR, 54.4% were BLS certified and 45.5% were not; out of the five nurses who exhibited fair knowledge of CPR, only 20% were BLS certified and 80% were not BLS certified, while all 18 respondents who scored poor in the knowledge section of the questionnaire lacked BLS certification. So, BLS training had a significant association with better knowledge of CPR among nurses ($p=0.010$).

Similar co-relation was present between the quality of practice of CPR and BLS certification as shown in Table 2. From among 62 nurses who had excellent practice of CPR, 93.5 % had BLS certification, while 6.5% did not; from among 13 nurses who showed good practice of CPR 61.5% were BLS certified and 38.5% were not; out of the eight nurses who exhibited fair practice of CPR, half (50%) were BLS certified while half were not BLS certified, while 94.1% of the 17 respondents who exhibited poor practice of CPR lacked BLS certification, and only 1 (5.9%) respondent with poor practice was BLS certified. So, BLS training had a significant association with better practice of CPR among nurses ($p=0.010$).

Table 1: Cross-tabulation between BLS Certification and level of Knowledge

		Number of nurses	Level of Knowledge			
			Excellent	Good	Fair	Poor
BLS Certification	Yes	82 74.5%	75 98.7%	6 54.5%	1 20%	0 0.0%
	No	28 25.5%	1 1.3%	5 45.5%	4 80%	18 100%
Total		110 100%	76 100%	11 100%	5 100%	18 100%

Table 2: Cross-tabulation between BLS Certification and level of Practice

		Number of nurses	Level of Practice			
			Excellent	Good	Fair	Poor
BLS Certification	Yes	82 74.5%	60 96.8%	11 84.6%	9 50%	2 11.8%
	No	28 25.5%	2 3.2%	2 15.4%	9 50%	15 88.2%
Total		110 100%	62 100%	13 100%	18 100%	17 100%

DISCUSSION:

Cardiopulmonary resuscitation is an important skill in the modern healthcare system and must be mastered by all healthcare workers. Although it's most frequently employed in the clinical setting, particularly the emergency departments and critical care settings, it has proved to be life-saving in non-clinical settings as well [10]. Therefore, its importance and value in assuring the provision of quality healthcare to the people cannot be over-emphasised [11]. Different institutions and healthcare set ups have conducted studies to gauge the quality and knowledge of their healthcare teams so that they can develop and implement much-needed policies regarding in-service training sessions on CPR, in particular, and Basic Life Support, in general [12][7]. This study had a similar rationale in the setting of District Headquarter Hospital, Jhelum.

Moreover, the CPR guidelines have been subject to continuous evolution over the past few decades due to rigorous researches and studies being conducted on different aspects of cardiopulmonary resuscitation. These changes in the guidelines are meant to make the process of CPR more effective and efficient than before [13]. Thus, it is imperative for healthcare workers to undergo BLS and CPR trainings repeatedly in order to ensure that their knowledge and practice are up-to-date as per the latest guidelines [14].

This study used the latest standard guidelines for cardiopulmonary resuscitation by American Heart Association to develop the questionnaire to assess the knowledge and practice of the respondents regarding CPR [1]. However, following this study, it is highly recommended that, in line with the process of development of guidelines, knowledge and awareness questionnaires must also be standardized to avoid bias due to differences in questionnaires in different studies.

Although this study shows strong association between BLS certification and improvement in the knowledge and practice of CPR, it does not take into account the number of BLS trainings that the respondents had. This study also does not look into the time period that has elapsed since the last BLS training that the respondents underwent. Thorough study of these variables might give scientific evidence for how often BLS training must be repeated for in-service healthcare workers in order to ensure provision of optimal healthcare for all.

CONCLUSION:

This study indicates that there is a dire need of regular CPR training programmes and workshop for nurses in order to ensure provision of optimal healthcare for the masses.

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