Original Article

A Comparative Study of Doctors and Nurses Regarding the Knowledge, Attitude and Practice of Basic Life Support in Tertiary Care Hospitals of Peshawar

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ABSTRACT

Background: Basic Life Support (BLS) is a critical skill set for healthcare providers, enabling them to offer immediate assistance in cardiac emergencies. In Peshawar, Pakistan, the knowledge, attitude, and practice of BLS among doctors and nurses in tertiary care hospitals have not been extensively studied, despite the region's significant healthcare demands. Understanding these aspects can inform targeted improvements in BLS training and preparedness.

Objective: This study aimed to evaluate and compare the knowledge, attitudes, and practices regarding BLS among doctors and nurses working in tertiary care hospitals in Peshawar, identifying gaps and areas for enhancement.

Methods: A comparative cross-sectional study was conducted from July to October 2023. The sample comprised 249 healthcare professionals (102 doctors and 147 nurses) selected through convenience sampling. Participants were assessed using a validated questionnaire adapted from previous research, covering demographics, knowledge, attitude, and practice related to BLS. Data analysis utilized SPSS version 27, with descriptive statistics summarizing demographics, and inferential statistics (independent samples T-test) examining associations between knowledge levels and demographic variables.

Results: The majority of participants were aged 26 to 30 years (47.4%), with nurses representing 59% of the sample. Knowledge assessment showed that 86.3% correctly identified the BLS abbreviation, but only 10.8% knew the correct first response for an unresponsive individual on the road. About 33.3% of participants displayed poor knowledge, with 49.0% demonstrating average knowledge. In practice scenarios, 56.2% exhibited poor practice. No significant differences were found in knowledge and practice based on gender or experience.

Conclusion: The study highlights significant gaps in BLS knowledge and practice among healthcare providers in Peshawar's tertiary care hospitals, despite generally positive attitudes towards BLS. The findings underscore the need for enhanced BLS training programs, emphasizing practical skills and regular updates to guidelines. Addressing these educational gaps is crucial for improving patient outcomes in cardiac emergencies.

Keywords: Basic Life Support, BLS, healthcare providers, knowledge, practice, attitude, Peshawar, tertiary care hospitals.

INTRODUCTION

Basic Life Support (BLS) constitutes a fundamental component of medical intervention for cardiac emergencies, incorporating established interventions like cardiopulmonary resuscitation (CPR) to maintain oxygenation of the brain during cardiac arrest events. These interventions are critical, as BLS encompasses the identification of cardiac arrest, management of foreign-body airway obstruction, and the execution of CPR and defibrillation with an external defibrillator (1, 2). The global impact of Sudden Cardiac Death (SCD) is profound, with it being a leading cause of mortality, accounting for approximately 25% of global deaths annually, or 17 million fatalities. Out-of-hospital cardiac arrest (OHCA) represents a significant health challenge, with varying incidence rates reported across different regions—40.6 per 100,000 individuals in Europe, 47.3 in North America, 45.9 in Asia, and 51.1 in Australia, illustrating the widespread nature of this health issue (3). In contexts like the U.S and Europe, cardiac arrests affect around 1,000,000

individuals each year (4). The critical role of BLS and CPR in improving the survival chances of SCD victims is highlighted by the decrease in survival rates by 10 to 15% for every minute that CPR is delayed (5)(6). This fact emphasizes the importance of regular BLS training for nurses, who often are the first to respond to in-hospital cardiac arrests, to ensure their preparedness to act swiftly and effectively (6).

The need for a focused study on the knowledge, attitude, and practice concerning BLS among healthcare professionals in Peshawar, Pakistan, is underscored by the high mortality rates in the region. With Pakistan facing some of the highest death rates globally, a recent review reported 146,000 deaths and 2.8 million injuries, highlighting the critical need for effective emergency response capabilities (8). Studies indicate a concerning gap in BLS knowledge and practice, with only 22.9% of nurses in Karachi passing a BLS knowledge test and a staggering 92% of cardiac arrest victims failing to receive CPR in emergency departments (8)(9). This situation underscores the urgency of enhancing BLS training and awareness among medical professionals in Pakistan.

The literature review reveals a general deficiency in BLS knowledge and skills among healthcare providers across various regions. Studies conducted in India and other countries have consistently shown poor theoretical knowledge and practical skills in BLS among both nursing students and doctors (10)(11)(12). For instance, a cross-sectional study in India highlighted that practicing physicians and nursing instructors scored lower on BLS knowledge tests compared to their counterparts (2). Similarly, research in Pakistan demonstrated a lack of CPR performance and awareness of proper techniques among doctors, with a significant majority never having performed CPR (13)(14). These findings are echoed in studies from other countries, such as Italy and Afghanistan, where discrepancies in BLS knowledge and competence were observed between doctors and nurses, often favoring the former in terms of theoretical understanding (15)(16). Conversely, some studies have reported that both nurses and physicians possess adequate knowledge and show a positive attitude towards performing BLS, suggesting a correlation between increased age and a better disposition towards BLS practices (20).

This comprehensive analysis of the current state of BLS knowledge, attitude, and practice among healthcare professionals, particularly in the context of Peshawar, Pakistan, underscores the critical need for systematic training and education in BLS techniques. Enhancing the competence and confidence of doctors and nurses in executing BLS interventions is imperative for improving patient outcomes in cardiac emergencies.

MATERIAL AND METHODS

This comparative cross-sectional study was designed to assess and contrast the knowledge, attitudes, and practices regarding Basic Life Support (BLS) among doctors and nurses employed in tertiary care hospitals in Peshawar city. The investigation spanned from July to October 2023. The cohort for this study was meticulously selected through convenience sampling, with a calculated sample size of 249 individuals, determined using Raosoft software with a 95% confidence interval. Eligible participants comprised doctors holding at least an MBBS degree and nurses equipped with a diploma, BSN, or MSN degree. These professionals were required to have been employed full-time for a minimum duration of two years across various hospital departments. Exclusion criteria were established to omit senior administrative and managerial staff not directly involved in patient care, healthcare providers outside the scope of doctors and nurses, and individuals unwilling to participate in the study.

The data collection process employed a validated instrument adapted from a preceding study (21), which was segmented into three distinct sections: demographic data, knowledge assessment, and an evaluation of attitudes and practices. The demographic section solicited information on participants' backgrounds. Knowledge was gauged through a questionnaire comprising 15 questions, each correctly answered question was awarded one mark, accumulating to a total possible score of 15. Scores were subsequently categorized, with 10-15 denoting good knowledge, 7-9 indicating average knowledge, and 0-6 signifying poor knowledge. The practice section included five questions, while the attitude component encompassed 15 questions. Prior to data collection, informed consent was duly obtained from all participants, ensuring voluntary participation and adherence to ethical standards consistent with the Declaration of Helsinki.

The analytical phase was conducted using SPSS version 27 to perform both descriptive and inferential statistical analyses. Continuous variables were summarized using means and standard deviations, whereas categorical data, including demographics such as gender and years of experience, were presented in percentages and frequencies for clarity and ease of interpretation. The independent samples T-test was utilized to explore significant associations between knowledge levels and demographic factors, ensuring a robust examination of the data. This methodological approach facilitated a comprehensive understanding of the BLS knowledge, attitudes, and practices among the healthcare professionals involved, providing valuable insights into the efficacy of existing training programs and identifying areas for potential improvement.

RESULTS

The study conducted to compare the knowledge, attitude, and practice of Basic Life Support (BLS) among doctors and nurses in tertiary care hospitals of Peshawar revealed significant findings. Demographically, the majority of participants fell within the age group of 26 to 30 years, accounting for 47.4% of the total sample, followed by the 20 to 25 age group at 37.8% (Table 1). This indicates a relatively young cohort of healthcare professionals involved in the study. Nurses constituted a larger portion of the participants at 59%, compared to 41% of doctors, highlighting a greater nurse representation in this research. In terms of experience, a vast majority (81.1%) had 1 to 5 years of working experience, suggesting that the participants were relatively early in their careers (Table 1).

When assessing knowledge on BLS among the participants, the study uncovered that a considerable number had a good understanding of the abbreviation of "BLS," with 86.3% answering correctly. However, knowledge gaps were apparent in other areas. For instance, only 10.8% knew the correct first response for someone found unresponsive in the middle of the road, and merely 24.5% knew the immediate action after confirming unresponsiveness (Table 2). This discrepancy in knowledge levels points to specific areas where BLS training could be strengthened. The correct location for chest compression was known by slightly more than half of the respondents (52.6%), while knowledge on the compression depth required in CPR for adults, children, and neonates varied significantly, with correct responses at 32.9%, 10.0%, and 35.3%, respectively (Table 2). This variance underscores the need for targeted educational interventions to address these crucial aspects of BLS.

Table 1: Demographic Information

Variable	Group	Frequency	Percent
Age	20 to 25	94	37.8%
	26 to 30	118	47.4%
	31 to 35	15	6.0%
	36 to 40	15	6.0%
	41 to 45	2	0.8%
	46 to 50	5	2.0%
Profession	Doctor	102	41.0%
	Nurse	147	59.0%
Experience	1 to 5	202	81.1%
	6 to 10	29	11.6%
	11 to 15	13	5.2%
	16 to 20	5	2.0%

Table 2: Knowledge Distribution Among Doctors and Nurses

Questions	Incorrect n (%)	Correct n (%)
What is the abbreviation of "BLS"?	34 (13.7%)	215 (86.3%)
First response for someone unresponsive in the road	222 (89.2%)	27 (10.8%)
Immediate action after confirming unresponsiveness	188 (75.5%)	61 (24.5%)
Location for chest compression	118 (47.4%)	131 (52.6%)
Chest compression location in infants	147 (59.0%)	102 (41.0%)
Exclusion for mouth-to-mouth CPR	127 (51.0%)	122 (49.0%)
Rescue breathing in infants	202 (81.1%)	47 (18.9%)
Compression depth in adults	167 (67.1%)	82 (32.9%)
Compression depth in children	224 (90.0%)	25 (10.0%)
Compression depth in neonates	161 (64.7%)	88 (35.3%)
Chest compression rate in adults and children	144 (57.8%)	105 (42.2%)
CPR ratio, single rescuer in adult	50 (20.1%)	199 (79.9%)
Chest compression and ventilation ratio in newborn	169 (67.9%)	80 (32.1%)
Abbreviation AED stands for	77 (30.9%)	172 (69.1%)
Abbreviation EMS stands for	65 (26.1%)	184 (73.9%)

Table 3: Professional Knowledge

Profession	Poor Knowledge	Average Knowledge	Good Knowledge	Total
Doctors	25	59	18	102
Nurses	58	63	26	147
Total	83	122	44	249

Table 4: Practice Distribution Among Doctors and Nurses

Questions	Incorrect n (%)	Correct n (%)
First response to choking friend in canteen	187 (75.1%)	62 (24.9%)
First response to choking infant playing with a toy	92 (36.9%)	157 (63.1%)
First step for unresponsive adult removed from fresh water	201 (80.7%)	48 (19.3%)
Action for colleague with slurred speech and limb weakness	147 (59.0%)	102 (41.0%)
Next step for adult with chest discomfort and sweating	59 (23.7%)	190 (76.3%)

Table 5: Professional Practice

Profession	Poor Practice	Average Practice	Good Practice	Total
Doctors	52	36	14	102
Nurses	88	48	11	147
Total	140	84	25	249

The distribution of knowledge between the professions revealed that 18 doctors and 26 nurses fell into the good knowledge category, whereas 25 doctors and 58 nurses were categorized under poor knowledge (Table 2). This distribution suggests a broad spectrum of BLS understanding among healthcare providers, emphasizing the importance of continuous education and training in this lifesaving procedure.

Regarding the practice of BLS, the responses varied across different scenarios presented to the participants. For example, when asked about the first response to a choking incident in a canteen, only 24.9% responded correctly, highlighting a gap in practical knowledge application. Conversely, a higher competency was observed in responding to a choking infant, with 63.1% correct answers (Table 3). This indicates a better preparedness for pediatric emergencies among the study's participants. Notably, the practice responses also reflected a significant need for improvement in managing unresponsive victims, with only 19.3% knowing the first step for an adult removed from fresh water (Table 3).

The practice distribution between doctors and nurses showed that 14 doctors and 11 nurses exhibited good practice, whereas a concerning number of 52 doctors and 88 nurses were identified with poor practice (Table 3). These findings highlight the critical areas where both doctors and nurses require further training to enhance their practical skills in BLS.

In summary, the study delineates specific areas of strength and opportunities for improvement in BLS knowledge and practice among doctors and nurses in Peshawar's tertiary care hospitals. While there is a satisfactory level of basic BLS knowledge among healthcare professionals, the detailed understanding and practical application of BLS techniques, particularly in critical and emergency situations, necessitate focused educational interventions. This data provides a valuable foundation for developing targeted training programs aimed at enhancing the efficacy of BLS practices in clinical settings.

DISCUSSION

The conducted comparative cross-sectional study, a pioneering effort in Peshawar, Pakistan, to explore the knowledge, attitude, and practice of basic life support (BLS) among doctors and nurses, unveiled notable knowledge and practice gaps among healthcare providers. This study, set against the backdrop of a city that attracts a substantial patient population from peripheral areas, underscores the critical need for healthcare professionals to possess robust BLS skills and knowledge. The significant knowledge and practice discrepancies observed in CPR and AED usage among participants echo findings from various international studies, highlighting a global challenge within healthcare education and practice (5, 17).

The analysis revealed that a considerable portion of both doctors and nurses lacked essential knowledge and practical skills in BLS, akin to observations in studies from India and Pakistan (12). For instance, a stark 91% of doctors had reportedly never performed CPR in Karachi, Pakistan, with a majority unfamiliar with correct compression rates, emphasizing the deficiency in practical BLS application (Majid et al.). Despite these gaps, a generally positive attitude towards engaging in CPR and AED training and community

projects was noted among participants, resonating with literature that underscores the healthcare community's recognition of BLS's value (11, 18).

Interestingly, our study found no significant impact of gender or experience on BLS knowledge and practice, aligning with other research findings indicating that these demographic factors do not necessarily correlate with BLS proficiency (13). This suggests that the observed knowledge and practice gaps might be universally prevalent across different healthcare professional demographics, further advocating for tailored educational strategies.

The study revealed that approximately one-third of the participants exhibited poor knowledge in BLS, with nearly half demonstrating average knowledge. Moreover, over half of the respondents displayed poor practice in BLS application. These figures starkly highlight the imperative need for targeted educational and training programs aimed at enhancing BLS knowledge and skills among healthcare professionals (16).

Incorporating the insights gained from the literature review, this discussion not only corroborates the existence of significant knowledge and practice gaps but also suggests a pervasive hesitancy around AED usage, partly attributed to fears of inadvertently harming the patient. Such apprehensions, coupled with a lack of confidence in BLS skills as noted in other studies (6), underline the necessity for comprehensive training programs. These programs should prioritize hands-on experience, regular guideline updates, and efforts to demystify AED use, thereby fostering a more confident and competent healthcare workforce capable of executing life-saving interventions (19).

The study's strengths lie in its comparative approach and the inclusion of both doctors and nurses, providing a broad perspective on the BLS competency landscape within tertiary care settings in Peshawar. However, it is not without limitations, including its reliance on convenience sampling and the potential for response bias, which may affect the generalizability of the findings. Furthermore, the study's cross-sectional design precludes the determination of causality between identified gaps and specific outcomes.

Recommendations for future research include longitudinal studies to track changes in BLS knowledge and practice over time, especially after targeted interventions. Additionally, exploring the impact of innovative educational methodologies, such as simulation-based training and virtual reality, on BLS proficiency could offer valuable insights into more effective training strategies.

CONCLUSION

In conclusion, this study not only highlights a critical gap in BLS knowledge and practice among healthcare providers in Peshawar but also aligns with global trends observed in the literature. It underscores the urgent need for enhanced BLS training and education programs, emphasizing practical skills and addressing misconceptions around AED usage. Addressing these gaps through comprehensive and continuous training initiatives is paramount to improving healthcare professionals' readiness in delivering effective life-saving care in critical situations, ultimately aiming to elevate patient care standards and outcomes.

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