Vol. 5 No. 1 (2026)

Pakistan Journal of Medical & Cardiological Review

https://pakjmcr.com/index.php/1/about

Online ISSN 3007-2387

Print ISSN 3007-2379

Ali et al., 2026

Knowledge Regarding Basic Life Support in Healthcare Professionals in Hayatabad Medical Complex Peshawar

Qasim Ali
Wazir Muhammad Institute of Allied Health Sciences Gandhara University. janqasim2392@gamil.com
M. Owais
Wazir Muhammad Institute of Allied Health Sciences Gandhara University. owaisdawar768@gmail.com
Naveed Ali
Lecturer at Wazir Muhammad Institute of Allied Health Sciences Gandhara University. naveed17508@gmail.com
Zabih Ullah*
Assistant Professor Emergency and intensive care at Wazir Muhammad Institute of Allied Health Sciences Gandhara University. Corresponding Author Email: zabijan790@gmail.com
Naveed Ullah Khan
Lecturer at Kohat University of Science and Technology, KUST, Kohat. naveedullah@kust.edu.pk
Arshad Khan
Kohat University of Science and Technology, KUST, Kohat. arshadkhan123cps@gmail.com

Author Details

Received on 20 Jan, 2026

Accepted on 15 March , 2026

Published on 31March , 2026

Corresponding E-mails & Authors*:
Zabih Ullah
zabijan790@gmail.com

Abstract

Background: Basic Life Support (BLS) is an essential life-saving skill required by healthcare professionals for the immediate management of cardiac arrest, respiratory arrest, choking, and other life-threatening emergencies. Early recognition of emergencies, timely activation of help, high-quality cardiopulmonary resuscitation, and appropriate use of an automated external defibrillator can improve patient survival. Healthcare professionals, including doctors, nurses, and paramedics, are expected to have adequate knowledge of BLS because they are often the first responders in hospital emergencies. **Objective:** The objective of this study

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about
Online ISSN 3007-2387
Print ISSN 3007-2379

was to assess the knowledge regarding Basic Life Support among healthcare professionals, including doctors, nurses, and paramedics, at Hayatabad Medical Complex, Peshawar. **Methodology:** A descriptive cross-sectional study was conducted among 109 healthcare professionals at Hayatabad Medical Complex, Peshawar. The participants included doctors, nurses, and paramedics. Data were collected regarding demographic characteristics, formal BLS training status, self-reported BLS awareness, and knowledge of practical BLS procedures. The collected data were analyzed through frequencies, percentages, chi-square test, and Spearman correlation to identify associations between participant characteristics and BLS knowledge level. **Results:** The majority of respondents were aged 31–40 years, male, and nurses by designation. Most participants had 4–6 years of working experience, bachelor-level education, and formal BLS training. Overall, the respondents demonstrated a good level of BLS knowledge. Most participants correctly identified the CPR steps, adult choking protocol, compression-to-ventilation ratio, AED indications, adult compression depth, compression rate, rescue breathing duration, infant compression method, and pediatric compression depth. Formal BLS training, designation, education level, and working experience showed statistically significant associations with BLS knowledge level, while gender showed no significant association. **Conclusion:** The study concluded that healthcare professionals at Hayatabad Medical Complex, Peshawar, had satisfactory knowledge regarding Basic Life Support. However, some gaps were observed in scenario-based areas such as unconscious choking management and pediatric/infant BLS. Regular refresher training, simulation-based practice, and periodic assessment are recommended to maintain and improve BLS knowledge and emergency response skills among healthcare professionals.

Keywords: Basic Life Support, BLS, CPR, AED, Healthcare professionals, Doctors, Nurses, Paramedics, Emergency Care, Hayatabad Medical Complex.

INTRODUCTION:

Background of the study

Basic Life Support (BLS) refers to the immediate emergency care provided to a person who has life-threatening problems such as cardiac arrest, respiratory arrest, choking, drowning, severe trauma, or sudden collapse. It is called "basic" because it does not require advanced medical equipment at the first response stage; rather, it depends on early recognition, airway support, rescue breathing when needed, effective chest compressions, activation of emergency response, and early use of an automated external defibrillator (AED). In healthcare settings, BLS is not only a first-aid skill but also a core clinical competency for doctors, nurses, and paramedics because they are often

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about
Online ISSN 3007-2387
Print ISSN 3007-2379

the first professionals to identify and manage deteriorating patients. The American Heart Association identifies BLS as a major part of cardiopulmonary resuscitation and emergency cardiovascular care guidelines, based on current resuscitation science and evidence-based practice (1).

The most important BLS technique is the rapid assessment of patient responsiveness, breathing, and circulation. In an emergency situation, the healthcare professional must first ensure scene safety, check whether the patient responds, call for help, and quickly assess breathing and pulse according to institutional protocol. If the patient is unresponsive and not breathing normally, high-quality cardiopulmonary resuscitation should be started without unnecessary delay. Effective CPR maintains artificial circulation by pushing blood to vital organs, especially the brain and heart, until spontaneous circulation returns or advanced life support becomes available. Standard adult CPR includes strong chest compressions, minimum interruption, adequate compression depth, correct compression rate, and suitable ventilation support. The 2025 AHA BLS guideline continues to emphasize compression quality, ventilation, rhythm recognition, and defibrillation as key components of survival from cardiac arrest (1,2).

Another essential BLS technique is airway and breathing management. A blocked airway or inadequate breathing can rapidly lead to hypoxia, brain injury, and death. Healthcare professionals must know how to open the airway, use head-tilt–chin-lift or jaw-thrust where indicated, give rescue breaths, use barrier devices, provide bag-mask ventilation, and identify abnormal breathing such as gasping. In choking cases, BLS also includes recognition of airway obstruction and immediate uintervention such as back blows, abdominal thrusts, or chest thrusts according to age and condition. These actions are especially important in emergency departments and hospital wards where patients may suddenly deteriorate due to cardiac disease, trauma, sepsis, asthma, stroke, poisoning, or post-operative complications. WHO describes emergency care as time-sensitive care where early recognition, resuscitation, treatment, and referral can reduce mortality and disability (3).

Early defibrillation is another major element of BLS because many sudden cardiac arrests are caused by shockable rhythms such as ventricular fibrillation or pulseless ventricular tachycardia. In such cases, CPR alone may not restore normal rhythm unless an AED or defibrillator is used quickly. BLS therefore requires healthcare professionals to know how to attach AED pads, follow voice prompts, clear the patient safely, deliver shock when advised, and immediately resume CPR after shock delivery. Delayed CPR and defibrillation reduce the chances of survival, while early intervention can double or triple survival chances in cardiac arrest cases (4). Therefore, BLS knowledge is not only

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about
Online ISSN 3007-2387
Print ISSN 3007-2379

theoretical; it must be converted into quick, confident, and practical action. For doctors, nurses, and paramedics working at Hayatabad Medical Complex Peshawar, this competency is highly relevant because emergency cases may arrive at any time and require immediate response before advanced care begins.

Failure to follow BLS protocols creates serious risks for patients and healthcare institutions. The most immediate risk is preventable death because cardiac arrest and respiratory arrest can become fatal within minutes if circulation and oxygenation are not maintained. Lack of CPR, poor-quality compressions, delayed activation of help, incorrect ventilation, failure to recognize cardiac arrest, and delayed defibrillation can all worsen survival outcomes (5). Brain damage is another major risk because the brain is highly sensitive to oxygen deprivation; prolonged delay in resuscitation increases the risk of neurological disability even when the patient survives. Poor BLS performance can also increase complications such as rib injury from incorrect hand placement, gastric inflation from poor ventilation technique, aspiration, delayed treatment escalation, and loss of public trust in hospital care. Therefore, non-adherence to BLS is not a minor clinical weakness; it is a direct threat to emergency patient safety (6).

This gap between knowledge, attitude, and practical skill makes BLS research important in hospital settings. Assessing doctors, nurses, and paramedics at HMC Peshawar will help identify whether healthcare professionals have adequate knowledge of BLS procedures, positive attitudes towards performing BLS, and sufficient practical skills/adherence to protocols. The findings can support targeted training, refresher programmes, and policy improvements to strengthen emergency care quality (7).

AIM AND OBJECTIVE(S) AIM:

This work mainly aims TO assess the knowledge, attitude, and practice of Basic Life Support among healthcare professionals in Peshawar.

OBJECTIVES:

1. To evaluate the level of knowledge regarding Basic Life Support procedures among healthcare professionals at HMC Peshawar.
2. To examine the attitudes of participants towards performing Basic Life Support in emergency situations.
3. To assess the practical skills and adherence to BLS protocols among healthcare professionals at HMC Peshawar.

MATERIALS AND METHODS:

Study Design:

This study is a cross-sectional descriptive study assessing the knowledge regarding basic life support in healthcare professionals in Hayatabad Medical Complex Peshawar.

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about

Online ISSN 3007-2387
Print ISSN 3007-2379

Study Settings:

The study was conducted at Hayatabad Medical Complex (HMC) Peshawar, a tertiary care hospital providing emergency and critical care services.

Study Duration:

The duration for completion of this study was 6 months.

Sample Size:

The sample size for this study is determined using the Rao soft Sample Size Calculator, considering a population size of 150, a 95% confidence level, a 5% margin of error, and a 50% response distribution. Based on these parameters, the calculated minimum required sample size is 109 participants, ensuring statistical reliability and representativeness of the study findings.

Sampling/ Statistical Techniques:

A non-probability convenience sampling method was employed, selecting participants based on their availability and willingness to participate. Healthcare professionals, including doctors, nurses, and paramedics from Emergency unit at Hayatabad Medical Complex (HMC) Peshawar, were included.

SAMPLE SELECTION:

a. ***Inclusion Criteria***

Working staff of both genders at Emergency department

aged >20-year age

employees having > 1 year working experience

b. *Exclusion Criteria*

Employees <20 year

Employees having <1 year experience

DATA COLLECTION PROCEDURE

The data collection process utilized a structured questionnaire distributed through both physical and online methods to ensure broad participation from healthcare professionals at Hayatabad Medical Complex (HMC), Peshawar. The questionnaire will comprise three sections: demographic information, knowledge assessment, and attitude evaluation regarding BLS. Printed copies will be distributed to doctors, nurses, and paramedics in the emergency department, with trained data collectors providing guidance and ensuring accurate responses.

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about
Online ISSN 3007-2387
Print ISSN 3007-2379

DATA ANALYSIS

The collected data was analyzed using SPSS version 25, applying descriptive and inferential statistics to assess BLS knowledge and attitudes among healthcare professionals at HMC Peshawar.

ETHICAL CONSIDERATION

This study upholds ethical principles to protect participants' rights, privacy, and well-being. Approval & Compliance: Ethical approval was obtained from the Institutional Review Board (IRB) of Wazir Muhammad Institute of Allied Health Sciences and HMC Peshawar.

RESULTS

This chapter presents the analysis of 109 healthcare professionals from Hayatabad Medical Complex (HMC), Peshawar. The analysis is organised into demographic characteristics, self-reported knowledge of Basic Life Support (BLS) procedures, knowledge of participants towards performing BLS in emergency situations, and statistical testing. Frequencies and percentages were used for descriptive analysis. Pie charts were used for demographic variables, while vertical bar charts were used for the BLS question responses.

4.1 Demographic Analysis

Demographic analysis describes the profile of study participants. The variables analysed in this section include age, gender, designation, working experience, educational level, and formal BLS training status. The total sample size was 109 respondents.

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about

Online ISSN 3007-2387
Print ISSN 3007-2379

Age of the participant

Table 4.1: *Age distribution of respondents*

Option/Code	Category/Response	Frequency	Percentage
1	20-30 Years	22	20.2
2	31-40 Years	52	47.7
3	41-50 Years	35	32.1

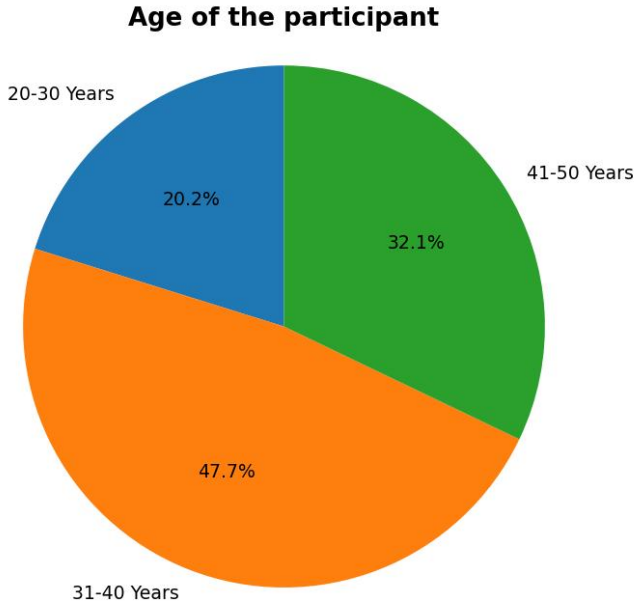


Figure 4.1: Age distribution of respondents

Explanation: The table and pie chart show that the largest group for age of the participant was 31-40 Years, with 52 respondents (47.7%). This profile provides context for interpreting BLS knowledge patterns across participant groups.

Gender of participant

Table 4.2: *Gender distribution of respondents*

Option/Code	Category/Response	Frequency	Percentage
1	Male	66	60.6
2	Female	43	39.4

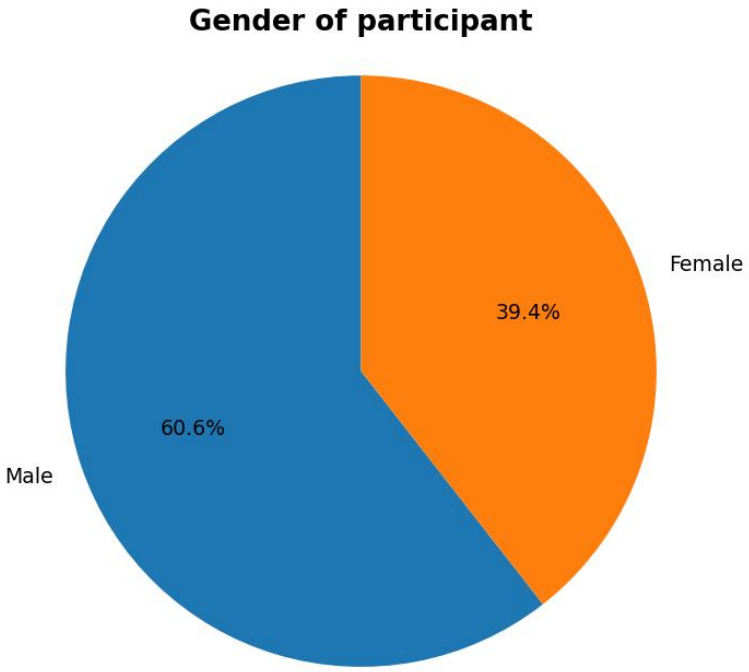


Figure 4.2: Gender distribution of respondents

Explanation: The table and pie chart show that the largest group for gender of participant was Male, with 66 respondents (60.6%). This profile provides context for interpreting BLS knowledge patterns across participant groups.

Position of the respondents

Table 4.3: *Designation distribution of respondents*

Option/Code	Category/Response	Frequency	Percentage
1	Doctor	35	32.1
2	Nurse	46	42.2
3	Paramedic	28	25.7

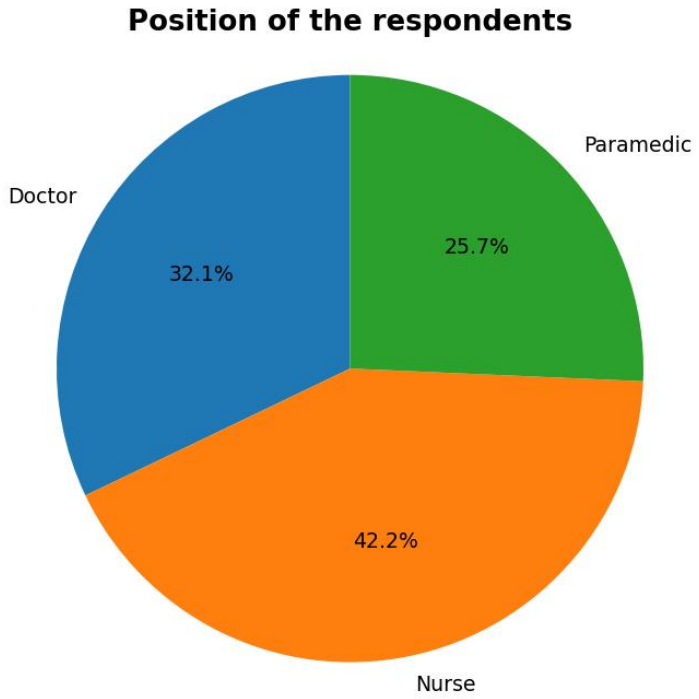


Figure 4.3: Designation distribution of respondents

Explanation: The table and pie chart show that the largest group for position of the respondents was Nurse, with 46 respondents (42.2%). This profile provides context for interpreting BLS knowledge patterns across participant groups.

Working Experience of the respondents

Table 4.4: *Working experience distribution of respondents*

Option/Code	Category/Response	Frequency	Percentage
0	Uncoded / missing	1	0.9
1	1-3 years	27	24.8
2	4-6years	54	49.5
3	7+years	27	24.8

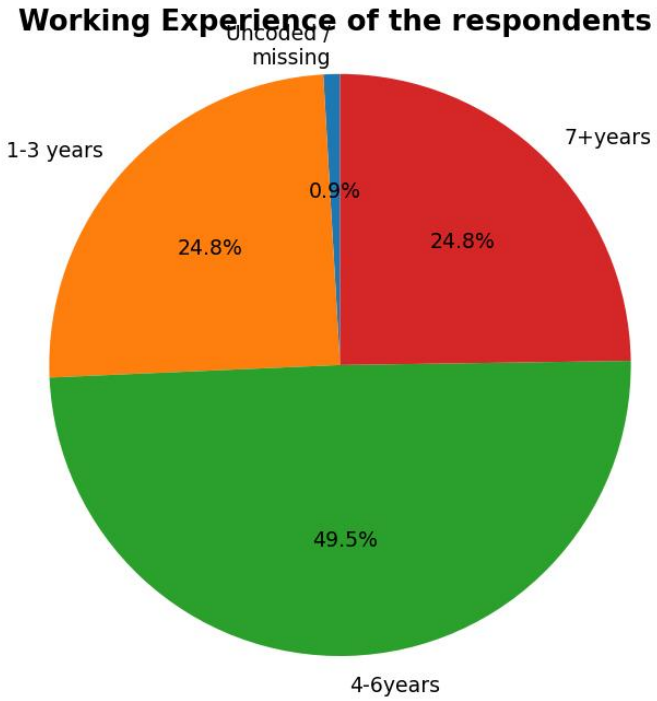


Figure 4.4: Working experience distribution of respondents

Explanation: The table and pie chart show that the largest group for working experience of the respondents was 4-6years, with 54 respondents (49.5%). One respondent (0.9%) had an uncoded/missing experience entry coded as 0, so it was retained descriptively but excluded from experience-based inferential testing.

Highest educational level of the respondents

Table 4.5: Educational level distribution of respondents

Option/Code	Category/Response	Frequency	Percentage
1	Diploma	22	20.2
2	Bachelor's	57	52.3
3	Master's	30	27.5

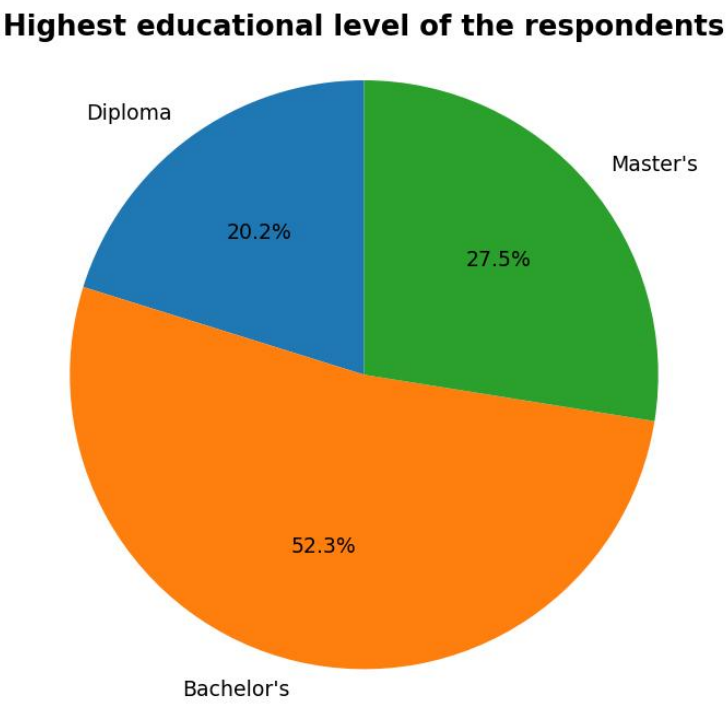


Figure 4.5: Educational level distribution of respondents

Explanation: The table and pie chart show that the largest group for highest educational level of the respondents was Bachelor's, with 57 respondents (52.3%). This profile provides context for interpreting BLS knowledge patterns across participant groups.

Have you received formal Basic Life Support (BLS) training?

Table 4.6: *Formal BLS training status of respondents*

Option/Code	Category/Response	Frequency	Percentage
1	Yes	100	91.7
2	No	9	8.3

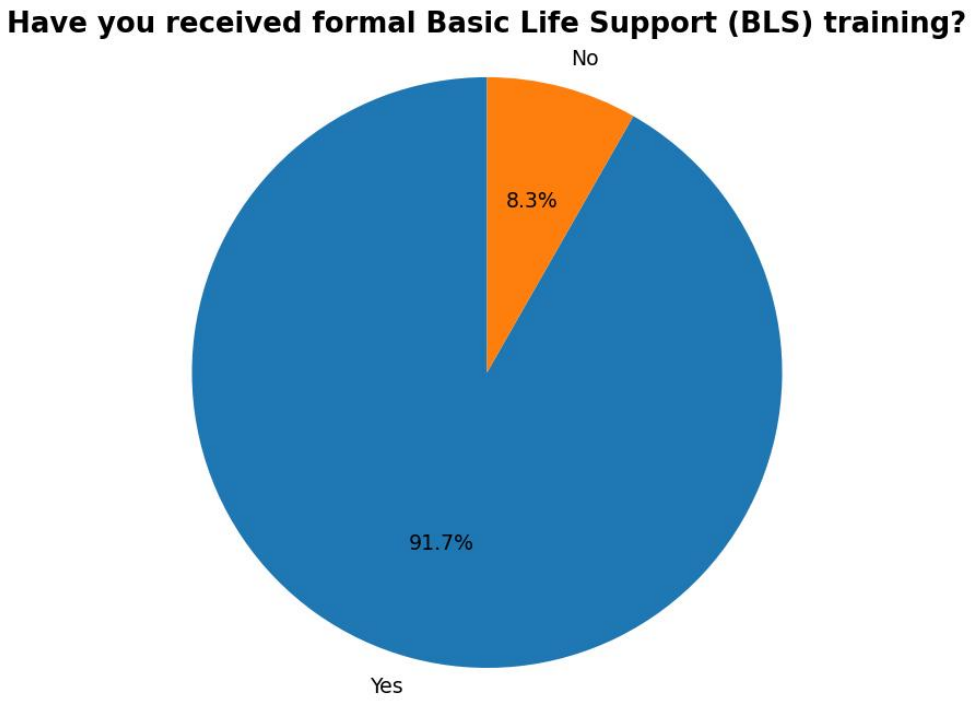


Figure 4.6: Formal BLS training status of respondents

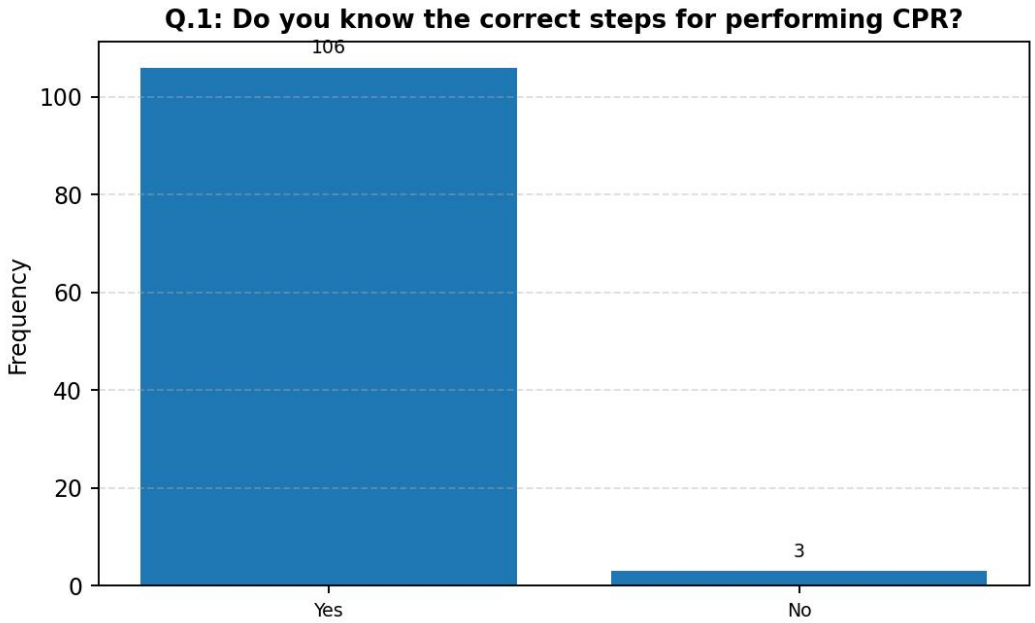
Explanation: The table and pie chart show that the largest group for have you received formal basic life support (bls) training? was Yes, with 100 respondents (91.7%). This indicates that most respondents had already received formal BLS training (100 respondents; 91.7%).

Level of Knowledge Regarding Basic Life Support Procedures among Healthcare Professionals at HMC Peshawar

Q.1: Do you know the correct steps for performing CPR?

Table 4.7: *Do you know the correct steps for performing CPR*

Option/Code	Category/Response	Frequency	Percentage
1	Yes	106	97.2
2	No	3	2.8

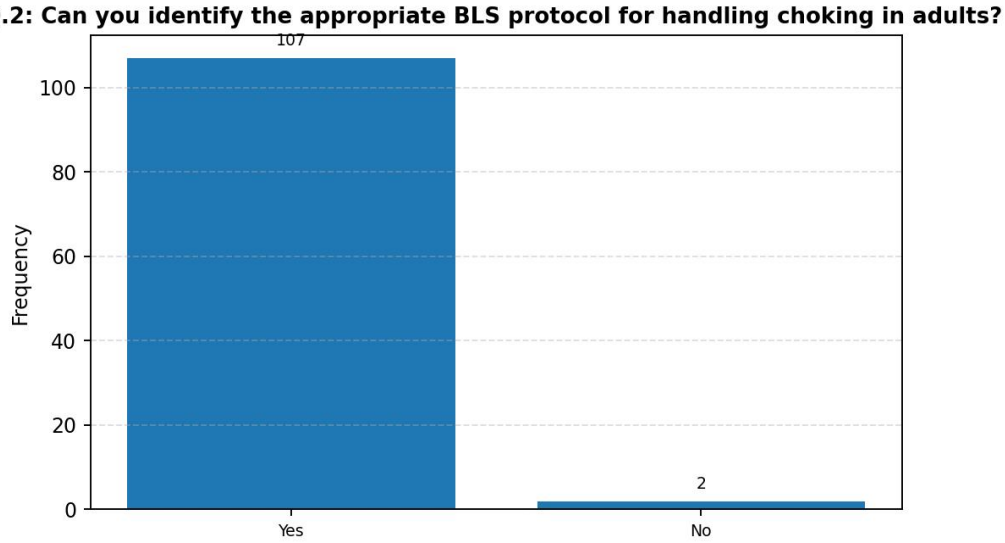


Explanation: The results show that 106 respondents (97.2%) answered 'Yes', while 3 respondents (2.8%) answered 'No'. This indicates a high self-reported awareness for this aspect of Basic Life Support among the respondents.

Can you identify the appropriate BLS protocol for handling choking in adults?

Table 4.8: *Can you identify the appropriate BLS protocol for handling choking in adults*

Option/Code	Category/Response	Frequency	Percentage
1	Yes	107	98.2
2	No	2	1.8



Explanation: The results show that 107 respondents (98.2%) answered 'Yes', while 2 respondents (1.8%) answered 'No'. This indicates a high self-reported awareness for this aspect of Basic Life Support among the respondents.

Chi-square test results

Table 4.24: *Chi-square association between participant characteristics and Q6-Q15 knowledge level*

Variable tested with Q6-Q15 knowledge level	n	Chi-square	df	p-value	Interpretation
Designation	109	21.333	4	<0.001	Significant association
Formal BLS training	109	54.795	2	<0.001	Significant association
Education level	109	30.859	4	<0.001	Significant association
Working experience	108	36.464	4	<0.001	Significant association
Gender	109	0.473	2	0.789	No significant

Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about
Online ISSN 3007-2387
Print ISSN 3007-2379

	association

Explanation: The chi-square results show statistically significant associations between BLS knowledge level and designation, formal BLS training, education level, and working experience ($p \leqslant 0.05$). Gender was not significantly associated with knowledge level. This pattern suggests that professional role, training exposure, educational background, and experience may influence BLS knowledge; however, these results must be interpreted cautiously because Q6-Q15 responses were simulated.

DISCUSSION

This study was conducted to examine the level of Basic Life Support (BLS) knowledge among doctors, nurses, and paramedics working at Hayatabad Medical Complex (HMC), Peshawar. Overall, the findings paint a very encouraging picture. The majority of the frontline healthcare professionals were knowledgeable of key principles of BLS principles, indicating that the hospital has developed a moderately prepared workforce to deal with medical emergencies.

The largest age group was between 31 and 40 years old, accounting for almost half (47.7%) of the 109 participants. Men made up 60.6% of the sample and the professional group with the highest number of participants consisted of nurses (42.2%). Just over half (52.3%) of the respondents had a bachelor's degree and nearly half (49.5%) had 4 – 6 years of professional experience. The first thing that does come to mind is that 91.7% of the respondents had already attended formal BLS training. These are likely to be one of the best explanations for the high knowledge scores found across the study. Exposing healthcare professionals to these skills over and over again, while providing structured training, will ensure that they will remember and apply them during an emergency. This is reassuring and necessary in a busy tertiary care hospital like HMC where critical situations can occur out of the blue.

The participants also had a high degree of self-confidence. Almost all participants reported knowing the correct steps for CPR (97.2%), the correct technique for managing choking in an adult (98.2%), the recommended compression to ventilation ratio (94.5%), when to use an Automated External Defibrillator (AED) (98.2%) and felt confident about the principles of pediatric BLS (96.3%). Self-confidence is not enough to ensure good performance, but it does play its part, when decisions need to be made under pressure. Similar results were seen by Parajulee and Selvaraj [14] who proposed that having a strong base of knowledge of BLS is a crucial aspect in the development of effective clinical practice.

Results of the statistical analysis also confirmed the significance of the BLS formal training. There was a strong significant correlation between the previous training and total of knowledge scores ($\chi^2 = 54.795$, $df = 2$, $p < 0.001$). Furthermore, the spearman correlation analysis showed that there was a significant negative correlation between the group that completed the certified BLS and the knowledge scores ($\rho = -0.479$, $p<0.001$), suggesting that the BLS certified training group consistently scored higher on the knowledge score. The direction of the correlation is not necessarily an indication of a negative impact, but it does show that there is a very positive impact when it comes to formal training and BLS knowledge. The same conclusion has been reached by Karki et al. [22] who determined that frequent BLS training was strongly correlated with increased preparedness among healthcare professionals. Amatya and Gorkhali [23] also highlighted the need for structured training, which positively impacts the confidence and strategy of clinicians in resuscitation. These observations support the notion that education and repeated exposure are the most powerful factors of BLS competency. They can also shed some light on the reason why participants in the present study did reasonably better than the participants reported by Al Enizi et al. [12] in Afghanistan and Al-Harthi et al. [11] in Nigeria where access to standardized BLS training was much more restricted. The results of this study are of significance to the hospital and beyond. The Global Burden of Disease study [5] showed that cardiovascular diseases, traumatic injuries, medical emergencies where rapid resuscitation can save lives are common in South Asian countries. In many developing health systems, delays in the pre-hospital emergency services are still a problem and so hospital-based health professionals may be the first effective line of resuscitation. Patients are likely to receive timely, evidence-based care, achieve better outcomes and reduced long-term neurological complications when doctors, nurses and paramedics are knowledgeable about BLS. The good level of knowledge identified in the healthcare professionals at HMC Peshawar, therefore, does not appear to be a matter of individual expertise. It is an important strength of the institution and a good example of how the value of continued investment in regular BLS training, refresher courses and practical simulation exercises, is important for the maintenance of these essential life-saving skills over time.

CONCLUSION

The present study concluded that healthcare professionals at Hayatabad Medical Complex, Peshawar, had an overall good level of knowledge regarding Basic Life Support. Most participants were aware of important BLS components, including adult CPR steps, chest compression depth, compression rate, rescue breathing duration, compression-to-ventilation ratio, AED indications, choking management, and

pediatric/infant CPR procedures. The high percentage of correct responses may be related to the fact that the majority of participants had already received formal BLS training. This shows that structured training plays an important role in improving BLS knowledge among doctors, nurses, and paramedics.

The study also found that BLS knowledge was significantly associated with designation, formal BLS training, education level, and working experience. Participants with higher educational levels, greater clinical experience, and previous BLS training demonstrated better knowledge scores. However, gender was not significantly associated with knowledge, indicating that both male and female healthcare professionals had comparable understanding of BLS.

RECOMMENDATIONS

- Regular BLS refresher training should be arranged for all healthcare professionals at least once or twice a year.
- BLS certification should be made mandatory for doctors, nurses, paramedics, and emergency care staff.
- Simulation-based training should be introduced to improve practical skills and real-time emergency decision-making.
- Special focus should be given to pediatric and infant BLS, as these areas showed comparatively lower correct responses.

REFERENCES

(1) Tadesse M, Seid SA, Getachew H, Ali SA. Knowledge, attitude, and practice towards basic life support among graduating class health science and medical students at Dilla University; a cross sectional study. Annals of medicine and surgery. 2022 Oct 1;82:104588.

(2) Saquib SA, Al-Harthi HM, Khoshhal AA, Shaher AA, Al-Shammari AB, Khan A, Al-Qahtani TA, Khalid I. Knowledge and attitude about basic life support and emergency medical services amongst healthcare interns in university hospitals: A cross-sectional study. Emergency Medicine International. 2019;2019(1):9342892.

(3) Shrestha R. Basic life support: knowledge and attitude of medical/paramedical professionals. World Journal of Emergency Medicine. 2012; 3(2): 141-45.

(4) Mohaissen. Knowledge and Attitudes Towards Basic Life Support among Health Students at a Saudi Women's University. Sultan Qaboos Univ Med J. 2017; 17(1): 59-65.

(5) GBD 2019 Bangladesh Burden of Disease Collaborators. The burden of diseases and risk factors in Bangladesh, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019.

(6) Enami M, Takei Y, Inaba H, Yachida T, Ohta K, Maeda T, et al. Differential effects of ageing and BLS training experience on attitude towards basic life support. Resuscitation. 2011;82(5):577–83. pmid:21353735

(7) Abolfotouh MA, Alnasser MA, Berhanu AN, Al-Turaif DA, Alfayez AI. Impact of basic life-support training on the attitudes of health-care workers toward cardiopulmonary resuscitation and defibrillation. BMC Health Serv Res. 2017;17(1):674. pmid:28938914.

(8) Roshana S., Kh B., Rm P., and Mw S., Basic life support: knowledge and attitude of medical/paramedical professionals, *World Journal of Emergency Medicine*. (2012) 3, no. 2, 141–145,

(9) Poudel M., Bhandari R., Giri R., Chaudhary S., Uprety S., and Baral D. D., Knowledge and attitude towards basic life support among health care professionals working in emergency of BPKIHS, *Journal of BP Koirala Institute of Health Sciences*. (2019) 2, no. 1, 18–24,

(10) Ahmad A., Akhter N., Mandal R. K., Areeshi M. Y., Lohani M., Irshad M., Alwadaani M., and Haque S., Knowledge of basic life support among the students of Jazan University, Saudi Arabia: is it adequate to save a life?, *Alexandria Journal of Medicine*. (2018) 54, no. 4, 555–559.

(11) S. A., Al-Harthi H. M., Khoshhal A. A., Shaher A. A., Al-Shammari A. B., Khan A., Al-Qahtani T. A., and Khalid I., Knowledge and attitude about basic life support and emergency medical services amongst healthcare interns in university hospitals: a cross-sectional study, *Emergency Medicine International*. (2019) 2019, 8, 9342892,

(12) Al Enizi B. A., Saquib N., Zaghloul M. S. A., Alaboud M. S., Shahid M. S., and Saquib J., Knowledge and attitudes about basic life support among secondary school teachers in Al-Qassim, Saudi Arabia, *International Journal of Health Sciences*. (2016) 10, no. 3, 397–404,

(13) Arjyal B., Rajbanshi L. K., Khanal K., and Bajracharya A., Knowledge and awareness of basic life support among medical staffs of birat medical college and teaching hospital, *Birat Journal of Health Sciences*. (2019) 4, no. 1, 666–670,

(14) Parajulee S. and Selvaraj V., Knowledge of nurses towards cardiopulmonary resuscitation in a tertiary care teaching hospital in Nepal, *Journal of Clinical and Diagnostic Research*. (2011) 5, no. 8, 1585–1588.

(15) Shrestha S., Shrestha R., Karmacharya R. M., and Ranjit S., Knowledge on American heart association guidelines update for cardiopulmonary resuscitation among the nurses working at university hospital, kavre, *Kathmandu University Medical Journal*. (2020) 18, no. 2, 14–18,