

Knowledge of Basic Life Support Among Health Care Professional Working in Tertiary Care Hospitals of KP (Pakistan)

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Abstract

The study objective was to assess healthcare professional knowledge and practice about basic life support. Sufficient knowledge and professional training about Basic Life Support (BLS) is essential for all hospital healthcare professionals. To prevent death, every second is very precious; therefore, utilizing knowledge, skills and time management is the key to success in case of a medical emergency. The design for the study was a cross-sectional study conducted in the tertiary care hospitals of KP, Pakistan. The sample size for the study was 237, while the period was one month (15th September 2022 to 15th October 2022). All healthcare workers were included, although those having less than six months of experience, unwilling, student and internees were excluded. An adopted questionnaire was used consisting of two sections. The primary section contains demographic information, while the following section contains fundamental questions about BLS. Among 237 participants (68.77%) were male, while (31.2%) were female. A considerable number, 189 (79.7%) of the participants were nurses. Almost all participants had sufficient experience in critical units; 181 (76.3%) participants had performed CPR in adults, while 50.6% performed in pediatric patients more than four times throughout their professional careers. Most healthcare professionals have many years of experience in critical and with less knowledge about BLS, and many of them still need to refresh their knowledge once trained.

Keywords: Basic Life Support, Healthcare Professional, Knowledge and Skill.

Introduction

One of the most essential areas of expertise for all healthcare professionals is Basic life support (BLS) knowledge (Toubasi et al. 2015). There are several methods for preventing a person's death, such as dietary guidelines, physical activity regimens, and prescribing lifesaving drugs by medical specialists. In addition, essential life support is a crucial method in a medical emergency (Narayan et al., 2015). According to Bajracharya and Nagarkoti, (2016), CPR includes recognizing an arrest

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and performing cardiopulmonary resuscitation (CPR) measures to save life until the victim either recovers or is taken to a medical facility with access to advanced life support. It comprises performing CPR, using an automated external defibrillator (AED), and detecting the indications of sudden cardiac arrest (SCA stroke, heart attack and foreign body airway obstruction (FBAO)). Every member of the community needs to be aware of essential life support in order to save lives and enhance survival chances (Chandrasekaran et al., 2010). The study conducted by Sharma and Attar (2012) revealed that Cardiac arrest is a severe acute emergency that can occur within or outside the hospital setting following significant mortality. However, the survival rate can be expressively increased by timely providing essential life support (BLS) services. The primary worldwide public health concern is cardiovascular disease, leading to cardiac arrest. The primary cause of mortality worldwide is sudden cardiac death (SCD), which is frequently the earliest sign of cardiovascular disease. The likelihood of survival following cardiopulmonary arrest depends on early intervention, the effectiveness of chest compression, and the moment defibrillation is started after cardiac arrest (Rajashekar et al., 2018).

According to Steen and Johansen (2008), quality of cardiopulmonary resuscitation impacts the chances of survival following cardiac arrest. Since the outcomes of investigated interventions can depend on or be influenced by cardiopulmonary resuscitation quality, reporting data on this quality should be a standard procedure in all investigations of cardiac arrest. Even though all healthcare professionals who come into contact with patients should be proficient in BLS, registered nurses should be competent in essential life support (BLS), as they are the healthcare professionals most likely to respond to an in-hospital cardiac arrest (Keenan et al., 2009). Due to their prolonged contact with patients, nurses are frequently the first healthcare professionals to come in contact with cardiac arrest patients in a hospital setting (Gok et al., 2014).

The importance of cardiopulmonary resuscitation (CPR), which can lower mortality by up to 50%, has been highlighted in several studies carried out in different regions around the globe (Asadi, et al., 2021). Generally, people are getting familiar with BLS training worldwide. Studies suggested that chest compression and defibrillation administered in the first 3 minutes of collapse after a ventricular defibrillator in an outpatient cardiac arrest can result in survival rates ranging from 49% to 75% (Poudel et al., 2019). Moreover, numerous worldwide organizations have underlined the significance of education in performing high-quality CPR to increase survival following cardiac arrest (Passali, 2011). Rea et al. (2001) reported that only one-third of people routinely receive CPR before reaching the Emergency Assessment Room (EAR), thus increasing the likelihood of survival. Relevant studies also revealed that the quality of CPR is inferior inside and even outside the hospital (Roshana et al., 2012). Secondly, poor BLS techniques among health professionals are linked to higher morbidity and rates following cardiac arrest (Umuhoza et al., 2021). Even when certified HCPs deliver CPR to cardiac arrest victims, the procedure may be poor or inappropriate (Govender et al., 2010). Healthcare facilities in developing countries still need to establish the correct procedure. In Pakistan's public sector, CPR is not of that caliber, and frequent CPR performer's attitudes toward the procedure could be better. This study aims to evaluate the level of understanding and attitude of health professionals about essential life support. It is anticipated that the data will help create plans for CPR training and workshops.

Study Design Methods

This study was descriptive cross-sectional study was carried out in the tertiary care hospitals of KP. The objective for the study was to assess the knowledge and practice of health care professional about BLS working and managing medical emergency in tertiary care hospitals. A

sample of 237 was obtained, the period for the study was from 15th September 2022 to 15th October 2022. All health care workers were included in the study, those having less than six months' experience, unwilling participants, student and interneers were excluded from the study. An adopted questionnaire was used consisting of two sections. The first section contains demographic information and the second section was consisting of question about BLS basic knowledge level among health care professional.

Results

Among 237 participants 163 (68.77%) were male while 74 (31.2%) were female. A huge number 189 (79.7%) of the participants were nurses, 15 (6.3%) were respiratory therapist, 18 (7.5%) were doctors, 9 (3.3%) were paramedics while no pharmacist took part in the studies. Bases on clinical experiences around one fifth of the participants 52 (21.9%) were having one to three years of experience, 42 (17.7%) were having three to six years of experience, 39 (16.45%) were having six to nine years of experience, a huge number of the participants 95 (40.08%) were having more than nine years of experience while a few numbers 9 (3.79%) were having no clinical experience as shown in Table 1.

Table 1: Demographic Details of Participants

Demographic		Total sample (n=237)	Percentage
Sex	Male	163	68.77%
	Female	74	31.2%
Education	Nurses	189	79.7%
	Respiratory therapist	15	6.3%
	Doctors	18	7.5%
	Paramedics	9	3.7%
	Pharmacist	0	0%
	Other	6	2.5%
Clinical Experience	1 to 3 years	52	21.94%
	3 to 6years	42	17.72%
	6 to 9 years	39	16.45%
	Above 9 years	95	40.08%
	No clinical experience	9	3.79%
Teaching experience	1 to 3 years	69	29.1%
	3 to 6years	21	8.86%
	6 to 9 years	16	6.75%
	Above 9 years	9	3.7%
	No teaching experience	122	51.47%

On the other hand, more than half of the participants, 122 (51.47%), had no teaching experience, while 69 (29.1%), 21 (8.86%), 16 (6.75%) had one to three, three to six and six to nine years of experience respectively. Although 9 (3.7%) had more than nine years of experience. Based on area-wise experience, 126/237 (91.1%), 165/237 (69.6%) and 123/237 (51.89%) participants had experience in EAR, ICU and CCU, respectively. In this study, 181 (76.3%) participants had performed CPR in adult patients, while 50.6% performed in pediatric patients more than four times, as shown in Fig.1 In addition, 191 (84.59%) participants were previously

trained about BLS; out of them, 62 (26.16%) were trained six months earlier, 44 (18.56%) were trained one year earlier, 40 (16.87%), were trained two years earlier, while 45 (23.50%) were train for more than two years earlier. This clear from the above analysis that majority of the participants need to refresh their knowledge about BLS as shown in figure 2.

Figure 1: Experience in critical unites

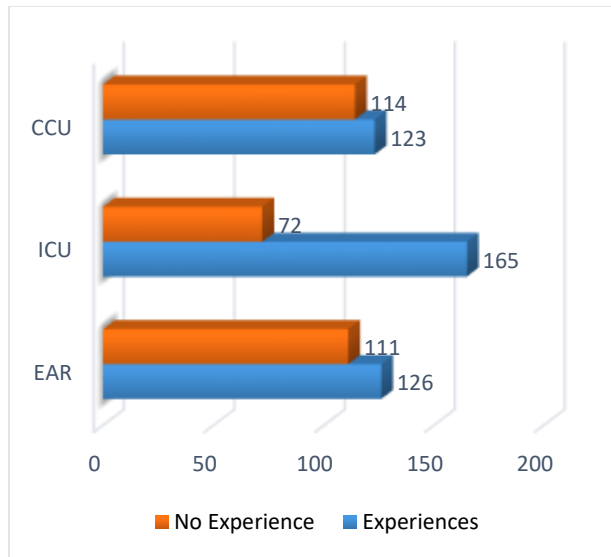
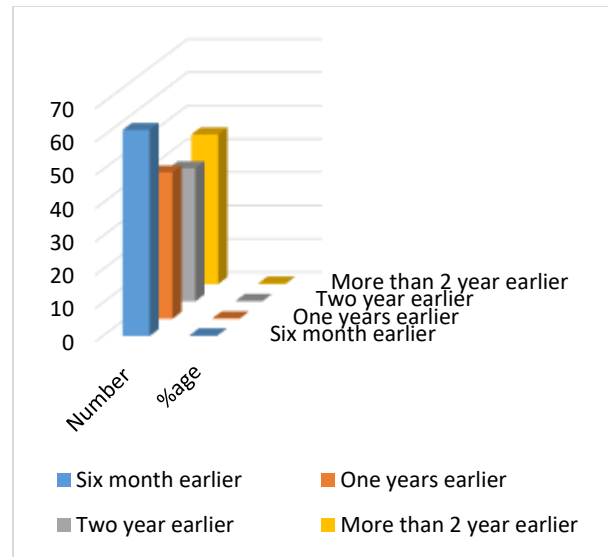


Figure 2: Duration since last BLS training



While assessing the knowledge of the health care professional by using the following question guide, most of the simple questions were marked incorrection. One factor for this may be not referring to their knowledge about BLS. It is also clear from another question in which the participants rate their knowledge about BLS, according to which 29% of participants marked their knowledge excellent, 42% marked good, 5% marked poor, 21% marked average, and 3% marked below average. Given managing medical emergencies 118 (49.78%) respondents reported that doctors, nurses, respiratory therapists and anesthesiologist are primarily involved in managing a medical emergency; remaining 68 (28.69%) reported that only nurses and doctors, 44 (18.56) reported that nurses, doctors and respiratory therapist, while 7 (2.95%) did no say about it as shown in Fig.3 Participants also identified the reason for insufficient knowledge about BLS more than half of the respondent 125, (52.7%) marked lack of professional training, 41 (17.3%) marked busy curriculum, 16 (6.75%) reported lack of interest, while 55 (23.20%) mentioned no reason as shown in Figure 4.

Figure 3: Health Care Professional Involvement in Managing Medical Emergency

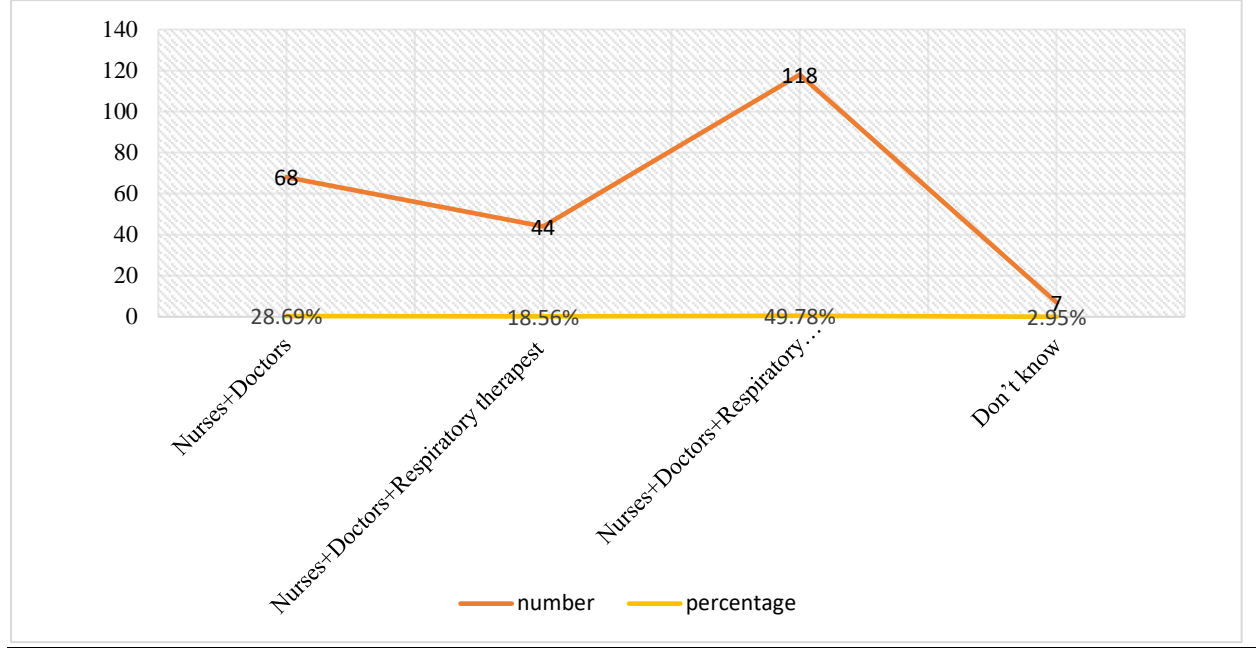


Figure 4: Knowledge about BLS

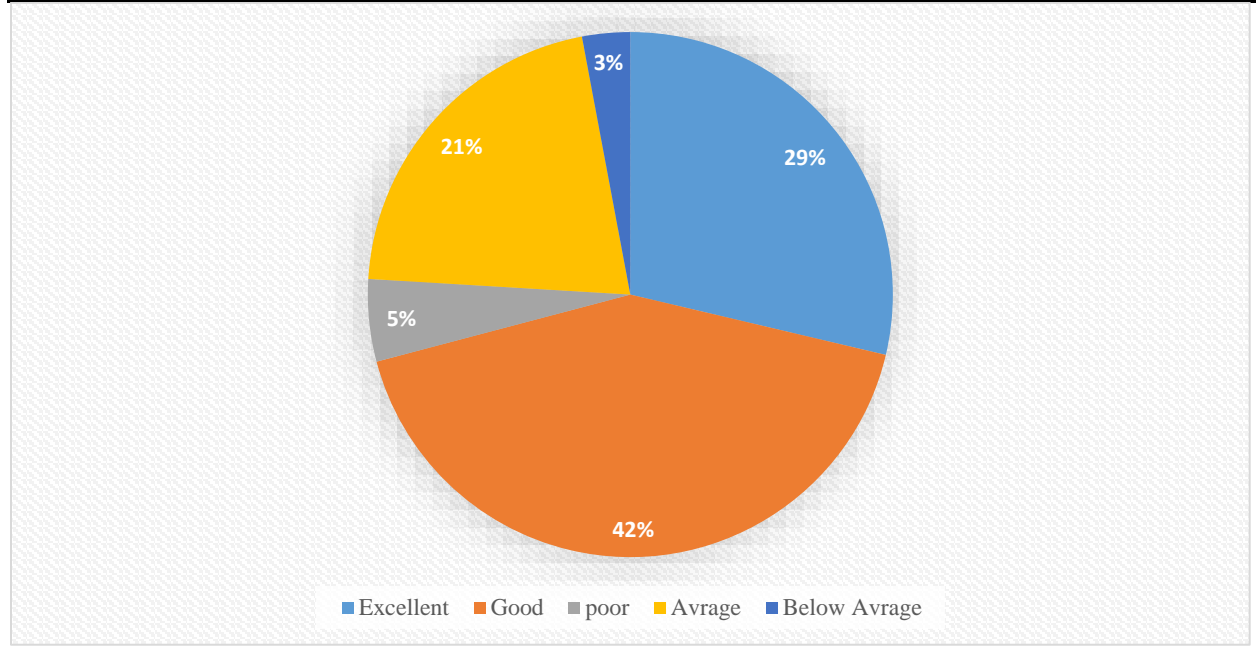
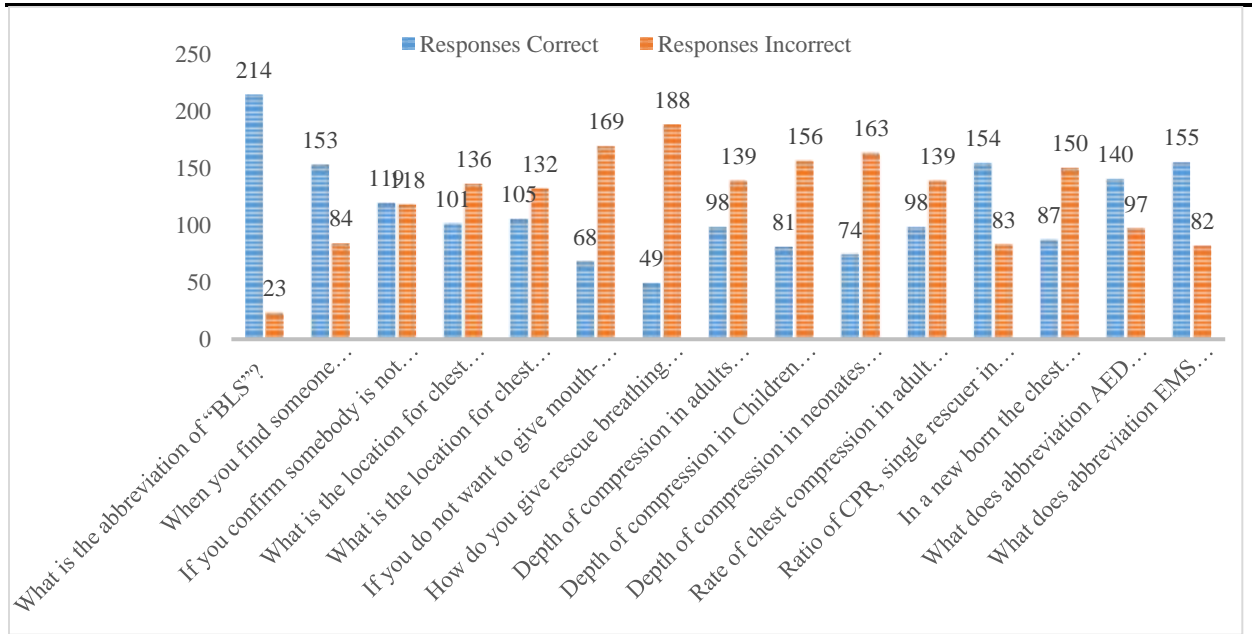


Table 2: BLS level of understand

Question about BLS	Responses			
	Correct	%age	Incorrect	%age
What is the abbreviation of “BLS”?	214	90.29%	23	9.71%
When you find someone unresponsive in the middle of the road, what will be your first response? (Note: You are alone there)	153	64.55%	84	35.45%
If you confirm somebody is not responding to you even after shaking and shouting at him, what will be your immediate action?	119	50.21%	118	49.79%
What is the location for chest compression?	101	42.6%	136	57.4%
What is the location for chest compression in infants?	105	44.3%	132	55.7%
If you do not want to give mouth-to-mouth CPR, the following can be done EXCEPT	68	28.69%	169	71.39%
How do you give rescue breathing in infants?	49	20.67%	188	79.33%
Depth of compression in adults during CPR	98	41.3%	139	58.7%
Depth of compression in Children during CPR	81	34.17%	156	65.83%
Depth of compression in neonates during CPR	74	31.22%	163	68.78%
Rate of chest compression in adult and Children during CPR	98	41.3%	139	58.7%
Ratio of CPR, single rescuer in adult is	154	64.97%	83	35.02%
In a new born the chest compression and ventilation ratio is	87	36.7%	150	63.29%
What does abbreviation AED stands for?	140	59.0%	97	40.92%
What does abbreviation EMS stand for?	155	65.40%	82	34.59%

Figure 5: Participant’s responses to question 1 to 15

Discussion

Community members must be encouraged about life-saving skills to enhance life expectancy and community standards. Besides community, all healthcare personnel need to be knowledgeable about essential life support as they deal with such situations regularly. In this study, the participants rate their knowledge about BLS, according to which 29% participants marked their knowledge excellent, 42% marked good, 5% marked poor, 21% marked average, and 3% marked below average. A similar study suggests that 50% of the participants' understanding of the BLS was generally average (Narayan et al., 2015). A survey found that most nurses had intermediate-fair knowledge (Asadi et al., 2021). Some studies showed that remaining healthcare professionals lacked sufficient CPR knowledge (Roshana et al., 2012; Osinaike et al., 2007; Zaheer & Haque, 2009). 58.3% of those who responded to the questionnaire received a total score of less than 50%, which indicates insufficient knowledge of BLS (Irfan et al., 2019). Other study findings revealed that essential life support (BLS) knowledge among students, doctors, and nurses at medical, dentistry, homoeopathy, and nursing colleges is relatively poor, with 84.82% of the respondents scoring less than 50%, which is a big void (Rajashekar et al., A. 2018). However, in the written and practical tests, 280 (80%) and 232 (66%) participants received overall scores of less than 50% (Kaihula et al., 2018). In this study, 191 (84.59%) participants were previously trained about BLS; out of them, 62 (26.16%) were trained six months earlier, 44 (18.56%) were trained one year earlier, 40 (16.87%), trained two years earlier, while 45 (23.5%) were trained for more than two years earlier. In addition, 9 per cent of health personnel responded incorrectly to questions, including the BLS abbreviation. In another study, 25 respondents (18%) failed to correctly define the meaning of the term BLS (Almesned et al., 2014). BLS, which stands for essential life support, was unfamiliar to almost 23.8% of the respondents (Alanazi et al., 2014). Regarding the initial response when the victim was discovered unresponsive, 64.55 per cent of participants correctly answered. In another study, two hundred forty-five (53.1%) of the respondents correctly said they would check for a response after discovering a patient who was having a cardiac arrest in a secure area (Nambiar et al., 2016).

Conclusion

This study showed that although most healthcare professionals have many years of experience in critical hospital areas, such as ICU, CCU and EAR, they need to gain more knowledge about BLS. Many of them should have refreshed their knowledge once trained. Therefore, the hospital administration in KP needs to facilitate, encourage and update the knowledge and skills of all healthcare professionals about BLS regularly for managing medical emergencies and increasing the chance of survival.

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