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ORIGINAL ARTICLE

Knowledge of Basic Life support in Post Graduate Residents in two Teaching Hospitals

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ABSTRACT

Background: Cardiopulmonary resuscitation (CPR) knowledge and training among junior doctors is very important as the junior doctor is mostly the first one to attend the patients in emergency room. Unfortunately, they don't have enough knowledge. Healthcare professionals need to have hands-on practice regularly in order to retain the BLS skills.
Aim: To determine the frequency of adequate knowledge of basic life support among Post graduate residents.
Method:A Descriptive, Cross-sectional study was conducted from November 2017 to May 2018 in the Children's Hospital Lahoreand from June 2022to August 2022 in Government Kot Khawaja Saeed Teaching Hospital, Lahore. A total of 96doctors of all 4 years of postgraduate training program of either genderwere included. A questionnaire was prepared. It included demographic data and BLS knowledge assessment. It was distributed to participants who met the inclusion criteria. It did not contain the name of the participant and confidentiality was maintained. Questionnaire was collected back after the completion and knowledge score was noted as described in questionnaire. Score >8 was taken as adequate knowledge.
Results: Mean age was 28.76 ± 2.29 years. Out of 96 participants, 70 were from Children Hospital and 26 from Govt. Kot Khawaja Saeed Teaching Hospital KEMU, 50(52.08%) were males and 46(47.92%) were females. The male to female ratio is 1.1:1. Mean time duration since BLS course attended was 9.12±4.54 months. Mean score was 11.78±3.98. This study has shown frequency of adequate knowledge of basic life support among pediatric residents in 57(59.38%) participants and remaining 39(40.62%) participants showed no adequate knowledge.
Conclusion: It is concluded that frequency of adequate knowledge of basic life support among postgraduate residents is good.
Keywords: Basic life support (BLS), Pediatric Advanced Life Support, residents, adequate knowledge.

INTRODUCTION

Basic life support is a medical care which is provided in life-threatening illnesses or injuries until they can get full care by health care providers. It can be provided by trained health care provider including Physicians, Nurses and Paramedical staff and even trained common public.Basic Life Support (BLS) comprises of identification of sudden cardiac arrest signs, impending respiratory failure, foreign body airway obstruction, and measures to reverse these. General public should also be familiar of BLS skills for saving lives. For doctors and paramedical staff ,it is more important to learn BLS skills as they are facing life threatening situations in hospitals [1, 2]Overallsurvival in patients with an out-of-hospital cardiac arrest has remained low (6%) due to the fact that only one third to one half of these patients receives bystander cardiopulmonary resuscitation (CPR). Out-of-hospital arrest survivors, many suffer permanent brain injury. One the other hand, survival in patients with in-hospital cardiac arrests has increased from 9% to 27% due to earlier recognition and management of critical conditions, earlier CPR, by specialists trained in resuscitation[2,3]. BLS includes immediate support of both ventilationand circulation in case of cardiac or respiratory arrest. Cardiac arrest decreases blood circulation which further causes cessation of breathing, depression of breathing and no circulation leads to ischemia which causes sudden death[4].

Cardiopulmonary resuscitation (CPR) knowledge and training among junior doctors is very essential as they have first encounter with sick patients in Emergency room.[5,6]. Unfortunately, they don't have enough knowledge. Healthcare professionals need to have hands-on practice regularly in order to retain the BLS skills[5, 7]. In a study conducted in Nepal, health care professionals with CPR training in last 5 years got highest mean score of BLS knowledge of 8.62±2.49, whereas those who obtained CPR training more than 5 years got mean score of 5.54±2.38 and 6.1±2.29 respectively (*P*=0.001). Health care professionals who were involved frequently in resuscitation had higher score compared with infrequent handler of resuscitation (*P*<0.001)[8]. In a study in India to assess the BLS knowledge, out of total 117 participants 3 participants obtained 80-90% marks in pretest whereas rest of participants contained less than 50% marks[1]. In a study, percentage of adequate knowledge was seen in 54.25% residents[9].

Good Basic life support technique decreases the chances ofcardiac arrest, CPR duration increases frequency of hospital discharges. The aim of this study is to know the awareness of basic life support among doctors to guide further planning of BLS programs in the hospital to improve BLS training of doctors to decrease morbidity and mortality related to poor BLS techniques. Similarly such courses should be extended to educated parents and general public to decrease childhood morbidity and mortality.

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METHODS

It is Descriptive, Cross-sectional study done in The Children's Hospital and Institute of Child Health Lahore from November 2017 to May 2018 and from June 2022 to July 2022 in Government Kot Khawaja Saeed Hospital. The calculated sample size was 96with 95% confidence Level, 10% margin of error, and taking percentage of adequate knowledge of basic life support among Post graduate residents as 54.25% and it was Non-probability, consecutive Sampling technique. Residents of all 4 years of post-graduate training program of both gender andincompletequestionnaire was not included in the study

Data collection: A questionnaire was prepared. It included demographic data and BLS knowledge assessment. It was distributed to participants who met the inclusion criteria. It did not contain the name of the participant and confidentiality was maintained. Questionnaire collected back after the completion and knowledge score was noted as described in questionnaire. Score >8 was taken as adequate Knowledge.

Data analysis: We used SPSS version 20. Mean and standard deviation was analyzed for age and duration of time since BLS course attended.Frequency and percentage wasanalyzed for gender, year of residency (I/II/III/IV) and adequate knowledge (yes/no). Effect modifiers like age, gender, duration of time since BLS course attended and year of residency (I/II/III/IV) were controlled through stratification. chi square chart was applied to see their effect on Outcomeand p-value ≤0.05 was considered as significant.

RESULTS

Age range in my study was from 20 to 40 years with mean age of 28.76 ± 2.29 years. Majority of the participants 66(68.75%) were between 20 to 30 years of age. Out of 96 participants, 50(52.08%) were males and 46 (47.92%) were females. Male to female ratio is 1.1:1. Mean time duration since BLS course attended was 9.12±4.54 months. This study has shown frequency of adequate knowledge of basic life support among pediatric residents in 57(59.38%) participants and remaining 39(40.62%) participants showed no adequate knowledge.

Table-II: Distribution of participants according to Age (n=96).

Age (in years)	No. of Participants	%age
20-30	66	68.75
31-40	30	31.25
Total	**96**	**100.0**

Mean ± SD = 28.76 ± 2.29 years

Figure III: Distribution of participants according to gender (n=96).

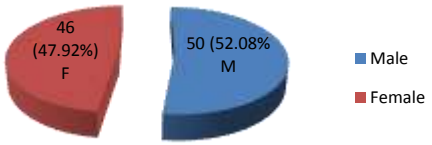
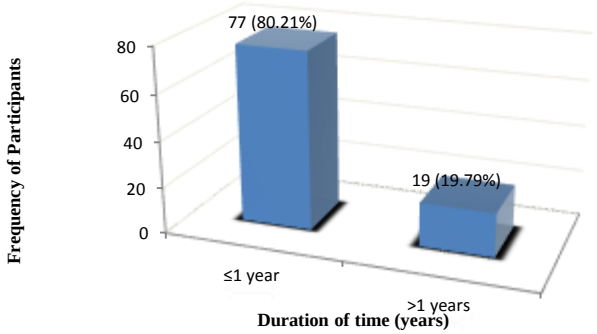


Figure IV: Distribution of participants according to duration of time since BLS course attended (n=96).



Mean ± SD = 9.12 ± 4.54 months.

Figure V: Distribution of participants according to year of residency (n=96).

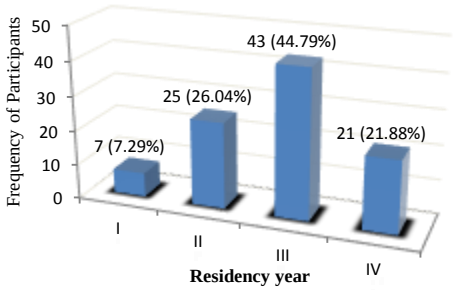


Figure VI: Frequency of adequate knowledge of basic life support among pediatric residents

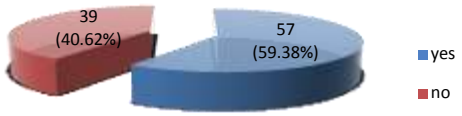


Table III: Stratification of adequate knowledge with respect to age groups.

Age groups	Adequate knowledge	
	Yes	No
20-30	38	28
31-40	19	11
P-value	**0.594**	

Table IV: Stratification of adequate knowledge with respect to gender.

Gender	Adequate knowledge	
	Yes	No
Male	25	21
Female	32	18
P-value	**0.336**	

Table V: Stratification of adequate knowledge with respect to duration of time since BLS course attended.

Duration of time since BLS course attended	Adequate knowledge	
	Yes	No
≤1 year	44	33
>1 year	13	06
P-value	0.370	

Table VI: Stratification of adequate knowledge with respect to year of residency.

Year of residency	Adequate knowledge	
	Yes	No
I	04	03
II	09	16
III	32	11
IV	12	09
P-value	**0.021**	

DISCUSSION

Post graduate trainees complete their training lacking sufficient knowledge and skills of resuscitation expertise for care of critically ill patients[10]. BLS and Pediatric Advanced Life support are benchmark of pediatric training. These trainings comprise of steps of resuscitation and management of life threatening emergencies. The mastery and recognition decrease significantly over period of 1 year[11]. Coolen et al[12] compared video assisted real time stimulation to conventional problem based scenarios and PALS, they concluded that video based learning best suits in pediatric emergencies skill trainings.We have conducted this study to determine the frequency of adequate knowledge of basic life support among post graduate residents. Mean duration of time

since BLS course attended was 9.12±4.54 months. This study has shown frequency of adequate knowledge of basic life support among post graduate residents in 57(59.38%) participants and remaining 39(40.62%) participants showed no adequate knowledge. Recently, Almesned et al[15] assessed the awareness of BLS knowledge in physicians, healthcare students and pharmacists at Qassim University Saudi Arabia. He came to know that candidates didn't have proper knowledge of this and require improvement.

Multiple studies of pediatric staff in the UK and in other Western countries have shown both a lack of knowledge and a poor ability to carry out basic lifesaving skills[14,15]. Cooper et al[20] observed that candidates who had learnt BLS in last six months were more competent..Pillow et al[16] established that 98.2% of students assumed that in the medical curriculum, BLS should be incorporated. Roshana et al[17] proposed that undergraduate students should also be trained for BLS. Sharma and Attar[18]established that all medical personals including medical school should receive basic life support techniques. The trained candidate have higher score of BLS skills as compared to untrained candidates.In a recent study, it has also been seen that achievement ofskills was highest immediately after trainings but decays with passage of time[19].

CONCLUSION

The BLS training is for handling life threatening emergencies and it should be mandatory for medical students, public safety professionals and Post graduate residents. Moreover the practising Physicians, Surgeons, Nurses and medical Residents need its repetitive trainings in order to reduce mortality and morbidity of hospitals.

Conflict of interest: None

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