KAP STUDY

Assessment of knowledge, attitude and practice of basic life support among physical therapy practitioners in Rawalpindi and Islamabad

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Abstract

Objective: To assess the level of knowledge, attitude and practice of basic life support among physical therapy practitioners.

Method: The descriptive cross-sectional study was conducted at Riphah International University, Islamabad, Pakistan, from February to July 2018, and comprised data collected from physical therapy practitioners working at four public-sector hospitals in Rawalpindi and Islamabad. A 30-item structured questionnaire adapted from the American Heart Association was used. Data was analysed using SPSS 21.

Results: Of the 100 subjects, 65(65%) were females and 35(35%) were males. The overall mean age was 25.54±3.76 years. The mean score of BLS knowledge and practice was 7.27±1.79 and 3.77±1.65 respectively. of the total, 61(61%) had received prior basic life support training, and the difference in knowledge and practice scores between trained and untrained professionals was significant ($p<0.05$). Gender-based difference was significant ($p=0.02$). All (100%) participants showed positive attitude towards basic life support training.

Conclusion: Physical therapy practitioners possessed average basic life support knowledge, but practising skills were lacking.

Keywords: Attitude, Cardiopulmonary Resuscitation, Knowledge, Physical Therapists.

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Introduction

Medical emergency or sudden illness can occur anywhere, anytime without warning, and as these are not planned, it is vital for every person in a community to be prepared for what to do and how to react when facing such a situation.[1] Early provision of good quality basic life support (BLS) is considered an important step in the "chain of survival" in cardiac arrest. BLS refers to maintaining airways, supporting breathing and circulation of an individual without any equipment. It involves noticing signs of sudden cardiac arrest,[2] heart attack, stroke and foreign-body airway obstruction (FBAO), and execution of cardiopulmonary resuscitation (CPR) and use of an automated external defibrillator (AED).[3]

Medical emergency experienced in a physical therapy setting is no surprise like elsewhere. Being healthcare professionals, it is an important duty of all physical therapists (PTs) to sustain life until medical help arrives, reducing the chances of morbidity. American Physical Therapy Association (APTA) states that all PTs, assistants (PTAs) and student PTs should be trained periodically in BLS of adults, children and infants.[4]

An emergency can be managed effectively by proper knowledge and practice of resuscitation skills.[5] The skill to perform CPR is important as it increases the chances of survival of an individual in a potentially life-threatening situation. It is crucial for every healthcare professional to have BLS knowledge to save lives and improve the general quality of public health.[6] As such, it is essential to assess theoretical knowledge and practice skills of PTs to avoid having proportion of lay rescuers performing CPR at a much faster rate, making BLS provision ineffective. Studies on BLS/CPR have rarely been conducted among PTs worldwide. To bridge this gap, the current study was planned to evaluate the knowledge, attitude and practice (KAP) related to BLS among the PTs.

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Subjects and Methods

The descriptive, observational cross-sectional study was conducted at Riphah International University, Islamabad, Pakistan, from February to July 2018. After getting approval from the institutional ethics committee, the sample size was calculated using Raosoft sample size calculator with 5% margin of error, 95% confidence level, response distribution 80% and assumed population size 300.[7] Using purposive sampling technique, the sample was raised with permission from four public-sector hospitals of Rawalpindi and Islamabad. These were the Armed Forces Institute of Rehabilitation Medicine (AFIRM), Pakistan Railway General Hospital (PRGH), Fauji Foundation Hospital (FFH), and the National Institute of Rehabilitation Medicine (NIRM).

The study population comprised graduate, postgraduate PTs regardless of age, gender and clinical specialty working as regular employees in their clinical facilities and willing to participate. Those working as academicians, undergraduates and PTAs were excluded. Data was collected after receiving consent form from all the subjects.

A self-administered questionnaire was used to gather demographic and professional details of the participants, including BLS certification, if any. The second questionnaire consisted of predefined 30 structured multiple choice questions (MCQs) adapted from the American Heart Association BLS Guidelines 2010.[8,9]

Theoretical knowledge of BLS and practice skills were assessed through 13 and 10 questions respectively. Each correct answer was given 1 mark in scoring. Further levels of knowledge and practice were analysed by converting total scores to a percentage scale.[3] A score of >75% was considered excellent, >65%-75% very good, >55%-65% good, >45%-55% average, >30%-45% poor and <30% very poor. The attitude of PTs towards BLS was assessed by 7 questions. The attitude responses were taken as 'Yes', 'No' or 'Not Sure', and the number of each response was calculated. It included questions like importance and need of BLS training, their willingness to be trained and taught BLS skills, should it be performed voluntarily, mouth-to-mouth in same or mouth-to-mouth in opposite gender and should it be regular part of post-graduate PT curriculum. Each participant took almost 10-15 minutes to complete the form.

Data was analysed using SPSS 21. Descriptive and inferential test statistics were applied. The data was divided into gender-based and training-based groups. Mean and standard deviation (SD) were calculated for all quantitative variables. Percentages and frequencies were calculated for qualitative variables. The normality of knowledge and practice scores was calculated by Kolmogorov test, indicating that data was non-normally distributed. So, Mann-whitney U test was applied to compare gender- and training-based BLS knowledge and practice scores of the subjects.

Results

Of the 136 PTs approached, 100(73.5%) responded; 65(65%) females and 35(35%) males. The overall mean age was 25.54±3.76 years. In terms of professional experience, 52(52%) had been in the field for less than 1 year, 28(28%) 1-2 years, and 20(20%) 3 or more years. Professional qualification was Doctor of Physical Therapy (DPT) in 65(65%) cases, post-professional DPT (PP-DPT) in 10(10%), and Masters in 25(25%). Overall, 59(59%) were house officers, 24(24%) consultants and 17(17%) were postgraduate trainees (PGTs). Also, 61(61%) PTs had attended a BLS course in the preceding 2 years and were classified as BLS-trained, whereas 39(39%) were untrained.

The mean BLS knowledge score was 7.27±1.79 (range: 3-12) (Table 1). Most PTs 35(35%) had average knowledge, 22(22%) good, 17(17%) poor, 16(16%) very good, 9(9%) excellent and 1(1%) had very poor knowledge. Male PTs had a higher score ($p<0.05$) compared to the females, whereas BLS-trained and untrained PTs showed no difference ($p>0.05$) in knowledge scores.

Table-1: Percentage Score Distribution of Knowledge Question Responses.

Questions	Correct	Incorrect
1. What does the abbreviation mean? "BLS"	96	4
2. When you find someone unresponsive in the middle of the road, what will be your first response?	73	27
3. If you confirm somebody is not responding to you even after shaking and shouting at him, what will be your immediate action?	41	59
4. What is the location for chest compression?	67	33
5. What is the location for chest compression in infants?	49	51
6. How do you give rescue breathing in infants?	44	56
7. Depth of compression in adults during CPR	62	38
8. Depth of compression in Children during CPR	21	79
9. Depth of compression in neonates during CPR	41	59
10. Rate of chest compression in adult and Children during CPR	55	45
11. What does abbreviation AED stands for?	48	52
12. What does abbreviation EMS stands for?	73	27
13. If you and your friend are having food in a canteen and suddenly your friend starts expressing symptoms of choking but responsive, what will be your first response?	22	78

BLS: Basic Life Support; AED: Automated external defibrillator; CPR: Cardiopulmonary resuscitation.

Table-2: Percentage Score Distribution of Practice Skill Question Responses.

Questions	Correct	Incorrect
1. The 5 links in the adult Chain of Survival include all of the following EXCEPT:	16	84
2. How often should rescuers switch roles when performing 2-rescuer CPR?	13	87
3. The initial Basic Life Support (BLS) steps for adults are:	49	51
4. Where should you attempt to perform a pulse check in adult?	86	14
5. The compression to ventilation ratio for the lone rescuer giving CPR to victims of ANY age is:	47	53
6. The proper steps for operating an AED are:	63	37
7. The 2010 AHA Guidelines for CPR recommended BLS sequence of steps are:	15	85
8. Signs of severe airway obstruction include all of the following EXCEPT?	12	88
9. In an adult with an advanced airway in place during 2-rescuer CPR, breaths should be administered how often?	7	93
10. The critical characteristics of high-quality CPR include which of the following?	67	33

AED: Automated external defibrillator; CPR: Cardiopulmonary resuscitation; AHA: American Heart Association.

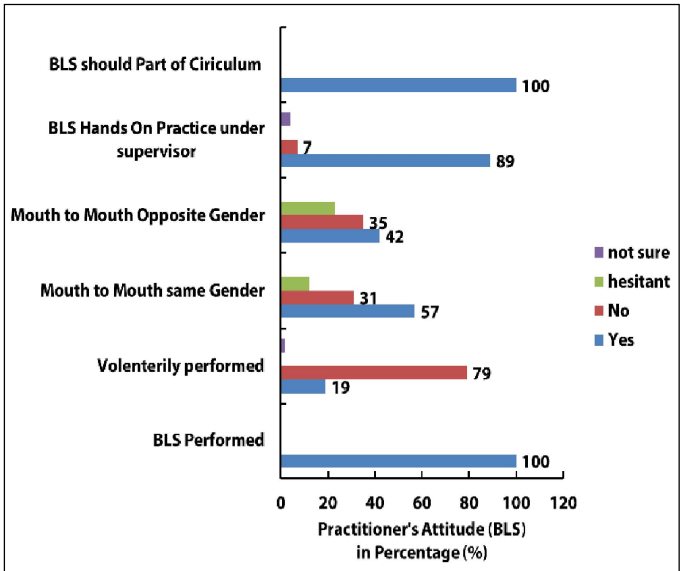

Figure: Percentage of Attitude responses regarding Basic life support (BLS) among the Physical Therapy Practitioners.

The mean score for practice skills was 3.77±1.65 (range: 1-10) (Table 2). Most PTs 51(51%) were ranked very poor, 23(23%) poor, 9(9%) average, 11(11%) good, 4(4%) very good and 2(2%) excellent. Females had higher scores ($p<0.05$) compared to the males. BLS-trained and untrained PTs showed no significant difference ($p>0.05$).

The attitude toward BLS training of the participants was very positive as all the 100(100%) PTs thought it necessary to be trained in BLS and that such a training should be part of the educational curriculum. Only 19(19%) performed BLS voluntarily, while 57(57%) and 42(42%) PTs had no issue performing mouth-to-mouth resuscitation in the same and opposite gender respectively. Also, 89(89%) PTs stated that they would like to undergo BLS training with hands-on practice under supervision (Figure).

Discussion

The current study had 52% certified BLS trainers. An earlier study had 52% junior doctors with BLS training.[3] In another study, 28.2% of the radiology residents had attended a BLS course.[10]

In our study the average BLS knowledge score was 7.27±1.79, which correlates with earlier results.[4,11] In contrast, one study reported mean knowledge score of 5.28.[12]

A study about knowledge and awareness of medical students about BLS reported 57% students had no knowledge of BLS and only 21% students knew about BLS skills.[13] In comparison, the current study reported average BLS knowledge of 35% and >% of the respondents were not aware about the management of choked and collapsed patients, depth of chest compression in children and neonates, and rescue breaths in infants. Similar results were reported by a study on Egyptian medical students.[14]

In the current study, female PTs had less score about BLS knowledge. Likewise, a study reported poor overall BLS knowledge among female students in Saudi Arabia.[15] A study concluded that the male population had a higher level of knowledge than females ($p<0.001$).[16]

Regarding BLS knowledge scores, in our study total participants in the excellent category were about 9%. A study found 20% falling in that category.[3] Also, 35% of our participants were in the average category, and one study reported 35% of medical students in that category.[17] Besides, 17% and 1% of our subjects were in the poor and very poor categories. A study on medical students and nurses reported 31.1% and 14% in the poor category respectively.[17] Knowledge of BLS among medicine, pharmacy, dentistry, and allied health science students and health providers at Qassim University in the Kingdom of Saudi Arabia was found to be poor.[18] Awareness level on BLS was below average with 61.9% subjects stressing the importance of professional training at all levels in a tertiary care health institution.[19] Not much different were the results of a study involving students, doctors and nurses in India.[8]

About the BLS practice, 51% in the current study fell in the category of very poor, 23% in poor, and only 2% in the excellent category. A study reported 1.5% excellent and 48.6% very poor categories.[3]

In our study 100% participants were of the opinion that BLS training should be part of the educational curriculum. And 89% participants said they would like to go on BLS training with hands-on practice. Likewise, in a study 92.21% subjects were willing to attend a hands-on workshop.[3] Another study found 84.4% dentists willing to be trained.[12]

The current study was the first of its kind from Pakistan as no national data has been reported earlier on BLS KAP among PTs. The study does have its limitations. The participants were reluctant to have knowledge assessment, and BLS proficiency was subjectively measured. Thus, it is recommended to objectively evaluate practice skills of PTs on a larg scale to better generalise the findings. Also, the updated 2015 BLS AHA guidelines could not be evaluated on PTs because in literature predefined structured questionnaire was only available up to 2010 guideline.[8,9] Future studies should evaluate KAP findings on PTs according to the updated guidelines with particular emphasis on age groups.

Conclusion

PTs possessed average knowledge of BLS but majority had deficient practice skills required to execute BLS effectively. Male PTs had a higher knowledge of BLS, whereas female PTs possess better practical skills. Both showed a positive attitude towards BLS training and certification.

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