

Cardiopulmonary Resuscitation–Attitudes and Awareness among Physical Therapists of Karachi; A Cross-Sectional Survey

Sobia Hassan¹, Saad Saleem², Fahad Farooq³, Amaila Fazal⁴, Sabika Minhaj⁵, Muhammad Khurram⁶

¹ Assistant Professor, Iqra University, Karachi Pakistan

² Assistant Professor, Iqra University, Karachi Pakistan

³ Assistant Professor, Dadabhoy Institute of Higher Education, Karachi Pakistan

⁴ Senior Lecturer, Zia Uddin University, Karachi Pakistan

⁵ Senior Lecturer, Zia Uddin University, Karachi Pakistan

⁶ Lecturer, Iqra University, Karachi Pakistan

Author's Contribution

¹Conception and design, Collection and assembly of data, ²Analysis and interpretation of the data, ⁵Drafting of the article, ⁴Critical revision of the article for important intellectual content, ⁶Statistical expertise, ³Final approval and guarantor of the article.

Article Info.

Received: October 4, 2021

Acceptance: September 21, 2022

Conflict of Interest: None

Funding Sources: None

Address of Correspondence

Dr Amaila Fazal

Email Id: amaila.fazal@gmail.com

ORCID: 0000-0002-5457-0493

Cite this article as: Hassan S, Saleem S, Farooq F, Fazal A, Minhaj S, Khurram M. Cardiopulmonary Resuscitation–Attitudes and Awareness among Physical Therapists of Karachi; A Cross-Sectional Survey. *JRCRS*. 2022; 10(2):85-89

<https://dx.doi.org/10.53389/JRCRS.2022100206>

A B S T R A C T

Objective: To compare and study the attitude and awareness level related to Cardiopulmonary Resuscitation (CPR) among physical therapists in Karachi.

Methodology: The total sample was 126 physical therapists in this study. This was an observational study based on a cross-sectional design conducted for the assessment of CPR attitude and awareness of physical therapists through simple convenient sampling technique during the period of December 2020 to June 2021 from various public and private sector hospitals and rehabilitation centers of Karachi. Data collection was done through a questionnaire consisting 31 questions categorized into three sections including demographics, CPR attitudes and CPR awareness. Descriptive data was analyzed using frequency and percentages. The traits of physical therapists were analyzed using continuous variables, consisting of CPR education and the perception of its value, ideals about CPR use, and understanding of contemporary CPR protocols were presented as numbers and percentages.

Results: Results revealed more female physical therapists (76%). Most of them (70%) were aged less than 35 years and had less than 15 years of working experience. Most of them were engaged in musculoskeletal practice (40.5%). Almost 31% participants had CPR certifications. Less than half of the physical therapists (38.9%) reported $\leq 25\%$ success rate of CPR. Majority of the participants stated that their ability to perform CPR was satisfactory (44.4%).

Conclusion: The overall awareness of physical therapists regarding CPR was evident, but the attitude regarding CPR need improvement. It was also evident from the results that mandatory professional training programs should be conducted.

Keywords: Attitude, Awareness, Cardiac Arrest, Cardiopulmonary Resuscitation (CPR), Physical Therapists.

Introduction

Cardiopulmonary resuscitation (CPR) is an essential part of clinical practice.¹ This technique is used for the revival of the cardiac arrest patients.² The outcomes after cardiac arrest and CPR are dependent on suitable mediations, especially timely defibrillation, chest compressions done correctly and prompt administration of Advanced Cardiac Life Support (ACLS).^{2, 3} According to researches, patient survival in which ventricular fibrillation (VF) has been witnessed, myocardial

infarction rates reduces by 7–10%, with the passage of time.^{1, 3} Causes of unexpected heart attack could range anywhere from cardiac diseases, suffocation, pulmonary diseases, electrocution, drowning and to other numerous causes leading to breathing or blood circulation impairment.⁴

European Resuscitation Council (ERC) along with the American Heart Association (AHA) uses the “Chain of Survival”, also called four links in action to improve the cardiac arrest

patients' pre-hospital care. These four links in action accentuates time-dependent interventions to maximize the chance of patient survival. The chain of survival includes (1) Early Access—for the activation of the Emergency Medical Services (EMS); (2) Early basic life support (BLS)—decreases the rate of brain and heart deterioration and extends time to enable Defibrillation;³ Early Defibrillation—helps to restart a rhythm which can perfuse; and (4) Early Advanced Cardiac Life Support (ACLS)—which stabilizes the patient.⁵

The prime objective of CPR is to maintain enough circulation to preserve existence till specialized treatment is provided. As mentioned, early CPR is an essential aspect in the chain of survival in Emergency Cardiovascular Care (ECC), layperson being the most crucial hyperlink.^{6,7}

Health care specialists play a pivotal role in making sure that every link within the chain of survival is accomplished in a well-timed and knowledgeable manner.⁵ According to the specifications for physical therapy requirements notes, physical therapists "Are morally obliged to implement in their attitude, the risk and safety administration measures to ensure patient safety".^{8,9} Physical therapists meet patients with diverse general health experiences, ranging from sports fields to clinics and hospitals.¹⁰ Physical therapists work with patients in such environments in collaboration with other staff members, or be the most recognized health expert handing over treatment, implying that physical therapists should also have detailed and up-to-date awareness of CPR and pro-level expertise to properly respond in an emergency.¹¹⁻¹³

It was presumed that there would be CPR awareness gaps along with low levels of competence among Pakistani physical therapists along with the negative attitudes regarding CPR use. Thus, this study aimed to analyze the awareness of physical therapists in Karachi regarding CPR and their opinions about the use of CPR in an emergency.

Methodology

This was a survey based-observational-cross-sectional study assessing the attitude of a total of 126 physical therapists of Karachi towards CPR along with their awareness, during the period of December 2020 to June 2021. A Convenient simple sampling technique was applied. This study was conducted between both male and female graduate and post-grad physical therapists of various private and government hospitals and also the private physical therapy centers in Karachi.

All the graduated physical therapists who are currently practicing were included in the study regardless of the gender and age. However, physical therapists who were not

working in any of the described settings and undergraduates were not included in the study.

Data was collected using a self-structured questionnaire. Inter-examiner reliability of the questionnaire was calculated using mixed model through Cronbach's alpha and intra-class coefficients. The questionnaire consisted of thirty-one close-ended questions categorized into three sections including Demographics for the assessment of participants' socio-demographic characteristics, CPR attitudes for assessing the awareness and acquisition of CPR skills and CPR awareness for the assessment of experience with loss of consciousness or traumatic events and attitudes towards acquiring CPR skills (questions 1-7, 8-20 and 21-31, respectively). As the survey was conducted online, it created an unknown response rate with undefined sample thereby left no way of following with the non-participants response rate of 10%.

The permission to commence this study was granted by the ethical committee of Karachi Institute of Physiotherapy and Rehabilitation Sciences (KIPRS) and physical therapists from all over Karachi participated in this study, reference # KIPRS/R&D/ERC/2021-06. The confidentiality of participants was maintained at all the times and written informed consent was taken prior to start of study.

Statistical analyses were done using 22 version of SPSS. Descriptive data was analyzed using frequency and percentages. The traits of physical therapists were analyzed using continuous variables, consisting of CPR education and the perception of its value, ideals about CPR use, and understanding of contemporary CPR protocols were presented as numbers and percentages.

Results

The total sample was 126 physical therapists in this study, including more female physical therapists (female 76%). Most of them (70%) were aged less than 35 years and had less than 15 years of working experience. Moreover, 60% were employed and were engaged in musculoskeletal practice (40.5%) most frequently. Further, 33% were trained CPR administrators (Table I).

Almost 31% participants had up to date CPR certifications. Around 26.2% participant used CPR in an emergency, but only 23% were successful. Less than half of the physical therapists (38.9%) reported \leq 25% success rate of CPR while dealing with cardiac arrest patients out-of hospital. Further, CPR training should be included as part of physical therapists' annual practicing certificate or in the portfolio of continuing professional development was reported by 56.3%

study participants. Majority of the participants stated that their ability to perform CPR was satisfactory (44.4%) (Table II).

Only few participants reported accurate extent of time to stop CPR when patient had not recovered (27%). Roughly 65.9% participants reacted effectively on assertion relating to seeking help first when alone with a patient needing CPR. Further, length of breathing check in an unresponsive patient was determined by 77% participants; use of automated external defibrillators (AED) for cardiac arrest patients was not advised by only 27% physical therapists (Table III).

Discussion

This study was conducted in relation to previous research conducted by Oteir AO et.al, 2020¹⁴ which arouse a need and make it mandatory for all personnel related to medical that they should have CPR skills. Research have suggested that this skill must be interpreted and correctly practiced.^{13, 15}

It was identified that in contrast to a previous research¹² physical therapists in Karachi had superficial awareness and perception of CPR. This might be defined by the reality that there may be no obligatory requirement of CPR accreditation for Pakistani physical therapists and only a few physical therapists within the study had genuinely obtained any preceding CPR training.

Correspondingly, the result of this study is again similar to the findings of Jonathan W., et.al¹² in terms of time of life and no of years a person has worked, that is, majority of physical therapists, around 44.4%, between the ages of 26–29

Variable	N	%
Gender	Male	30 23.8
	Female	96 76.2
Experience	0-5 Years	85 67.5
	6-10 Years	22 17.5
	11-15 Years	19 15.1
Qualification	Yes	53 42.1
	No	73 57.9
Employment Status	Employer	22 17.5
	Employee	60 47.6
	Self Employee	44 34.9
Training	Less than 3 months	37 29.4
	6-12 months	27 21.4
	1-2 Years	20 15.9
	Greater than 2 Years	42 33.3
Age	<= 20	1 0.8
	21 - 25	41 32.5
	26 - 29	39 31
	30 - 34	17 13.5
	35+	28 22.2

Statement	N	%
Up-to-date CPR certificate	Yes	40 31.7
	No	86 68.3
Qualification above BLS	Yes	56 44.4
	No	70 55.6
Used CPR in emergency before	yes	33 26.2
	No	93 73.8
If yes, was it effective?	Yes	29 23
	No	17 13.5
	Don't Know	26 20.6
	N/A	54 42.9
CPR success rate in out-of-hospital Cardiac arrest	0-25 %	38 30.2
	26-50 %	39 31
	51-75 %	49 38.9
CPR training for physical therapists	Mandatory APC	71 56.3
	Mandatory CPD	34 27
	Voluntary	21 16.7
Rate of your ability of CPR	Poor	18 14.3
	Fair	32 25.4
	Satisfactory	56 44.4
	Effective	17 13.5
	Highly Effective	3 2.4
If CPR was needed during emergency at work, I would not be sure about how to react	Strongly Disagree	12 9.5
	Disagree	1 0.8
	Neutral	30 23.8
	Agree	60 47.6
	Strongly Agree	23 18.3
To perform and intervene in an emergency CPR is a duty of physical therapist	Strongly Disagree	8 6.3
	Disagree	32 25.4
	Neutral	52 41.3
	Agree	29 23
	Strongly Agree	5 4
If CPR was needed in public, I would not be sure about how to react	Strongly Disagree	8 6.3
	Disagree	33 26.2
	Neutral	51 40.5
	Agree	32 25.4
	Strongly Agree	2 1.6
PPEs are required to perform CPR	Strongly Disagree	12 9.5
	Disagree	25 19.8
	Neutral	33 26.2
	Agree	31 24.6
Mouth-to-mouth ventilation is not preferred by me during CPR	Strongly Agree	25 19.8
	Strongly Disagree	9 7.1
	Disagree	30 23.8
	Neutral	42 33.3
	Agree	38 30.2
	Strongly Agree	7 5.6

Table III: Attitudes of the participants related to CPR awareness.

Statements regarding CPR	T/F	True		False	
		N	%	N	%
100 per minute is the compression rate	T	84	66.7	42	33.3
Breath over 1 second should be given by each rescue	T	83	65.9	43	34.1
Before starting CPR, go for help with adult patient, if alone	T	83	65.9	43	34.1
Stop CPR, if patient recovery is not observed after resuscitation of 15-20 minutes	F	92	73	34	27
AED advised shock for all heart attack patients	F	92	73	34	27
To check for breathing, no longer than 10 seconds should be taken for an unresponsive patient	T	98	77	28	22.2
After giving CPR, patient should be reassess for recovery every two minutes	F	112	88.9	14	11.1
The infants and children < 8 years of age could be given AED	T	60	47.6	66	52.4

years, had sufficient CPR abilities and awareness just as those with experience of 0-5 years or above. This could be elucidated in a way that in Pakistan CPR is emphasized under the domain of clinical health practitioners, however when compared to developed countries, where CPR education is imposed on the public, which includes medical universities students as well.^{16, 17}

In comparison with a study conducted by Mbada et al, in Nigeria¹⁸, it was noticed that around 26.2% participant used CPR in an emergency, but only 23% were successful.

The current results are consistent with the study of Jonathon W. et al,¹² which indicated that physical therapists working in private settings like universities and hospitals have current CPR expertise and accreditations as compared to those working in other areas.¹⁹

But our results contradicted with the results indicated in Jonathan W. et al, study in New Zealand¹². Our data indicates that more physical therapists in Karachi (44.4%) had additional qualifications above basic life support.

Currently, only 27.2% participants showed correct awareness about the administration of AED, in contrast Jonathan W. et al,¹² showed higher awareness rate (66.5%). This difference reveals that the people are not interested to avail the up to date awareness regarding CPR.²⁰

The current study had four identified boundaries. The foremost limitation was the cross-sectional study design, therefore only inferences could be identified and not the causalities. Secondly, the use of self-recommended might have brought bias that might not reflect real conduct of the participants. As the survey was conducted online, it created an unknown response rate with undefined sample thereby left no way of following with the non-participants (10%). Fourth, this study being a questionnaire-based study could not evaluate the practical or hands-on skills of the study participants which forms an important aspect of CPR training.

It is recommended that future studies ought to study the CPR competency of physiotherapists in actual with a practical evaluation by hands-on evaluation instead of a theoretical evaluation, proper follow-up of non-participants, and face-to-face interviews. It is also recommended that high-

quality CPR should be learnt by public as well which contrasts with the popular belief that CPR should be administered by a health care professional. Therefore, the understanding of public for high-quality, proper CPR administration is also important and is a step that is easily manageable. Hence, it is essential to educate the society on their understanding and awareness towards BCLS/CPR, and the attitude should be evaluated, so that suitable interventions may be implemented much more effectively.

Conclusion

The overall awareness of physical therapists regarding CPR was evident, but the attitude regarding CPR need improvement. It was also evident from the results that mandatory professional training programs and refresher programs should be conducted in a timely manner at all levels in any health care institution. Regular courses, hands-on workshops, and updated research studies are strongly recommended to improve CPR awareness and skills. From this study, a strong message was conveyed especially to all health care workers to get CPR training certified and keep themselves up to date regarding the current trends in CPR attitudes.

References

1. Ibrahim W. Recent advances and controversies in adult cardiopulmonary resuscitation. *Postgraduate Medical Journal*. 2007; 83(984):649-654.
2. Fredriksson M, Herlitz J, Nichol G. Variation in outcome in studies of out-of-hospital cardiac arrest: a review of studies conforming to the Utstein guidelines. *The American journal of emergency medicine*. 2003 Jul 1;21(4):276-81.
3. Kwiecień-Jaguś K, Mędrzycka-Dąbrowska W, Galdikienė N, Via Clavero G, Kopeć M. A cross-international study to evaluate knowledge and attitudes related to basic life support among undergraduate nursing students—A questionnaire study. *International Journal of Environmental Research and Public Health*. 2020 Jan;17(11):4116.
4. McNally B, Robb R, Mehta M, Vellano K, Valderrama AL, Yoon PW, Sasson C, Crouch A, Perez AB, Merritt R, Kellermann A. Out-of-hospital cardiac arrest surveillance—cardiac arrest registry to enhance survival (CARES), United States, October 1, 2005–December 31, 2010. *Morbidity and Mortality Weekly Report: Surveillance Summaries*. 2011 Jul 29;60(8):19.

5. Nolan J, Soar J, Eikeland H. The chain of survival. Resuscitation. 2006 Dec 1;71(3):270-1.
6. Milan M, Perman SM. Out of hospital cardiac arrest: a current review of the literature that informed the 2015 American Heart Association guidelines update. Current emergency and hospital medicine reports. 2016 Dec 1;4(4):164-71.
7. Jacobs, I., Nadkarni, V., ILCOR Task Force on Cardiac Arrest and Cardiopulmonary Resuscitation Outcomes, CONFERENCE PARTICIPANTS, Bahr J, Berg, R.A., Billi, J.E., Bossaert L, Cassan P, Coovadia, A. and D'Este, K. Cardiac arrest and cardiopulmonary resuscitation outcome reports: *Circulation*.2004; 110(21):3385-3397.
8. Cooper S, Johnston E, Priscott D. Immediate life support (ILS) training: Impact in a primary care setting. Resuscitation. 2007 Jan 1;72(1):92-9.
9. Gebremedhn EG, Gebregergs GB, Anderson BB, Nagaratnam V. Attitude and skill levels of graduate health professionals in performing cardiopulmonary resuscitation. Advances in medical education and practice. 2017;8:43.
10. Pepera G, Xanthos E, Liliou A, Xanthos T. Knowledge of cardiopulmonary resuscitation among Greek physiotherapists. Monaldi Archives for Chest Disease. 2019 Nov 12;89(3)
11. Harvey D, O'Brien D, Horner D. Is it time to make regular cardiopulmonary resuscitation training mandatory for all New Zealand registered physical therapists?. New Zealand Journal of Physiotherapy. 2019 Nov 1;47(3):137-8.
12. Jonathon Webber RN. Knowledge and perceptions of cardiopulmonary resuscitation amongst New Zealand physical therapists. New Zealand Journal of Physiotherapy. 2019 Jul 1;47(2):94-104.
13. Pandit R, Berry AK. Awareness, Knowledge and Attitude about Basic Life Support among Interns of Maharashtra University of Health Science's Affiliated Physiotherapy Colleges in Pune City: A Questionnaire Based Study. 2020;10(6):257-63.
14. Oteir AO, Almhdawi KA, Kanaan SF, Alwidyan MT, Williams B. Cardiopulmonary resuscitation level of knowledge among allied health university students in Jordan: a cross-sectional study. BMJ open. 2019 Nov 1;9(11):e031725.
15. Alzahrani HT, Alghamdi AS, Saad A, Alzahrani SM, Alghamdi MM, Minqash AS. Awareness and interpretation of basic life support and emergency medical services and its associated factors among students. Age.2019;231:23-1.
16. Aroor AR, Saya RP, Attar NR, Saya GK, Ravinanthan M. Awareness about basic life support and emergency medical services and its associated factors among students in a tertiary care hospital in South India. Journal of emergencies, trauma, and shock. 2014 Jul;7(3):166.
17. Adewale BA, Aigbonoga DE, Akintayo AD, Aremu PS, Azeez OA, Olawuwo SD, Adeleke JD, et al. Awareness and attitude of final year students towards the learning and practice of cardiopulmonary resuscitation at the University of Ibadan in Nigeria. African Journal of Emergency Medicine. 2020 Oct 19.
18. Mbada CE, Hakeem BO, Adedoyin RA, Awotidebe TO, Okonji AM. Knowledge, attitude and practice of cardiopulmonary resuscitation among Nigerian physiotherapists. Journal of Respiratory and Cardiovascular Physical Therapy. 2013;2(2):52-62.
19. Alnajjar H, Hilal RM, Alharbi AJ, Alharthi OH, Batwie RA, AlShehri RM, Algethami MR. Evaluation of Awareness, Knowledge, and Attitudes Towards Basic Life Support Among Non-Medical Students at Two Academic Institutions in Jeddah, Saudi Arabia. Advances in Medical Education and Practice. 2020;11:1015.
20. Kaihula WT, Sawe HR, Runyon MS, Murray BL. Assessment of cardiopulmonary resuscitation knowledge and skills among healthcare providers at an urban tertiary referral hospital in Tanzania. BMC health services research. 2018 Dec;18(1):1-8.

Copyright Policy

All Articles are made available under a Creative Commons "**Attribution-NonCommercial 4.0 International**" license. (<https://creativecommons.org/licenses/by-nc/4.0/>). Copyrights on any open access article published by *Journal Riphah college of Rehabilitation Science (JRCRS)* are retained by the author(s). Authors retain the rights of free downloading/unlimited e-print of full text and sharing/disseminating the article without any restriction, by any means; provided the article is correctly cited. JRCRS does not allow commercial use of the articles published. All articles published represent the view of the authors and do not reflect the official policy of JRCRS.