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ORIGINAL ARTICLE

A Study to assess the Knowledge Regarding CPR among Students of Selected College, Malampuzha

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ABSTRACT

The study was intended to assess the knowledge regarding CPR among the college students of selected college, Malampuzha. The objectives of the study were to assess the level of knowledge regarding CPR among the students of selected college and to find out the association between the level of knowledge regarding CPR and selected sociodemographic variables. The Study design used in this study is, Non-experimental descriptive survey design. The study was conducted among 200 students of ITI Malampuzha, selected by convenience sampling. The tool used for the data collection includes section A with sociodemographic variables and section B with structured questionnaire regarding the CPR. In the study most of the students were in the age group of 18-19 years. 74% were males and 26% were females. 23% of the students have relatives working in health department and 12% of the male parents were working in government and private sectors. The knowledge level of CPR is poor for 27.5%, average for 63.5%, good for 9%. There is an association between the level of knowledge and selected demographic variables such as age and occupational status of the father.

KEYWORDS

• CPR knowledge • College students • Malampuzha • Cardiopulmonary Resuscitation • Basic Life Support

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BACKGROUND

The heart is the centre of cardiovascular system, and it is vitally responsible for about everything that gives body life ranging from the transportation of oxygen to the success of the immune system. Each year, a number of persons suffer with an accident or illness, severe enough to stop their breathing and leads to respiratory arrest. In a small number of these cases, it will even stop their heart beating and leads to cardiac arrest. Sudden cardiac arrest is a major cause of death in developed countries. Sudden death occurs when heartbeat and breathing stops. The most important determinant of survival among these patients is the prompt and effective delivery of basic life support at the site or by the first bystander. Although there has been a decline in overall cardiovascular morbidity and mortality but the incidence of sudden deaths from cardiovascular causes has remained constant. Currently the basic life support not only includes cardiopulmonary resuscitation but also defibrillation using automated external defibrillators. The latest guidelines for cardiopulmonary resuscitation published in 2010 by the American Heart Association (AHA) have made substantial changes to the basic life support strategy. The conventional stepwise approach A-B-C has been changed to C-A-B. This mandates the decrease in time to deliver first compression. Look, listen and feel has been omitted to avoid unnecessary delay of the chest compressions.

According to AHA, updated to 2022-2023, the incidence of out of hospital cardiac arrests is over 356,000 rate of bystander CPR is 41.2% and survival rate is 9.1%. According to ICMR, data received by Delhi economic survey in 2017, 150-250 deaths happened due to cardiac arrest in city every single day, out of this 25-43 deaths occur suddenly with 60% of people dying before their reach of hospital.

According to the report of The Hindu newspaper, in 2021, of the total 3,39,648 deaths registered, 21.39% was due to heart attacks and in 2020 of the totals 2,50,983 death registered 25.43% was due to heart attacks. Sudden cardiac death is the most prevalent yet preventable clinical problem. It is estimated that about 300,000 to 400,000 deaths occur annually due to cardiovascular causes with 63% occurring due to sudden cardiac deaths.

The American Heart Association (AHA) and the International Liaison Committee on Resuscitation (ILCOR) updated their CPR guidelines in 2010, emphasizing the importance of high-quality chest compressions as the most critical component of CPR, especially in the initial minutes of cardiac arrest.

Martina Anto-Ocrah, Nick Maxwell, Jeremy Cushman et al conducted a study on public knowledge and attitudes towards bystander cardiopulmonary resuscitation (CPR) in Ghana, West Africa (2020) among ≥ 18 years of age, living in Ghana. They created, pretested, and distributed an online survey through social media platforms like WhatsApp and Facebook among 246 participants. The result shows that healthcare workers were more aware of CPR than lay respondents (96.5% vs 68.1%) and 10% were unwilling to administer CPR.

Dr. Ashwini Jogade & Dr. Deepak Patkar conducted a study on Study of Awareness of Basic Life Support among the General Population in Mumbai (2020) among 233 participants at the age group of 18-30 years. The study is a cross-sectional survey using a structured questionnaire. The questionnaire was shared with participants using Google forms through social media. A total of 196 (84.1%) knew about basic life support and that it would be helpful during OHCA.Mahmoud T Alwidyan et al. conducted a cross-sectional study to assess Knowledge and willingness of school teachers in to perform CPR in Jordan in 2023. A total of 385 questionnaires were eligible for analyses. Only 14.5% of the participants received CPR training and overall correct knowledge answers were 18.8% of the total score. Those participants with previous CPR training had higher mean knowledge scores (2.34 vs 1.15 $p<0.001$). Trained participants were also more likely to provide hands-only CPR to various patient groups than untrained participants ($p<0.05$). Participants were more willing to provide standard CPR to family members than hands-only CPR ($p<0.001$), but more willing to provide hands-only CPR to friends ($p<0.001$), students (75.1% vs 58.2%, $p<0.001$), neighbour ($p<0.001$), stranger ($p=0.001$) and patient from the opposite gender ($p<0.001$) Schoolteachers in Jordan possess limited knowledge of CPR.

Nombulelo E Zenani et al conducted a cross sectional study to assess the effectiveness of school-based CPR training among adolescents

to enhance knowledge and skills in CPR at North-west, Mafikeng in 2022. Results: Fourteen studies were included in the review, and 5418 participants were found in the databases. The studies were mainly conducted during the last decade, which suggests that the public's attention has been directed toward training schoolchildren in CPR. The most common interventions were taught in video simulation training courses. They also used subjective assessments to evaluate the participants' knowledge and skills

Jang-SikKo, Seon-Rye Kim andbByung-Jun Cho conducted a cross-sectional study to assess the Effect of Cardiopulmonary Resuscitation (CPR) Education on the CPR Knowledge, Attitudes, Self-Efficacy, and Confidence in Performing CPR among Elementary School Students in Korea in 2023. Result: A significant increase in schoolchildren's CPR knowledge after education was shown, knowledge did not affect confidence in performing CPR. Therefore, early CPR education which focuses on improving confidence in performing CPR is recommended. CPR education might raise attitude and self-efficacy leading to increased confidence in performing bystander CPR. In conclusion, early and regular CPR education for elementary school students is crucial and should be conducted repeatedly.

OBJECTIVES

- Assess the level of knowledge regarding CPR among the students of selected college.
- Find out the association between the level of knowledge regarding CPR and selected sociodemographic variables.

Tool

- A Structured questionnaire will be used to assess the knowledge level of ITI students regarding CPR. The questionnaire will consist of the following sections.

Section A: Socio-demographic variables.

Socio-demographic variables containing age, gender, course and stream educational status of father, educational status of mother, occupational status of mother, occupational status of mother, any relatives working in health department, any relatives studying in paramedical courses.

Section B: Questionnaire on CPR.

It consists of 25 multiple-choice questions to assess knowledge regarding CPR. Each question carries one mark, and the level of knowledge was scored as good, average, poor.

Table 1: Level of Knowledge regarding CPR

Score	Level of Knowledge
0-8	Poor
9-17	Average
18-25	Good

RESULT

Section A: Description of Socio-demographic data

Table 2: Distribution of sample according to age

Age	Frequency	Percentage
16-17	10	5%
18-19	141	70%
20-21	43	22%
>22	6	3%

Table 3: Distribution of sample according to gender

Gender	Frequency	Percentage
Male	148	74%
Female	51	25%
Transgender	1	1%
Others	0	0

Table 4: Distribution of sample according to course and stream

Course and Stream	Frequency	Percentage
Diploma	52	26%
Degree	2	1%
Others	146	73%

Table 5: Distribution of sample according to educational status of father

Educational Status of Father	Frequency	Percentage
Primary	40	20%
High school	117	58%
Higher secondary	32	16%
Graduate	11	6%

Table 6: Distribution of sample according to occupational status of father

Occupational Status of Father	Frequency	Percentage
Government	23	11%
Private sector	23	12%
Self employed	74	37%
Others	80	40%

Table 7: Distribution of sample according to occupational status of mother

Occupational Status of Mother	Frequency	Percentage
Government	27	13%
Private sector	23	12%
Self employed	36	18%
Others	114	57%

Table 8: Distribution of sample according to any relatives working in health department

Relatives Working in Health Department	Frequency	Percentage
Yes	50	25%
No	150	75%

Table 9: Distribution of sample according to any relatives studying in paramedical courses

Relatives Studying in Paramedical Course	Frequency	Percentage
Yes	42	21%
No	158	79%

Section B: Knowledge regarding CPR.

Table 10: Frequency and percentage distribution of knowledge level

Knowledge level	Frequency	Percentage
Poor	55	27.5%
Average	127	63.5%
Good	18	9%

Table 11: Chi square test for the association of knowledge level of nursing students with selected demographic variables

Variables	Level of Knowledge			Chi Square	D F	Table Value	Inference
	P	A	G				
Age in years							
16-17	3	5	5	17.906	6 df	12.59	Significant
18-19	41	88	10				
20-21	15	25	2				
>22	1	5	0				
Gender							
Male	47	87	14	2.197	4 df	9.49	Non significant
Female	13	35	3				
Transgender	0	1	0				
Others	0	0	0				
Course and stream							
Diploma	16	33	3	0.79	4 df	9.49	Non significant
Degree	1	2	0				
Others	43	89	13				
Educational status of Father							
Primary	16	22	1	5.1127	6 df	12.59	Non significant
H. S	35	71	10				
H. S. S	8	22	4				
Graduate	3	7	1				
Educational status of Mother							
Primary	14	22	0	11.9278	6 df	12.59	Non significant
H. S	26	70	9				
H. S. S	14	25	7				
Graduate	6	6	1				
Occupational of status Father							
Government	10	13	0	16.27	6 df	12.59	Significant
Private sector	7	13	1				
Self employed	18	48	10				
Others	25	49	6				
Occupational of status mother							
Government	8	18	1	10.984	6 df	12.59	Non significant
Private sector	7	12	5				
Self employed	6	28	2				
Others	40	65	8				

table cont....

Relatives Working in Health department							
Yes	12	32	7	3.168	2 df	5.99	Non significant
No	48	91	10				
Any Relatives Studying In Paramedical Department							
Yes	12	27	4	0.133	2 df	5.99	Non significant
No	48	96	13				

Tested at 0.05 level of significant

There is an association between the level of knowledge and selected demographic variables such as age and occupational status of the father.

DISCUSSION

Sohyune R Sok, Jung A Kim, Yoonshin Lee et al. 2020 conducted a study on Effects of a Simulation-Based CPR Training Program on Knowledge, Performance, and Stress in Clinical Nurses in South Korea among Effects of a Simulation-Based CPR Training Program on Knowledge, Performance, and Stress in Clinical Nurses60 clinical nurses in a general hospital in Seoul, South Korea. A 4-hour simulation-based CPR training program was conducted. Measures included the knowledge scale and performance scale from the Korean Association of Cardiopulmonary Resuscitation and the Post Code Stress Scale in Korean. The result shows that the simulation-based CPR training program significantly improved CPR knowledge and performance and decreased stress in clinical nurses. These findings indicate simulation-based CPR training program was effective in improving knowledge and performing CPR, as well as in decreasing stress of CPR in clinical nurses.

Sedigheh Miranzadeh, Mohsen Adib-Hajbaghery, Nadimeh Hosseinpour et al.2016 conducted a study on A Prospective study of survival after in-hospital cardiopulmonary resuscitation and its related factors. This study aimed to evaluate the survival rate of in-hospital CPR and its related factors at Shahid Beheshti hospital in Kashan, Iran. A descriptive study was conducted on all cases of CPR performed in Kashan Shahid Beheshti hospital during a 6-month period. Through a consecutive sampling method, 250 cases of CPR were studied. A three-part researcher-made instrument was used. The outcome of CPR was documented as either survival to hospital discharge or death of the patient. Chi-square test, t test, and logistic regression analysis were used to analyze the data. Results of all CPR cases, 238 (95.2%) were unsuccessful and 12 (4.8%) survived to hospital discharge. Only 2.6% of patients who were resuscitated in medical units survived to hospital discharge, whereas this rate was 11.4% in the emergency department. Only 45 (18%) patients were defibrillated during resuscitation; in 11 patients, defibrillation was performed between 15 to 45 minutes after the initiation of CPR. Moreover, the mean duration of CPR was 35.11 ± 11.42 minutes. The survival rate was higher in the morning shift and lower during the time of shift change (9.4% vs. 0). The duration of CPR and speed of arrival of the CPR team were identified as factors that predicted the outcome of CPR. The survival rate after in-hospital CPR was very low. The duration of CPR and the time of initiating CPR effects patients' outcomes. These findings highlight the crucial role of an organized, skilled, well-established and timely CPR team.

CONCLUSION

The present study was intended to assess the knowledge regarding CPR among college students of selected college, Malampuzha. There are also objectives such that; to assess the level of knowledge regarding CPR among the students of selected college and find out the association between the level of knowledge regarding CPR and selected sociodemographic variables. After the structured questionnaire and demonstration regarding CPR among college students, the knowledge level of students got improved. The study shows that there is a significant relationship between the knowledge and demographic variables.

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