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Original Research Article

Knowledge, attitude and practice study on cardiopulmonary resuscitation among medical and nursing interns

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ABSTRACT

Background: Cardiac arrest is a substantial public health problem estimated to account for 15–20% of all death. It is documented that a timely performed cardiopulmonary resuscitation (CPR) can largely prevent sudden death. Being important members of the health care delivery team, medical professionals and nursing staff are deemed to pass the basic skills and expertise which are needed to perform CPR. The principle objectives of the research project are to assess knowledge and attitude of CPR and to compare knowledge regarding CPR among medical and nursing students.
Methods: It was a cross sectional study for duration of 2 month from March 2013 to April 2013, conducted among 100 nursing and medical interns of a tertiary care institute in Vijayawada (A.P). Pre tested structured questionnaire of 2010 American health association guidelines for CPR and basic life support (BLS) Practice Test of National Health Care Provider Solutions of 30 questions were used to assess the knowledge, attitude and practice among study participants.
Results: The median for knowledge score of MBBS interns was 6 with inter-quartile range 2 and the median for the knowledge score of nursing interns was 6 with inter-quartile range 1. The median for the practice score for MBBS interns was 5 with inter-quartile range of 2.25 and median for practice score in case of nursing interns was 4 with inter-quartile range 2. 36% of MBBS interns had poor knowledge score and 46% of nursing interns had poor knowledge score.
Conclusions: The present study identified the knowledge and practice score of BLS or CPR which is poor in both medical and nursing students, even though they have positive and good attitude towards it. BLS training should be the part of the curriculum to solve this issue.

Keywords: Cardiac arrest, CPR, BLS

INTRODUCTION

Cardiac arrest is a substantial public health problem estimated to account for 15–20% of all deaths.[1,2] It is an important cause of cardiovascular morbidity and mortality in both developed and developing countries. Data from previous studies suggest that more than 3 million sudden cardiac deaths occur worldwide every year and survival is lower than 8%.[3-5] It has also been estimated that by the end of present decade, 60% of world's heart disease is expected to occur in India and proportionately the incidence and prevalence is expected to rise.[6] CPR is a part of important integral medical procedure in emergency medical care. It is a combination of rescue breathing and chest compression, which is delivered to the victims who are thought to be in cardiac arrest. The ability to respond quickly and effectively to

cardiac arrest situation rests on health care team. It is documented that a timely performed CPR can largely prevent sudden death.[7,8] Being important members of the health care delivery team; medical professionals and nursing staff are deemed to passes the basic skills and expertise which are needed to perform CPR.[9-12] It is very important for every medical professionals to know about CPR to save lives and improve overall quality of the community health. But, low confidence among medical students in performing CPR has been reported from Europe.[13] Also, inadequate knowledge of CPR has been reported among medical students from Switzerland and Pakistan.[14] Previously the technique of ABC (Airway, breathing, circulation) was followed. But according to 2010 AHA guidelines it was changed to CAB (Chest compression, airway, and breathing). Hence training techniques should be practiced, as poor training among under graduate medical students has also been reported from UK and Poland.[15] Targeted education on Cardiopulmonary resuscitation for emergency care providers and the public has increased survival rate of the patients.[16,17] The Medical Council of India recommends that undergraduate students should have adequate knowledge and skills to manage common acute emergencies.[18] The need for health professionals to know how to perform basic and advanced life support cannot be over-emphasized as they often encounter such a situation in their practice. This present study has been conducted to investigate the knowledge of CPR among medical and nursing interns which will help in understanding the deficits and for further formulating medical education protocol in this regard and also to assess their attitude towards CPR.

Objectives

The principle objectives of the research project are to assess knowledge & attitude of CPR and to compare knowledge regarding CPR among medical and nursing students.

METHODS

Present study was a cross sectional study for duration of 2 month from March 2013 to April 2013, conducted among 100 nursing and medical interns of a tertiary care institute in Vijayawada (A.P). Informed and written consent were obtained from the participants. Those interns who did not give the consent were excluded from the study.

During the study period, the strength of the nursing college of the institute was only 52. And during the visit, 2 of them were absent and hence 50 nursing interns were included as the study participants from the nursing college.

To compare the theoretical knowledge and practice of basic life support of nursing interns with medical interns 50 participants from the medical college were included as study subjects. The consented participants were provided the questionnaire and same were taken back with marked answers after completion.

Pre tested structured questionnaire of 2010 American health association guidelines for CPR and BLS Practice Test of National Health Care Provider Solutions of 30 questions were used to assess the knowledge, attitude & practice among study participants.[19] Knowledge and practice questionnaire were structured as multiple choice questions and attitude based questions were structured as yes/no/not sure pattern. Data was collected in the same questionnaire as marked response and was used for data analysis. Equal marks were given for each question and scores were converted to percentage scale for each of the knowledge and practice questions of CPR. A score of <45% was considered as poor, 45% to 55% were considered as average, 55% TO 75% were considered as good and >75% were considered as excellent in the current study. To assess the attitude questionnaire the number of responses were calculated.

Statistical analysis

Each completed questionnaire was coded on pre-arranged coding to minimize errors. SPSS.V-19 was used to analyze the data. Statistical tools applied were percentages, median, inter quintiles range, chi square test, Mann Whitney test, and Box and Whisker graph.

RESULTS

Among all the participants 50 were medical interns (50%) and 50 were nursing interns (50%) The median for knowledge score of MBBS interns was 6 with inter-quartile range 2 and the median for the knowledge score of nursing interns was 6 with inter-quartile range 1. The knowledge score between MBBS interns and nursing interns was not found to be statistically significant. The median for the practice score for MBBS interns was 5 with inter-quartile range of 2.25 and median for practice score in case of nursing interns was 4 with inter-quartile range 2.

Table 1: Distribution of subjects based on scores in knowledge and practice of BLS.

Score	Medical interns	Nursing interns	Two tailed p value
	Median (IQR)	Median (IQR)	
Score of knowledge (out of 13 score)	6 (2)	6 (1)	0.68
Score of practice (out of 10 score)	5 (2.25)	4 (2)	0.36

The practice score between MBBS interns and nursing interns was not found to be statistically significant. 36% of MBBS interns had poor knowledge score and 46% of nursing interns had poor knowledge score.

Table 2: Percentage score based on category distribution of MBBS and nursing internees of knowledge and practice of BLS.

Knowledge score	Course		Total	Practice score	Course		Total
	Intern	Nursing			Intern	Nursing	
Poor (<45)	18	23	41	Poor (<45)	21	26	47
	36.00%	46.00%	41.00%		42.00%	52.00%	47.00%
Average (45-55)	21	16	37	Average (45-55)	13	15	28
	42.00%	32.00%	37.00%		26.00%	30.00%	28.00%
Good (55-75)	8	11	19	Good (55-75)	13	7	20
	16.00%	22.00%	19.00%		26.00%	14.00%	20.00%
Excellent (>75)	3	0	3	Excellent (>75)	3	2	5
	6.00%	0.00%	3.00%		6.00%	4.00%	5.00%
Total	50	50	100	Total	50	50	100
	100.00%	100.00%	100.00%		100.00%	100.00%	100.00%
Chi-square value=4.76; p=0.19				Chi-square value=2.68; p=0.45			

Table 3: Distribution of attitude questionnaire responses.

Question	Category	Course				Total	
		Intern		Nursing			
		Count	%	Count	%	Count	%
Think that BLS is necessary	Yes	50	100	49	98	99	99
	No	0	0	1	2	1	1
How much necessary	Very much Imp	43	86	49	98	92	92
	Important	7	14	1	2	8	8
Voluntarily performed BLS	Yes	15	30	32	64	47	47
	No	34	68	17	34	51	51
	Performed but not voluntarily	1	2	1	2	2	2
Performed mouth to mouth ventilation for same gender	Yes	38	76	34	68	72	72
	No	6	12	15	30	21	21
	Hesitant	6	12	1	2	7	7
For opposite gender	Yes	35	70	31	62	66	66
	No	4	8	17	34	21	21
	Hesitant	11	22	2	4	13	13
Like to undergo hand on practice in workshop	Yes	47	94	39	78	86	86
	No	2	4	4	8	6	6
	Not sure	1	2	7	14	8	8
BLS training should be part of curriculum	Yes	50	100	50	100	100	100
	No	0	0	0	0	0	0

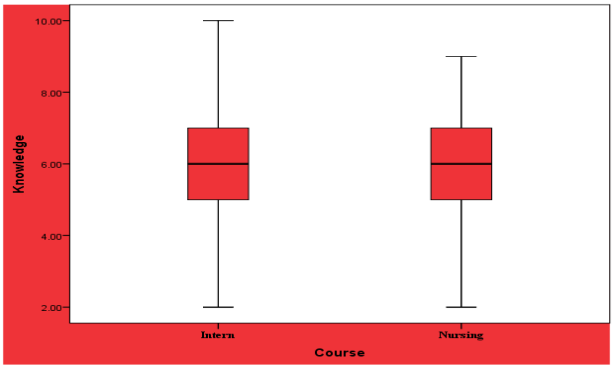

Figure 1: Box and Whisker graphs showing median with deviation of knowledge score.

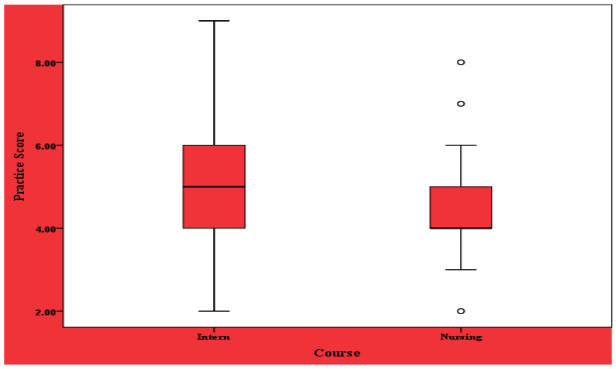

Figure 2: Box and Whisker graphs showing median with deviation of practice score.

42% of MBBS interns had poor practice score and 52% of nursing interns had poor practice score. Almost all the participants 99% are of the view that BLS is necessary and it should be the part of the teaching curriculum.

51% of the study participants have not performed CPR voluntarily and 47% participants i.e. (30% MBBS and 64% nursing interns) have performed CPR.

DISCUSSION

CPR techniques are simple and can be performed by a layman. Even though Immediate response to a cardiac arrest challenging in resource limited and developing countries, having the basic knowledge, skill and attitude is an essential part of medical service providers.[11]

With the established benefit of CPR, developed countries have already recommended BLS training even for high school students nearly a decade ago.[16,17] However India still doesn't have any such recommendations and guidelines even for medical and paramedical students. Many Indian medical, nursing students might not even learn the basics of BLS except few students.

In the present study also 69% of the study participants have not performed CPR any time while only 29% of the participants (30% MBBS interns and 28% nursing interns) have performed CPR. According to study done by Suzuki et al the levels of knowledge in 3305 Japanese medical students and showed that less than 20% of them could perform standard CPR.[20] Other close studies confirmed this, too.[21,22]

Only 5 MBBS interns and 3 nursing interns underwent training at the workshop and all of the participants studied BLS during UG classes and bedside clinics.

The knowledge score as well as practice score among both MBBS interns and nursing interns was found less but was statistically non-significant.

Inadequate knowledge of CPR has been reported among medical students from Switzerland and Pakistan.[14]

This study has limitations that standard questionnaire used in the study actually measures only theoretical knowledge or cognitive domain. On the contrary, practical performance needs both theoretical knowledge as well as psychomotor skills. The satisfactory acquisition of theoretical knowledge during the course doesn't necessarily indicate a good performance of psychomotor skills during CPR in the real world.[18] As the sampling method was non random sampling, confidence interval cannot be calculated thus limits the scope of the study. However, our study was conducted only in a single hospital and hence cannot be compared with the findings of this study.

CONCLUSION

The present study identified the Knowledge and practice score of BLS or CPR is poor in medical and nursing students, even though they have positive and good attitude towards it. BLS training should be the part of the curriculum to solve this issue. Repeated training with practical demonstration is needed to acquire practical knowledge both among nursing and medical students.

Recommendation

Policy makers should prioritize, and clearly articulate, a policy regarding compulsory BLS education in there syllabus and position on the provision of compulsory training schedule and certifications for their degree registration.

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