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Hands on practice schooling and allied factors on basic life support among civil patrol in Dakshina Kannada, India

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ABSTRACT

Introduction

Cardiac arrest is characterized by abrupt loss of consciousness caused by lack of adequate cerebral blood flow. It is an event that uniformly leads to death in the absence of an active intervention, although spontaneous reversions occur rarely. The most important factor in an emergency is the amount of time lost before a patient reaches the hospital. Cardiopulmonary resuscitation is designed to support and maintain breathing and circulation until emergency medical personnel arrive and take over.

Objective

To evaluate the effectiveness of hands on practice schooling and allied factors regarding Basic Life Support among civil patrols.

Methodology

One group quasi experimental design was used among fifty civil patrols by selected by cluster random sampling technique. The collected data were collected by structured skill questionnaire and performance checklist. Collected data were analyzed using descriptive and inferential statistics.

Results

The mean pre-test skill score was 5.10 with SD ± 0.73 and the mean of post- test skill score was 16.58 with SD ± 1.60 . The paired 't' test showed the difference in overall skill (47.604, $p < 0.05$) respectively. Age ($\chi^2 = 8.320$, $p = 0.05$), educational status ($\chi^2 = 33.040$, $p = 0.05$) and previous awareness on CPR ($\chi^2 = 18.000$, $p = 0.05$) were statistically significant associated with pre-test knowledge level of civil patrols. Thus suggests the effectiveness of skill training in terms of gain in skill score among civil patrols.

Conclusion & Recommendation

The present study concluded that the civil patrols lack in hands on techniques regarding Basic Life Support (BLS) and recommended that further study can be conducted with large similar groups, first responders like fire fighters, life guards, teachers, high school students, and other lay person as well.

Keywords: Hands on Practice Schooling. Allied Factors, Basic Life Support, Patrol

INTRODUCTION

Heart disease is the world's largest killer, claiming 17.5 million lives every year. About every 29 seconds, an Indian dies of heart problem. As many as 20,000 new heart patients develop every day in India 9 crore suffer from heart disease and 30% more are at high risk. Sudden cardiac arrest is a major public health problem. Basic Life Support (BLS) is the provision of treatment designed to maintain adequate circulation and ventilation to the patient in cardiac arrest, without the use of drugs or specialist equipment. Basic Life Support (BLS) includes recognition of signs of sudden cardiac arrest (SCA), heart attack, stroke, and foreign-body airway obstruction (FBAO); and cardiopulmonary resuscitation (CPR) [1].

Cardiac arrest is characterized by abrupt loss of consciousness caused by lack of adequate cerebral blood flow. It is an event that uniformly leads to death in the absence of an active intervention, although spontaneous reversions occur rarely. Nationally over 80% of emergency victims in India do not receive proper medical attention during the golden hour and statistics indicate that 62% of those getting involved in emergencies are those belonging to the productive age group of 25 to 50 years, and for the country this is a major drain on the nation's most important resource, trained manpower [2].

Sudden Cardiac Arrest (SCA) is one of the most common causes of death in many countries [3]. While for many of the victims a Cardio Pulmonary Resuscitation (CPR) was performed, the survival to discharge after CPR was about 6.9% [4]. CPR is a technique used in cardiac arrest to re-establish heart and lung function until more advanced life support is available [5].

CPR is unlikely to restart the heart; its main purpose is to maintain a flow of oxygenated blood to the brain and the heart, thereby delaying tissue death and extending the brief window of opportunity for a successful resuscitation without permanent brain damage [6]. The concept of educating the lay public in the techniques of resuscitation was advocated by Dr. Beck in the late 1950s, when he created a short teaching film in which he introduced were successfully resuscitated and in which he stated that "a massive teaching program is needed" [7].

Thus this life saving strategy is considered to be one of the important practical skills. The training of which is not just confined to the medical professionals, but almost anyone can perform provided with adequate skill which therefore needs to be regularly practiced to ensure full competency. Towards saving the precious lives [8].

Objectives

1. To find out the pre-existing skill of Basic Life Support among civil patrol in selected police station at Dakshina Kannada.
2. To assess the effectiveness of Hands on Practice Schooling regarding Basic Life Support among civil patrol in selected police station at Dakshina Kannada.
3. To find out the association between pre-test skill level and selected demographic pro-forma of civil patrol on Basic Life Support

METHODOLOGY

Research design

One group pre-test post-test, quasi experiment design

Setting and Sampling

The study was conducted in police hall at Dakshina Kannada. There were a total of 28 police stations under superintendent of police, DK. Five police stations were selected using cluster sampling method and then 50 patrols were selected randomly.

Description of the tool

The tool is divided into mainly two parts,

Part-I: Demographic pro-forma of the civil patrol.

Part-II: Structured skill questionnaire on BLS, which is divided into three sections.

Section A: Consists 6 items regarding general concept of BLS.

Section B: Consists 16 items regarding resuscitation and after procedure care according to the standards of American Heart Association (AHA)

Section C: Performance checklist for evaluation of BLS skill (modified AHA guidelines)

Content validity

Validity of the tool was ascertained in consultation with nine experts in the field of medical-surgical nursing, one intensivist from Intensive Care Unit and a Professor in the field of

medicine. The experts were requested to judge the items for accuracy, relevance, appropriateness and degree of agreement. The suggestions of the experts were incorporated into the tool and the tool was modified accordingly.

Pilot study

The pilot study was conducted in Ullal police station at Dakshina Kannada. The patrols who were participated in the pilot study were excluded from the sample. To find the feasibility of the study, five civil patrols were selected by using random sampling technique. After conducting the pilot study, found that the study was feasible, the questionnaire was relevant and the time and cost for the study was within the limit.

Data collection procedure

Prior permission was obtained from the concerned authority. Informed consent obtained

from the subjects. The respondents were assured the anonymity and confidentiality of the information provided by them. The pre-test data were collected from the sample 2010. Lecture cum discussion, demonstration and re-demonstration were the methods of instruction. LCD projector and video footage were used as an AV aid. The duration of the practical was one day. After 7 days a post-test was conducted using the performance checklist and structured questionnaire to assess the effectiveness of Hands on Schooling.

Statistical analysis

The collected data were analyzed by using SPSS, descriptive (frequency, distribution, percentage, mean and standard deviation) and inferential statistics (Chi square test, paired t test).

RESULTS

Demographic variables

Table 1: Frequency and percentage distribution of Patrol

N = 50

Sl. No.	Variables	Frequency	Percentage (%)
1	Age		
	Less than 25	29	58
	26 – 35	16	32
	36 – 45	5	10
2	Gender		
	Male	34	68
	Female	16	32
3	Education		
	SSLC	4	8
	PUC	17	34
	Graduation	27	54
	Post graduate	2	4
4	Duration of working Experience		
	1 – 5 year	30	60
	6 – 10 year	17	34
	11 years and above	3	6
5	Previous awareness on CPR		
	Yes	10	20
	No	40	80

The above table 1 depicts that more than half 29 (58%) of the civil patrols were in the age group of less than 25 years. Majority 34 (68%) of the civil

patrols belongs to male. In relation to their educational status, highest 27(54%) of them had graduation. In addition, most of 30 (60%) civil

patrols had 1-5 years experience. Regarding previous awareness on CPR reveals that, majority

40 (80%) of the sample did not have previous exposure.

Assessment of the pre-existing skill among patrol on BLS.

Table 2: Distribution of pre test level of skill of patrol

N= 50

Range of score %	Level of skill	Number of respondents	Percentage (%)
Below 40	Poor(<8)	50	100
41-60	Average(9 – 13)	-	-
61-80	Good(14-17)	-	-
81-100	Very good(>18)	-	-
Total		50	100

The finding of the present study reveals that all the patrol had poor skill on BLS.

Area-wise analysis of pre-test skill score

Table 3: Area-wise mean, SD and mean percentage of skill

N= 50

Areas	Max score	Mean	Median	SD	Mean %
Initial assessment	3	1.04	1	0.66	34.66
Airway	2	0.84	1	0.76	42
Breathing	6	1.70	2	0.73	28.33
Circulation	10	1.52	1	0.64	15.2
Total	21	5.1	5	± 2.79	24.28

The data presented in the above table shows that the mean percentage of total skill scores of civil patrols in the pre-test was 24.28 % with mean \pm SD of 5.1 ± 2.79 . Area-wise mean percentage of skill scores was highest (42%) in the area airway and initial assessment with a mean \pm SD of 1.04 ± 0.66 .

In the area related to breathing the mean percentage was (28.33%) with an area-wise mean \pm SD of 1.70 ± 0.73 . In the area of Circulation the mean percentage was 15.2% with an area-wise mean \pm SD of 1.52 ± 0.64 . The findings reveal that the skill of the patrol regarding BLS is poor in all the areas.

Effectiveness (pre test and post test) of hands on practice schooling on BLS

Table 4: Shows mean, median and standard deviation

Areas	Mean	Median	SD(\pm)
Pre-test	5.10	5	0.73
Post-test	16.58	17	1.60

The data presented in the above table shows that the pre-test mean was 5.10 with that of SD

± 0.73 and post- test mean was 16.58 with that of SD of ± 1.60 .

Comparison of level of skill in pre-test with post test

Table 5: Comparison of level of skill in pre-test with post-test

Level of Skill	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Poor	50	100	-	-

Average	-	-	2	4
Good	-	-	37	74
Very good	-	-	11	22

The data presented in the above table shows that the pre-test skill level of all the patrol was poor and

post test skill level good 74%, very good 11% and average 4%.

Effectiveness of hands on practice schooling (t test)

Table 6: Mean difference and 't' value of pre-test and post-test skill scores

Test	Mean	Mean difference	t- value
Pre-test	5.10	11.48	47.604*
Post-test	16.58		

$t_{49} = (2.02)$, $p < 0.05$

* = Significant

The findings revealed that the mean post test score was significantly higher than their mean pre test score. The calculated 't' value (47.604, $P < 0.05$) in skill aspect was greater than the table value

(2.02) at 0.05. Hence it is concluded that there is very highly significant gain in skill of patrol on BLS.

Association between pre-test skill scores and demographic variables of patrol

Table 7: Chi square test showing association of pre-test skill with demographic variables

N = 50

Demographic variable	Skill		
	Chi-square (χ^2)	Df	Inference
Age	8.320	2	S
Gender	2.880	1	NS
Educational status	33.040	3	S
Duration of work experience	3.040	2	NS
Have you come across doing CPR	18.000	1	S

$\chi^2 = 3.84$, $df=1$, $p < 0.05$ S = Significant; NS=Not significant

Data presented in Table 8 reveals that the calculated chi-Square value of age (8.320), educational status (33.040) and previous knowledge on CPR (18.000) were greater than that of table value at 0.05 level of significance, hence the research hypothesis was accepted and concluded that there was a significant association between the pre-existing skill with these demographic variables on BLS.

DISCUSSION

The study was undertaken to assess the effectiveness of hands on practice schooling on BLS among patrols in a selected police station at Dakshina Kannada. The data were collected from 50 respondents before and after the administration

of the skill training. Percentage distribution of patrol according to their age shows that the highest percentage (58%) of the respondents were in the age group of less than 25 years, 32% were in the age between 26-35 years and only (10%) were in the age group of 36-45 years. With regard to gender distribution of samples most (68%) of the respondents were males and 32% were female.

The present study shows that the mean pre-test skill score was 5.10 with $SD \pm 0.73$ and the mean of post-test skill score was 16.58 with $SD \pm 1.60$, which is compared to similar study [9] to evaluate the effectiveness of skill training revealed that mean score for pretest was found to be 7.07 ± 2.12 with a mean percentage of 35.3% which was significantly improved to 14.9 ± 3.25 with a mean

percentage of 74.5 % at $p < 0.001$ for posttest score. There was a significant association of age ($\chi^2 = 8.320$, $p = 0.05$), educational status ($\chi^2 = 33.040$, $p = 0.05$) and previous awareness on CPR ($\chi^2 = 18.000$, $p = 0.05$) with pre-test knowledge level of civil patrols in present study which was not similar to the study (Tarika Sharma and Urvashi Sharma, 2016) [9], where there was no association found between levels of knowledge of study participants with selected demographic variables.

CONCLUSION

Hence the study concluded that prevalence of BLS was more effective among patrols and increased significantly with age. Moreover, the level of skill about the CPR was very low. So there is an essential to conduct similar training programme for patrols on updated BLS.

Recommendations

1. A similar study can undertake with a larger sample to generalize the findings.

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2. A similar study may be conducted by using a control group. A similar study could be used to test the effectiveness of hands on training regarding BLS among parents, drivers, teachers, lifeguards and all first responders including lay persons.

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