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Learning Needs Assessment about Compression-Only Life Support (COLS) among non-medical Students of SGT University, Gurugram, Haryana

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ABSTRACT
Sudden Cardiac Death (SCD) is a fatal event, which has a tremendous adverse impact on the health care delivery system. SCD constituted 5.6% of total mortality and about 1/5th of all the cardiovascular deaths globally. Bystander CPR or COLS (Compression -only Life Support) is the most significant factor for OHCA survival as Out of hospital cardiac arrest have been associated with dismal outcome due to delays in commencing effective resuscitation by bystanders. Medical students learn these basic skills in their curriculum but evidences shows that non-medical students have less knowledge or low perception about them. To assess learning Needs Assessment about COLS among non-medical Students of SGT University, Gurugram, Haryana, India. The descriptive cross-sectional research design was used. Stratified Proportionate samplingtechnique was used and data collection was done by using a Self-report(Questionnaire) and rating scale. Data was collected through google form. The mean knowledge score was 4.47±1.9.Majority (76%) of participants have positive perception regarding learning need of participants on COLS. There was a significant association between educational qualification with perception level of participants regarding learning need of COLS at 0.05 level of significance. ***Conclusion:*** *TheNon-medical students had inadequate knowledge but have positive perception regarding learning need of COLS. It generates need for future training of Non-medical students on COLS to save life after sudden cardiac arrest.*
Keywords: *Learning need assessment, Compression- Only Life Support, Non-medical students.*

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INTRODUCTION

Sudden Cardiac Death (SCD) is a fatal event, which has a tremendous adverse impact on the health care delivery system. SCD globally constituted 5.6% of total mortality and about 1/5th of all the cardiovascular deaths The United States vital statistics mortality data analysis from 1989 to 1998 showed that 63% of the 7 lakh cardiac deaths in the country were sudden [1]. In India 10% of total mortality occurs due to SCD [2].

The location of cardiac arrest however affects outcome; most studies from developed countries (with effective and efficient health care delivery system) out of hospital cardiac arrest have been associated with dismal outcome; these are often attributed to delays in commencing effective resuscitation by bystanders before arrival of the emergency medical service [3].

Cardiopulmonary resuscitation is an important medical procedure which is performed in an effort to manually preserved intact brain function until further measures are taken to restore normal spontaneous blood circulation and breathing in a person in cardiac arrest. It is a combination of rescue breathing and chest compression, which is delivered to the victims who are thought to be in cardiac arrest. Being important members of the health care team; medical students are deemed to passes the basic skills and expertise which are needed to perform cardiopulmonary resuscitation [4, 5].

The American Heart Association (AHA) resuscitation guidelines recommend that all under graduated students who are in contact with the patients should have regular resuscitation training [6].

Bystander CPR is the most significant factor for OHCA survival. Bystander CPR rates are below 50% on average, and the rates vary between different countries according to reports. Bystander CPR occurs less than 6% of OHCA in india[7]. For the purpose of improving the rate of bystander CPR and the ability of the

layperson to perform CPR, this study was performed to find out the current status and effects of CPR training, to understand attitudes of lay person towards bystander CPR, and to uncover the barriers to improving bystander CPR rates in India[8].

Early cardiopulmonary resuscitation (CPR), including bystander CPR, is significantly associated with improved survival to hospital discharge rates from out-of-hospital cardiac arrest (OHCA). The incidence of adult out-of-hospital cardiac arrest (OHCA) is estimated to be 95.9 cases per 100,000 persons per year. In a survey performed in a busy street in a city of a western region of Turkey, 40.7% of people living in a highly educated region reported having received CPR training and 3.6% had previously performed bystander CPR but showed improvement after increased public education and increased use of automatic external defibrillators. Approximately 70% to 75% of cases of OHCA are witnessed by nonmedical people. The early recognition of OHCA, early activation of emergency medical services (EMS), and early provision of bystander basic life support (BLS) are the most important factors that determine the survival probability in patients with OHCA; these actions depend entirely on the knowledge, attitude, and actions of the bystanders[9].

Many studies have demonstrated the impact of inculcating BLS support measures by trained regular citizens,have an huge impact on both mortality and morbidity rate due to cardiac arrest[(10-12)]. Person receiving CPR from a trained personnel found to be four times more likely to live in comparison to those who did not receive CPR [13]. It should also included at schools and universities level because it provides an opportunity to expose as much of the population as possible BLS/COLS technique. One region in the United Kingdom started this step and introduced its schools to CPR training and it was shows that 99% of its students agreeing to its benefit to them[14].Increasing BLS training centers should be essential to improve the survival rates from OHCA that is why National Reference Simulation Centre at SGT University Gurugram is the International Training Centre of AHA (American Heart Association) so that All University students, administrative people, teaching and non –teaching faculty members become aware about COLS and its application.

Need of the study

Despite important advances in prevention, sudden cardiac arrest is the leading cause of death in many developed countries. 70 percentage of cardiac arrest happens at home. About half are unwitnessed. It is more important to train general public besides the health care providers. This study emphasizes on assessments of knowledge, and attitude of non-medical students towards Basic Life Support (BLS), so it may provide baseline information for other researcher and health professional who are interested on same area. Besides this, it initiates responsible bodies to treat cardiac arrest patients in order to take action and further increment of awareness.

Development of programs, which will improve their knowledge of Basic Life Support (BLS), should be encouraged. The media should also be in the forefront, and education of the populace on the usefulness and the need for voluntary training on should be highlighted.

The willingness of the laypersons in different countries to learn and perform Basic Life Support (BLS) is also very important. No time and no interest to learn Basic Life Support (BLS), afraid of doing something wrong, a fear of legal liability, and other reasons are obstacles limiting bystander to learn and perform Basic Life Support (BLS). Also, it is important to increase the willingness of the people to supply help to cardiac arrest victims.

BLS training in schools and universities is also highly relevant; American Heart Association guidelines recommend requiring CPR training program for graduation from secondary schools[15]. A study established in Denmark targeted high school students to investigates the knowledge and fears of performing CPR before and after participation in 45-minute sessions of CPR training, a significant improvement of choosing the correct answers noticed and the prevalence of students who are willing to perform CPR increased from 30% to 90%[16]

By keeping these facts in mind, this survey will be conducted to assess the knowledge and perception towards learning on Basic Life Support (BLS) among non-medical students. It will help to understand the baseline knowledge of students and their willingness to know about this life saving procedure. Further trainings can be planned based on the findings of the study.

REVIEW OF LITERATURE

This is a cross-sectional study assessing CPR knowledge among AHP (Allied Health Profession) students. A multidisciplinary expert panel designed a survey, which then was piloted to 20 potential participants. The survey had two sections, including demographics and knowledge questions. Knowledge questions scores ranged from 0 to 10, where 10 indicates all questions were answered correctly. A total of 883 students completed the surveys and were included in the study. The mean age was 21 years (±1.6) and the majority were females (73.1%). A total of 693 (78.5%) students did not receive previous CPR training

and the top barriers to receiving CPR training were unawareness of training opportunities and a lack of time. Participants had a mean CPR knowledge score of 3.9 (±1.7) out of 10 maximum potential points. Trained participants had a higher mean score compared with the untrained (4.6 (±1.6) vs 3.8 (±1.6), Previous training (adjusted β=0.6; 95%CI 0.2 to 0.9; p<0.001) and being in the physical therapy programme (adjusted β=0.5; 95%CI 0.1 to 0.8; p=0.01) were associated with higher knowledge. There is poor knowledge of CPR among AHP students including trained individuals. Efforts to increase the awareness of CPR should target students and professionals who are highly likely to encounter patients requiring CPR. Compulsory training courses, shorter training periods as well as recurrent and regular refreshing courses and use of various media devices are recommended[17].

A Cross sectional study was conducted to assess, awareness, knowledge and attitude towards BLS among 426 non-medical adult at Muscat City , Oman . they used Convenience sampling method .Questionnaire was used, including four parts of 37 questions on socio-demographic information, awareness, knowledge and attitude. The result reveals that majority of participants were in age groups, 28-37 years (50.0%) and 18-27 years (35.7%), were female (57.0%); married (58.5%), single (39.9%); had secondary (31.5%), diploma (27.2%), bachelor's (32.4%) education levels; and worked in government (28.6%), private sector (25.4%). Significantly, large proportion of them (62.0%) were aware about BLS. This study concluded thatthe awareness of nonmedical adults toward Basic Life Support was substantial, whereas, knowledge level toward BLS was very low despite of its differences with respect to socio-demographic characteristics. In contrast, all participants had positive attitude toward BLS[18].

Problem statement

"A study on Learning Needs Assessment about Compression-Only Life Support (COLS) among non-medical students of SGT University, Gurugram, Haryana."

Objectives

1. To assess the leaning needs about Compression-Only Life Support (COLS) among non-medical students of SGT University.
2. To find out the association of learning needs assessment about Compression-Only Life Support (COLS) with selected demographic variables among non-medical students of SGT University.

Assumption:

1. Non-medical students of SGT Universitymay not be familiarabout Compression-Only Life Support (COLS)

Delimitation:

The study is delimited to:

1. The study is delimited to non-medical students of SGT University, Gurugram, Haryana.

Operational Definition:

Learning needs assessment: It refers to the-

a) existing knowledge of students regarding COLS

b) perception towards learning Compression Only Life Support (COLS)

c) Compression-Only Life Support (COLS): It is a lifesaving skill used to manage the victim of cardiac arrest by the bystanders using protocol as per the Indian Resuscitation Council (IRC) which includes hands only CPR without rescue breaths.

MATERIAL AND METHODS

A Quantitative Research Approach and a pre- experimental, descriptive cross-sectional Research Design was used. Research setting wasShri Guru Gobind Singh Tricentenary University is located in Chandu-Budhera, Gurugram, Haryana India. Stratified Proportionate samplingwas used to withdraw sample. 315Non -medical students of SGT University who are willing to participate in study were included in the study. Data was collected using a tool in the form of google form which consists of 3 sections: Demographical Variables, Knowledge questionnaire and perception rating scale on Compression Only Life Support (COLS). Content validity of the tool was done and reliability was assessed using test-retest method. The tool was found to be reliable with correlation coefficient 0.87.Ethical approval was obtained from the institutional ethical committee of SGT University Gurugram. Informed consent was obtained from the participants.

RESULTS

The analysis was done using descriptive and inferential statistics using SPSS version. The results are presented based on objectives of the study.

Table-1 Describes that majority(82.2%) of the participants were in the age group of 17-21 years and were male (54.6%) . Majority (98.4%) of the participants were Unmarried. Most (85.7%) of the participants were Undergraduate and among them majority (30.5%) were second year students. Mostly participants

said they are not having a Family member with cardiovascular disease (86.5%), (94%) haven't learned and seen Compression Only Life Support and (96.2%) never performed Compression Only Life Support.

Table 1: Demographic profile of Non – Medical Students of SGT University

Demographic variables	Category	Frequency (%)
Age (years)	17-21	259 (82.2%)
	22-26	53(16.8%)
	27-31	1 (0.31%)
	>32	2 (0.63%)
Gender	Male	172 (54.6%)
	Female	143 (45.4%)
Marital Status	Married	5 (1.6%)
	Unmarried	310 (98.4%)
Undergraduate	First Year	88 (27.9%)
	Second Year	96 (30.5%)
	Third Year	80 (25.4%)
	Fourth Year	17 (5.4%)
	NA	34 (10.8%)
Postgraduate	First Year	24 (7.6%)
	Second Year	10 (3.2%)
	NA	282 (89.5%)
Having a Family member with cardiovascular disease?	Yes	42 (13.3%)
	No	273 (86.7%)
Have you ever learnt Compression Only Life Support (COLS)?	Yes	19 (6.0%)
	No	296 (94%)
Have you ever seen Compression Only Life Support (COLS) being performed?	Yes	19 (6.0%)
	No	296 (94%)
Have you ever performed Compression Only Life Support (COLS)?	Yes	12 (3.8%)
	No	303 (96.2%)

Table 2: Knowledge score regarding COLS among participants
N= 315

S.NO	VARIABLE	MEAN± SD
1	Overall knowledge score	4.47±1.9

Maximum knowledge Score:15

Table no 2 reveals Knowledge score regarding COLS among participants. The mean score of knowledge is 4.47±1.9 SD,out of maximum knowledge score is 15.

Table 3: level ofperception regarding learning need of participants on COLS
N= 315

LEVEL OF PERCEPTION	RANGE OF PERCEPTION	FREQUENCY
NEUTRAL	0-8	22 (7%)
NEGATIVE	8-15	55 (17%)
POSITIVE	>15	238(76%)

Maximum Perception Score:30

Table-3 Describes that majority (76%) of participants have positive perception regarding learning need of participants on COLS, 17% of participants have negative perception and 7% of participants have neutral perception regarding learning need of participants on COLS.

Table 4: Association of Perception of participants regarding learning need of COLS with selected demographic variables N= 315

VARIABLE	CATEGORY	BETWEEN GROUPS MEAN DIFFERENCE	TEST VALUE (F –value)	df	LEVEL OF SIGNIFICANCE
Under Graduate	First Year	11.35	2.452	4	0.046*
	Second Year				
	Third Year				
	Fourth Year				
Post Graduate	First Year	15.9	4.863	2	.008*
	Second Year				

Significant at p<0.05

Table no 4 revealed that there is no significant association between age, gender, marital status with perception of participants regarding learning need of COLS. There is significant association with their educational qualification; Under Graduate students have more positive perception than Post graduate students

Table 5:POST HOC analysis of between group association of perception score with educational qualification of participants (Under Graduate):

(I)UG	(J)UG	Mean Difference (I-J)	Std Error	Level of Significance
post graduate	1.00	- 1.094	1.464	1.00
	2.00	.381	1.447	1.00
	3.00	-2.927	1.484	.495
	4.00	-.764	2.154	1.00
First year	.00	1.094	1.464	1.00
	2.00	1.475	1.070	1.00
	3.00	-1.832	1.120	1.00
	4.00	.329	1.921	1.00
Second Year	.00	-.381	1.447	1.00
	1.00	-1.475	1.070	1.00
	3.00	-3.308	1.097	.028*
	4.00	-1.145	1.936	1.00
Third Year	.00	2.927	1.484	.495
	1.00	1.832	1.120	1.00
	2.00	3.308	1.097	.028*
	4.00	2.162	1.936	1.00
Forth Year	.00	.764	2.154	1.00
	1.00	-.329	1.921	1.00
	2.00	1.145	1.908	1.00
	3.00	-2.162	1.936	1.00

Significant at p<0.05

Table 5 revealed POST HOC analysis of between group associations of perception score with educational qualification of participants (Under Graduate). It shows that Third year students have more positive perception for learning need on COLS than Second Year student.

Table 5.2:POST HOC analysis of between group association of perception score with educational qualification of participants (Post Graduate):

(I)PG	(J)PG	Mean Difference (I-J)	Std Error	Level of Significance
Under Graduate	1.00	2.321	1.540	.398
	2.00	4.648	1.638	.015*
First Year	.00	-2.321	1.540	.389
	2.00	2.327	2.160	.847
Second Year	.00	-4.648	1.638	.015*
	1.00	-2.327	2.160	.847

Significant at p<0.05

Table 5.2 revealed thatUnder Graduate students have more positive perception than Post graduate students

DISCUSSION

The major findings of the current study included that majority of the participants are not aware about COLS and its application which is reflected in the mean score of knowledge is 4.47±1.9 SD,out of maximum knowledge score that is 15. Majority (76%) of participants have positive perception regarding learning need on COLS, 17% of participants have negative perception and 7% of participants have neutral perception regarding learning need on COLS.

The result of present study is in congruence with the result of a study to evaluate awareness, knowledge and attitudes towards Basic Life Support among non-medical students at two academic Institutions in Jeddah, Saudi Arabia. It is a descriptive, cross-sectional study design. The data was collected by using self –administered questionnaire from 1053 non-medical students. The study conclude that knowledge and awareness of CPR among non-medical university student were poor , despite positive attitude towards it [19].

A similar descriptive cross-sectional study was conducted across King Faisal University, Al Ahsa, Saudi Arabia. In this study the data was collected to evaluate levels of awareness, practical knowledge, and attitudes about BLS, by using a structured questionnaire among 406 students and the result shows that the majority of participants (82.5%) had poor knowledge of the BLS. A quarter of students (25.1%) indicated that they had previously taken BLS training among them (16%) of students acquired their knowledge about BLS from the internet, 7.6% from watching movies and TV shows, 16% from school subjects, 2.2% from college subjects, and 26.4% from reading [20].

RECOMMENDATIONS

Similar study can be conducted to assess knowledge and perception of COLS among non- medical student at various institutions and University Also, the participants can be followed up for providing them training to make them aware and provide hands-on practice of COLS. From the findings our study recommended a mandatory course on COLS in the curriculum of the non-medical students of all Universities in country.

CONCLUSION

In conclusion study reported that the Non-medical students of SGT University having inadequate knowledge but have positive perception regarding learning need of COLS. It generates need for future training by integrating mandatory COLS Course in the curriculum of Non-medical students of the university on COLS so, that timely intervention can be taken by them to save a LIFE.

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CONFLICTS OF INTERESTS

The authors declare that there are no conflicts of interests.

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