

The Effects of Knowledge and Skills Training Programme on Basic Life Support for Nursing Students

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ABSTRACT

Introduction: Sudden cardiac death is a crucial reason for death in the developed countries. In typical cases, defibrillation and other means of advanced life support are not urgently accessible. In urban settings it resume an around nearly ten minutes for medical facilities help to appear. Throughout that time victims can only depend on CPR given by the educated in the BLS. Consequently fundamental burden of duty lies on the shoulders of educators who need to pass on their knowledge and skills of CPR to their trainees in an exceedingly method easy enough to be remembered and recalled rapidly in an exceedingly extremely stressful moment. It has been shown that properly performed onlooker cardiac resuscitation might absolutely survival of the life which persons have the cardiac arrest (CA) persons.

Methodology: a study was conducted with Empirical approach and used pre experimental one group pre test post test research design. The data collection from 200 nursing students studying at selected nursing colleges of Jaipur city. The selection of sample was done through purposive sampling technique. The data collection from nursing students via structured knowledge questionnaire. The reliability of tool was 0.84.

Results: as per results during the pre test 180 (90%) nursing students had poor knowledge while in post test 162 (81%) nursing students had good knowledge regarding BLS. The overall mean of before analysis score is 24.22 whereas the mean of after analysis score is 43.35 with 19.13 mean differences. The median of before analysis score is 24 and the mean of after analysis score is 44 and the standard deviation of pre test was 2.71 whereas in post test the standard deviation was 4.75. The calculated value of 't' is 48.13 at the 0.05 level of worth and the tabulate value of 't' is 1.96 at the 0.05 level of worth on 199 df.

Conclusion: On the basis of results it is conclude that the level of knowledge and skills regarding BLS among nursing was inadequate and the knowledge and skills of the nursing students can improve by providing training programme regarding BLS. It is also concluded that the extraneous variables like age, father's income and mother's income are not significant with level of knowledge of nursing students on BLS and others extraneous variables like gender, father's education, mother's education and previous knowledge are significant with level of knowledge of nursing students on BLS.

Key Words: Knowledge, Skills Training Programme, Basic Life Support

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INTRODUCTION

Basic life support (BLS) knowledge and training is important for nursing students and medical staffs. CPR training for nursing students and medical health staff has been documented over the past 20 years. BLS training is necessary for nursing students and medical health staff and is very essential as nurses often find out the victims of In-hospital cardiac arrest along with nursing students also finds out the victims of Out-hospital cardiac arrest. Various strategies used for raising the type of knowledge about CPR so nursing students and medical health staff can easily evaluate. By the new guideline trained the nursing students to basic life support like best chest compression, and most others techniques of BLS to the nursing students to improve the new update the guided and save the person of the life. Nursing students learns the new update curriculum about CPR. Nursing students and nurses require skills needed for BLS include the ability to recognize a need and work under pressure whereas still maintaining calm to recollect and apply the abilities learned in an exceedingly basic life

support class. Once administering aid, safety to the supplier also because the victim is important, thus employing a barrier device once giving mouth to mouth resuscitation is important. Vital is protection against bodily fluids like blood once serving to accident victim. An inexperienced rescuer must always keep in mind to exercise caution once approaching and rendering help in unfamiliar surroundings condition.[1]

Sudden cardiac death is a crucial reason for death in the developed countries. In typical cases, defibrillation and other means of advanced life support are not urgently accessible. In urban settings it resume an around nearly ten minutes for medical facilities help to appear. Throughout that time victims can only depend on CPR given by the educated in the BLS. Consequently fundamental burden of duty lies on the shoulders of educators who need to pass on their knowledge and skills of CPR to their trainees in an exceedingly method easy enough to be remembered and recalled rapidly in an exceedingly extremely stressful moment. It has been shown that properly performed onlooker cardiac resuscitation might absolutely survival of the life

which persons have the cardiac arrest (CA) persons.[2]

Cardio-pulmonary resuscitation (CPR) is one of the ways in which all of those methods can save the lives of individuals in such a way that they can save their brain problems when transferred to patients who are guarded by CPR. They are able to save their lives. If the center of the heart is blocked, he can save his life through CPR at the earliest. So the chances of survival of the person will increase a lot. If no resuscitation is done to the person at that time, then the person will lack oxygen due to which it takes only 3-4 minutes to die. If we see this revival of art and if we provide oxygen on time, and if we keep the circulation of blood, then the vital organ that is use CPR from its due to will survive. These entire organs can be saved as long as no one reaches them, such as by means of CPR. This prior study shows that students who have been trained can revive the lives of their other people.[3]

Cardiopulmonary-Cerebral Resuscitation (CPCR) is included the basic life support and advanced life support techniques and post-resuscitation care of the patient. CPCR is needed when oxygen supply to the brain insufficient to maintain function. The oxygen delivery to the vital organs by the lungs, cardiac output and haemoglobin with oxygen these all completely depends on the lungs functioning. By the CPCR the return of rhythm vary from 30% to 60%. Teamwork, efficiency and developing a CPCR protocol in the practice in proper way to the victim resuscitation successful. All emergency equipment and drugs available must be in approachable. Big institutions may have a "crash cart" for their emergency equipment, but every practice should have an emergency kit with at least the basic supplies. The emergency kit should be available in stocked in every time and should staff also aware about uses with its contents to deliver easily treatment. All faculties should have update about the standard of ABCs (airway, breathing, circulation) of CPCR.[4]

By the American Health Association (AHA) (2010) Guidelines, the cardiopulmonary resuscitation guidelines were first changed from "A-B-C" (Airways, Breathing, Chest Compression) to "C-A-B". A new development was made in the sequence and a huge change was brought (chest compression, airway, and breathing) for adults and paediatric patients. In A-B-C sequence chest compression class, it has been observed that their measures are delayed to a great extent, in addition to those who are resuscitated; their rate of breath is increased by the mouth to mouth. Through this, the person gets an open airway, for this, the person should complete the entire process of 30 seconds of CPR as soon as possible so that their circulation can be regained.[5]

NEED OF THE STUDY

In India, the leading reason behind death is coronary cardiovascular disease. According to the latest

WHO guideline (2014), coronary Heart Disease deaths in India were around 1,215,414 or 13.70% of total death. And according to AHA, each minute somebody died from coronary heart disease in United State. If one appearance solely at death certificates the figure are 456,000 annually. A study was done that the annual occurrence of coronary attack is 1.2 million of them, out of 770,000 can have a replacement coronary attack and 430,000 were repeated coronary attacks.[6]

Heart problem is one of the world's biggest diseases. It also claims that at least 17.5 million people are suffering from heart disease. It was seen that every twenty-nine seconds, an Indian person suffers from heart disease. And Apart from this, every day in the Asian nation, at least 20,000 people are suffering from new heart disease. It is also seen that every sixth person in India is suffering from coronary disease (CAD). Now it can be said that by 2020, the world's most dangerous ratio of heart disease i.e. coronary artery disease (CAD) can be seen in the Asian nation out of all the diseases, the cause of their death is only the heart problems. Out of 1000 adults who are 35 years of age, among those who are getting younger, the risk of death from artery disease is increasing rapidly. The number of people who are complaining of out-of-hospital cardiac arrest has been seen from 75% to 80%. Therefore, looking at these figures, basic life support (BLS) training is very important to make some difference between dying and living.[7]

Poor knowledge regarding CPR to nursing students and also have poor talent retention after cardiopulmonary resuscitation training for nursing students and medical personnel. Basic life support i.e. CPR is very important training for nursing students, through which emergency situation helps the victims. It has been seen that there is no help in the emergency situation of the victims who are there. Therefore, in order to develop the concept well about CPR, students are evaluated and assessed in many different ways. And along with that researcher seen that the lack of training about the CPR to the students. Seven viscous nursing can be a nursing specialty that employs patients with multiple conditions of the circulatory system, such as unstable angina, cardiomyopathies, Coronary Artery Disease (CAD), congestive heart disease, myocardial misdemeanour.[8]

Nurses must be prepared to assist in treatment or directly in emergencies reporting sudden life-threatening injuries. Cardiac nurses monitor the patient for any signs of condition modification, seek the basic medication regimen and work with a specialist to develop an idea of action for the patient's care. Cardiac nurses must acquire specialized skills including graph observation, defibrillation, emergency medicine, emergency procedure techniques. The cardiac nurse is accountable to the field unit for distinguishing

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emergency items and initiating methods to treat the emergency scenario.[9]

OBJECTIVES OF THE STUDY

1. To assess the knowledge of nursing students regarding the basic life support.
2. To evaluate the skills of nursing students regarding the basic life support.
3. To develop a training programme and introduce as demonstration form related to basic life support.
4. To check the efficiency of training programme regarding basic life support to nursing students.
5. To find the association level of knowledge on basic life support with their selected extraneous variables.

HYPOTHESIS

- **H₁:** There is relationship between pre and post mean score of the knowledge and skills of the students of nursing on the basic life support (BLS).
- **H₀:** There is no relationship between knowledge and skills of student nurses with their selected extraneous variables.

METHODOLOGY

In this study Empirical approach was used to assess the results of information and skills training programme on basic life support for nursing students. An experimental; A group pre test post test research design is appropriate for present study. Independent variable was demonstration on basic life support. And dependent variable was information or knowledge and skill related to basic life support (BLS) of nursing students. Extraneous variables include age, gender, Father's education, Mother's education, father's income, mother's income and previous knowledge of nursing students regarding CPR. 200 nursing students studying in Upchar College of nursing Mansarovar, Jaipur, Jeevan shree nursing college, Niwaru Jaipur, symbiosis institute of nursing, mangyawas, Jaipur, Siddharth College of nursing, Pratap Nagar, Jaipur, Saint Florence College of Nursing, Sitapura, Jaipur and R R College Of Nursing Jaipur were selected through Non Probability Purposive Sampling Technique. Data was collected from the nursing students by structured knowledge questionnaire which is related to the basic life support. Reliability of tool was checked by Karle Pearson's correlation formula and value was $r = 0.84$. So these finding show that the tools was reliable for the study.

RESULTS

Table 1: Description of extraneous variables of the nursing student

Extraneous variables	Category	Frequency	Percentage (%)
Age (year)	18 – 21	85	42.5%
	22 – 24	55	27.5%

Gender	25 – 27	40	20%
	28 -30	20	10%
	Male	130	65%
	Female	70	35%
Father's Education	Illiterate	30	15%
	Primary to Middle	70	35%
	Secondary and Senior secondary	60	30%
	Graduation and PG	40	20%
Mother's Education	Illiterate	60	30%
	Primary to Middle	65	32.5%
	Secondary and Senior secondary	50	25%
	Graduation and PG	25	12.5%
Father's Income (per month)	<10000	40	20%
	11000-15000	70	35%
	16000-20000	60	30%
	>20000	30	15%
Mother's Income (per month)	<10000	90	45%
	11000-15000	60	30%
	16000-20000	40	20%
	>20000	10	05%
Previous Knowledge	Yes	105	52.5%
	No	95	47.5%

The table no. 1 revealed that Most of samples 85 (42.5%) were from age group of 18 – 20, 130 (65%) were male, most of samples were primary and middle class 70 (35%, most of samples were primary and middle class 65 (32.5%), The father's of the most of samples were earned per month 11000 – 15000 were 70 (35%), The mother's of the most of samples were earned per month <10000 were 90 (45%), 105 (52.7%) have previous knowledge regarding BLS.

Table no. 2: Comparison of the level of knowledge by before and after analysis

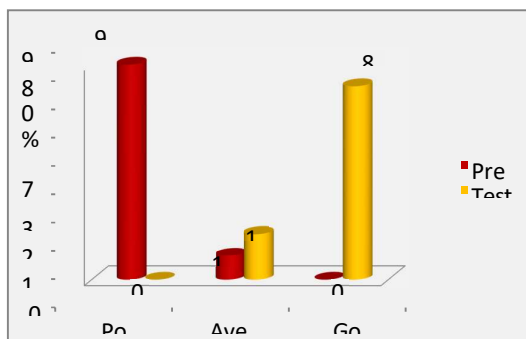
S. NO.	LEVEL OF KNOWLEDGE	PRE TEST		POST TEST	
		F	%	F	%
1.	Poor (< 50%)	180	90%	00	00%
2.	Average (50 to 75%)	20	10%	38	19%
3.	Good (>75%)	00	00%	162	81%

Figure – 1: Clustered Cylinder diagram showing similarity of level of knowledge by pre test and post

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test

The table no 2 and figure no. 1 showed the association of before and after analysis level of



knowledge regarding BLS between nursing students. With regarded to scores, during pre test 180 (90%) nursing students had poor knowledge, 20 (10%) had average knowledge and 00 (00%) of nursing students had good knowledge regarding BLS while during post test 00 (00%) nursing students had below level knowledge, 38 (19%) nursing students had average knowledge and 162 (81%) nursing students had good knowledge regarding BLS.

Table no. 3: Mean, Median, SD, mean difference and t test Value of knowledge level of nursing students

S. No.	Aspect Of Knowledge	Pre test			Post test			Mean difference	t value
		Mean	Median	SD	Mean	Median	SD		
1.	Questions related to general concept of CPR	8.98	9	1.72	16.75	17	2.88	7.77	32.36
2.	Questions related to procedure of CPR	11.68	12	1.60	22.10	23	3.14	10.42	40.84
3.	Question related to post resuscitation care	3.57	3	1.13	4.55	5	1.28	0.93	7.57
Total		24.22	24	2.71	43.35	44	4.75	19.13	48.13

Table no.3 is showing the mean, median, SD, mean difference and 't' value of before test and after test as per aspect of knowledge area.

The sub division of research hypothesis H1 that is check response skill, chest compression skill, open airway skill and assessing breathing is accepted because the mean and SD of pre test is 11.68 and 1.60 respectively. The mean and SD of post test is

22.10 and 3.14 respectively. The t value is 40.84 that were more to compare table value.

The overall mean of before analysis score is 24.22 whereas the mean of after analysis score is 43.35 with 19.13 mean differences. The median of before analysis score is 24 and the mean of after analysis score is 44 and the standard deviation of pre test was 2.71 whereas in post test the standard deviation was 4.75.

The calculated value of 't' is 48.13 at the 0.05 level of worth and the tabulated value of 't' is 1.96 at the 0.05 level of worth on 199 df.

The calculated value is more compare to the tabulated value so we can say that the training programme on BLS can enhance the acquaintance and skill of the student. It means that the training programme regarding BLS is effective to improve the familiarity and skill of student nurses.

The hypothesis H1 that is training programme will be valuable in raising the familiarity and a skill of student nurses on BLS is accepted.

DISCUSSION

During pre test 180 (90%) nursing students had poor knowledge, and after post test 162 (81%) nursing students had good knowledge regarding BLS.

The overall mean of pre test score is 24.22 whereas the mean of post test score is 43.35 with 19.13 mean differences. The median of before analysis score is 24 and the mean of post test score is 44 and the standard deviation of pre test was 2.71 whereas in post test the standard deviation was 4.75.

The calculated value of 't' is 48.13 at the 0.05 level of importance and the tabulated value of 't' is 1.96 at the 0.05 level of worth on 199 df.

The following studies support the results of our study which help in hypothesis H1:- Li H, Shen X, Xu X (2016) conducted a prospective study to investigate the effects of cardiopulmonary resuscitation training on primary and secondary school students. The findings of this study show us that school children in China had little knowledge about pre-CPR training. However, after training there was a very significant improvement in the basic principles and skills of CPR. This proves that through training we can increase knowledge and skills.[10]

The tabulated value of chi square at 6 df was 12.59 which is more than calculate value that was 1.29. So there was no considerable relationship among the level of information and skills regarding BLS of nursing students at 0.05 level of the significance.

The tabulated value of chi square at 2 df was 5.99 which is less than calculate value that was 38.52. So there was considerable relationship among the level of information and skills regarding BLS of nursing students at 0.05 level of the significance.

The following studies supported:-Krammell M, Schnaubelt S (2014) carried out a cross sectional research study based on the knowledge and gender

and age-specific aspects of information in basic life support in the Austrian capital. Of appalling significance, only thirty-three (33%) may be ready to perform cardiopulmonary resuscitation and fifty (50%) will use an AED device. BLS had significantly less disposition to try (male: four-hundredths vs. female: a pair of 5%; OR: 2.03 [95% CI: 1.39–2.98]; $p < 0.001$) and to use an AED device. (Male): fifty eight vs. female: 44%; or: a .76 [95% CI: 1.26–2.53]; $P = 0.002$) in females compared to their male counterparts. Apparently, we attribute a powerful decreasing level of data and disposition to BLS efforts (14% or 0.72 [95% CI: 0.57–0.92]; $p = 0.027$) and AED-use (19%). Determine; 0.68 with increasing age [95% CI: 0.54–0.85]; $P = 0.001$]. [11]

CONCLUSION

The following conclusion drawn of the study, "the effects of knowledge and skills training programme on basic life support for nursing students."

From the result of the present research, it is finished that before administration of training programme 180 nursing students had poor knowledge and after administration of training programme 162 nursing students had good knowledge. The overall mean of before analysis score is 24.22 whereas the mean of post test score is 43.35 with 19.13 mean differences. The calculated value of 't' is 48.13 at the 0.05 level of significance and the tabulated value of 't' is 1.96 at the 0.05 level of significance on 199 degree of freedom. On the basis of results it is conclude that the level of knowledge and skills regarding BLS among nursing was inadequate and the knowledge and skills of the nursing students can improve by providing training programme regarding BLS.

It is also concluded that the extraneous variables like age, father's income and mother's income are not significant with level of knowledge of nursing students on BLS and others extraneous variables like gender, father's education, mother's education and previous knowledge are significant with level of knowledge of nursing students on BLS.

RECOMMENDATIONS

1. Student nurses should be provided 7 days CPR training programme by the health recognized (AHA, Red Cross) because nursing students are future of the health department.
2. The CPR training should be provided by the health care professional.
3. BLS certificate training course not only for nursing students but also nursing staff provided because these are help in any emergency situation to any needed person.
4. Nursing teachers and any medical personnel should be have trained by the BLS certificate training course.
5. Communicate CPR related seminars, workshops, etc. to nursing students time to

time so students aware about CPR new updates.

6. CPR training is given at a minimum fee so that every person can attend the training programme so that they can get knowledge about it and save the life of individuals.
7. Make AED available in every department with CPR and also tell about its use.
8. CPR training not only to nursing students, but also to those who are willing to know it in the society.
9. The CPR training should be offer classes at varying levels for laypersons, corporate CPR training and others.
10. The CPR training programme also should be offers a wide range of courses for the medical professionals like student nurses, nurses, doctors, EMT's, dentists and others.

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