

Original Research

A study to evaluate the effect of structured teaching program on knowledge regarding basic life support among college students studying in selected colleges at Ajmer Rajasthan

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ABSTRACT:

Aim: A study to evaluate the effect of structured teaching program on knowledge regarding basic life support among college students studying in selected colleges at Ajmer Rajasthan **Material and methods:** 400 students were included from Hukumchand Noble Institute Of Science And Technology Ajmer Rajasthan various departments. We adopted convenient sampling for sample selection explained them about the study and obtained their consent for participation in the study. On the first day assessed their knowledge regarding BLS with the help of questionnaire on first day before intervention. The execution of Planned teaching program was done by the research scholar to participants. Post Planned teaching program on the same day knowledge assessed regarding BLS. After seventh day and fourteenth day of post intervention knowledge were assessed. **Results:** The mean value for the level of score for before intervention is 14.86 whereas the mean score of after is 27.82 with 12.96 mean differences. The median for pre test is 14 and the median for post test is 27 and the standard deviation of pre analysis score is 4.35 whereas in post analysis the standard deviation is 5.66. The calculate value of 't' is 32.76 at the 0.05 level of significant which is higher than the tabulated value of 't' that is 1.96 at the 0.05 level of significant on 19 df. **Conclusion:** After the implementation of structured teaching program the knowledge and practice of adult basic life support among staff nurses had improved drastically, which was evident from the post knowledge as well as post practice score. Hence the first scientific hypothesis was accepted. Hence it was concluded that the structured teaching programme is an effective teaching strategy to improve the knowledge as well as practice of the staff nurse.

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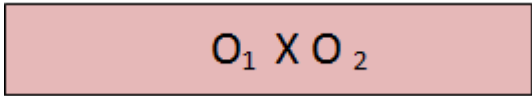
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INTRODUCTION

It is a vital first aid procedure which saves the life of victim. In many emergencies in which breathing or heart of victim is stopped like in cardiac arrest it is life saving procedure we cannot cure victim but we keep victims vital organs live with artificial circulation by pumping heart externally and with rescue breaths to provide oxygen till the further help arrives. American Heart Association (AHA)- prefer for everyone untrained lay person or medical personnel start CPR with chest compressions.¹ The heart has played an important role in understanding the body since antiquity. In the fourth century B. C., the Greek philosopher Aristotle identified the heart as the most important organ of the body, the first to form according to his observations of chick embryos. It was

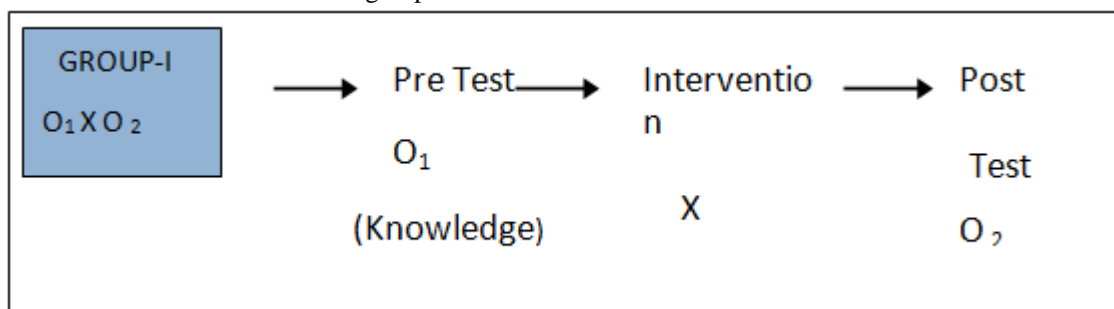
the seat of intelligence, motion, and sensation a hot, dry organ. Aristotle described it as a three-chambered organ that was the center of vitality in the body. Other organs surrounding it (e.g. brain and lungs) simply existed to cool the heart.²⁻⁶ The commonest cause of heart attack is coronary heart diseases. It is a group of diseases which comprises disease of blood vessels. These are arteries which carry and supply blood to heart. Coronary artery diseases developed due to reduction of blood flow to muscles of heart when plaque build up in the arteries of the heart.⁷ Coronary artery diseases, includes cardiac conditions like Angina, ischemic heart disease or heart attack, As per World health Organization incidence sheet, worldwide coronary heart diseases is the major cause of illness and death. 2015 statistics depicts the eight

million deaths increased in last five years. It is a huge number. So coronary heart diseases are the burning health problem and awareness and its management are important aspects in reducing number of its happening. No attempt till today from human being has gained the importance like CPR. Cardiopulmonary resuscitation is manmade gift to the human being for the better survival of the mankind. It plays a vital role in the keeping the victim alive when heart ceases or stops functioning till it gets starts mechanically or automatically or supported with advanced airway and circulatory management. Till 1950's, the efforts were on individualized basis. When it was proved in 1954, external cardiac compressions were as equal important and efficient as internal cardiac compressions it leads to drastic changes occurred in the technique of CPR.⁸⁻¹⁰ CPR is the golden opportunity to getting a stopped heart beating again. CPR is performed in hospital setup as well as outside by lay persons or emergency medical services responders. CPR is an emergency procedure involves chest compression and artificial ventilation. An effort made to maintain brain and heart circulation and other vital organs circulation intact artificially till further treatment modalities started and restore the spontaneous blood circulation to the vital organs and breathing started. It delays the tissue death and prevents the permanent brain damage. Main purpose of CPR is to maintain the Schematic presentation is as given below-



KEY: X = Intervention

O = Observation of measurement of dependent variable / outcome --+In this study, the plan could be laid down in schematic form as follows. The group consisted of students.



In this study, Hukumchand Noble Institute Of Science And Technology Ajmer Rajasthan is the selected setting for the study by the research Scholar.

INCLUSION CRITERIA

- College students who are willing to participate in the study.
- College students who are available during the period of data collection.
- College students who can read, write and understand English.

EXCLUSION CRITERIA

- College students who are not willing to

oxygenated blood flow to brain, heart and other vital organs with delay tissue damage and gives the chance of survival by providing the brief window for successful resuscitation with good neurological output.¹¹

The vital is to know the proper technique and adequate knowledge of CPR has been proven. When CPR is performed by trained personnel in healthcare industry, in hospital cardiac arrest survival reported is seven to twenty four percent. The AHA recommends proper CPR training with well-studied technique as proven and studied with the consequences worldwide. Every five years revised guideline is published by AHA. In 2015 guideline, the recommendations included ABC where Airway, Breathing and Chest compression. The 2015 current guideline recommend the sequence as CAB. Look, listen and feel, except in new born no longer it is recommended. Here more focus is on high quality CPR, for lay rescuer as well as medical personnel.¹²

MATERIAL AND METHODS

To assess knowledge of students regarding basic life support here to assess knowledge of students regarding basic life support research design adopted was one group pre test post test quasi experimental design, where **only one group is observed before and after administration of independent variable.**

- participate in the study.
 - College students who are not available during the period of data collection.
 - College students who cannot understand English
- 400 students were included from Hukumchand Noble Institute Of Science And Technology Ajmer Rajasthan various departments. we adopted convenient sampling for sample selection explained them about the study and obtained their consent for participation in the study. On the first day assessed their knowledge regarding BLS with the help of

questionnaire on first day before intervention. The execution of Planned teaching program was done by the research scholar to participants. Post Planned teaching program on the same day knowledge assessed regarding BLS.

After seventh day and fourteenth day of post intervention knowledge were assessed.

DATA ANALYSIS

According to the objective of the study, opinion of the experts related to this study, the statistical analysis related to the study, to check the objectives use the suitable formulas i.e. mean, median, standard deviation (S.D.) and “t” test were used to organize the data received, to do the tabulation, to analyze and to interpret rate of recurrence and proportion allocation of sample description, Mean median and standard deviation of pre test information scores of students, Mean median and standard deviation of after intervention awareness score of students, Effectiveness of the program checked by the test of significant i.e. “t” test and Chi square value to determine the relationship of the level of data of students with their demographic variables.

RESULTS

Out of total 400 college students, 170 (42.5%) of college students were belongs to age category of 18 to 21 group, 110 (27.5%) of college students were belong to 22-24 years of age group whereas 80 (20%) of college students were of age group of 25-27 years and 40(10%) were 28-30 age group. Out of 400 college students, 260(65%) of college students are male as well as 140 (35%) of college students are female. Out of 400 college students, 200 (30%) of college students are belonging to Hindu religion followed by 150 (38%) of college students is Muslim whereas 50 (12%) of college students with

Christianity and other religion 20 (5%) as their religion. Out of 400 college students, 200 (50%) of college students are studying course is B.A 120 (30%), 130 (32.50%) are studying in B.Sc. whereas B.COM 100 (25%) and in other courses 50 (12.50%) as per data obtained. Out of 400 college students, 120 (30%) of students are in their Ist year of their course , 150 (38%) of students are in IInd year whereas 130 (32%) of students are in IIIrd year. Out of 400 college students, 180 (45%) of college students are living in joint family as well as 220 (55%) of college students are in nuclear family. Out of 400 college students, 55 (13.75%) education of father is Illiterate, 179 (42.01%) education of father as Primary, 80 (20%) education of father is Secondary, 85 (21.25%) education of father as having Senior secondary, 90 (22.5%) education of father is Degree 50 (12.5%), education of father as having PG 40 (10%). Out of 400 college students, 85 (21.25%) education of mother is Illiterate, 88(22%) education of mother as Primary, 92 (23%) education of mother is Secondary, 75 (18.75%) education of mother as having Senior secondary, 90 (22.5%) education of mother is Degree 40 (10%), education of mother as having PG 20 (5%). Out of 400 college students, 50 (12.5%) of father are in govt job followed by 180 (45%) are in private job whereas 150 (37.50%) are having business and 20 (5%) as unemployed. Out of 400 college students, 30 (7.5%) of mothers are in govt job followed by 90 (22.50%) are in private job whereas 50 (12.50%) are having business and 230 (57.5%) as unemployed. Out of 400 college students, 120 (30%) of college students are belong to BPL family followed by 200 (50%) of college students are belong to Middle class family whereas 80 (20%) of college students live in upper class. Out of 400 college students, 250(62.5%) of college students are live in urban area as well as 150 (37.5%) of college students are live in rural area.

Table 1 Demographic profile

Demographic parameter	Frequency	Percentage (%)
Age (year)		
18 – 21	170	42.50%
22 – 24	110	27.50%
25 – 27	80	20%
28 -30	40	10%
Gender		
Male	260	65%
Female	140	35%
Religion		
Hindu	200	50%
Muslim	130	33%
Christian	50	12%
Others	20	5%
Study Stream		
B.Sc	120	30%
B.A	130	32.50%
B.Com	100	25%
Others	50	12.50%

Study class		
1 st year	120	30%
2 nd year	150	38%
3 rd year	130	32%
Type of family		
Joint	180	45%
Nuclear	220	55%
Father Education		
Illiterate	55	13.75
Primary	80	20
Secondary	85	21.25
Senior secondary	90	22.5
Degree	50	12.5
PG	40	10
Mother's Education		
Illiterate	85	21.25%
Primary	88	22%
Secondary	92	23%
Senior secondary	75	18.75%
Degree	40	10%
PG	20	5%
Father's Occupation		
Govt.	50	12.50%
Private	180	45%
Business	150	37.50%
Unemployed	20	5%
Mother's Occupation		
Govt.	30	7.50%
Private	90	22.50%
Business	50	12.50%
Unemployed	230	57.50%
Family Status		
BPL	120	30%
Middle Class	200	50%
Upper Class	80	20%
Area of Residence		
Urban	250	62.5%
Rural	150	37.5%

Table 2: Knowledge level of students

Level of Knowledge	Pre-Test			Post Test			Mean Difference	Correlation	t Value
	Mean	Median	SD	Mean	Median	SD			
	14.86	14	4.35	27.82	27	5.66	12.96	0.041	32.76

The above table 2 is showing the knowledge level regarding basic life support. The mean value for the level of score for before intervention is 14.86 whereas the mean score of after is 27.82 with 12.96 mean differences. The median for pre test is 14 and the median for post test is 27 and the standard deviation of pre analysis score is 4.35 whereas in post analysis the standard deviation is 5.66. The calculate value of 't' is 32.76 at the 0.05 level of significant which is higher than the tabulated value of 't' that is 1.96 at the 0.05 level of significant on 19 df.

Table – 3 Comparison of the level of knowledge by before and after analysis

Level of knowledge	Pre test		Post test	
	F	%	F	%
Poor (< 50%)	340	85%	4	01%
Average (50 to 75%)	40	10%	76	19%
Good (>75%)	20	05%	320	80%

With regard to scores, during pre test 340 (85%) students had poor knowledge, 40 (10%) had average knowledge and 20 (05%) of students had good knowledge regarding BLS while during post test 4 (01%)

students had below level knowledge, 76 (19%) students had average knowledge and 320 (80%) students had good knowledge regarding BLS.

Table – 4: Area wise pre-test knowledge score

Aspect Of Knowledge	Max. Score	Mean	Median	SD	Se Of Mean
Questions Related To General Concept Of Heart	7	3.05	3	1.85	1.07
Questions Related To Cardiac Arrest	5	2.035	2	1.12	0.9
Question Related To BLS	23	9.775	9	5.56	2.35

The above table 4 shows the summary of statistical outcomes of pre test awareness scores of students related to BLS. The structured knowledge questionnaire consists of three parts. The mean, median and standard deviation SE of mean of first part that was related to general concept of heart, were 3.05, 3 and 1.85 and 1.07 respectively. Regarding Cardiac Arrest, mean, median and standard deviation and SE of mean were 2.03, 2 and 1.12 respectively. About BLS mean, median and standard deviation and SE of mean was 9.77, 9 and 5.56 and 2.35.

Table – 5 Area wise post test knowledge score

Aspect Of Knowledge	Max. Score	Mean	Median	SD	Se Of Mean
Questions Related To General Concept Of Heart	7	5.55	5	2.34	0.9
Questions Related To Cardiac Arrest	5	4.095	4	1.92	0.65
Question Related To BLS	23	18.18	18	8.45	2.5

The above table 5 shows the summary of statistical outcomes of after intervention information scores of students regarding Basic Life Support. The structured knowledge questionnaire consists of three parts. The mean, median and standard deviation, and SE of mean of first part that was related to general concept of heart, were 5.55, 5, 2.34 and 0.9 respectively. Regarding Cardiac Arrest, mean, median and standard deviation and SE of mean were 4.09, 4, 1.92 and 0.65 respectively. About BLS the mean, median and standard deviation and SE of mean was 18.18, 18, 8.45 and 2.5.

Table – 6 Mean, Median, SD, mean difference and t test Value

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 Heart	3.05	3	1.85	5.55	5	2.34	2.5	33.45
2	Questions related to Cardiac arrest	2.035	2	1.12	4.095	4	1.92	2.06	18.45
3	Question related to BLS	9.775	9	5.56	18.18	18	4.45	8.405	28.56
Total		14.86	14	8.53	27.825	27	8.71	12.97	80.46

The sub division of research hypothesis H1 that are check concept of heart, cardiac arrest, knowledge of basic life support, is accepted because the mean and SD of pre test is 3.03 and 1.85 respectively. The mean and SD of post test is 5.55 and 2.34 respectively. The t value is 33.45 that were more to compare table value. The overall mean of before analysis score is 14.86 whereas the mean of after analysis score is 27.82 with 12.92 mean differences. The median of before analysis score is 14 and the median of after analysis score is 27 and the standard deviation of pre test was 8.53 whereas in post test the standard deviation was 8.71. The calculated value of ‘t’ is 80.46 at the 0.05 level of worth and the tabulate value of ‘t’ is 1.98 at the 0.05 level of worth on 99 df. The tabulated value of chi square at 2 df was 5.99 which is less than calculate value that was 77.04 So there was important relationship among the level of knowledge with their demographic variable gender regarding BLS of student at 0.05 level of the significance. The

tabulated value of chi square at 6 df was 12.59 which is less than calculate value that was 34.61. So there was important relationship among the level of knowledge with their demographic variable study stream regarding BLS of student at 0.05 level of the significance. The tabulated value of chi square at 6 df was 12.59 which is less than calculate value that was 40.06. So there was important relationship among the level of knowledge with their demographic variable mother occupation regarding BLS of student at 0.05 level of the significance.

DISCUSSION

The aim of the present study was to assess the effectiveness of structured teaching programme regarding basic life support among students in a selected college at ajmer Rajasthan. The study was conducted by using quasi experimental design. Sample size was 400 students selected by purposive sampling technique. The effectiveness of structured

teaching program was evaluated by questionnaire. The responses were analyzed through descriptive statistics (mean, frequency, percentage and standard deviation) and inferential statistics (paired 't' test.)

The study findings revealed that (340)85% of students had poor knowledge, (40)10% of students had average knowledge. The above findings were supported by the study conducted by Hassan Zaheer studied the knowledge of BLS in 60 Students. They demonstrated about the CPR using Manikins. After 7 days the knowledge level of the student was assessed and it was improved.¹³

The study findings revealed that comparison of overall mean, SD and mean percentage of pre and post test knowledge scores shows that over all pre test mean score was 14.84+8.53 whereas in post test the mean score was 27.82+8.71 which revealing the difference of 12.97 % shows the effectiveness of STP. The above findings were supported by the study conducted by Larsen P, Pearson J, studied about the Cardiopulmonary Resuscitation. Here the sample received the knowledge about BLS. So the researcher concluded that the STP gives better result.¹⁴

The study findings revealed that association between the level of knowledge and their selected demographic variables. It was interpreted that there was significant association found between knowledge scores of students basic life support with their demographic variables such as Source of information (P<0.05). No significant association was found between knowledge scores of students regarding BLS with their other demographic variables such as age, religion, study class, type of family, father's education, mother's education, father occupation, family status, residential area,. The stated hypothesis was accepted.¹⁵

Sanders AB reported that Cardiopulmonary Resuscitation knowledge among students was important. There was no significant association between the level of knowledge and their selected demographic variables like age, sex, residential area, type of family and education of parents.¹⁶

CONCLUSION

After the implementation of structured teaching program the knowledge and practice of adult basic life support among staff nurses had improved drastically, which was evident from the post knowledge as well as post practice score. Hence the first scientific hypothesis was accepted. Hence it was concluded that the structured teaching programme is an effective teaching strategy to improve the knowledge as well as practice of the staff nurse.

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