

Effectiveness of Planned Teaching Programme on Knowledge and Practice Regarding Basic Life Support among Nursing Students of Selected Nursing College of Himachal Pradesh

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Abstract: The aim of study was to evaluate the effectiveness of planned teaching programme on knowledge and practice regarding basic life support among nursing students. Pre-experimental research design with one group pre-test and post-test without control group was undertaken in MLM College of Nursing, Solan (HP). 59 subjects were sampled for data collection using total enumeration sampling technique. Structured knowledge questionnaire was used to collect data regarding knowledge and observation checklist to assess the practices of subjects. Data collected was analyzed using descriptive and inferential statistics. Findings reveals that pre-test mean knowledge score of subjects is 15.69 ± 3.98 (52.31%) and mean practice score of subjects is 7.89 ± 1.17 (39.45%) which concluded that subjects were having the average level of knowledge score and poor level of practices. In post-test mean knowledge score of subjects is 21.50 ± 4.22 (71.66%) and the mean practice score 15.54 ± 2.22 (77.7%) which interpreted that subjects were having the good level of knowledge and good level of practices. Therefore, stated research hypothesis is accepted ($p < 0.001$) because paired 't'-test shows highly significant difference between pre-test and post- test knowledge and practice scores. There was no significant association found between post-test knowledge and practice score with basic education, course of education, education of father, education of mother, occupation of mother, occupation of father, previous experience of training in BLS and previous source of knowledge regarding BLS.

Keywords: Assessment, Effectiveness, Planned teaching programme, Knowledge, Practice and Basic life support

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I. Introduction

Basic life support is that phase of medical measure which is provided to victims found in life threatening conditions such as respiratory distress, severe chest pain, shock, choking etc. can cause obstruction to airway and cardiac arrest which ceases complete functioning of heart, brain and respiratory system without no contraindications¹. The main objective of BLS/ cardio pulmonary resuscitation is to resuscitate functions of vital organs until appropriate or definitive medical treatment is found^{3,4}. It can be provided by any trained personnel either he or she can be a medical health personnel or person from other fields who have undergone training for cardio pulmonary resuscitation¹. More than 350,000 cardiac arrests occur outside of the hospital each year.^{3,5,7}. The heart does not just stop like that, in the period of 3-5 minutes it usually beats at the rate of 350-400 BPM (Beats per minute) very rapidly and then it stops. Those 3-5 minutes usually gives the window of opportunity to save a person if a shock can be given within the given period.^{2,4}. BLS involves chest compressions which are given at the rate of 100-120 compressions /minute with target depth for adult compressions to be between 2 inches [5centimetres] and ratio of CPR cycle 30:2.^{2,3}. In India the Sudden Cardiac Death rate in those >35 years of age was estimated 39.7/100,000 with male/female ratio of 4.6⁵ therefore BLS is important to learn and to get trained for each and every health personnel as they are the first who interact with the patient especially for nurses as they are in direct contact with patient day and night. Not only the health personnel should be trained but beside those non-medical professionals also should be made trained for BLS as no one knows when and where emergency can occur.

II. Material And Methods

The present study was carried out among final year nursing students of Murari Lal Memorial College of Nursing, Solan, HP. Quantitative research approach was used to assess the effectiveness of planned teaching programme on knowledge and practices regarding basic life support.

Research design- Pre-experimental research design with one group pre-test and post-test without control group was used.

Research location – This study was conducted at Murari Lal Memorial College of Nursing, Solan, HP

Study duration- December 2020-january 2021

Target population- Nursing students of final year were included as the targeted population in the study.

Sample size- 59 students were included in the study as sample

Sampling technique- Purposive sampling technique in which total enumeration technique was used to select the sample under the study.

Inclusion criteria:

- ❖ B.Sc. Nursing final year and P.B. Sc Nursing final year students.
- ❖ Subjects who were present at the time of data collection.
- ❖ Subjects who were willing to participate.

Exclusion criteria:

- ❖ Subjects who were sick at the time of data collection.
- ❖ Subjects who were absent at the time of data collection.

DEVELOPMENT AND DESCRIPTION OF TOOL-

Selection and development of tool-

The tool used to collect the data was-

- ❖ Structured questionnaire to assess the knowledge regarding BLS
- ❖ Checklist for assessment of skills related to BLS
- ❖ Planned teaching programme for improving knowledge and demonstration for improving practice

Preparation of tool-

The steps that used for preparation of tool are-

- ❖ Review of literature
- ❖ Preparation of blue print
- ❖ Consultation with experts

Description of Tool-

Tool was divided in the three sections-

- ❖ **Section A-** consist of demographic variables which includes basic education, course of student, education of father, education of mother, occupation of mother, occupation of father, previous experience of training in BLS and previous knowledge regarding BLS.
- ❖ **Section B-** consist of knowledge items. 30 questions were included in the structured questionnaire in which correct responses were scored as 1 and wrong answers as 0.
- ❖ **Section C** –consist of checklist to assess the practice. 20 items were included in which performed steps were scored 1 and no responses scored as 0.

Scoring procedure used for assessment of level of knowledge and practice score is as follows-

Level of knowledge and practice score	%age
Very Poor	Below 20%
Poor	21%-40%
Average	41% - 60%
Good	61% - 80%
Excellent	81% - 100%

Content validity of tool-

Content validity of tool was established by the validation of the content from the experts in the field of medical and nursing.

Reliability of tool-

- ❖ Feasibility of tool was checked on 10% of sample size.
- ❖ To check the reliability of tool pilot study was conducted at Abhilashi College of Nursing, Mandi (HP) on dated 9 November 2020. Test-retest method was used to calculate reliability (using Pearson's correlation coefficient formulae) of knowledge questionnaire and practice observation checklist and tool was found reliable.

Pilot study-

After getting a written permission, pilot study was conducted among 8 subjects at Abhilashi College of Nursing, Mandi. The samples were selected by using random sampling technique. The pilot study was carried out for period of 1 week in which pre-test was conducted on day1 followed by planned teaching programme and demonstration ,after then post-test was conducted on day 8 followed by re-demonstrations.

Method of data collection-

❖ Data collection period was for 1month in December2020-January2021. Samples were selected on basis of total enumeration sampling technique and inclusion criteria of the study. Informed consent was taken from all the subjects who have participated in the study. Pre-test was conducted for assessing the pre-existing level of knowledge and practice score followed by administration of planned teaching programme and demonstration of procedure. After 1 week post-test and re-demonstration was conducted for assessment of effectiveness of planned teaching programme.

❖ Paper pencil method was used to collect data. Knowledge was assessed with structured questionnaire consisting of 30 questions before and after the implication of planned teaching programme. Pre evaluation was conducted in 20 minutes followed by lecture for 40-50 minutes after that demonstration of practice was carried out for 15-20 minutes. Post evaluation was conducted after 1 week of administration of planned teaching programme and demonstration activity.

Statistical analysis-

Data was analyzed using MS-Excel and SPSS version 16. Paired‘t’ test was used to show comparison between pre-test and post-test score. Chi- square was used to find out association between post-test score with selected demographic variables. The level $P < 0.001$ was considered as level of significance.

III. Analysis And Interpretations

Organization of data analysis

The analyzed data was organized according to the objectives and presented under the following sections.

SECTION-I: Description of demographic characteristics of subjects

SECTION-II: Assessment of the knowledge and practice of subjects regarding Basic Life Support before implementation of planned teaching programme and assessment of the post-test knowledge and practice score of subjects and effectiveness of planned teaching programme on knowledge and practice of subjects regarding Basic Life Support

SECTION-III: Assessment of significant difference between pre-test and post-test knowledge and practice score using paired t-test. Assessment of significant association of post-test knowledge and practice score with selected demographic variables using chi-square test.

SECTION-I

Description of demographic characteristics of subjects

Table3.1- Showing frequency and percentage distribution of subjects according to demographic variables

S.No	Demographic variable	Frequency(n=59)	Percentage distribution (%)
1.	Basic education		
	Medical	40	67.79
	Non-medical	8	13.55
	Commerce	1	1.69
	Arts	10	16.94
2.	Course of student		
	B.Sc. Nursing	32	54.23
	P. B.Sc. Nursing	27	45.76
3.	Education of father		
	Matriculation	14	23.72
	High secondary	16	27.11
	Graduate/Post graduate	20	33.89
	Informal education	9	15.25
4.	Education of mother		
	Matriculation	24	40.67
	High secondary	19	32.20
	Graduate/ Post graduate	10	16.94
	Informal education	6	10.16
5.	Occupation of father		
	Business	27	45.76
	Teacher	10	16.94
	Doctor	1	1.69
	Engineer	4	6.77

	Farmer	17	28.81
6.	Occupation of mother		
	Business women	5	8.47
	Teacher	6	10.16
	Staff nurse	1	1.69
	Housewife	47	79.66
7.	Previous experience of training in BLS		
	Yes	10	16.94
	No	49	83.05
8.	Previous source of knowledge regarding BLS		
	Mass media	8	13.55
	Studied during time of course	49	83.05
	Attended any certified course	2	3.38

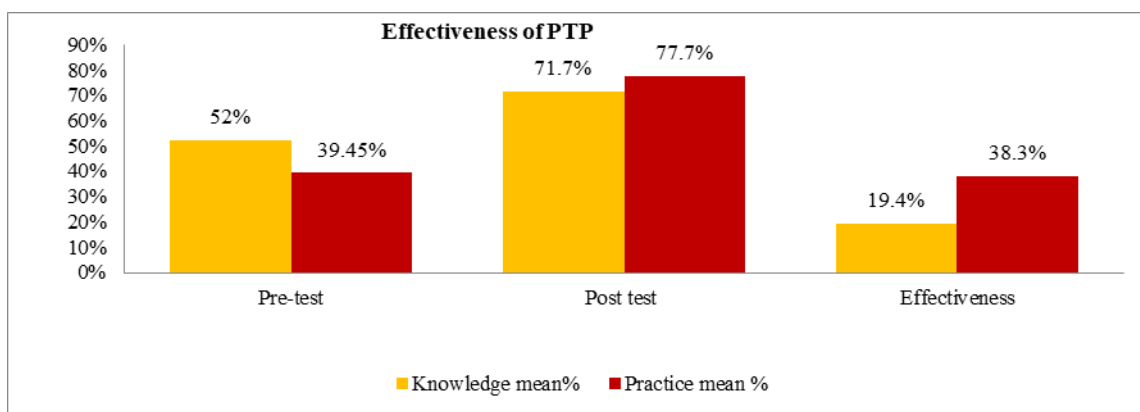
Out of 59 study subjects according to demographic variables, 40 subjects (67.79%) have medical as basic education, 32 subjects (54.23%) have BSc Nursing as a course, 20 father (33.89%) were graduated/ post graduated, 24 mothers (40.67%) were matriculated, 27 father (45.76%) were doing business, 47 mothers (79.66%) were housewives, 49 subjects (83.05%) do not have previous experience and 49 subjects (83.05%) have studied during course.

SECTION-II

Assessment of the knowledge and practice of subjects regarding Basic Life Support before and after implementation of planned teaching programme and demonstration regarding Basic Life Support

Table 3.2- Showing mean, S.D, mean% wise distribution of subjects pre-existing knowledge score and practice score before and after implementation of planned teaching programme and demonstration.

S.No	CRITERIA	PRE-TEST			POST-TEST			Effectiveness
		Mean	S.D	Mean %	Mean	S.D	Mean %	
1.	Knowledge score	15.69	±3.98	52.31%	21.50	4.22	71.66%	19.4%
2.	Practice score	7.89	±2.17	39.45%	15.54	2.27	77.7%	38.3%



Determine frequency and % wise distribution of subjects according to their level of knowledge score

Table 3.3- showing frequency and % wise distribution of subjects according to their level of knowledge score

Level of knowledge score	%age	PRE-TEST (n=59)	%age	POST-TEST (n=59)	%age
Very poor	Below 20%	1	1.69%	-	-
Poor	21-40%	11	18.64%	-	-
Average	41-60%	34	57.6%	15	25.42%
Good	61-80%	12	20.38%	29	49.15%
Excellent	81-100%	1	1.69%	15	25.42%

Table 3.3 shows the frequency and % wise distribution of subjects according to their level of knowledge score in which 1.69% have very poor, 18.64% have poor, 57.6% have average, 20.38% have good and 1.69% have excellent knowledge score in pre-test whereas 25.42% have average, 49.15% have good and 25.42% have excellent knowledge score in post-test

Determine frequency and % wise distribution of subjects according to their level of practice score

Table 3.4- showing frequency and % wise distribution of subjects according to their level of practice score

Level of practice score	%age	PRE-TEST (n=59)	%age	POST- TEST (n=59)	%age
Very poor	Below 20%	3	5.08%	-	-
Poor	21-40%	30	50.84%	-	-
Average	41-60%	25	42.37%	5	8.47%
Good	61-80%	1	1.69%	33	55.93%
Excellent	81-100%	-	-	21	35.59%

Table 3.4 shows the frequency and % wise distribution of subjects according to their level of practice score in which 5.08% have very poor, 50.84% have poor, 42.37% have average, 1.69% have good practice score in pre-test whereas 8.47% have average, 55.93% have good and 35.59% have excellent practice score in post-test

SECTION-III

Assessment of significant difference between pre-test and post-test knowledge and practice score using paired t-test

H₀₁ - there will not be significant difference between pre-test and post-test knowledge regarding basic life support among nursing students

Table 3.5-showing comparison between mean, mean%, S.D among pre-test and post-test knowledge score

Paired t-test	Comparison	
	PRE-TEST	POST-TEST
KNOWLEDGE SCORE		
Mean	15.69	21.50
S.D	±3.98	±4.22
Calculated t-value	13.141	
Df	58	
P value	0.001	
Table value	3.237	
Result	13.141 > 3.237 Significant	

Table 3.5 shows difference between pre-test and post-test knowledge score which interprets that calculated t-value is more than tabulated t-value at p value (≤ 0.001) level of significance which is highly significant to reject null hypothesis.

H₀₂ - there will not be significant difference between pre-test and post-test practice score.

Table 3.6-showing comparison between mean, mean%, S.D among pre-test and post-test practice score

Paired t-test	Comparison	
	PRE-TEST	POST-TEST
PRACTICE SCORE		
Mean	7.89	15.54
S.D	±2.17	±2.27
Calculated t-value	26.44	
Df	58	
P value	0.001	
Table value	3.237	
Result	26.44 > 3.237 Significant	

Table 3.6 shows difference between pre-test and post-test practice score which interprets that calculated t-value is found more than tabulated t-value at p value (≤ 0.001) level of significance which is highly significant to reject null hypothesis.

Assessment of significant association of post-test knowledge and practice score with selected demographic variables

H₀₃-there will not be significant association between post-test knowledge score on basic life support among nursing students with their selected demographic variables

Table 3.7- showing the association of post- test knowledge score with selected demographic variables

Association table								
Demographic variable	Level of knowledge score			Chi square				
	Average	Good	Excellent	Chi square	Df	P value	T value	Result
Basic education								
Medical	8	18	14	0.59	4	0.01	13.27	Not significant
Non-medical	1	6	1					
Commerce	-	1	-					
Arts	5	5	-					
Course of student								
B.Sc. Nursing	7	14	11	0.22	2	0.01	9.21	Not significant
P. BSc. Nursing	7	16	4					
Education of father								
Matriculation	5	6	3	0.75	4	0.05	9.48	Not significant
High secondary	2	8	6					
Graduate/Post graduate	5	14	3					
Informal education	2	4	3					
Education of mother								
Matriculation	9	10	5	0.31	6	0.001	22.45	Not significant
High secondary	3	11	5					
Graduate/ Post graduate	-	7	3					
Informal education	2	2	2					
Occupation of father								
Business	7	15	5	0.45	8	0.05	15.50	Not significant
Teacher	1	5	4					
Doctor	1	-	-					
Engineer	2	1	1					
Farmer	3	9	5					
Occupation of mother								
Business women	2	3	-	0.53	6	0.01	16.81	Not significant
Teacher	-	4	6					
Staff nurse	-	1	-					
Housewife	12	22	13					
Previous experience of training in BLS								
Yes	2	7	1	0.39	2	0.01	9.21	Not significant
No	12	23	14					
Previous source of knowledge regarding BLS								
Mass media	4	4	-	0.06	2	0.05	5.99	Not significant
Studied during time of course	10	25	14					
Attended any certified course	-	1	1					

Table 3.7 manifests that chi square was calculated to find out association of post-test knowledge score with selected demographic variables. There was no significant association found between post-test knowledge score with selected demographic variables therefore, null hypothesis is accepted.

H₀-there will not be significant association between post-test practice score on basic life support among nursing students with their selected demographic variables

Table 3.8- showing the association of post- test practice score with selected demographic variables

Demographic variable	Level of practice score			Chi square				Result
	Average	Good	Excellent	Chi square	Df	P value	T value	
Basic education								
Medical	4	19	17	0.37	4	0.05	9.48	Not significant
Non-medical	-	6	2					
Commerce	1	-	-					
Arts	-	7	3					
Course of student								
B.Sc. Nursing	4	17	11	0.57	2	0.05	5.99	Not significant
P. B.Sc. Nursing	1	15	11					
Education of father								
Matriculation	-	10	14	0.30	4	0.01	13.27	Not significant
High secondary	1	9	6					
Graduate/Post graduate	3	8	9					
Informal education	1	5	3					
Education of mother								
Matriculation	-	15	9	0.12	6	0.001	22.45	Not significant
High secondary	3	10	6					
Graduate/ Post graduate	-	5	5					
Informal education	2	2	2					
Occupation of father								
Business	1	16	10	0.49	8	0.01	20.09	Not significant
Teacher	1	6	3					
Doctor	-	1	-					
Engineer	3	1	-					
Farmer	-	8	9					
Occupation of mother								
Business women	-	2	3	0.62	6	0.01	16.81	Not significant
Teacher	1	4	1					
Staff nurse	-	-	1					
Housewife	4	26	17					
Previous experience of training in BLS								
Yes	-	5	5	0.66	2	0.01	9.21	Not significant
No	5	27	17					
Previous source of knowledge regarding BLS								
Mass media	1	4	3	0.73	2	0.05	5.99	Not significant
Studied during time of course	4	27	17					
Attended any certified course	-	1	1					

Table 3.8 manifests that chi square was calculated to find out association of post-test practice score with selected demographic variables. There was no significant association found between post-test practice score with selected demographic variables therefore, null hypothesis is accepted.

IV. Discussion

This chapter relates the result of the findings of the present study with the result of study conducted in the past. Present study findings have been discussed in accordance with the objectives of the study.

Objective first is to assess the pre-existing knowledge score before implementation of planned teaching programme regarding basic life support among nursing students of selected nursing college. In the present study pre-test mean knowledge score was (15.69) i.e. (52.31%) which specified that subjects have average level of knowledge score. Similar results were found consistent with the study conducted by **Joseph Amita, Batra Bharati**, 'Effectiveness of Structured Teaching Program on Knowledge regarding Basic Life Support among

G.N.M. Student in Selected College of Indore.”³² The pre-test score of the samples, shows that 32 (64%) out of 50 had poor knowledge, 16 (32%) had average knowledge and 2 (4%) had good knowledge about the Basic Life Support.

Objective second is to assess the pre-existing practice score before implementation of planned teaching programme regarding basic life support among nursing students of selected nursing college. **In this study the mean practice score is (7.89), (± 1.17)** which is 39.45% of total score which manifests that subjects have poor level of practices under this study. Consistent study findings were made by **Goswami Rashmi, Kanika and N Sembian** “quasi experimental study to assess the Effectiveness of Training Program on Knowledge and Practices Regarding Basic Life Support (BLS) Among Nursing Students.”³³ in which the mean of pre-test practice score (10.31 ± 3.84) was found low than post-test practice score (23.00 ± 1.18).

Objective fourth is to assess the post-test knowledge score after implementation of planned teaching programme regarding basic life support among nursing students of selected nursing college. In the present study the mean of post-test knowledge score (**21.50**) was found higher than pre-test knowledge score (**15.69**) specified that teaching programme was effective in improving the post-test knowledge score. Similar results were discussed in study conducted by **Ajjappa A.K, Babu C.P.S et al.** Effectiveness of BLS Training in improving the Knowledge and skills among Medical Interns.”²⁷ They concluded that the mean of first post test knowledge score (13.76 ± 1.16) was higher than the mean of pre test knowledge score (7.19 ± 2.00) and also the mean of second post test knowledge score (14.12 ± 1.15) was higher than the mean of pre test knowledge score (7.19 ± 2.00) which indicate that training program was effective in increasing the knowledge score among nursing students.³⁴

Objective fifth to assess the post-test practice score after implementation of planned teaching programme regarding basic life support among nursing students of selected nursing college. In the present study the mean post-test score (**15.54**) was found higher than pre-test score (**7.89**) which indicate that teaching program was effective in increasing the practice score among nursing students. Similar results were discussed in study conducted by **Goswami Rashmi, Kanika and N Sembian** “quasi experimental study to assess the Effectiveness of Training Program on Knowledge and Practices Regarding Basic Life Support (BLS) Among Nursing Students.” They concluded that the mean of post test practice score (23.00 ± 1.18) was higher than the mean of pre test practice score (10.31 ± 3.84) which indicate that training program was effective in increasing the practice score among nursing students.³³

Objective sixth is to assess the effectiveness of planned teaching programme. In present study the comparison was made among pre-test and post-test knowledge score to find out the difference in knowledge score. The overall score was highly significant at P value 0.001 level of significance which manifests that planned teaching programme was highly effective. The same findings were found consistent in the study conducted by **Ratha Kabina et.al** to “Evaluate the Effectiveness of Planned Teaching Programme regarding Basic Life Support (BLS) among Intern (B.Sc Nursing) Student at Selected Nursing College, Bhubaneswar.”⁶ This study shows that the overall score of knowledge in pre-test and post-test was highly significant indicating that the Planned teaching programme was highly effective.⁷

On other hand, the same comparison was made among pre-test and post-test practice score to find out the difference in practice score. In the present study overall score was highly significant at P value 0.001 level of significance which manifests that planned teaching programme was effective, the same findings were found consistent with the study conducted by **Goswami Rashmi, Kanika and N Sembian** “quasi experimental study to assess the Effectiveness of Training Program on Knowledge and Practices Regarding Basic Life Support (BLS) Among Nursing Students.”³³ This study shows that overall score of practice in pre-test and post-test was highly significant at P value 0.05 level of significance indicating that the Planned teaching programme was highly effective in enhancing the practices of subjects.

Objective seventh is to determine the association of post- test knowledge and practice score with selected socio-demographic variables In present study no significant association was found of post-test knowledge score with selected demographic variables also in related study conducted by **Philip Nitin**, ‘a quasi experimental study on Effectiveness of planned teaching programme regarding Basic Life Support (BLS).’³⁵ no significant association is found in between percentage improvement in scores and among both genders (p value=0.992), age (p-value=0.662), duration of clinical experience (p value=0.564) and area of clinical experience (p-value=0.070) however, no significant association was found of post-test practice score with selected demographic variables but in study conducted by **Kose S, Akin S, Mendi O, Goktas S.** The effectiveness of basic life support training on nursing students’ knowledge and basic life support practices: a non-randomized quasi-experimental design. *Afri Health Sci.*³⁶ There was no significant association between the post-training basic life support skills and age ($p > 0.05$). There was a significant and moderate association between the adult basic life support Knowledge Form scores and the adult basic life support practice assessment form scores obtained after the training ($r = 0.39, p < 0.01$).

V. Conclusion

The findings revealed that pre-test and post-test knowledge and practice score were significant at P value (≤ 0.001) level of significance. In pre-test the mean knowledge score of subjects is 15.69 ± 3.98 and mean practice score of subjects is 7.89 ± 1.17 which concluded that subjects were having the average level of knowledge score and poor level of practices. In post-test mean knowledge score of subjects is 21.50 ± 4.22 and the mean practice score 15.54 ± 2.22 which interpreted that subjects were having the good level of knowledge score and have good level of practices which interpreted that planned teaching programme was effective. No significant association was found between post-test knowledge and practice score with selected demographic variables.

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