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A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME (STP) AND VIDEO ASSISTED TEACHING (VAT) REGARDING KNOWLEDGE OF PEDIATRICCARDIOPULMONARY RESUSCITATION AMONG 3rd YEAR BSc NURSING STUDENTS IN SELECTED NURSING COLLEGES, BENGALURU

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Abstract: **Cardiac arrest occurs when the heart ceases to produce an effective pulse and circulate blood. Resuscitation measures can be lifesaving for children who experience respiratory failure.**

Objectives of the Study: A comparative study to evaluate the effectiveness of structure teaching programme and video assisted teaching programme on knowledge regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students in selected nursing colleges, Bengaluru.

Methodology: It is a four step model of program evaluation developed for obtaining useful information for taking decisions. It involves four types of decisions, namely planning decisions, Structuring decisions, implementing decisions and recycling decisions. The sample comprised a total of 100 students from 3rd year BSc nursing (50 samples in STP group and 50 samples in VAT group). A Non probability purposive sampling technique was adopted. The tool used for data collection was structured knowledge Questionnaire.

Result: The computed independent 't' value for pre-test knowledge scores of two interventional groups is 0.43 which is not found significant at 0.05 levels. This indicated that there is no difference between the mean pre-test knowledge scores among two interventional groups.

Keywords: **Paediatric Cardiopulmonary resuscitation, Structured teaching programme, Video assisted teaching, Sociodemographic variables.**

I. INTRODUCTION

The cardiovascular system is divided into two main parts- the heart, whose pumping action ensures constant circulation of the blood and the blood vessels, which form a lengthy network through which the blood flows. The heart is a muscular pump with four chambers inside, the right and left atria and the right and left ventricles. These four chambers allow the heart to pump blood through two circulatory pathways: systemic circulation (takes oxygen rich blood to the tissues and organs) and pulmonary circulation (takes deoxygenated blood to the lungs and oxygenated blood back to the heart).[3]

Cardiopulmonary resuscitation (CPR) is a method employed to aid and uphold the respiration and blood flow of an infant, child, or adolescent experiencing respiratory arrest and/or cardiac arrest. Cardiopulmonary resuscitation provides blood flow to vital organs until effective circulation can be re-established.[6] CPR is an emergency procedure that combines chest compression often with artificial ventilation in an Attempting to sustain normal brain activity manually while awaiting the restoration of natural blood flow and breathing in an individual experiencing cardiac arrest. or in which breathing and heart beat has stopped due to drowning, suffocation, choking etc. CPR involves, rescue breathing which provides oxygen to a child's lungs and chest compressions which keep the child's blood circulating. The ABC's of basic CPR include airway, breathing, circulation.

Problem statement

"A comparative study to evaluate the effectiveness of Structure Teaching Programme(STP) and Video Assisted Teaching(VAT) programme on knowledge regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students in selected nursing colleges, Bengaluru."

Objectives of the Study

1. To assess the knowledge regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students as pre-test.
2. To evaluate the effectiveness of Structured teaching programme on knowledge regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students.
3. To evaluate the effectiveness of video assisted teaching programme on knowledge regarding cardiopulmonary resuscitation among 3rd year B.sc nursing students.
4. To compare the effectiveness of Structured teaching programme and Video assisted teaching programme on knowledge regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students.
5. To find out the association between the pre-test knowledge scores regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students and selected demographic variables.

Hypotheses:

- **H_1:** There will be statistically significant difference between mean pre-test knowledge scores on paediatric cardiopulmonary resuscitation in children among two interventions groups of the 3rd year B.Sc nursing students at 0.05 level of significance.
- **H_2:** The mean post-test knowledge scores of 3rd year B.Sc nursing students regarding paediatric CPR will be higher than the mean pre-test knowledge scores after exposing to Structure teaching programme at 0.05 level of significance.
- **H_3:** The mean post-test knowledge scores of 3rd year B.Sc nursing students regarding paediatric CPR will be higher than the mean pre-test knowledge scores after exposing to video assisted teaching at 0.05 level of significance.
- **H_4:** There will be statistically significant difference between mean post-test knowledge scores on paediatric cardiopulmonary resuscitation in children among two interventions groups of the 3rd year B.Sc nursing students at 0.05 level of significance.
- **H_5:** There will be significant association between pre-test levels of knowledge of 3rd year B.Sc nursing students regarding paediatric cardiopulmonary resuscitation in children and their selected personal variables at 0.05 level of significance.

II. FIGURES GRAPHS AND TABLES

TABLE 1: Frequency & Percentage distribution of subjects in two intervention groups according to their age

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
1. Age (in years)				
a) 17 - 19	04	08	00	00
b) 19 - 21	30	60	35	70
c) 21 – 23	14	28	14	28
d) 23 and above	02	04	01	02

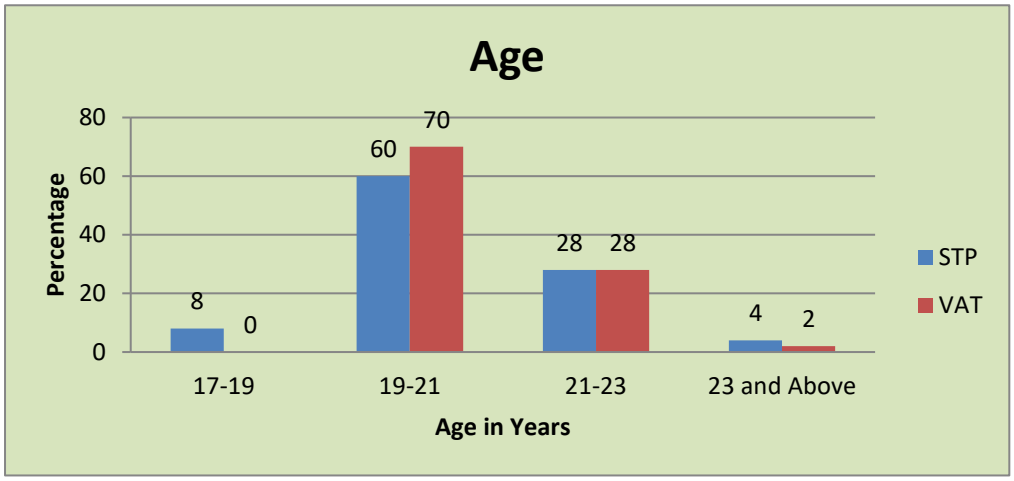

Figure 1. Frequency & Percentage distribution of subjects in two intervention groups according to their age

TABLE 2: Frequency and percentage of distribution of subject group according to their Gender

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
2.Gender				
a) Male	10	20	15	30
b) Female	40	80	35	70

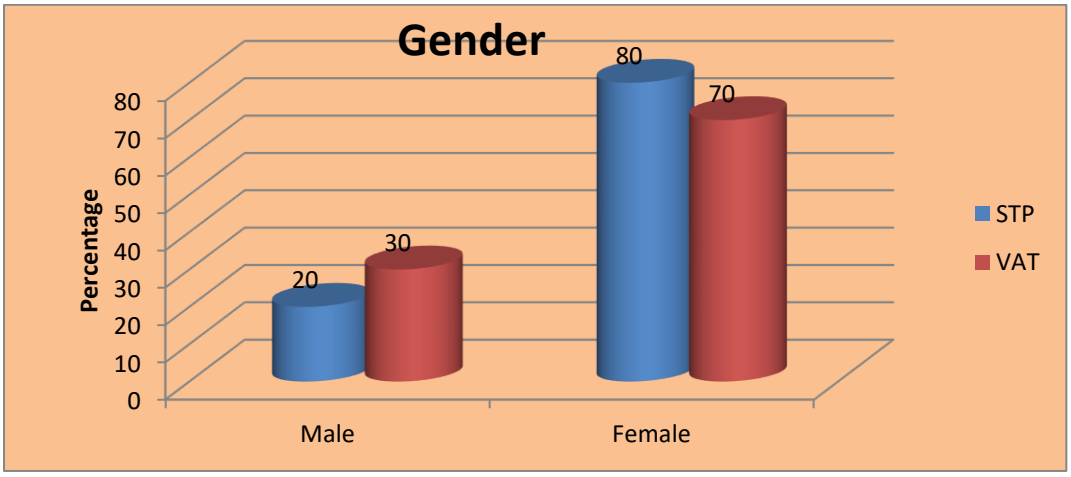

Figure 2. Frequency & Percentage distribution of subjects in two intervention groups according to their Gender.

TABLE 3: Frequency and percentage of distribution of subject group according to their Religion

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
3. Religion				
a) Hindu	16	32	22	44
b) Muslim	10	20	06	12
c) Christianity	20	40	21	42
d) Others	04	08	01	02

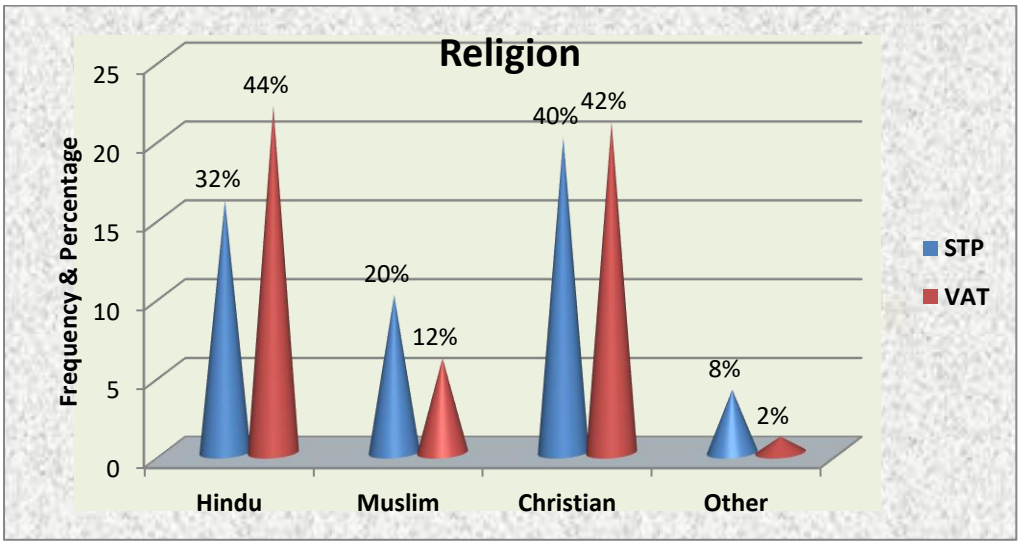

Figure 3. Frequency & Percentage distribution of subjects in two intervention groups according to their Religion

TABLE 4: Frequency and percentage of distribution of subject group according to their Type of family

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
4.Type of family				
a) Nuclear	16	32	22	44
b) Joint	24	48	22	44
c) Extended	10	20	06	12

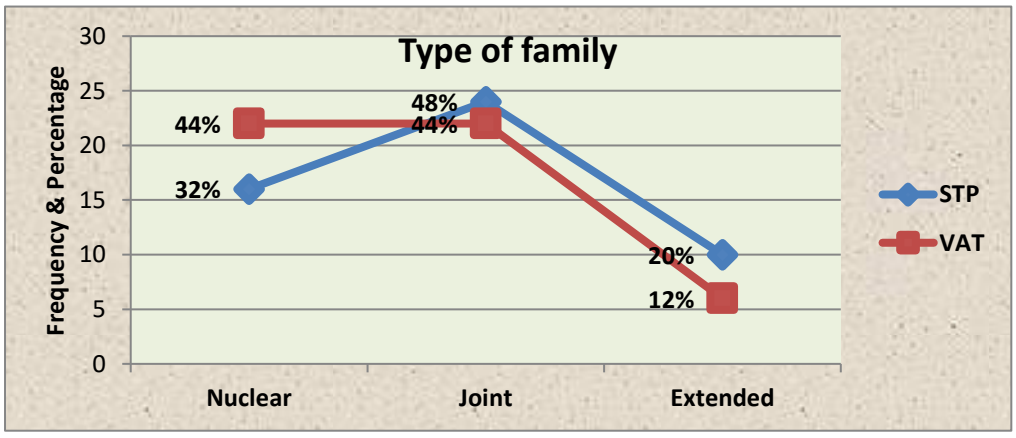

Figure 4. Frequency & Percentage distribution of subjects in two intervention groups according to their type of family

TABLE 5: Frequency and percentage of distribution of subject group according to their Dietary Pattern

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
5.Dietary Pattern				
a) Vegetarian	12	24	11	22
b) Mixed	38	76	39	78

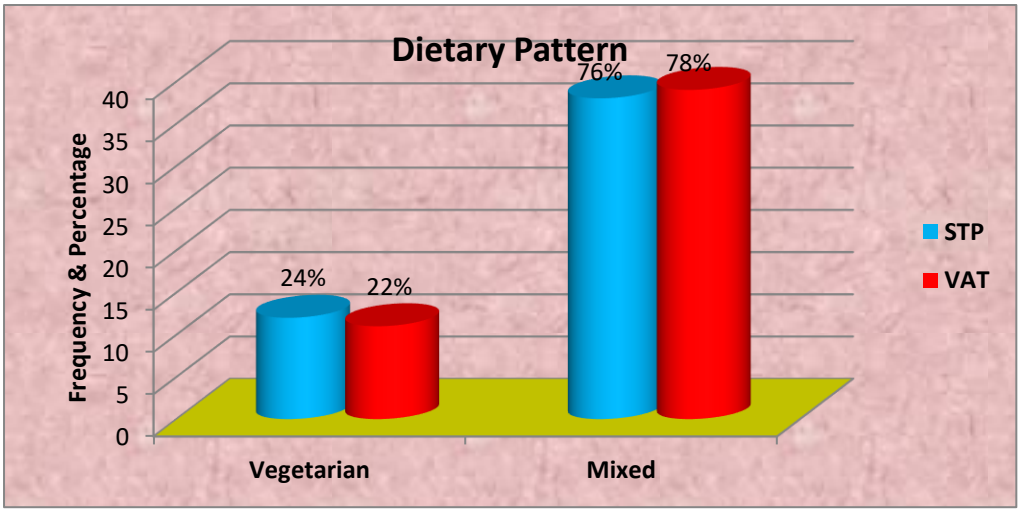

Figure 5. Frequency & Percentage distribution of subjects in two intervention groups according to their dietary pattern

TABLE 6: Frequency and percentage of distribution of subject group according to their Family Income

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
Family Income (Rs/Month)				
a) <10,000	12	24	06	12
b) 10.001 to 20,000	16	32	26	52
c) 20,001 to 30,000	20	40	16	32
d) 30,001 and above	02	04	02	04

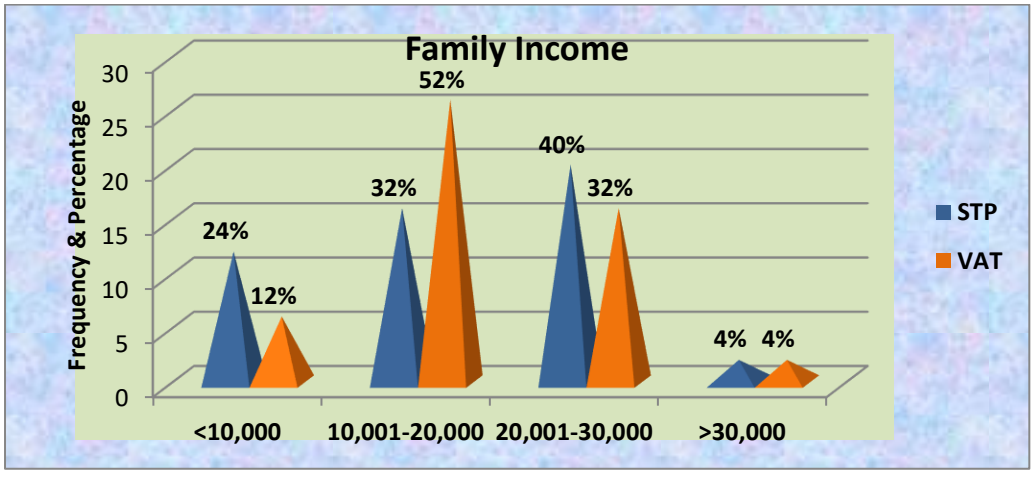

Figure 6. Frequency & Percentage distribution of subjects in two intervention groups according to their family income

TABLE 7: Frequency and percentage of distribution of subject group according to their Previous knowledge

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
7.Previous knowledge				
a) Yes	32	64	38	76
b) No	18	36	12	24

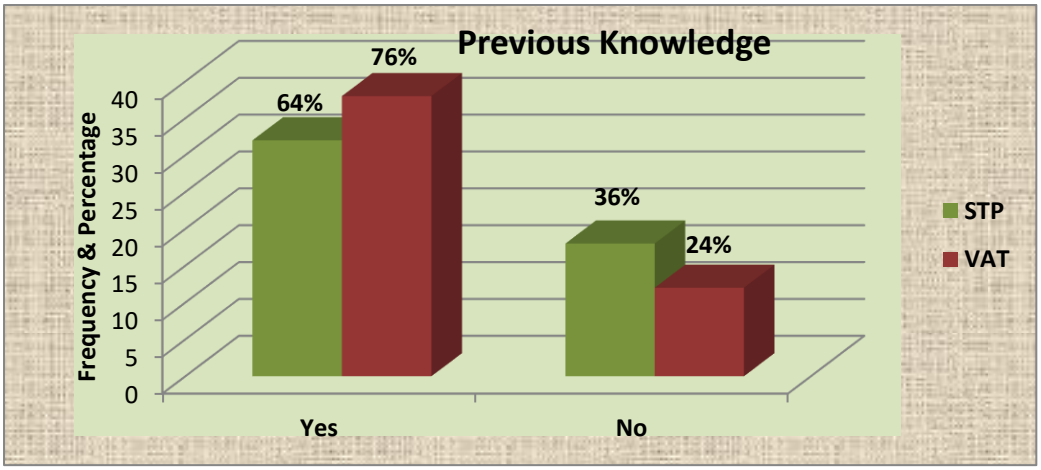

Figure 7. Frequency & Percentage distribution of subjects in two intervention groups according to their previous knowledge regarding paediatric cardiac resuscitation

TABLE 8: Frequency and percentage of distribution of subject group according to their Source of information

$n_1 + n_2 = 100$

Sample Characteristics	Group I (Structured Teaching Program)		Group II (Video assisted Teaching Program)	
	f	%	f	%
8.Source of information				
a) Mass Media	00	00	00	00
b) Health Personnel	04	12.5	06	15.8
c) Classroom	28	87.5	32	84.2
d) Personal experience	00	00	00	00

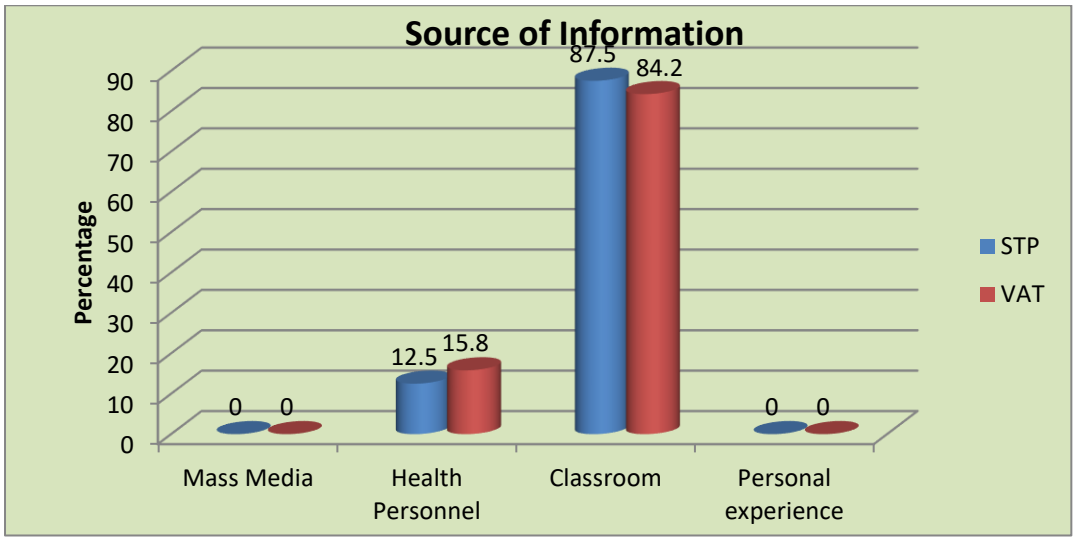

Figure 8. Frequency & Percentage distribution of subjects in two intervention groups according to source of information regarding pediatric cardiac resuscitation

III. DISCUSSION

Although present study discussion is focused with the objectives of the study to assess the "A comparative study to evaluate the effectiveness of structure teaching programme and video assisted teaching programme on knowledge regarding paediatric cardiopulmonary resuscitation among 3rd year B.sc nursing students in selected nursing colleges, Bengaluru"

Methodology

In the present study, the investigator likes to assess the knowledge of 3rd year BSc nursing students after STP and VAT on Paediatric Cardio Pulmonary Resuscitation in children. Hence the research approach adopted for this study is an Evaluative and Comparative approach.

The research design provides an overall blueprint to carry out the study. The research design used in this study is the Pre Experimental Two groups pre-test - post-test design to evaluate the effectiveness of STP and VAT on Cardio Pulmonary Resuscitation.

Organization of Findings

Section I: Description of sample characteristics

- Frequency and percentage distribution of 3rd year B.Sc Nursing students in two intervention groups according to their selected personal variables.

Section II: The comparison of pre-test knowledge scores among two interventional groups

- The Independent 't' test statistics to compare the pre-test scores of the two interventional groups.

Section III: The comparison of pretest and posttest knowledge scores in two interventional groups.

1. Comparison of the pre-test and post-test knowledge scores according to level of knowledge.
2. The Paired 't' test to compare the pre-test and post test scores in two interventional groups.

- Comparison of the pre-test and post-test knowledge scores in structured teaching program group.
- Comparison of the pre-test and post-test knowledge scores video assisted teaching program group.

Section IV: The comparison of posttest knowledge scores among two interventional groups

- The Independent 't' test statistics to compare the post test scores of the two interventional groups.

Section V: Findings related to association between pre-test levels of knowledge of 3rd year B.Sc nursing students regarding paediatric cardiopulmonary resuscitation in children and selected socio demographic variables.

IV. RESULTS

- *The comparison of pretest knowledge scores among two interventional groups*

The pre-test knowledge scores obtained by the subjects were tabulated to a master sheet and the total scores obtained for each sample in pre-test were tabulated. Mean, standard deviation, median and range of pre-test scores were computed. The findings are presented in the Table 9.

Table 9: Mean, standard deviation, median, and range of pre-test knowledge scores of subjects among two interventional groups

n=50

Groups	Pre test scores			
	Mean	SD	Median	Range
Knowledge scores				
Group-I (STP)	9.44	3.25	9	15
Group-II (VAT)	9.72	3.19	10	15

The data presented in the Table 9 shows that the mean pre-test knowledge score of group I (STP) was 9.44 with Standard deviation of ±3.25, median of 9 and a range of 15 as against possible range of 0-30. The mean pre-test knowledge score of group II(VAT) was 9.72 with standard deviation of ±3.19, median of 10 and a range of 15 as against the possible range of 0-30.

In order to compare the pre-test knowledge scores of the two interventional groups Independent 't' test was calculated. The data is presented in the Table 10. To test the statistical significance following hypothesis was stated.

H_1: There will be statistically significant difference between mean pre-test knowledge scores on paediatric cardiopulmonary resuscitation in children among two interventions groups of the 3rd year B.Sc nursing students at 0.05 level of significance.

Table 10: Mean difference, standard deviation of the difference and standard error of the mean difference and 't' value of pre-test knowledge scores of two intervention groups regarding paediatric cardiopulmonary resuscitation in children

n1 + n2 = 100

Groups	Mean $_D$	SD_D	SEMD	Independent 't' test	Significance
Group-I (STP) Group-II (VAT)	0.28	0.06	0.64	0.43	NS

The data presented in the Table 10 shows that the computed independent 't' value for pre-test knowledge scores of two interventional groups is 0.43 which is not found significant at 0.05 levels. This indicated that there is no difference between the mean pre-test knowledge scores among two interventional groups hence H_1 is rejected indicating there will not be statistically significant difference between mean pre-test knowledge scores on paediatric cardiopulmonary resuscitation in children among two interventions groups of the 3rd year B.Sc nursing students at 0.05 level of significance and these two groups started from an equivalent baseline.

- *Distribution of knowledge scores of two groups during pre-test and post-test.*

Table 11: Mean, median, Mode, standard deviation and range Pre-test and Post-test knowledge scores of Respondents in two interventional groups regarding paediatric cardiopulmonary resuscitation in children.

n =50

Section	Group-I (STP)					Group-II (VAT)				
	Mean	Median	Mode	SD	Range	Mean	Median	Mode	SD	Range
Pre test	9.44	9	8	3.25	15	9.72	10	8	3.19	15
Post test	21.92	22	21	4.08	18	25.62	26	26	1.66	8

Table 11 reveals pre-test and post-test knowledge score two intervention groups regarding paediatric cardiopulmonary resuscitation in children, in group I (STP) during pre-test subjects mean was 9.44, median was 9, mode 8, standard deviation 3.25 and with range scores of 15 and in post test subjects mean was 21.92, median was 22, mode 21, standard deviation 4.08 and with range scores of 18; where as in group II (VAT) during pre-test subjects mean was 9.72, median was 10, mode 8, standard deviation 3.19 and with range scores of 15 and in post test subjects mean was 25.62, median was 26, mode 26, standard deviation 1.66 and with range scores of 8.

- **The comparison of post-test knowledge scores among two interventional groups**

In order to compare the post-test knowledge scores of the two interventional groups Independent 't' test was calculated. The data is presented in the Table 12. To test the statistical significance following hypothesis was stated.

H_4: There will be statistically significant difference between mean post-test knowledge scores on paediatric cardiopulmonary resuscitation in children among two interventions groups of the 3rd year B.Sc nursing students at 0.05 level of significance.

Table 12: Mean difference, standard deviation of the difference and standard error of the mean difference and 't' value of post-test knowledge scores of two intervention groups regarding paediatric cardiopulmonary resuscitation in children

n1 + n2 = 100

Groups	Mean$_D$	SD_D	SEMD	Independent 't' test	Significance
Group-I (STP) Group-II (VAT)	3.7	2.42	0.62	5.93	S

$t_{(98)}$ =2.04, ($p<0.05$), S = Significant

The data presented in the Table 8 shows that the computed independent 't' value for post-test knowledge scores of two interventional groups is 5.93 which is found significant at 0.05 levels. This indicated that there is difference between the mean post-test knowledge scores among two interventional groups hence H_4 is supported indicating there will be statistically significant difference between mean post-test knowledge scores on paediatric cardiopulmonary resuscitation in children among two interventions groups of the 3rd year B.Sc nursing students at 0.05 level of significance.

Moreover, the mean value of group II (VAT) 25.62 is greater than mean value of group I (STP) 21.92 this indicates that, video assisted teaching is more effective than the structured teaching program.

- Findings related to association between pre-test levels of knowledge of 3rd year B.Sc nursing students regarding paediatric cardiopulmonary resuscitation in children and selected socio demographic variables.

To find out the association between the pre-test levels of knowledge and selected personal variables, Chi square was computed and the following hypothesis is stated-

H_5: There will be significant association between pre-test levels of knowledge of 3rd year B.Sc nursing students regarding pediatric cardiopulmonary resuscitation in children and their selected personal variables at 0.05 level of significance.

V. CONCLUSION

The conclusions drawn from the study were as follows

1. The overall pre-test knowledge of 3rd year B.Sc nursing students regarding paediatric CPR was poor.
2. There was a need for structured teaching programme and video assisted teaching regarding paediatric CPR.
3. Post test results showed significant improvement in the level of knowledge regarding paediatric CPR among 3rd year B.Sc nursing students. Thus, it can be concluded that structured teaching programme (STP) and video assisted teaching (VAT) was effective to increase and update their knowledge on pediatric CPR.
4. Post test results showed that VAT is more effective than STP in increasing the knowledge regarding paediatric Cardiopulmonary resuscitation.
5. The results revealed that there is partial association between pre-test knowledge scores and sociodemographic variables.

Ethical Clearance

Ethical clearance was obtained from the institutional ethical committee.

Source of funding: Self

Conflict of Interest: Nil

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