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A Comparative Study to Assess the Knowledge Regarding ECG among Second Year and Third Year B.Sc. Nursing Students Attending Classroom Teaching Method with those Attending Video Assisted Teaching Method in Apollo Institute of Nursing

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ABSTRACT

A comparative study was conducted to assess the knowledge regarding ECG among second year and third year B.Sc. Nursing students attending classroom teaching method with those attending video assisted teaching method in Apollo institute of nursing. A quantitative approach with comparative study design with quasi experimental approach was used to achieve the objectives of the study. The samples consisted of 60 students from second and third year of Apollo Institute of Nursing, Bhat, Gandhinagar. Simple random sampling technique was used to collect the sample. A structured questionnaire was used to assess the knowledge regarding ECG among the students. The tool was validated by the experts. Cronbach alpha was used to establish the reliability of the tools. The tool was found to be valid and reliable. Data gathered was analyzed and interpreted using both descriptive and inferential statistic. The study shows that the majority (100%) were in the age group of 18-20 years in both groups I and II. In group I, 1% was male and 99% were females and in group II, majority (100%) was females. In classroom teaching method majority (60%) of the students had average knowledge and in the video assisted teaching method majority (100%) of the students had good knowledge on ECG. The post test mean score of group I was 28$\pm$ 2.46 with the mean percentage of 66.67% after the classroom teaching and the post test mean score group II were 39.23$\pm$ 1.41 with the mean percentage of 93.41% after the video assisted teaching method. The calculated t-value was higher than the table value ($t_{59}=2.00$, $p<0.05$). hence the null hypothesis was rejected. So it is inferred that in the present study, there was significant difference between the post test score after classroom teaching method and video assisted teaching method on ECG among second and third year BSc. Nursing students. Therefore, it can be concluded that the video assisted teaching method was effective. Based on the finding the following recommendations were proposed for future research: Similar study can be replicated on a large sample with similar baseline characteristics. A similar study can be replicated in more than one college of Nursing.

KEYWORDS

ECG, Classroom, Teaching

BACKGROUND OF THE STUDY

Student nurses are the future caregivers of the patients. So it is very important for them to learn the technique of ECG monitoring. According to Mahatma Gandhi, “education is the all round drawing out of the best in child and man’s body, mind and spirit’. So, it is necessary that whatever the students are taught, they should understand and learn to the core of it. There are several teaching-learning methods used in education. They

are: lecture, demonstration, lecture cum demonstration, video assisted teaching.[1]

A study was conducted in puducherry 'effectiveness of video teaching Vs lecture cum demonstration on antenatal examination'. A total of 80, third year BSc nursing students were selected by simple random technique for the study. The mean post test knowledge of lecture cum demonstration was 27.775 and mean post test knowledge of video teaching was 36.150. In this study the students who have undergone lecture cum video got the post test score of 80% where as the knowledge score of students underwent lecture cum demonstration had a score of 55% (P <0.001) The results showed that lecture cum video was more effective than the lecture cum demonstration[2].

After the introduction of the internet, many researchers report its successful use in nursing education.

NEED OF THE STUDY

The advantages of video-assisted teaching are, one time investment will allow the agency to train as many people as they want over a long time. It is flexible because you can present the curriculum at one time or divide it and the video cassettes contain the correct information, and you will not have people getting different messages from different people. [3]

A qualitative study was conducted in Pune, India to access teachers' reaction towards video assisted feedback. Results indicated that teachers' had a strong preference for feedback protocols that involved video, both in terms of effectiveness and ease of use, also found evidence to suggest that video technology improved the quality of human feedback by enabling rapid recall of events and by facilitating resolution of conflicts[4].

The investigator felt that preparation, validation and reliability of a video assisted teaching can be more useful as it permits both observing and listening and also facilitates learning at their own pace in comparison to classroom teaching method. So the investigator had chosen these two methods to teach ECG to the students, the evaluation of which will help in choosing the best of the method to be recommended in practice.

OPERATIONAL DEFINITION

Comparative: in this study, comparative refers to measuring or judging the quality of

video – assisted and lecture method of teaching on ECG.

Effectiveness: effective refers to determining the extent to which the video-assisted and lecture teaching method have achieved desired effect as evidenced by gain in the post test score of Nursing students regarding ECG.

Video assisted teaching: it refers to teaching the proper steps of ECG with the help of a video on ECG which is prepared by the investigator.

Classroom teaching method: it refers to teaching correct steps of ECG by adequate explanation and lecture given by the investigator.

Group one: in this study it refers to the second and third year B.sc Nursing students who are participating in the classroom teaching method on ECG.

Group two: In this study it refers to the second and third year B.sc Nursing Students who are participating in the video assisted teaching method on ECG.

Electrocardiogram: it refers to the normal and abnormal changes in the heart recorded in a waveform on a graphic sheet.

DATA COLLECTION

The data collection tool developed for the present study was a structured questionnaire to assess knowledge on ECG among second and third year B. Sc. Nursing students along with a subject data sheet to obtain information about demographic profile of the students. The technique for data collection was paper and pencil technique. This technique was considered appropriate as the sample was illiterate and it helped the respondents to maintain their anonymity and hence helped them to respond frankly. The tool to assess knowledge on ECG among students of second and third year B. Sc Nursing was divided into 2 parts:

Part 1: Consists of 2 questions related to demographic data of students such as age, gender

Part 2: Consisted of 42 questions to assess the knowledge among students regarding ECG

The Reliability of the questionnaires was calculated using Cronbach's alpha formula and the reliability was found to be 0.85, indicating reliability of the tool. The data collection procedure was started with an informed written consent from all the participants. The investigators administered

pretest on 1st day and then administered video assisted teaching and classroom teaching method on the second day. The post test was taken after seven day.

Section 1

Analysis and interpretation of the personal data of the sample such as Age and Gender.

Table 1 Frequency and percentage distribution of sample characteristic Age and Gender n_1=30, n_2=30

Variables	Class room teaching		Video assisted teaching	
	Frequency	Percentage %	Frequency	Percentage%
Age in years 18 – 20 years	30	100%	30	100%
21 - 23 years	0	0	0	0
24 – 26 years	0	0	0	0
Gender				
Male	1	1%	0	0
Female	29	99%	30	100%

Seection 2

Analysis and interpretation of the data related to the knowledge of the samples before and after the administration of the classroom teaching method programme and video assisted teaching method on ECG.

Table 2 Distribution of students according to obtained scores in basic information on ECG
n_1=30 n_2=30

Categories of Score	Classroom teaching method			
	Pre test		Post test	
	Frequency	Percentage%	Frequency	Percentage%
Poor	4	13.33	0	0
Average	26	86.66	18	60
Good	0	0	12	40
Categories of	**Video assisted teaching method**			
	Pre test		**Post test**	
Score	**Frequency**	**Percentage%**	**Frequency**	**Percentage%**
Poor	4	13.33	0	0
Average	26	86.66	0	0
Good	0	0	30	100

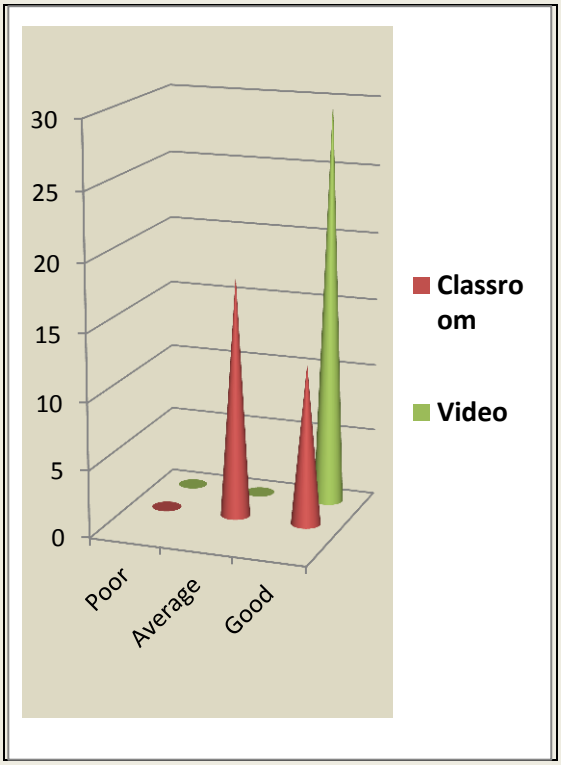

Figure 1 Pyramid showing distribution of students based on post test score of classroom teaching and video assisted teaching

Table 3 Possible range of scores, Range of obtained scores, Mean, Standard Deviation, Mean difference, Mean percentage before and after administration of classroom teaching method n_1=30

CLASSROOM TEACHING METHOD	PRE TEST	POST TEST
Possible ranges of scores	0—42	0-42
Range of obtained scores	11-23	24-34
Mean	17.43	28
Standard Deviation	3.15	2.46
Mean Difference	10.57	

Table 4 Possible range of scores, Range of obtained scores, Mean, Standard Deviation, Mean difference,

Mean percentage before and after administration of video assisted teaching method n_2=30

VIDEO ASSISTED TEACHING METHOD	PRE TEST	POST TEST
Possible ranges of scores	0--42	0-42
Range of obtained scores	12-24	36-41
Mean	17.13	39.23
Standard Deviation	3.18	1.41
Mean Difference	22.1	

Since the pre test of classroom teaching method and video assisted teaching method from table 3, 4 shows that the mean value of both are almost close by in range. So in this study the investigator has given more preference to the post test of video assisted teaching and classroom teaching method. Figure 2 and 3 presents the comparison of mean score of pre test and post test of classroom teaching method and video assisted teaching method respectively.

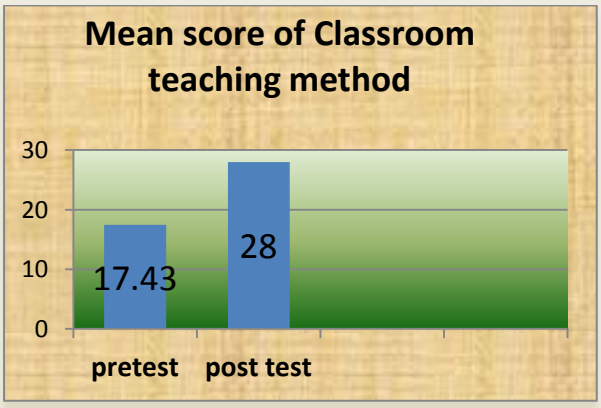

Figure 2 The bar diagram showing the comparisons of mean score of pre test and post test of classroom teaching method.

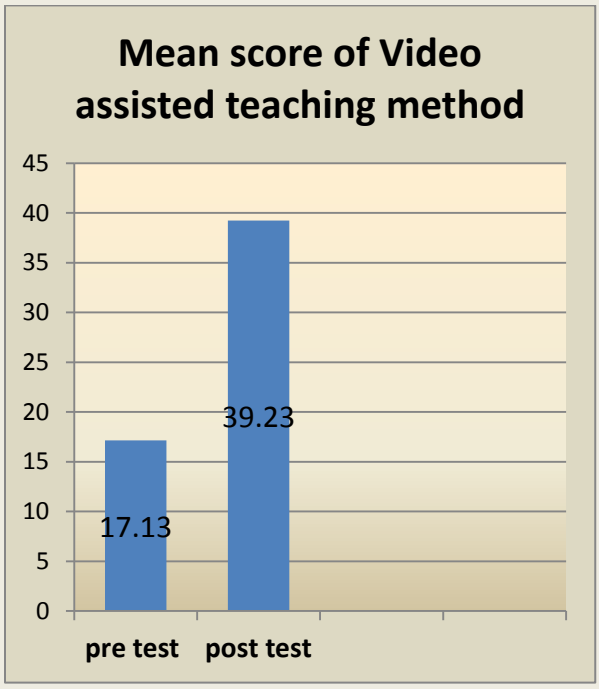

Figure 3 The bar diagram showing the comparisons of mean score of pre test and post test of video teaching method

Table 5 Findings related to mean post test scores of group I and group II on ECG

	Mean	Standard deviation	Mean %
Group I (Classroom)	28	2.46	66.67
Group II (Video)	39.23	1.41	93.41

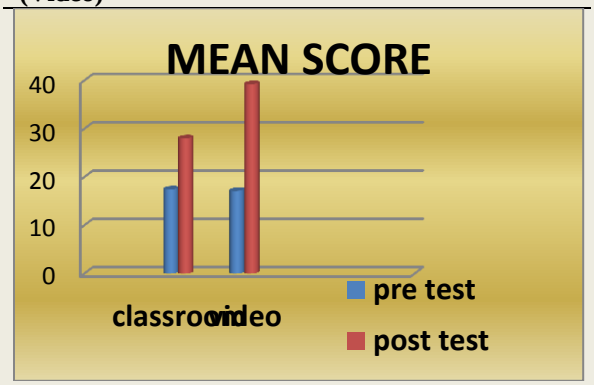

Figure 4 A bar diagram showing mean score of pre test and post test classroom teaching method and video assisted teaching method on ECG

Section 3
Evaluate and compare classroom teaching method and video assisted teaching method on ECG.

Table 6 Comparison of post test score of group I and group II students on ECG and effectiveness of the study $n_1=30$, $n_2=30$

Method of teaching	Mean	Median	Standard Deviation	't' value
Classroom teaching	28	28	2.46	*8.826
Video assisted teaching	39.23	39	1.41	

***=significant at 0.05 level**
t=2.00, p<0.05

Data presented in table 6 shows the mean, median, standard deviation and unpaired t test of second and third year B.Sc. Nursing students after classroom teaching method and video assisted teaching method on ECG. The mean and standard deviation of video assisted teaching method was 39.23± 1.41 with a percentage mean of 93.41% whereas the mean and standard deviation of classroom teaching method was 28± 2.46 with a percentage mean of 66.67%. The calculated 't' value was higher than the table value (t59=2.00, p<0.05). Hence the null hypothesis was rejected and the research hypothesis was accepted and it was inferred that in the present study, there was significant difference between the post test score after classroom teaching method and video assisted teaching method on ECG among second and third year B.Sc. Nursing students. Therefore it can be concluded that video assisted teaching method was effective.

CONCLUSION

In the Classroom teaching method, majority (60%) of the students had average knowledge, (40%) had good knowledge and none were found to have poor knowledge regarding ECG. Whereas, in the Video assisted teaching method, majority (100%) of the students had good score and none were found to have average and poor knowledge regarding ECG. The post test mean score of group I is 28± 2.46 with a mean percentage of 66.67% after the classroom teaching and the post test score of group II is 39.23± 1.41 with a mean percentage of 93.41% after the video assisted teaching method. The calculated 't' value was higher than the table value (t59=2.00, p<0.05). Hence the null hypothesis was rejected and the research hypothesis was accepted indicating that the gain is score was not by chance. So it was inferred that in the present study, there was significant difference between the post test

score after classroom teaching method and video assisted teaching method on ECG among second and third year B.Sc. Nursing students. Therefore, it can be concluded that video assisted teaching method was effective.

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