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A comparative study to assess the effectiveness of demonstration vs video assisted teaching on knowledge and practices regarding ECG among staff nurses working in the critical care unit from selected hospitals of Pune city

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Abstract
Electrocardiogram played an important role in the understanding of cardiovascular diseases which is the most commonly used laboratory procedure that has a broad application in clinical diagnosis and prognosis of cardiovascular disease.

Objectives of the study: To assess effectiveness of demonstration and video assisted teaching on knowledge and practices regarding electrocardiogram among staff nurses. and compare effectiveness of demonstration and video assisted teaching on knowledge and practices regarding electrocardiogram among staff nurses working in the critical care unit.

Method and Materials: Research approach used for the study was quantitative and design was comparative experimental – one group demonstration pretest and posttest and another group video assisted teaching pretest and posttest without control group design was used. Variables under study were demonstration and video assisted teaching and knowledge and practice regarding electrocardiogram. The study was carried out on 60 samples with the Non-probability purposive sampling technique; samples were staff nurses working in the critical unit from selected hospitals of Pune city. Ethical clearance was taken from Institutional ethics committee. The data were directly collected from the staff nurses working in the critical care unit by using structured questionnaire and observation checklist. Tool validity was done to check its consistency & accuracy. Reliability was done and tool found reliable and The pilot study was conducted on sixty samples & the tool was found feasible to conduct study.

Result: The calculated t-value of knowledge score was 18.08 and that of practice was 6.09 statistically found to be significant 't' (df = 29) =1.69912 as p<0.05 for knowledge and 't' (29) = 1.69912 as p<0.05. The data indicated that demonstration on knowledge and practices regarding electrocardiogram among staff nurses significantly increases the knowledge and practices of staff nurses in posttest. The calculated t-value of knowledge score was 8.5 and that of practice was 5.3 statistically found to be significant 't' (df = 29) =1.69912 as p<0.05 for knowledge and 't' (df = 29) = 1.69912 as p<0.05. The data indicated that video assisted teaching on knowledge and practices regarding electrocardiogram among staff nurses significantly increased in posttest. The data signified that comparison of the effectiveness of demonstration and video assisted teaching on knowledge regarding electrocardiogram was found to be significant as per t calculated value was 3.6676 at t (df=29) =1.69912 as p<0.05 whereas comparison of the effectiveness of demonstration and video assisted teaching on practice regarding electrocardiogram was found to be not significant as per t calculated value was 0.9564 which was not significant at t (df=29) =1.69912 as p>0.05.

Conclusion: The study finding showed that there was effectiveness of demonstration and video assisted teaching on both knowledge and practices regarding electrocardiogram among the staff nurses working in the critical care unit.

Keywords: Demonstration, video-assisted teaching, knowledge, practice, electrocardiogram

Introduction

Worldwide cardiovascular disease is surveyed as the leading cause of death for people. Electrocardiogram helps to rule out underlying problems of rate and rhythm mechanism of the heart, abnormalities related to orientation of the heart in the chest cavity, impairment or hypertrophy to different parts of the heart muscle, deprivation of blood flow in cardiac system and abnormal electrical activity leading to abnormal cardiac rhythm disturbances.

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Method and Materials
Research approach used for the study was quantitative and design was comparative experimental – one group demonstration pretest and post test and another group video assisted teaching pretest and post test without control group design was used. Variables under study were demonstration and video assisted teaching and knowledge and practice regarding electrocardiogram. The study was carried out on 60 samples with the Non-probability purposive sampling technique; samples were staff nurses working in the critical unit from selected hospitals of Pune city. Ethical clearance was taken from Institutional ethics committee. The data were directly collected from the staff nurses working in the critical care unit by using structured questionnaire and observation checklist. Tool validity was done to check its consistency & accuracy. Reliability was done and tool found reliable and The pilot study was conducted on sixty samples & the tool was found feasible to conduct study.

Results
Findings of sample characteristics
Demonstration group, majority 36.67% belong to (20-21 years) age group, 30% belong to (22-23 years) age group, 26.67% belong to (24-25 years) age group and 6.67% belong to (26-27 years) age group. Gender wise distribution reveals that 66.67% were female and 33.33% were male. Professional qualification distributed as majority 80% nurses were GNM, 16.67% were BSc, 3.33% were PBBsc and 0% from MSc. Experience in years distributed as 63.33% staff nurses were having < 1 year experience, 36.67% were having experience of 1-3 years. 30% Staff nurse had attended workshop/conference/CNE related to electrocardiogram and 70% had not attended any workshop/conference/CNE related to electrocardiogram.

Video assisted group, majority 36.67% were in the (22-23 years) age group, 33.33% were in the (20-21 years) age group, 20% were in the (24-25 years) age group and 10% of them were in the (26-27 years) age group. In gender wise distribution, majority 70% was female and 30% were male. Professional qualification reveals that majority 73.33% nurses were GNM, 23.33% were BSc, 3.33% were PBBsc and 0% were MSc. 16.67% of the nurses had attended workshop/conference/CNE related to electrocardiogram and 83.33% had not attended any workshop/conference/CNE related to electrocardiogram.

Findings of knowledge regarding electrocardiogram among staff nurses before and after demonstration.
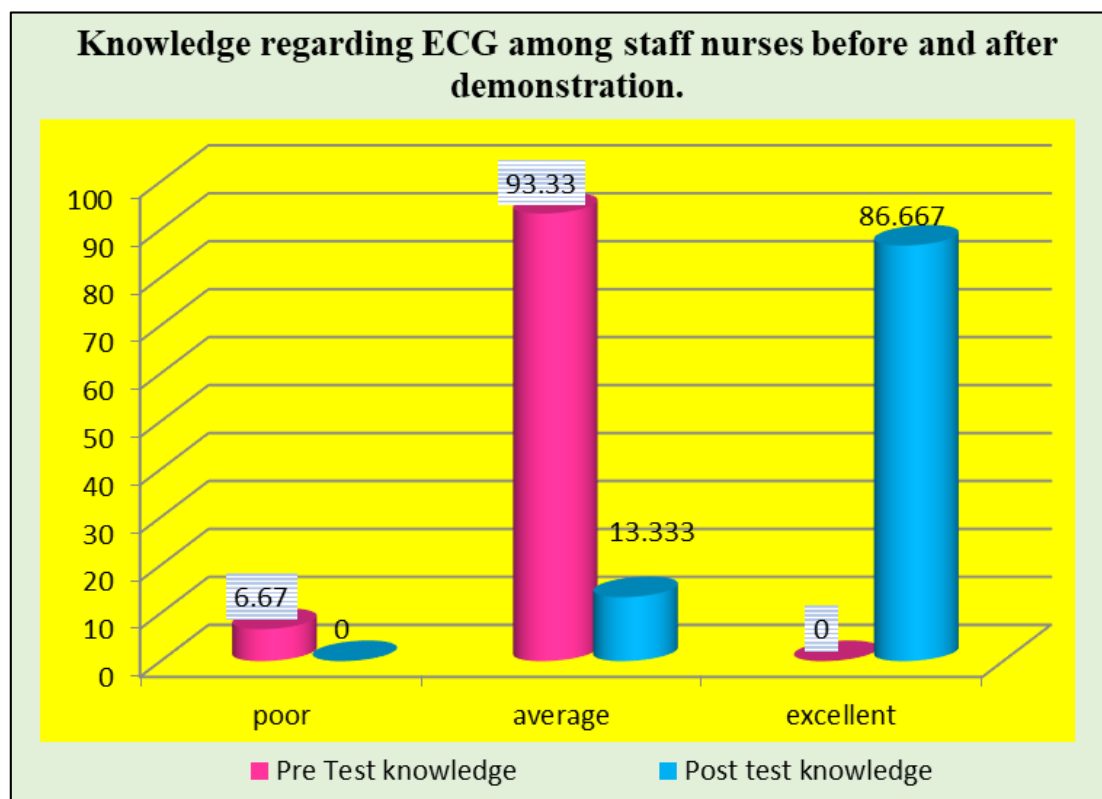

Fig 1: Knowledge regarding electrocardiogram among staff nurses before and after demonstration.

Figure no:1 indicated that in pretest knowledge score before demonstration, majority 93.33% had average knowledge and 6.67% had poor knowledge regarding electrocardiogram whereas posttest knowledge score were increased after demonstration as majority 86.67% had excellent knowledge, 13.33% had average knowledge and none of them had poor knowledge.

Findings of the practices regarding electrocardiogram among staff nurses before and after demonstration.
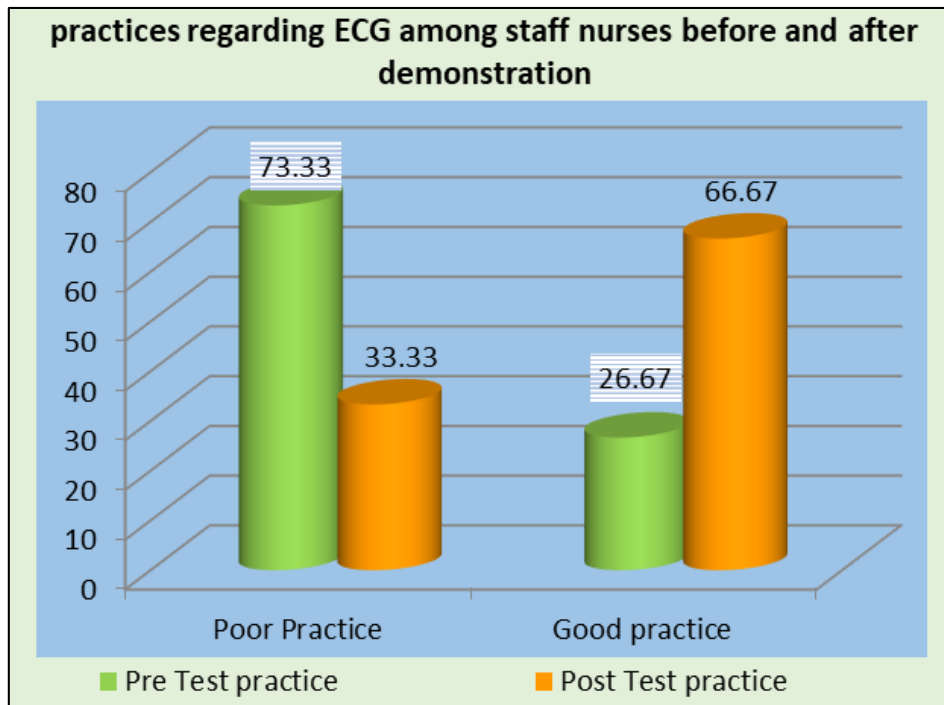

Fig 2: Practices regarding electrocardiogram among staff nurses before and after demonstration

Figure no:2 depicts that in pretest practice score before demonstration, majority 73.33% had practices and 26.67% had good practices regarding electrocardiogram whereas post test practice score were increased after demonstration as majority 66.67% had good practices and 33.33% had poor practices.

Findings of knowledge regarding electrocardiogram among staff nurses before and after video assisted teaching.
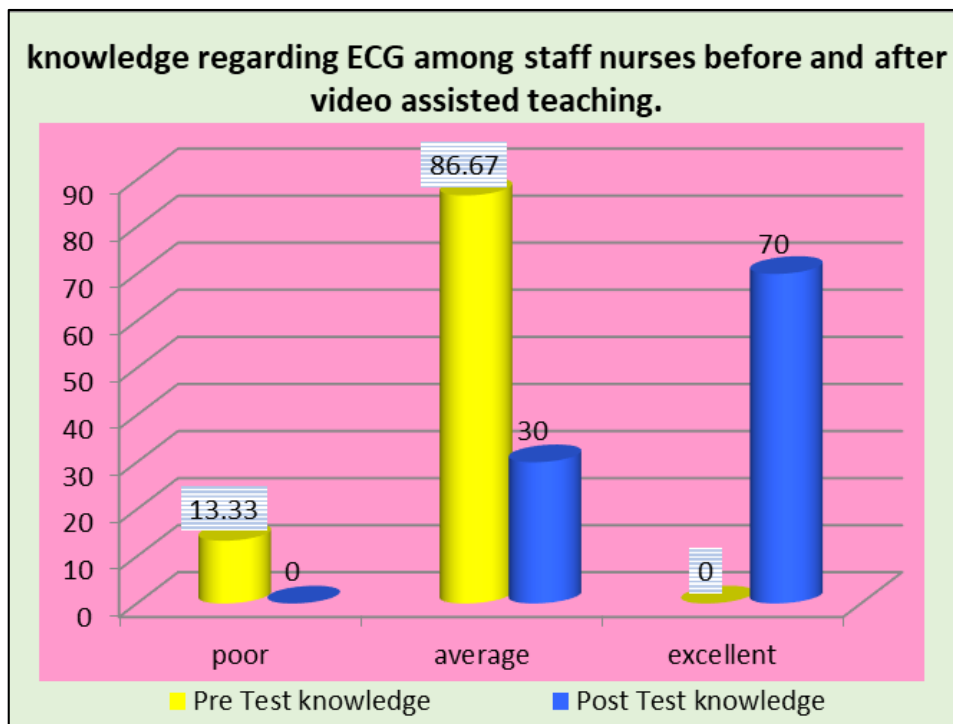

Fig 3: Knowledge regarding electrocardiogram among staff nurses before and after video assisted teaching.

Figure no: 3 shows that in pretest knowledge score before video assisted teaching, majority 86.67% had average knowledge and 13.33% had poor knowledge regarding electrocardiogram whereas post test knowledge score were increased after video assisted teaching as majority 70% had excellent knowledge, 30% had average knowledge and none of them had poor knowledge.

Findings of the practices regarding electrocardiogram among staff nurses before and after video assisted teaching.
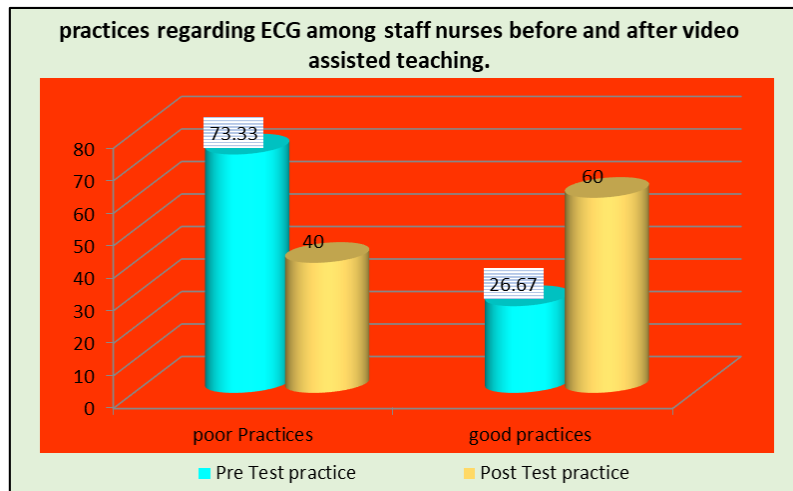

Fig 4: Practices regarding electrocardiogram among staff nurses before and after video assisted teaching.

Figure no: 4 depicts that in pretest practice score before video assisted teaching, majority 73.33% had poor practices and 26.67% had good practices regarding electrocardiogram whereas post test practice score were increased after video assisted teaching as majority 60% had good practices and 40% had poor practices.

Findings related to effectiveness of demonstration on knowledge and practices regarding electrocardiogram among staff nurses.

Table 1: The calculated t-value of knowledge score N=60

Demonstration Group	Pre Test		Post Test		T test calculated	T test table	P – value	Significance
	Mean	SD	Mean	SD				
Knowledge	11.9	1.62	22.73	3.2	18.08541	1.69912	<0.00001	Significant
Practice	10.6	3.5	17.1	4.5	6.095513	1.69912	<0.00001	Significant

Table N0: 1 shows the calculated t-value of knowledge score was 18.08 and that of practice was 6.09 statistically found to be significant 't' (df = 29) =1.69912 as $p<0.05$ for knowledge

and 't' (29) = 1.69912 as $p<0.05$.

7. Findings related to effectiveness of video assisted teaching on knowledge and practices regarding electrocardiogram among staff nurses.

Table 2: Highlights the calculated t-value of knowledge score N=60

Video assisted teaching group	Pre Test		Post Test		T test calculated	T test table	P – value	Significance
	Mean	SD	Mean	SD				
Knowledge	11.53	2.3	18.7	5.1	8.52969	1.69912	<0.00001	Significant
practice	10.93	3.3	15.93	4.9	5.33559	1.69912	<0.00001	Significant

Table N0: 1 highlights the calculated t-value of knowledge score was 8.5 and that of practice was 5.3 statistically found to be significant 't' (df = 29) =1.69912 as $p< 0.05$ for knowledge and 't' (df=29) = 1.69912 as $p< 0.05$.

8. Findings related to comparison of the effectiveness of demonstration and video assisted teaching on knowledge and practices regarding electrocardiogram among staff nurses.

Table 3: Shows the data signified that comparison of the effectiveness of demonstration and video assisted teaching on knowledge N=60

Variables	Post test (demonstration)		Post test (video assisted teaching)		T test calculated	T test table	P – value	Significance
	Mean	SD	Mean	SD				
Knowledge	22.73	3.2	18.7	5.1	3.6676	1.69912	0.000267	Significant
Practice	17.1	4.5	15.93	4.9	0.95641	1.69912	O.171417	Not Significant

Table N0: 1 shows the data signified that comparison of the effectiveness of demonstration and video assisted teaching on knowledge regarding electrocardiogram was found to be significant as per t calculated value was 3.6676 at t (df=29) =1.69912 as p<0.05 level of significance whereas comparison of the effectiveness of demonstration and video assisted teaching on practice regarding electrocardiogram was found to be not significant as per t calculated value was 0.9564 which was not significant at t (df=29) =1.69912 as p>0.05 level of significance.

Findings related to association of knowledge and practice regarding electrocardiogram among staff nurses with selected demographic variables (demonstration group).
This deals with the association of knowledge and practices regarding electrocardiogram among staff nurses with their demographic variables in demonstration group such as Age in

year, Gender, Professional Qualification, Working Experience, Attend any workshop/conference/CNE related to electrocardiogram. The data showed that there was no significant association at 0.05 level of significance with the selected demographic variables.

Findings related to association of knowledge and practice regarding electrocardiogram among staff nurses with selected demographic variables (video assisted teaching).
This deals with the association of knowledge and practice regarding electrocardiogram among staff nurses with selected demographic variables in Video assisted teaching group such as Age in year, Gender, Professional Qualification, Attend any workshop/conference/CNE related to electrocardiogram. The data showed that there was no significant association at 0.05 level of significance whereas working experience

demographic variable was significantly associated with practice regarding electrocardiogram at 0.05 level of significance.

Acknowledgment

Our sincere thanks to all the participants of the study who made this study possible. I shall remain indebted to authorities for permitting me to conduct this study.

Discussion

The present study was initiated to assess the effectiveness of demonstration verses video assisted teaching on knowledge and practices regarding electrocardiogram among staff nurses working in the critical unit from selected hospitals of Pune city. Thus the findings of the study revealed that as teaching module both demonstration and video assisted teaching improves the knowledge and practices of the staff nurses but when compared it was effective only in knowledge but no changes in the practices.

Conclusion

The study concluded that electrocardiogram was an important requisite of the cardiac discipline and the learning content was scattered. The knowledge and practice are interconnected. When there is improvement in basic knowledge and profound skills of electrocardiogram and its interpretation, number of cardiac emergencies can be prevented from worsening to severe or chronic conditions leading to one of the major cause of death worldwide.

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