# A Study to Assess the Effectiveness of Video Assisted Teaching on the Knowledge and Practice Regarding ECG among Student in Selected Nursing School of Greater Noida

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**Abstract:- An electrocardiogram (ECG) is simply one of many tools that medical professionals can use to evaluate heart function. The ECG is a highly technical and specialized diagnostic approach that is widely employed in modern healthcare; nonetheless, it does not provide a comprehensive evaluation of the heart. The present study aims to assess the effectiveness of video-assisted teaching on the knowledge and practice regarding EG among students in the selected nursing school of Greater Noida. objective: To find out the association between knowledge and practice (pre-test and post-test) among nursing students. To determine the impact of a video-assisted teaching programme on ECG among student nurses Quantitative research approach was adopted and a quasi-experimental between demographical data and a knowledgeable questionnaire on ECG. Methods: The target of this study is to provide knowledge on ECG. The sample size is 100 (hundred), and data analysis was done on the basis objective and hypothesis of the study. Results: The obtain was analysed based on objective and hypothesis using frequency and percentage of the data is p<0.05 level of significance the majority 34.5% of the participants poor level of knowledge, 34.5% had an average level of knowledge, 30% had a good level of knowledge**

## I. INTRODUCTION

An electrocardiogram, or ECG, is an essential tool for monitoring, diagnosing, and identifying irregularities in a patient's health. Since nurses typically do ECGs initially, they must be qualified to interpret them. [1] After being implemented in hospitals more than 40 years ago, electrocardiogram monitoring has grown in complexity. [2] Arrhythmias, ischemia, and corrected QT intervals have established practice guidelines for ECG monitoring in hospital settings. [3]The future caregivers for patients are student nurses. Therefore, they must understand how to monitor an ECG. [4]

"Effectiveness of Video Teaching Vs Lecture Cum Demonstration on Antenatal Examination" was the subject of a study carried out in Puducherry. For the study, a simple random procedure was used to pick 80 third-year BSc nursing students. The average post-test knowledge for lectures and demonstrations was 27.775 and 36.150 for video instruction. In this study, the post-test scores of the students who received lecture-cum videos were 80%, while the knowledge scores of the students who underwent lecture-cum demonstration were 55% (P <0.001). The outcomes demonstrated that lecture-cum video outperformed lecture-cum demonstration in terms of effectiveness. [5]

ECG is a cutting-edge medical tool that plays a crucial role in the prompt diagnosis and treatment of acute coronary syndromes by giving doctors real-time information about the electrical activity of the heart. [6] The most often used cardiac test, electrocardiography is a continuous process. [7] The ECG is an effective screening tool for various cardiac abnormalities. Most medical facilities have easily accessible ECG machines, and the test is simple to conduct, safe, and low-cost. [8] The action taken by nurses reflects their professional training and experience, so it is important to periodically revise and implement professional standards of care to ensure effective and safe care. [9] Therefore, professional standards of care must be reviewed and implemented periodically to ensure good care and safety. [10]

➤ *Problem Statement*

A Study To Assess The Effectiveness Of Video Assisted Teaching On The Knowledge And Practice Regarding ECG Among Student In Selected Nursing School Of Greater Noida.

➤ *Objectives*

- To assess the level of knowledge regarding ECG among student nurses at SSNSR.
- To assess the level of practice among student nurses regarding ECG at SSNSR.
- To assess the association between demographic variables with knowledge and practice.
- To find out the association between knowledge and practice (pre-test and post-test) among nursing students.
- To determine the impact of video-assisted teaching programs on ECG among student nurses.

➢ *Assumption:*
   This study assumes that-

• Nursing students will have some knowledge and practice regarding ECG at SSNSR.

➢ *Hypothesis:*

• There is a significant association in pre-test and post-test with knowledge practice of ECG. There is a significant association between the pre-test and post-test with selected demographic variables.

➢ *Operational Definition*

• Assess**:** In this study, assessment refers to the process of knowledge level measurement regarding electrocardiography (ECG).
• Knowledge**:** In this study, knowledge refers to the education of student nurses regarding the placement of electrodes of electrodes of ECG.
• Electrocardiography**:** Refers to a test that produces the recording of the electrical activity of the heart through repeated cardiac cycles.

➢ *Delimitation*
   The study is delimited to:

• B.Sc. 4th semester 2nd year nursing students at SSNSR, of Greater Noida.

• Sample size (100) nursing students of SSNSR at Sharda University.

## II. METHODS

• Study design: Non-experimental descriptive design was selected for this study.
• Setting: The setting of the study was SSNSR, Greater Noida.
• Selection of participants: student Nurses at SSNSR and a convenience sampling technique was used.
• Sample size: There were a total of 100 Student Nurses as the sample size in this study of SSNSR, Greater Noida.

➢ *Data Collection Tools and Techniques*

• *Section A (Demographic Performa):*
   This section consists of age in years, education status, marital status, religion, type of family, monthly income of a family, occupational status, family history of (Diabetic mellitus, Hypertension, PCOD, Obesity, none) occupation status of mother and father, type of family, and monthly income of the family.

• *Section B (Self-Structured Questionnaire):*
   The self-structured knowledge-based questionnaire was constructed by the researcher. The knowledge questionnaire comprised of 20 items.

Table 1 (Practice Scale on ECG)

| Knowledge Level | Pre-Test | percentage | Post-Test | percentage |
|---|---|---|---|---|
| | n | % | n | % |
| **Poor** | 90 | 90% | 14 | 14% |
| **Average** | 10 | 10% | 30 | 30% |
| **Good** | 0 | 0% | 56 | 56% |

The knowledge assessment reveals a substantial improvement following the intervention. Initially, 90% of participants were classified with poor knowledge and 10% with average knowledge, with none rated as good. Post-intervention, the distribution shifted dramatically: only 14% were considered poor, 30% were average, and a significant 56% were classified as having good knowledge. This change underscores the effectiveness of the intervention in enhancing overall knowledge levels among the participants.

The checklist contains 20 questions rated on a scale from 5 to 1, where (5 is strongly agree and 1 is strongly disagree)

Table 2 Baseline Characteristics and Baseline outcome measures of Nursing Students

| Background Variables | Frequency (n) | Percentage (%) |
|---|---|---|
| **Age: -** | | |
| 20 to 30 years | 100 | 100 |
| 31 to 40 years | 0 | 0 |
| 41 to 50 years, | 0 | 0 |
| **Educational status: -** | | |
| literate (can read and write) | 0 | 0 |
| Primary | 0 | 0 |
| Secondary | 0 | 0 |
| Higher senior secondary (12$^{th}$) and above | 100 | 100 |
| **Marital status: -** | | |
| unmarried | 94 | 94 |
| married | 5 | 5 |

| | | |
|---|---|---|
| divorced / separated | 1 | 1 |
| widow | 0 | 0 |
| **Religion: -** | | |
| Hindu | 76 | 76 |
| Christian | 13 | 13 |
| Muslim | 11 | 11 |
| Others (specify ……………………...) | 0 | 0 |
| **Type of family: -** | | |
| Nuclear family | 45 | 45 |
| Joint family | 44 | 44 |
| Extended family | 8 | 8 |
| Single parent family | 3 | 3 |
| **Family Monthly income (in rupees): -** | | |
| Less than 25,000 | 20 | 20 |
| 25,001 to 50,000 | 37 | 37 |
| 50,001 to 75,000 | 14 | 14 |
| 75,001 and above | 29 | 29 |
| | | |
| **OCCUPATIONAL STATUS** | | |
| House wife | 0 | 0 |
| Private job | 5 | 5 |
| Government job | 7 | 7 |
| Others (specify ……student….) | 88 | 88 |
| **Family History Of** | | |
| Diabetic mellitus | 16 | 16 |
| Hypertension | 9 | 9 |
| PCOD | 12 | 12 |
| Obesity | 9 | 9 |
| None | 46 | 46 |

The demographic data reveals a homogeneous age group, with all 100 respondents (100%) falling between 20 to 30 years old. In terms of educational status, every respondent (100%) has completed higher senior secondary education or beyond, with no individuals at other educational levels. The majority are unmarried (94%), with a small fraction married (5%), divorced/separated (1%), and none widowed. Regarding religion, the respondents are predominantly Hindu (76%), followed by Christian (13%), Muslim (11%), and none identified as belonging to other religions. Family structures are mostly split between nuclear families (45%) and joint families (44%), with fewer in extended (8%) or single-parent families (3%). Monthly family income is varied, with 20% earning less than 25,000 rupees, 37% earning between 25,001 and 50,000 rupees, 14% earning between 50,001 and 75,000 rupees, and 29% earning 75,001 rupees or more. In terms of occupational status, 5% have private jobs, 7% are in government positions, and a significant majority (88%) fall into other unspecified categories. There is no data provided for family history of diabetic mellitus, hypertension, PCOD, or obesity.

Table 3 Representation of level of Knowledge

| | Mean | Std. Deviation | t Value | Df | P Value |
|---|---|---|---|---|---|
| **Pre-test** | 39.0000 | 12.03941 | -21.418 | 19 | <0.01 |
| **Post-test** | 86.5000 | 7.42329 | | | |

The mean pretest score was 39.0000 with a standard deviation of 12.03941, and the t-value was -21.418 with 19 degrees of freedom (df), yielding a p-value of less than 0.01, indicating a highly significant difference. The post-test mean score for image-based questions was 86.5000 with a standard deviation of 7.42329. In the practice assessments, the mean pretest score was 59.4700 with a standard deviation of 3.27665, and the t-value was -7.498 with 99 degrees of freedom, also resulting in a p-value of less than 0.01, suggesting a significant improvement

Table 4 Suggesting a Significant Improvement

| | Mean | Std. Deviation | t Value | Df | P Value |
|---|---|---|---|---|---|
| **Pre-test** | 59.0000 | 3.27665 | -7.498 | 99 | <0.01 |
| **Post-test** | 71.7300 | 16.04278 | | | |

➢ *Practice:*
**(P<0.01 significant level)S-Significant and NS-Non Significant The post-test** mean score for practice assessments was 71.7300 with a standard deviation of 16.04278

- Section C : Distribution of level of knowledge regarding ECG among in Selected Nursing School Of Greater Noida on the basis of Pre Test and Post Test.
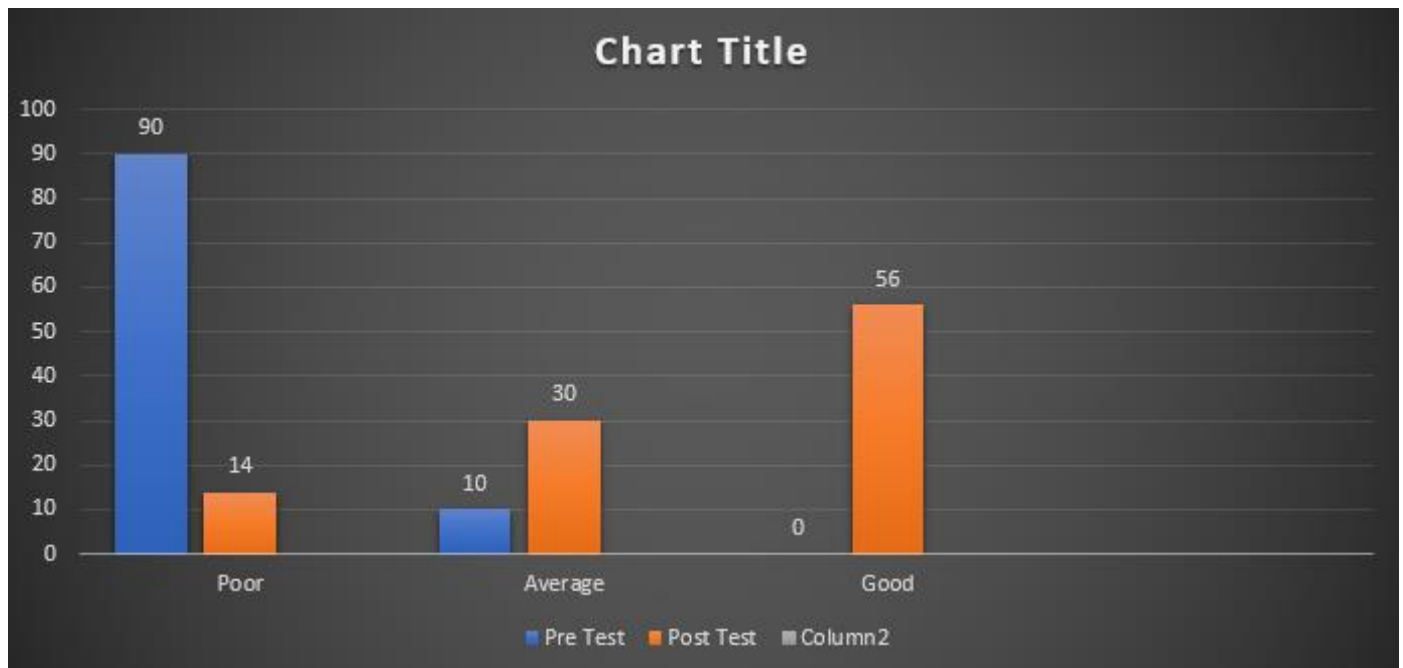


Fig 1 Distribution of level of Knowledge regarding ECG among in Selected Nursing School of Greater Noida

## III. DISCUSSION

The study findings led to the following conclusions. Evaluating the understanding and application of ECG sampling among B.sc 4th semester students was an effective method, as it helped us ascertain the level of knowledge and practical skills among these nursing students. As a result, we now have insight into the advantages of understanding and applying this knowledge and practice among B.sc 4th semester nursing students. Consequently, it will aid in raising awareness among B.sc 4th semester nursing students about this topic.

## IV. CONCLUSION

The study's findings led to the following conclusions. A successful method of assessing the knowledge and practice of ECG among nursing students was established. The study provided insights into the understanding of the ECG technique among nursing students and raised awareness of its knowledge and benefits. This understanding will be instrumental in promoting awareness of ECG.

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