International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

A Descriptive Study to Assess the Knowledge Regarding Interpretation of Selected Cardiac Abnormalities in Electrocardiograph among Staff Nurses in Selected Hospitals with a View to Provide Information Booklet

Shweta Sham Bhagwat[1], Milind Manohar Kale[2], Pooja Vishwas Ambre[3]

[1]M. Sc. Nursing, Clinical Instructor

[2]Professor and HOD of Medical Surgical Nursing

[3]M. Sc. Nursing, Clinical Instructor

Abstract: ***This study offers a much - needed glance at a crucial yet often underemphasized aspect of frontline healthcare—the ability of staff nurses to accurately interpret electrocardiographs (ECGS). given that nurses are frequently the first point of contact in clinical settings, their understanding of ECG abnormalities could quite literally determine the speed and accuracy of critical cardiac interventions. the research reveals that while most nurses demonstrated average knowledge, a sizable portion still lacked the necessary competence, especially in electrode placement and result interpretation. this suggests that current training programs may be insufficient or inconsistently applied across hospitals. interestingly, the absence of a statistical link between knowledge levels and variables like experience, education, or prior training hints at a deeper issue—perhaps the practical, hands - on reinforcement of ECG interpretation is lacking across the board. it is evident that despite the ECG being a common diagnostic tool, nurses are often ill - equipped to leverage it effectively. that said, the study's reliance on purposive sampling and a limited sample size does call for cautious generalization. nevertheless, the takeaway remains clear: improving structured ECG education and reinforcing its practical application among nurses isn't just beneficial—it's essential for timely, life - saving cardiac care.***

Keywords: Electrocardiograph, Knowledge, Cardiac Abnormalities, Interpretation, Staff Nurses, Booklet Information.

1. Introduction

The electrocardiograph (ECG) plays a vital role in helping to diagnose, follow - up, and detect any abnormalities in a patient's condition. Nurses are often the first to conduct an ECG, and for that reason, they need to know how to interpret it. This is because a failure to determine abnormalities means that physicians will not be notified which will affect patients' care. But still, some nurses do not know exactly where to place the electrodes on the patients, and some routinely carry out ECGs without comparing the results to previous ECGs. As a consequence, any complications will not be noticed as they don't possess the requisite interpretation skills.1

According to the American Heart Association, "An ECG abbreviated as ECG is a test which measures the electrical activity of the heartbeat. With each beat, an electrical impulse or wave travels through the heart. This wave causes the muscles to squeeze and pump blood from the heart. A normal heartbeat on an ECG will show the timing of the top and lower chambers.1 An ECG provides an important way to diagnose myocardial infarction and electrical pathways in the heart.1 Many times Nurses work on the frontline in hospitals and are usually the ones who initially assess patients. Thus nurses must know how to conduct an ECG and interpret cases of MI or other cardiac abnormalities.2

As we know, ECG is a cardiac diagnostic procedure mostly performed in the world.3 The test is, therefore, a Basic part of all healthcare settings.

2. Objectives of the Study

a) To assess the level of knowledge regarding the interpretation of selected cardiac abnormalities in electrocardiograph among staff nurses in selected hospitals.
b) To find out the association between the knowledge scores regarding the interpretation of selected cardiac abnormalities in electrocardiograph with socio - demographic variables of staff nurses.

3. Methodology

The Research approach obtained for this study is the Quantitative approach. A quantitative approach is "It is collecting, analyzing and interpreting data by observing what people do and say". Descriptive research design judges' level of knowledge regarding the interpretation of selected cardiac abnormalities in electrocardiographs among staff nurses in selected hospitals. Research design is the plan, structure, and strategy of investigations of answering research questions. In the present study, the purposive sampling technique was used to select the samples.

It is the blueprint or plan of action the researcher selects to conduct the study. The research design refers to the researcher's overall plan for obtaining answers to the research question and it spells out strategies that the researcher adopted to develop information i. e. accurate, objective, and interpretable. Sampling refers to the process of selecting the portion of the population to represent the entire population. The sample for the study comprises 100 staff nurses in selected hospitals.

Inclusion criteria

- Staff nurses who are qualified as GNM/B. Sc. /P. B. B. Sc/ M. Sc. (N) and registered with state nursing council.
- Staff nurses having more than one - year clinical experience.
- Staff nurses both Female and male nurses.

Exclusion criteria

- ANM Staff nurses.
- Staff nurses working in supervisory post.

4. Analysis and Result

Findings related to sample characteristics Majority of the sample 53 (53%) of them were 31 - 40 years old. The majority of the sample 76 (76%) were female nurses. The majority of the sample 32 (32%) of them were completed Basic BSc Nursing. The majority 45 (45%) of staff nurses have 6 - 10 years of experience. The majority of 32 (32%) of them had undergone in - service education about ECG training.76 Findings related to Knowledge scores regarding the interpretation of selected cardiac abnormalities in electrocardiographs among staff nurses: The mean is 27.07, the median is 29, the mode is 29, the standard deviation is 6.13 and the range is between 10 - 38.18 (18%) of them were having poor knowledge, 48 (48%) of them were having average knowledge and 34 (34%) of them were having good knowledge. Findings related to the Association between the knowledge scores regarding the interpretation of selected cardiac abnormalities in electrocardiographs with socio - demographic variables of staff nurses: Findings reveal that there is no significant association between knowledge of scores and selected demographic variables like age in years, gender, educational qualification, working experience, previous experience in the cardiac care unit, and in - service education about ECG training.

In the present study, 18 (18%) of them had poor knowledge, 48 (48%) of them had average knowledge, and 34 (34%) of them were having good knowledge. As per the result of this research study concluded that the nurse's knowledge level of the electrocardiogram was Average.

5. Discussion

This section attempts to discuss the findings of the study. The study was focused on "A descriptive study to assess the knowledge regarding interpretation of selected cardiac abnormalities in electrocardiograph among staff nurses in selected hospitals with a view to provide information booklet", Here the findings of the present study were compared with other similar studies conducted in western and Indian settings.

Although, the conclusions drawn from this study should be seen under certain limitations. It is crucial to remember that the sample size was small, and subjects were not fully matched due to constraints of time and other resources.

Description of Sociodemographic Variables of Staff Nurse

In relation to the age of the staff nurse's majority 53 (53%) of them were 31 - 40 years old, 17 (17%) of them were 22 - 30 years old, and 30 (30%) of them were 41 - 50 years old.

With respect to gender, among staff nurses majority 76 (76%) were female, and 24 (24%) of them were male.

In relation to the professional educational qualification among staff nurses the majority 32 (32%) of them were completed Basic BSc Nursing, 23 (23%) of them were completed general nurse midwife, 28 (28%) were completed Post Basic BSc Nursing and 17 (17%) were completed MSc Nursing course.58 With regard to years of clinical experience among staff nurse's majority 45 (45%) of them were had 6 - 10 years of experience, 23 (23%) of them had 1 - 5 years of experience, 32 (32%) were having More than 10 years of experience.

In relation to previous experience in the cardiac care unit among staff nurse's majority 78 (78%) of them didn't have any previous experience in the cardiac care unit and 22 (22%) of them had previous experience in the cardiac care unit.

In relation to in - service education about ECG training, the majority of 32 (32%) of them had undergone in - service education about ECG training and 68 (68%) of them had not attended any in - service education about ECG training.

The data presented that the staff nurses' knowledge mean is 27.07, the median is 29, the mode is 29, the standard deviation is 6.13 and the range is between 10 - 38.

In the present study, 18 (18%) of them were having poor knowledge, 48 (48%) of them were having average knowledge and 34 (34%) of them were having good knowledge. As per the result of this research study concluded that the nurse's knowledge level of the electrocardiogram was Average.

The objective first was to assess the level of knowledge regarding interpretation of selected cardiac abnormalities in electrocardiograph among staff nurses in selected hospitals.

In the present study, in 18 (18%) of them had poor knowledge, 48 (48%) of them had average knowledge and 34 (34%) of them had good knowledge. As per the result of this research study concluded that, the nurse's knowledge level on the electrocardiogram was Average.

The second objective was to find out the association between the knowledge scores regarding interpretation of selected cardiac abnormalities in electrocardiograph with socio - demographic variables of staff nurses.

In the present study findings related that none of the demographic variables of staff nurses' socio - demographic variables show any association with 61 knowledge scores

regarding the interpretation of selected cardiac abnormalities in electrocardiographs.

Findings reveal that there is no significant association between knowledge of scores and selected demographic variables like age in years, gender, educational qualification, working experience, previous experience in a cardiac care unit, and in - service education about ECG training.

In this study, the null hypothesis is there will be no significant association between the knowledge scores regarding the interpretation of selected cardiac abnormalities in electrocardiographs and with socio - demographic variables of staff nurses.

After the study, it was confirmed that none of the demographic variables of staff nurses. Socio - demographic variables do not show any association with knowledge scores regarding the interpretation of selected cardiac abnormalities in electrocardiograph, hence the null hypothesis is accepted.

6. Conclusion

The study found that maximum nurses were having average level of knowledge regarding the interpretation of selected cardiac abnormalities in electrocardiographs among staff nurses in selected hospitals and did not find any association between the knowledge scores regarding the interpretation of selected cardiac abnormalities in electrocardiographs with socio - demographic variables of staff nurses. The study proves that there is a need to improve the knowledge regarding Electrocardiograph interpretation. And also, the information is effectual for to boost knowledge.

References

[1] Alanezi FZ. A systematized review aimed to identify the impact of basic electrocardiogram training courses on qualified nurses. Saudi Critical Care Journal.2018 Oct 1; 2 (4): 51.
[2] Pelter MM, Carey MG, Stephens KE, Anderson H, Yang W. Improving nurses' ability to identify anatomic location and leads on 12 - lead electrocardiograms with ST elevation myocardial infarction. European Journal of Cardiovascular Nursing.2010 Dec 1; 9 (4): 218 - 25.
[3] Lancia L, Pisegna Cerone M, Vittorini P, Romano S, Penco M. A comparison between EASI system 12-lead ECGs and standard 12-lead ECGs for improved clinical nursing practice. Journal of clinical nursing.2008 Feb; 17 (3): 370 - 7.
[4] Funk M, Fennie KP, Stephens KE, May JL, Winkler CG, Drew BJ. et al Association of implementation of practice standards for electrocardiographic monitoring with nurses' knowledge, quality of care, and patient outcomes: findings from the Practical Use of the Latest Standards of Electrocardiography (PULSE) Trial. Circulation: cardiovascular quality and outcomes.2017 Feb; 10 (2): e003132.
[5] Lancia L, Pisegna Cerone M, Vittorini P, Romano S, Penco M. A comparison between EASI system 12-lead ECGs and standard 12-lead ECGs for improved clinical nursing practice. Journal of clinical nursing.2008 Feb; 17 (3): 370 - 7.
[6] Funk M, Fennie KP, Stephens KE, May JL, Winkler CG, Drew BJ. et al Association of implementation of practice standards for electrocardiographic monitoring with nurses' knowledge, quality of care, and patient outcomes: findings from the Practical Use of the Latest Standards of Electrocardiography (PULSE) Trial. Circulation: cardiovascular quality and outcomes.2017 Feb; 10 (2): e003132.
[7] Goldberger AL, Goldberger ZD, Shvilkin A. Clinical electrocardiography: a simplified approach e - book. Elsevier Health Sciences; 2017; Available from: https: //www.google. com/search?q=Goldberger+AL%2C+Goldberger+ZD %2C+Shvilkin+A. +Clinical+electrocardiography
[8] Hernandez JM, Glembocki MM, McCoy MA. Increasing nursing knowledge of ST - elevated myocardial infarction recognition on 12 - lead electrocardiograms to improve patient outcomes. The Journal of Continuing Education in Nursing.2019 Oct 1; 50 (10): 475 - 80.

Author Profile

Ms. Shweta Sham Bhagwat, M. Sc. Nursing in Medical Surgical Nursing, Clinical Instructor, shwetabhagwat48[at]gmail.com