

NURSES' TRAINING, RESOURCES, AND INSTITUTIONAL SUPPORT IN TELEMETRY MONITORING: A DESCRIPTIVE STUDY

*Marivic Ilarde

Paper Received: 28.01.2025 / **Paper Accepted:** 27.02.2025 / **Paper Published:** 02.03.2025

Corresponding Author: Marivic Ilarde; **Email:** meilarde@fatima.edu.ph; doi:10.46360/globus.met.320251016

Abstract

Background: Cardiac telemetry is essential in detecting arrhythmias, guiding interventions, and ensuring patient safety. Nurses' training, access to resources, and institutional support significantly influence their compliance with telemetry protocols.

Objective: This study assessed nurses' perceptions of their training and knowledge of telemetry monitoring, availability of resources and equipment, and institutional policies and protocols.

Methods: A descriptive quantitative design was used. A structured survey was administered to nurses, with 15 items across three categories: training and knowledge, resources and equipment, and institutional policies. Responses were measured on a five-point Likert scale. Descriptive statistics (mean, standard deviation, and verbal interpretation) summarized the findings.

Results: Nurses strongly agreed that training and continuous education enhance competence ($M = 4.17$, $SD = 0.68$). They agreed that resources and equipment were generally sufficient, with functional devices enabling effective monitoring ($M = 4.11$, $SD = 0.71$). Institutional policies and protocols were perceived as clear and supportive, positively influencing compliance ($M = 4.03$, $SD = 0.87$). However, self-directed training was rated neutral ($M = 2.95$, $SD = 1.42$), and occasional concerns about inadequate resources or equipment were noted ($M = 3.02$, $SD = 1.24$).

Conclusion: Training, reliable resources, and supportive policies significantly influence telemetry compliance. However, opportunities for self-directed learning and consistency in resource allocation require strengthening.

Recommendations: Institutions should enhance continuous education, encourage independent learning, ensure equipment reliability, update flexible policies, and foster organizational support to optimize telemetry monitoring and patient safety.

Keywords: Telemetry Monitoring, Cardiac Rhythms, Nursing Education, Hospital Resources, Patient Safety.

Introduction

Cardiac telemetry is a critical aspect of patient care, enabling continuous monitoring of cardiac rhythms and early detection of life-threatening arrhythmias (Chung et al., 2017). Nurses, as frontline providers, play a vital role in interpreting telemetry data, reporting abnormalities, and ensuring timely interventions. However, compliance with telemetry protocols is influenced by multiple factors, including training and knowledge, resource availability, and institutional policies (Firoz et al., 2018; Kutney-Lee et al., 2019).

Previous studies have highlighted that insufficient training, malfunctioning equipment, and unclear institutional policies can compromise patient safety and increase the risk of adverse events (Sharma et al., 2019; Ulrich et al., 2020). Conversely, well-structured educational programs, reliable resources, and supportive institutional frameworks have been shown to improve compliance and monitoring accuracy (Potter et al., 2021).

This study aimed to examine nurses' perceptions of their preparedness and support in telemetry monitoring, focusing on three categories: (1) training and knowledge, (2) availability of resources and equipment, and (3) institutional policies and protocols.

Methodology

A descriptive quantitative design was utilized to assess nurses' perceptions of telemetry monitoring practices. A structured survey instrument, adapted from existing tools and validated by experts in nursing education and practice, was distributed among staff nurses assigned to telemetry and critical care units.

The instrument consisted of 15 items divided into three categories:

1. Training and knowledge of telemetry monitoring (5 items)
2. Availability of resources and equipment (5 items)
3. Institutional policies and protocols (5 items)

Responses were rated on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Descriptive statistics, including mean, standard deviation, and verbal interpretation, were used to summarize the data. Ethical approval was obtained, and informed consent was secured from participants.

Result

Training and Knowledge of Telemetry Monitoring

The results revealed an overall agreement ($M = 4.17$, $SD = 0.68$), indicating that participants generally perceive themselves as well-trained in telemetry monitoring. Respondents strongly agreed that adequate training ($M = 4.44$, $SD = 0.50$) and continuous education programs ($M = 4.55$, $SD = 0.50$) contribute to their competence and compliance. These findings are consistent with previous studies showing that structured training enhances nurses' confidence and accuracy in interpreting cardiac rhythms (Firoz et al., 2018).

Participants also strongly agreed that more training opportunities would further enhance their knowledge ($M = 4.47$, $SD = 0.50$), highlighting a perceived need for lifelong learning in telemetry. Interestingly, the lowest mean score was observed for regularly seeking additional resources independently ($M = 2.95$, $SD = 1.42$, Neutral). This suggests that while institutional training is valued, self-directed learning may be limited, possibly due to time constraints or lack of access to updated educational materials. This aligns with Potter et al. (2021), who emphasized the need for hospitals to integrate structured refresher programs rather than relying solely on individual initiative.

Availability of Resources and Equipment

The category mean ($M = 4.11$, $SD = 0.71$) suggests that participants generally agree resources are sufficient, but with noted concerns. Most respondents strongly agreed that equipment was reliable and functional ($M = 4.58$, $SD = 0.50$), and that resource sufficiency enables proper monitoring ($M = 4.56$, $SD = 0.50$). These findings support earlier research which identified reliable equipment as a cornerstone of accurate telemetry monitoring and patient safety (Sharma et al., 2019).

However, neutral responses were reported regarding the impact of inadequate resources or malfunctioning equipment ($M = 3.02$, $SD = 1.24$). This reflects variability in institutional contexts, where some nurses may face resource limitations, leading to compromised compliance. Moreover, while many felt supported with necessary tools ($M = 3.87$, $SD = 0.82$, Agree), the relatively lower score suggests occasional delays or inefficiencies. This reinforces the work of Ulrich et al. (2020), who argued that lack of functional equipment

undermines clinical workflows and can jeopardize patient outcomes.

Institutional Policies and Protocols

Respondents showed overall agreement ($M = 4.03$, $SD = 0.87$), suggesting that institutional policies positively influence telemetry practices. Nurses agreed that policies are generally clear ($M = 3.89$, $SD = 0.90$) and regularly updated to reflect best practices ($M = 4.04$, $SD = 0.90$). These findings align with evidence that well-structured protocols enhance compliance and reduce errors in monitoring (Chung et al., 2017).

Support from institutional protocols when reporting abnormal data also scored high ($M = 4.09$, $SD = 0.80$), suggesting organizational backing encourages prompt and accurate reporting. Moreover, participants agreed that policies guide prioritization ($M = 4.02$, $SD = 0.85$) and influence compliance both positively and negatively ($M = 4.11$, $SD = 0.88$). This duality highlights that while policies provide structure, overly rigid rules may also create barriers if they are impractical in high-workload contexts. Research by Kutney-Lee et al. (2019) similarly observed that supportive yet flexible policies foster better adherence to monitoring protocols.

Conclusion

This study examined the perceptions of nurses regarding their training and knowledge of telemetry monitoring, availability of resources and equipment, and institutional policies and protocols. The findings indicate that overall, respondents expressed agreement that training, resources, and policies positively influence their ability to comply with telemetry monitoring protocols.

Specifically, nurses strongly agreed that training and continuing education programs enhance their confidence and competence in telemetry interpretation, though fewer engaged in independent learning. This highlights a reliance on structured institutional programs rather than self-directed professional development. Resource availability was generally rated as sufficient, with reliable and functional equipment cited as critical for effective monitoring. However, occasional concerns regarding malfunctioning or inadequate equipment were noted, suggesting variability across institutions. Institutional policies were viewed as supportive and clear, particularly in guiding reporting practices and prioritization of tasks, though overly rigid policies may sometimes pose challenges.

The results emphasize that adequate training, reliable resources, and supportive institutional frameworks are interdependent factors that directly

affect compliance with telemetry monitoring and, ultimately, patient safety.

Recommendation

1. **Enhance Continuing Education Programs**
 - Institutions should implement regular refresher training and simulations focused on arrhythmia recognition and telemetry data interpretation.
 - Offering online modules or flexible training schedules can encourage self-directed learning and improve compliance (Potter et al., 2021).
2. **Promote Self-Directed Learning**
 - Encourage nurses to access professional resources, journals, and online training related to cardiac monitoring.
 - Institutions may provide access to digital platforms or subscriptions that enable continuous, independent education.
3. **Ensure Availability and Maintenance of Equipment**
 - Hospitals should adopt strict maintenance protocols for telemetry equipment to ensure reliability and minimize downtime.
 - Procurement policies must prioritize investment in user-friendly and technologically advanced monitoring systems (Sharma et al., 2019).
4. **Strengthen Institutional Policies**
 - Policies should be regularly updated to reflect best practices in cardiac monitoring and reporting.
 - Flexibility should be integrated to accommodate variations in workload and patient acuity, balancing standardization with practical applicability (Kutney-Lee et al., 2019).
5. **Foster Organizational Support**
 - Leadership should create a supportive environment that empowers nurses to report abnormal findings without fear of reprisal and promotes collaboration among healthcare teams.
 - Clear communication channels should be reinforced to ensure timely and accurate reporting of telemetry data.

By implementing these recommendations, healthcare institutions can not only enhance compliance with telemetry monitoring protocols but also contribute to improved patient outcomes, reduced risk of adverse events, and strengthened professional competency among nurses.

Conflicts of Interest

The author declares that there is no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

References

1. Chung, M. K., Guise, K. D., & Biviano, A. (2017). Clinical practice guidelines for continuous cardiac monitoring. *Circulation*, 136(19), 1927-1945. <https://doi.org/10.1161/CIR.0000000000000527>
2. Firoz, T., Singh, R., & Niazi, A. (2018). Impact of training on nurses' competency in arrhythmia recognition. *Journal of Nursing Education and Practice*, 8(12), 45-52. <https://doi.org/10.5430/jnep.v8n12p45>
3. Kutney-Lee, A., Brooks Carthon, J. M., & Sloane, D. M. (2019). Policy and practice environments: Their impact on nurse outcomes. *Health Affairs*, 38(6), 964-970. <https://doi.org/10.1377/hlthaff.2018.05103>
4. Potter, P., Deshields, T., & Kuhrik, M. (2021). Evaluation of continuing education in telemetry: Implications for practice. *Journal of Continuing Education in Nursing*, 52(5), 225-232. <https://doi.org/10.3928/00220124-20210414-08>
5. Sharma, P., Sethi, S., & Mahajan, R. (2019). Reliability of cardiac monitoring equipment and its role in patient safety. *International Journal of Health Sciences*, 13(2), 56-63.
6. Ulrich, B. T., Kear, T., & Spiva, L. (2020). Adequate resources and healthy work environments: Impact on patient care. *Critical Care Nurse*, 40(5), e13-e21. <https://doi.org/10.4037/ccn2020763>