Title: Patient and nurse experience of vital-sign monitoring practices and preliminary views on the introduction of wearable monitoring: a qualitative study in a surgical ward.

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INTRODUCTION

Measurement of vital signs is an integral part of clinical management on surgical wards. These can be monitored periodically through manual measurements or continuously using one or more devices. Several factors contribute to the decision of the type and frequency of monitoring to ensure patient safety and comfort.

OBJECTIVES (OPTIONAL)

The objective of this study was to understand the current monitoring experience of patients and nurses, and their views on the introduction of wearable ambulatory monitoring into the general ward environment.

METHODS

Semi-structured interviews using topic guides were conducted with 15 patients and 15 nurses on a surgical ward and transcribed *verbatim f*rom the audio recordings. Thematic analysis was used to identify themes related to interviewees' views on vital-sign monitoring. The concept of ambulatory wearable devices for clinical monitoring was introduced at the end of the interview, and we also present the preliminary views of nurses and patients on how this may be used in practice.

RESULTS

Three interconnected themes were identified in interviews. The first, Vital Sign Data as Evidence for Escalation, examined nurses' use of data to support escalation of care and the implications for patients perceived to be deteriorating who have not reached the early warning score threshold for escalation. The second theme was Trustworthiness of Standard Care Vital Sign Measurements, describing nurses' practice of using manual measurements to recheck or confirm automated vital signs readings when concerned about a patient's condition. The final theme identified was Balancing Patient Safety with Comfort When Selecting Observation Type and Frequency. In this theme, both patients and nurses agreed that, although continuous monitoring may improve safety and offer reassurance, these benefits needed to be balanced with multiple limitations. Factors to be considered included noise pollution, comfort, and impact on patient mobility and independence.

Introduction of the concept of ambulatory wearable devices for clinical monitoring was viewed positively by both groups as offering solutions to some of the issues identified with traditional wired monitoring. However, most agreed that this would not be suitable for all patients, and should not replace direct nurse/patient contact.

CONCLUSIONS

Vital sign measurements are frequently used to aid decision-making related to patient escalation. Continuous monitoring can facilitate this and improve patient safety but can also be disruptive; therefore, patients and nurses agreed that its use should be carefully considered and patient-centred. Feedback from nurses and patients suggests there is scope for ambulatory monitoring

systems to be integrated into the hospital environment; however, both groups emphasised these should not add more noise to the ward nor replace direct contact.

IMPACT

This is a large qualitative study explored as part of a bigger project, aiming to test and implement continuous wearable monitoring in the ward environment and evaluate its impact on patient mobility, independence and overall clinical outcomes. This study established a foundation based on current practice and the views of both nurses and patients; supporting our hospital testing and implementation that is likely to shape the clinical monitoring of the future.

KEYWORDS

Vital signs; monitoring; patients; nurses; qualitative

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