



KEY POINT SUMMARY

OBJECTIVES

This study aimed to understand how nurses perceive the ICU environment in terms of what is important, and how it supports their work.

ICU nurses' experiences of environmental elements and their meaning for patient care at an ICU: A qualitative content analysis

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Key Concepts/Context

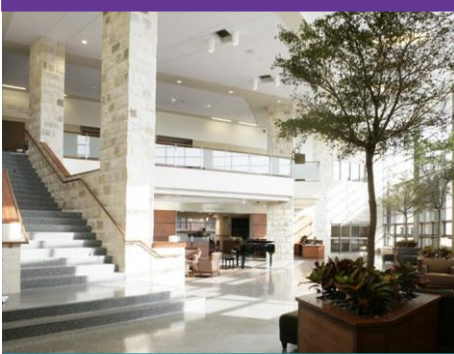
Previous research on the intensive care unit (ICU) environment has focused primarily on outcomes for patients (e.g., infection prevention, delirium, and satisfaction). There is very little research examining the impact of the ICU environment on staff. Further, most of the research in this area has applied quantitative methods. This study provides a more qualitative understanding of nurses' experience providing care in the ICU, an important perspective to inform better evidence-based design decision-making.

Methods

Researchers used a qualitative approach and a method called "photovoice." Photovoice is a method that involves the combination of photography and interviews as a means for participants to share their perceptions.

The authors recruited 16 total participants (11 registered nurses and five enrolled nurses) from three ICUs (two in university hospitals and one at a regional hospital). Some of the photo data in this study came from a previous set of data collected in 2014, and the rest was collected in 2016. The researcher did not find any new trends between the two time periods.

Nurses were asked to take photos of elements in the ICU that affect their work. Then they were asked to participate in an interview, which started with a general question: "Can you tell me how you experience the ICU room?" The researchers used the photos to prompt further questions about the nurses' experiences providing care. The interviews were transcribed for analysis.



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Researchers analyzed the photos and interview transcripts using a phenomenological approach and deductive content analysis. Phenomenological methods focus on the lived experiences of people. The researchers read through the transcripts and reviewed the photos, and began sorting the information according to themes that emerged.

Findings

The researchers found numerous ways that the environment impacted nurses and their work. Interview findings include themes around security (close access to monitoring equipment), darkness (lack of daylight), and confined space (due to visitors and medical equipment).

Regarding medical equipment, nurses felt that it was helpful; they also mentioned that it is noisy and takes up space. The warning alarms were viewed as a “lifeline” to alert nurses to a problem, but many of the alarms that serve as reminders were seen as annoying and contributed to “brain fatigue” by the end of the day. Nurses felt that the rooms were not big enough for the required medical equipment and described the equipment as an obstacle to reaching the patients. Some nurses reported that they sometimes avoided providing care due to the lack of space.

Nurses described work stations as cramped and crowded, creating safety risks during focused activities like preparing medication. Nurses suggested that they would prefer a secluded work station space for uninterrupted work.

Photos of windows revealed the importance nurses place on daylight and access to the world outside. All respondents mentioned the experience of darkness in their daily work, including descriptions like “walking into a cave.” Nurses described the positive energy they felt after looking through the window.

Nurses discussed privacy issues when describing photos of doors and curtains/partitions. Nurses felt it was their responsibility to protect patient dignity by closing the door or curtain.

The patient bed was described as the central element in the nurses’ work. Many of the comments regarding the bed were positive, as the bed helped nurses with tasks such as weighing and mobilizing patients. Nurses discussed the conflict between the chair as an obstacle to their work and their desire to encourage family involvement by making space for these chairs.

Limitations

This paper provides a clear overview of issues that this group of 16 ICU nurses face related to their work environment. The small sample size is appropriate for this type of case study, but limits the generalizability of the findings. The photovoice method provides a qualitative method to understand human experience but lacks some



objectivity. Future studies may benefit from triangulation with more objective methods to validate findings.

Design Implications

Findings include considerations related to room size, layout, window views, and visual and auditory privacy. Room size and layout should ensure that care is not impeded by the presence of medical equipment and visitors. Staff and patients benefit from access to daylight and views of nature. The design should support dignity and privacy for patients, as well as auditory and visual privacy for nurses during focused tasks. Innovation is needed in the design of medical equipment to reduce alarm fatigue.

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