



## KEY POINT SUMMARY

### OBJECTIVES

The purpose of this 2018 study was to validate the patient safety scales used in a previous smaller study by Rashid (2007); both studies explored the relationships of nurses' perceptions of ICU designs and specific patient safety scales.

## Evaluating Nurses' Perception of Patient Safety Design Features in Intensive Care Units

Islam, F., Rashid, M., 2018 | *Critical Care Nursing Quarterly*, Volume 41, Issue 1, Pages 10-28

### Key Concepts/Context

Patient safety subsets of efficient work process, patient room design, accessibility and visibility, and maintaining sterility were explored further following a smaller study using similar patient safety scales. This study used an electronic disbursement of a patient safety questionnaire to intensive care unit (ICU) nurses to increase the sample size from the original study. This larger study also took nurse characteristics into account, which the original study had not assessed.

### Methods

A framework was developed to study how variables of patient safety and nurse characteristics influence nurses' perception of design characteristic in the ICU setting. The first step was to define the items within the patient safety scale, using the Rashid (2007) article as a template. The second step was to examine the underlying dimensions of the patient safety scale and then provide evidence of reliability and validity for the patient safety scale. The study also took into account nurse characteristics, individual unit characteristics, and hospital type. The patient safety scale included only environmental features that related to patient safety within an ICU. A web link was electronically sent to ICU nurses through the American Association of Critical-Care Nurses website. The survey resulted in 587 usable responses which were then divided into two groups: one for analysis and the second for confirmation of the original set to ensure validity of the study. Further analysis was performed using factor analysis and it was determined that the patient safety scales were: efficient work process, patient room design, accessibility and visibility, and lastly, maintaining sterility. Each factor had sub-items which are explained in the glossary table below. The factors and characteristics were then evaluated to determine nurses' perceptions of the ICU environment.

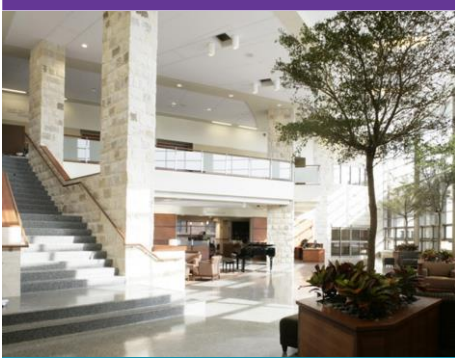


## Findings

There was found to be no effect of hospital type or care model on the nurses' perceptions of any of the patient safety scales. Both the life support system and layout of the unit had marginally significant effects on the nurses' perception of the patient safety scales. Patient mix had a significant effect on 2 of the 4 scales studied. A weak relationship between the number of beds and maintaining sterility was found; however, there was a negative association between the number of beds and efficient work process. Nurses' gender had a slightly significant effect on both maintaining sterility and the efficient process scales. The maintaining sterility scale was affected by professional title, position in the unit, and years spent working as a nurse. The scale of efficient work process was not significantly affected by any of the unit or nurse characteristics. The authors theorized that this is because design and efficient work process are always important, regardless of other influences. Accessibility and visibility were only affected by the unit layout type. Finally, patient room layout was affected by type of life support system used and type of patient.

## Limitations

The specifics of how each factor or characteristic affected the patient safety scales was not stated. This study was useful in determining the effectiveness of patient safety scales on nurses' perceptions of design. However, without further study it does not allow this information to be directly applied to the design process. Furthermore, due to the authors not being healthcare providers some of their assumptions may not be accurate – as an example, the idea that most of nursing care happens at the bedside. And, the idea that patient safety scales were limited to environmental issues, only leaving out medication and communication factors, which are two large patient safety areas of concern. The authors themselves stated, “no expert panel of nurses and/or designers were asked to identify terms that would concisely convey the ideas of the items in each factor” (Islam and Rashid, 2018, p.24). This could lead to nurses misinterpreting what the authors were asking because it was not presented in common nurse terms. And nurse titles were not taken into account in the study. So, there was no determination of a charge nurse's perception versus a staff nurse's perception of different safety scales. This information may be useful to determine in future studies.



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## Design Implications

This study found that patient safety scales can affect nurses' perceptions of design. However, there are no direct design implications able to be drawn from this study without inference or further study.