KEY POINT SUMMARY

OBJECTIVES

This study sought to understand the relationship between private and semiprivate rooms and health outcomes associated with fall rates and healthcare-acquired infections (HAIs) on older hospitalized patients.

Hospital Room Design and Health Outcomes of the Aging Adult

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Key Concepts/Context

Private patient rooms have become the industry standard since the American Institute of Architects (AIA) recommended including private patient rooms in the design of all new acute care hospital construction projects. This recommendation was made due to research suggesting that private patient rooms help reduce infection, increase caregiver efficiency, provide greater privacy, and offer greater opportunity for families to participate in the healing process of their loved ones. Private patient rooms also have been linked to reductions in medication errors, noise levels, and potential for falls. However, evidence has yet to document if private patient rooms are advantageous to all patient populations, nor has it established the actual relationship between room type and health outcomes.

Methods

For this research a retrospective case study was conducted utilizing existing secondary data from patient medical records. The objective of the study was to determine differences in fall rates and HAIs in patients over the age of 65 who were admitted to private and semiprivate rooms and received care from the University Medical Center at Princeton (UMCP) in New Jersey from January to May 2006. A total of 239 patient records were reviewed to ensure patients met the inclusion criteria. A total of 166 patient records met the following inclusion criteria: over the age of 65, a length of stay (LOS) ranging from three to 10 days, and received care on a general medical-surgical unit. Patients who were excluded met the following criteria: clinical history of dementia, bedridden prior to hospitalization, admitted directly from a nursing home, isolation for an identified infection, incontinence, or readmission within the last 30 days.

Gender and age data were collected from the patient charts. Fall risk data were retrieved from the nursing admission assessment, and data pertaining to incidences

of falls and HAIs were collected from a review of nurse and physician progress notes. Once an HAI was identified, it was further verified by laboratory and diagnostic data.

Demographic data consisting of age, gender, and LOS were analyzed using descriptive statistical analysis. Fall risk was assessed using the Schmid Fall Risk Assessment. Analysis for the incidence of falls and HAIs was performed through a chi square analysis and a Fisher's exact test.

Findings

Demographic data revealed that the mean age for the participants in this study was 80.08 years old, placing 51 percent of participants in the Old category (75-85), 27 percent in the Young-old category (65-74), and 22 percent in the Old-old category (older than 85). The distribution of gender was 61.4 percent female and 38.6 percent male. The average LOS was 5.88 days. Of the patients represented in this study, 69 percent were identified as at risk for falls upon admission.

During the time of this study, a total of five falls were reported from the population studied. Four of the five falls occurred in private rooms while the patient was either in the bathroom or on their way to the bathroom. Analysis revealed that there was no significant difference between the type of room and risk of falling. However, results reported that the relative risk of a patient falling is four times greater in a private room than in a semiprivate room.

A total of nine HAIs were reported among the patients included in this study. Of those nine, four occurred in private rooms and five occurred in semiprivate rooms. Analysis revealed that there was no significant difference between room type and occurrence of a HAI.

For those patients who did acquire a HIA, analysis revealed significant differences of LOS from patients who did not acquire a HIA. The additional cost to treat the patients who acquired the HIA was a minimum of $7,000.

Limitations

Utilizing a retrospective research design has inherent limitations within its framework. The use of secondary existing data creates hindrances in context, clarity, and consistency of physician/nurse documentation, and limits the reliability of the findings. Also, the study was a convenience sample representing a small population within a single geographic location. Other limitations were that the number of falls and HAIs could have easily been underreported due to multiple factors. Further, the inclusion/exclusion criteria may have screened out patients that were at a higher risk of experiencing adverse consequences. Due to coding issues with HAIs, it was also difficult to determine if the HAI was the reason for the increased length of stay.
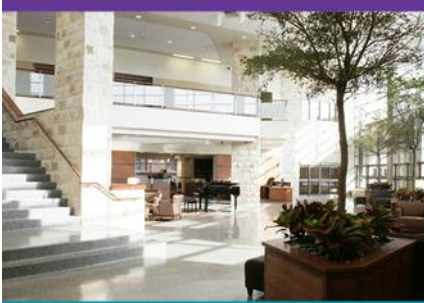
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Design Implications

Findings from this study revealed that room type may play a role in the occurrence of falls, but does not necessarily increase the chances of acquiring HAIs in aging populations. Due to these findings, hospitals embarking on new construction projects may want to consider a blend of private and semiprivate rooms for aging patient populations to address individual physiological and safety needs. Findings from this research also suggest that other issues should be addressed to reduce HAIs, such as appropriate protocols for hand washing, indwelling urinary catheter management, and isolation precautions.