



KEY POINT SUMMARY

OBJECTIVES

The objective of this study was to examine issues relating to safety, usability, and accessibility of bathrooms in a rehabilitation ward.

Hospital bathroom ergonomics: Safety, usability, and accessibility issues.

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Key Concepts/Context

The design of a hospital bathroom is important in terms of its usability and accessibility and crucial for patient and staff safety. A bathroom's design and layout becomes more important in a rehabilitation unit, where patient mobility is restricted for various reasons. The author notes that an inadequately designed bathroom can decelerate patient recovery and adversely affect nurse efficiency and health. This study explores the usability, accessibility, and safety of 32 bathrooms in a hospital's rehabilitation ward in Italy. The study found that the current design and layout of the bathrooms had some ergonomic drawbacks.

Methods

The methodology involved a participative ergonomic study of 32 bathrooms. Nurse and patient participants simulated the use of 30 en-suite and two specially-equipped corridor bathrooms. These simulations were observed and video recorded. The patient participants were classified as independent users (A), dependent users (B), and assisted by nurses (C). Participants simulated transiting from bed to bathroom, entering bathroom, approaching toilet and sink, performing stand-to-sit and sit-to-stand transfers, and approaching the shower. Research team members observed the simulations and made notes of issues and difficulties encountered by both patient and nurse participants. Participants were then asked about the challenges they faced during the simulation and if they could identify inadequacies related to the bathroom layout.

Findings

The study yielded the following findings:

The bathrooms had the following physical features:

- The corridor bathrooms were the largest in area with adjustable shower stretcher, handrails for toilet and shower.



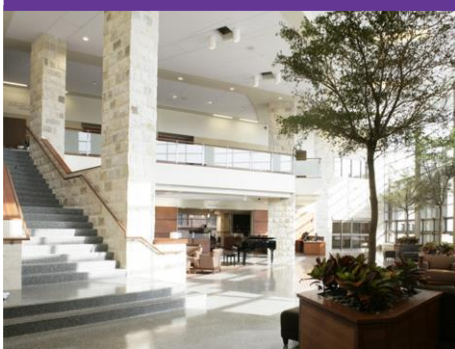
- The bathrooms in the patient rooms had the following features: externally opening doors with handles at a height of 110cm, skidproof floors, no raised edges in the shower area, external light switch at a height of 90cm, reachable emergency alarm for patient fallen near the toilet, and shelves (at 120cm) and coat hooks (at 160cm). Some of the bathrooms had handrails, mostly in the shower and toilet areas.
- Despite the spacious bathroom, its usability was limited by inappropriate space utilization and furnishings. This was especially seen in the bathrooms that did not have handrails for the toilets or shower seats, and the 'beyond reach' shelves and coat hooks for a sitting patient.

Accessibility:

- Access and maneuverability within most bathrooms were difficult for patients who required assistance in mobility. This was because the patients were accompanied by a nurse and equipment.
- Moving from bed to bathroom in a patient room was not without obstacles presented by radiators and furniture. Also the size of the door opening was limiting in terms of easy access.
- Limited door width disallowed dependent patients in 13 bedrooms from accessing the corridor bathrooms.
- Wheelchair-bound patients were able to reach toilets in 10 of the patient room bathrooms and the sinks in 18 of such bathrooms.
- Only three bathrooms had adequate space to use the mobile hoist to transfer patients from bed to patient room bathrooms.

Other aspects:

- Narrow transit and standing zones hindered nurses from imparting complete assistance to patients without risks to their health.
- Shower seats posed a fall risk because they were
 - Placed higher than the height of a standard wheelchair seat
 - Not fixed firmly to the wall
- Handrails increased risks to patient safety because of
 - Inconsistent location
 - Similarity in appearance to towel holders
 - Discontinuity from bed to bathroom



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- Shelves, faucets, towel holders, coat hooks, toilet paper holders were either beyond the reach of or ergonomically ill placed for a wheelchair or seated patients.

Limitations

The author did not identify any limitations in this study. One limitation of the study is that the authors do not mention the number of research participants or elaborate on their demographics.

Design Implications

Designers should take into consideration the following while designing bathrooms in rehabilitation units:

- Adequate space for maneuvering assistive devices including wheelchairs and mobile hoists; and for the movements of an accompanying nurse
- Difference in appearance of towel rods and handrails
- Switches, shelves, etc. to be reachable for a wheelchair or sitting patient
- Handrail locations to be ergonomic and consistent in placement
- Continuity of handrails between the bed and the bathroom
- No difference between the heights of the shower seat and a standard wheelchair seat

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