



KEY POINT SUMMARY

OBJECTIVES

The study compared carpet and vinyl flooring in terms of elderly's risk of falls in a rehabilitation unit at a community hospital in the UK.

DESIGN IMPLICATIONS

The study indicated that carpeting may not be the best option for preventing falls in patient care area.

However, the study only compared one type of carpet and one type of vinyl. Further research is needed to verify whether the result can be generalized to other types.

Other research revealed that soft flooring such as carpet may help reduce the risk of fall-related injuries. Both risks of falls and fall-related injuries should be taken into account when selecting flooring material for fall prevention.

Preventing Falls on an Elderly Care Rehabilitation Ward

Donald, I.P., Pitt, K., Armstrong, E., Shuttleworth, H.
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Key Concepts/Context

Patient falls refer to patients' unplanned descent to the floor with or without injuries to the patients. Patient falls are a leading cause of injuries and death and contribute to healthcare cost increase. Patient falls are more likely happen to elder patients and may cause special problems in rehabilitation units because falls may cause injuries and fear that impede the rehabilitation progress. It was also observed at the study site that the majority of falls happened at the bedside.

Flooring is considered as one of the environmental factors impacting the risk of falls in healthcare settings. A few studies examined the effects of flooring (including carpet vs. vinyl) on the prevalence of falls and the severity of fall-related injuries (see the list of relevant articles). Other research also looked at the effects of subfloor.

Methods

In this experimental study, fifty-four patients were randomly assigned to four groups defined by flooring (carpet vs. vinyl) and physiotherapy (conventional physiotherapy vs. additional exercise). Carpeting was installed in two of the four bays of the unit. The flooring in the other two bays was latex vinyl square tile flooring. Patient falls were continuously monitored and reported during the nine-month study. Statistical analyses were conducted to compare relative risk of falls in the four groups. In addition, individual patients' fall risks were evaluated by a simple nine-item rating scale. The overall outcome of rehabilitation as measured by physical strength was used to compare the two therapies.



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Findings

Only eight patients (15%) experienced a total of 11 falls. Among the eleven falls, ten happened in bays with carpeting and one in bays with vinyl. Seven falls happened in patients given conventional physiotherapy and four happened in patients given additional exercise. Additional exercise improved handgrip strength more than conventional therapy. However, the difference found between carpeting and vinyl was not statistically significant because of the relative small number of falls in the study period. Two-thirds of falls happened at the bedside. Only one-third of the falls resulted in minor injuries.

Limitations

There were several limitations of this study:

- Although the difference between the two flooring types was quite considerable (10:1), the small sample size limited the ability to reach statistical significance in this study.
- The relative low rate of falls probably was attributable to the fact that nurses might have paid more attention to patient fall prevention as a result of conducting the study and performing fall risk assessment. In addition, a relatively large amount of patients in each group were not able to complete the study for various reasons. These factors probably contributed to the small number of falls and insignificant statistics results.
- The method of recording and measuring patient falls was not described in detail. There was little information regarding the validity of the measurement methods. In addition, the risk assessment scale was not well tested and validated. These might have biased the result.