



KEY POINT SUMMARY

OBJECTIVES

The objective of the study was to evaluate the effectiveness of a multifaceted intervention (including staff training, resident education, environmental adaptations, resident exercise through balance and resistance training, and provision of hip protectors to residents) on long-term care resident falls and fractures.

DESIGN IMPLICATIONS

The focus of this particular study was on training, education, and organizational interventions rather than design interventions. More research is required to better understand the impact of correcting various environmental issues to reduce falls and fractures.

Effectiveness of a Multifaceted Intervention on Falls in Nursing Home Residents

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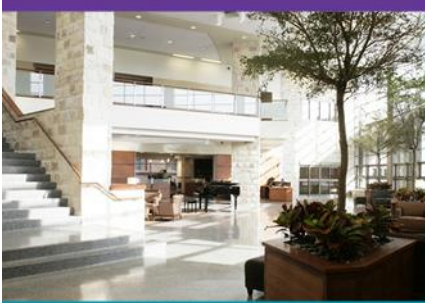
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Key Concepts/Context

Older people are particularly susceptible to falls and fractures due to mobility limitations and physical instability. Falls and fractures commonly result in functional deterioration, increased medical costs, and increased burden for all involved in the care setting. Attempts to prevent falls and reduce fall and fracture incidence rates both at home and in long-term care facilities span from educational interventions to adjustments of medication intake to environmental adaptations. There is an ongoing search for the most effective intervention methods that will reduce falls and fractures, particularly for older people in long-term care facilities.

Methods

The sample included 981 residents, aged 60 and older, living at six long-term care facilities (nursing homes) for at least 4 weeks during the intervention period (October 11, 1998, to October 10, 1999). Three facilities were randomly selected for the intervention (509 residents participating), while the other three facilities were randomly selected for the control condition (472 residents/participants). Within each nursing home, residents received oral and written information about the study and were able to self-select their prevention scheme if they agreed to participate. The intervention included staff training and feedback on the incidence and consequences of resident falls; written information on fall prevention provided to residents, along with a personal consultation with a study nurse or exercise instructor; an exercise program for balance and resistance training; the performance of an environmental hazard check to suggest modifications to the physical environment that might help reduce resident falls; and the provision of hip protectors to residents.



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A pre- and post-test measurement of participants in the exercise classes was conducted, known as a two-sided Wilcoxon signed rank test. Incidence density rates and relative risks for falls, fallers, and fractures were also calculated. Poisson regression was applied to calculate incidence density rates and relative risks with corresponding 95% confidence intervals, adjusted for clustering.

Findings

Significant differences were found for the rate of falls, number of frequent fallers, and for the general group of fallers in the intervention group versus the control group. Fewer falls and fallers existed in the intervention group. There were no significant differences between the two groups when comparing fracture rates, potentially due to the low incidence of hip fractures in the control group.

Limitations

Fall and fracture assessors were not blinded to the study conditions, as they were aware whether or not their facility was providing the intervention or not. A lack of assessor blindness to study conditions generally has the potential to bias the results, due to potential over- or underreporting. Also, because of a lack of a valid method for scoring environmental factors and time differences for correcting the environmental factors, reporting adherence to environmental corrections was not feasible. While allowing residents to self-select into a prevention scheme enabled higher generalizability of the results of the study, one potential limitation is that those who needed the intervention most may have opted not to participate. The authors described an expert-based decision to select residents' prevention schemes, as an alternative.