SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

The study investigated the effect of a multifactorial intervention program in reducing falls and fall-related injuries.

Fall and Injury Prevention in Older People Living in Residential Care Facilities: A Cluster Randomized Trial

Jensen, J., Lundin-Olsson, L., Nyberg, L., Gustafson, Y.

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Key Concepts/Context

Despite the fact that falls and resulting injuries are common in the residential care population, little is known about how to prevent falls. Research during the past 10 years around fall prevention has shown positive and negative results. Some of these inconsistent results could be explained by differences in target groups, interventions, and outcome measures.

Methods

The study was a cluster randomized, controlled, nonblinded trial that divided nine facilities into two groups and randomly assigned the groups by lots to an intervention or a control group. Group A included four facilities with 224 residents; the facilities had 29 to 74 residents each, and the median age by facility ranged from 82 to 85 years. Group B included five facilities with a total of 215 residents; there were 31 to 66 residents per facility, and the median age by facility ranged from 79 to 85 years.

The control group received usual care. The other group received an intervention program that included strategies targeting general and resident-specific risk factors for falling. The interventions included:

- Staff education: All staff were invited to a 4-hour educational session, and more than half attended. Led by a physician and a physiotherapist, the sessions covered risk factors for falls and intervention strategies.
- Environmental modification: The intervention facilities reduced environmental hazards in common areas by rearranging furniture that posed a risk for falling, quickly wiping wet areas on the floor, and clearing snow from the entrance to the facility. Staff and study physiotherapists made

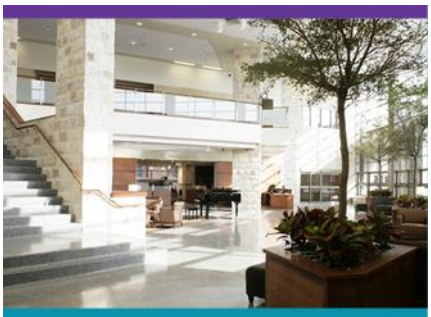
adjustments in the residents' accommodations such as removing loose carpets and repairing doorsteps (n = 18); adding grip bars, new beds, and firm mattresses in the bedroom and bathroom (n =15); furniture changes (n = 6); and better lighting (n = 3).

- Exercise: Residents received training to improve strength, balance, gait, and safe transfer.
- Supply or repair of aids: The intervention facilities gave 29 residents various types of aids or repaired their aids.
- Change in medication: During the 11-week intervention period, staff adjusted the medications for 21 residents because their side effects were believed to increase the risk for falling. In addition, pharmacologic treatment was initiated or adjusted in 26 residents because of medical conditions believed to pose a particular risk for falling such as anemia, heart disease, infection, pain, and depression.
- Hip protectors: Of the 47 residents who were considered particularly vulnerable to fall-related hip fracture and offered free hip protectors, 34 agreed to use them.
- Postfall problem-solving conferences: A registered nurse followed up on falls on the same day, and the physiotherapist followed up within 3 days. A team that included a physician, nurse, physiotherapist, and sometimes other staff members met weekly to discuss fall reports.
- Staff guidance: Staff and study researchers regularly discussed safety issues pertaining to 90 fall-prone residents. The most significant measure adopted was enhancing safe mobility by providing individualized supervision, improving the transfer technique, and supplying bed alarms.

Findings

The authors reported the following findings:

- Fewer residents in the intervention group than in the control group fell: 82 of 188 (44%), compared with 109 of 196 (56%).
- Falls per resident ranged from 0 to 16 in the intervention group, and 0 to 26 in the control group.
- The corresponding incidence of falls was 6.7 and 8.3 per 1,000 person-days for the intervention and control groups, respectively.
- The time to first fall was longer for the intervention group than for the control group.
- Of 619 falls, 145 (23%) resulted in injuries. The severity of injury did not differ significantly between the groups: 51 minor injuries in the intervention group versus 61 in the control group and 11 moderate injuries in the intervention group versus 7 in the control group.



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Limitations

Authors identified no limitations of the study.

Design Implications

This study identified that a multifactorial intervention program, including certain environmental modification strategies, was effective in reducing the number of residents who fell, total number of falls, time to first fall, and number of femoral fractures. Due to the multifactorial nature of the intervention, it is hard to isolate the impact of the environmental changes on falls and fall-related injuries. However, experts suggest that it is effective at reducing falls and fall-related injuries when hospitals make efforts of reducing environmental hazards in common areas such as rearranging furniture that posed a risk for falling; removing loose carpets and repairing doorsteps; and providing grip bars, new beds, firm mattresses, and improved lighting.