



KEY POINT SUMMARY

OBJECTIVES

The main purpose of the analysis of the extensive research literature (a meta-analysis) was to assess the relative effectiveness of four main types of interventions to prevent falls in older adults, as compared to either a "usual care" group or control group that received no interventions to prevent falls.

Interventions for the Prevention of Falls in Older Adults: Systematic Review and Meta-Analysis of Randomized Clinical Trials

Chang, J.T., Morton, S.C., Rubenstein, L.Z., Mojica, W.A., Maglione, M., Suttorp, M.J., Shekelle, P.G.

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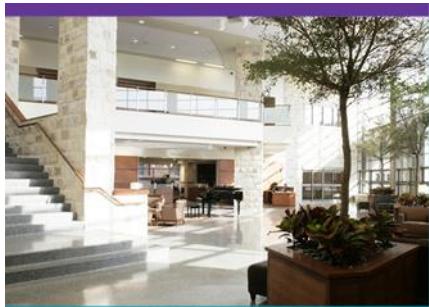
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Key Concepts/Context

Falls are a major health concern for older adults worldwide, not only because of the potential for fractures and head injuries, but also for the emotional toll—the fear and anxiety—that can develop as a result of an injury or close call. While the literature on fall interventions is vast, there is limited understanding about the best methods for preventing falls. The authors conducted an extensive review and analysis of relevant, rigorous research trials to assess the relative effectiveness of different types of fall interventions. Under comparison were falls risk assessment and management programs, exercise programs, environmental modification programs, and educational interventions.

Methods

The research team analyzed the research literature to find articles that met the precise inclusion criteria for the study. Criteria included a focus on falls prevention, studies that collected data on participants aged 60 or older, randomized controlled trials, and the inclusion of a comparison control group. The study interventions were classified based on content and methods, and two outcomes were pinpointed—falling at least once during a follow-up period of 6 to 18 months and total number of falls in the average follow-up period—to come up with a monthly fall rate. From 830 articles, 40 were ultimately analyzed and contributed data to the meta-analyses. Data on participants who fell at least once came from 22 studies (26 intervention groups), while data on monthly rate of falling came from 27 studies (30 intervention groups). Statistical analyses were performed to arrive at risk ratios and



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incidence rate ratios comparing falls in intervention groups as compared with control groups. Since none of the studies included in the meta-analysis directly measured the comparative effectiveness of different fall intervention components, the current study set out to model the effect of individual components while controlling for the rest of the components.

Findings

Among the interventions studied, the authors could not detect effectiveness of environmental modification programs or educational interventions. Multifactorial falls risk assessment and management programs were found to be most effective at reducing risk of falling and the monthly rate of falling, while exercise programs were also effective at reducing the risk of falls.

Limitations

The availability of original studies to pull into the meta-analysis of previous, relevant literature was one limitation. Also, none of the studies in the meta-analysis compared the interventions to each other; therefore, the current study used an indirect method to assess relative effectiveness of different intervention programs. Indirect comparisons can be less powerful than direct comparisons. Double blinding in falls intervention trials is not conceptually possible, but nonetheless is a limitation of the studies in the meta-analysis that should be noted. Until more seamless methods exist for measuring falls without oversight, it will be impossible to conceal intervention allocation to those involved in the study taking the measurements. An additional limitation of the study is that the outcome of monthly rate of falling is impacted by the correlation within patients. While monthly rates distribute the number of falls across individuals, some individuals have the potential to contribute a larger number of falls than others, and falls within an individual are correlated to their other falls and cannot be treated as independent falls.

Design Implications

This meta-analysis did not clarify the impact of specific environmental modifications on the prevention of falls in older people. It focused more heavily on risk assessment and management programs as well as exercise programs, with limited examples of research studies that primarily honed in on environmental modification programs. As a result, it is unclear from this particular study how to design healthcare facilities to reduce fall rates.