

DO HOSPITAL FALL PREVENTION PROGRAMS WORK? A SYSTEMATIC REVIEW

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Objectives: To analyze published hospital fall prevention programs to determine whether there is any effect on fall rates. To review the methodological quality of those programs and the range of interventions used. To provide directions for further research.

Methods: Keyword searches of Medline, CINAHL, monographs, and secondary references. All papers were included that described fall rates before and during intervention. Risk ratios and 95% Confidence Intervals (95% CI) were estimated and random effects meta-analysis employed. Begg's test was applied to detect possible publication bias. Separate meta-analysis regressions were performed to determine whether individual components of multifaceted interventions were effective.

Results: A total of 21 papers met the criteria (18 from North America), although only 10 contained sufficient data to allow calculation of confidence intervals. A rate ratio of <1 indicates a reduction in the fall rate, resulting from an intervention. Three were randomized controlled trials (pooled rate ratio 1.0 (CI 0.60, 1.68)), seven prospective studies with historical control (0.76 (CI 0.65, 0.88)). Pooled effect rate ratio from these 10 studies was 0.79 (CI 0.69, 0.89). The remaining 11 studies were prospective studies with historical control describing fall rates only. Individual components of interventions showed no significant benefit.

Discussion: The pooled effect of about 25% reduction in the fall rate may be a result of intervention but may also be biased by studies that used historical controls not allowing for historical trends in the fall rate before and during the intervention. The randomized controlled trials apparent lack of effect might be due to a change in practice when patients and controls were in the same unit at the same time during a study. Studies did not analyze compliance with the intervention or opportunity costs resulting from the intervention. Research and clinical programs in hospital fall prevention should pay more attention to study design and the nature of interventions.