Further research is required to determine the effectiveness of multifactorial interventions. Multifactorial interventions may reduce fall rates in older people, whereas multiple component interventions may reduce risk and rates of falls. However, evidence is low quality, so findings have limited implications to practice.

Further research is required to determine the effectiveness of multifactorial interventions, particularly those related to exercise and adherence to interventional regimes.

This review of 62 randomised controlled trials evaluates effectiveness of interventions to reduce falls in community settings. It analyses evidence on two fall prevention interventions, individualised assessment of risk, against general interventions. Both groups show a marginal reduction in falls rates when compared with ‘no active treatment’.

Context
Falls are common in older populations and levels of frailty, increasing age, impairment of functional status (cognitive/physiological), reduced mobility and environmental factors increase risk. Identification and reduction of modifiable risk factors is a key to falls prevention.

This review of 62 randomised controlled trials evaluates effectiveness of interventions to reduce falls in community settings. It analyses evidence on two fall prevention interventions, individualised assessment of risk, against general interventions. Both groups show a marginal reduction in falls rates when compared with ‘no active treatment’.

Methods
Authors combined data from 62 randomised controlled trials published 1990–2013 to resolve both individualised and collective approach interventions to reducing falls in the community. ‘GRADE’ (Grading of Recommendations Assessment, Development and Evaluation) was used for quality appraisal and collation of information for cross-analysis. Evidence summaries are presented for individualised, risk-assessed interventions and also collective interventions. Information on interventions compared with exercise is also presented. Comparator tables summarise interventions against primary and secondary outcomes. Random-effects modelling was applied to pool data and present the findings against rates and relative risks of falls. There was moderate to high heterogeneity across some variables (ie, 45%–88%). However, there was a wide disparity of both measurement tools and population sampling methods in included studies.

Findings
Authors conclude a marginal reduction on rate of falls with individual risk-based multifactorial interventions compared with ‘usual care’, but no reductions in other outcome measures. There is limited evidence to support whether multifactorial interventions are better than exercise alone. Moderate quality evidence supports that multiple component interventions may reduce risk and rates of falls. However, there is limited evidence on whether this impacts other outcome measures (quality of life, recurrent falls, fractures and hospital admissions).

Commentary
This review combines low or moderate quality evidence to evaluate interventions to reduce risk factors and prevent falls in community settings (exercise, environmental adjustment, assistive technologies, medication review, patient education and/or psychological interventions) against ‘usual care’ control groups. Authors applied search criteria previously used in a 2012 Cochrane review.

Confounding factors associated with falls and fall-related outcomes are difficult to determine as falls within community-dwelling populations are complex and multifactorial. Aggregating data on a range of interventions have the potential to reduce specificity. Subjects investigated through this meta-analysis included a very diverse population. Age ranges are presented, however, authors omit data on functional status or age-related comorbidities within populations.

There is lack of clarity in measurement of variables across included studies. For example, ‘medication review’ may denote a range of clinical interventions. Falls should be recorded through prospective calendars, completed daily, yet this review applied evidence from studies using patient recall and retrospective records.

Despite limitations in supporting evidence, this review reveals important information to inform clinical practice and research. It reveals there is limited information to support efficacy of interventions and suggests a need for further research on exercise as comparator. Authors also identify future research should include measurements of adherence.

Competing interests None declared.

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References
1. Lamb SE, Becker C, Gillespie LD, et al. Reporting of complex interventions in clinical trials: development of a taxonomy to classify and describe fall-prevention interventions. *Trials* 2011;12:125.
2. Hopewell S, Adedire O, Copsey BJ, et al. Multifactorial and multiple component interventions for preventing falls in older people living in the community. *Cochrane Database Syst Rev* 2018;7:CD012221.
3. Gillespie LD, Robertson MC, Gillespie WJ, et al. Interventions for preventing falls in older people living in the community. *Cochrane Database Syst Rev* 2012;CD005146.
4. Guirguis-Blake JM, Michael YL, Perdue LA, et al. Interventions to prevent falls in older adults: updated evidence report and systematic review for the us preventive services task force. *JAMA* 2018;319:1705–16.
5. Lamb SE, Jorstad-Stein EC, Hauer K, et al. Development of a common outcome data set for fall injury prevention trials: the Prevention of Falls Network Europe consensus. *J Am Geriatr Soc* 2005;53:1618–22.