Effectiveness of interventions for the assessment and prevention of falls in adult psychiatric patients: a systematic review

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**CRD summary**
The authors concluded that there was insufficient evidence on the effectiveness of fall risk assessment tools and fall prevention strategies for psychiatric patients. This conclusion reflects the poor evidence presented, and the authors’ recommendations for future research were justified.

**Authors’ objectives**
To assess the effectiveness of tools to assess the risk of falling and interventions to prevent falls for adult psychiatric patients.

**Searching**
A number of databases were searched, including CINAHL, PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), PsycINFO and Scopus (search dates not reported); search terms were reported. Reference lists of identified studies were checked. Studies had to be published in English.

**Study selection**
Studies that evaluated fall risk assessment tools for nurses, interventions to prevent falls, and common risk factors for falls, for psychiatric patients aged between 19 and 64 years, were eligible for inclusion. Participants had to have a mental illness diagnosed using the Diagnostic and Statistical Manual of Mental Disorders (DSM) or the International Classification of Diseases and Related Health Problems (ICD), or by the attending physician. The main outcome of interest was the number of patient falls in hospital. Studies of patients with intellectual disabilities were excluded.

All the included studies were of in-patients. The mean age of patients who fell, where reported, ranged from 38 to 68 years (range 16 to 108). The studies evaluated the effectiveness of a modified fall risk assessment tool, a fall protocol, a new hospital policy or intervention, and a revised fall assessment and prevention policy. The modified fall risk assessment tool consisted of age, history of falls, medications, mental status, physical status, orthostatic hypertension, gait and balance, and elimination. Fall prevention interventions included risk assessment on admission, regular observation, bed sensors, blood pressure monitoring, non-skid slipper socks, education brochure for patients, medical profile review by pharmacy staff, and annual staff education.

Two reviewers independently assessed studies for inclusion.

**Assessment of study quality**
Two reviewers independently assessed study quality before inclusion, using critical appraisal instruments from the Joanna Briggs Institute. Disagreements were resolved through discussion or with a third reviewer.

**Data extraction**
Two reviewers independently extracted data, using a tool from the Joanna Briggs Institute.

**Methods of synthesis**
The data were presented in a narrative synthesis.

**Results of the review**
Eleven studies were included; the total number of patients was unclear. Two were cohort studies, two were case-control studies, three were before-and-after studies, and four were descriptive studies. The studies had various methodological limitations including poor design (no randomised controlled trials), short periods of data collection, and failure to account for confounding factors.

One before-and-after study evaluated a modified risk assessment tool (with a fall protocol) for psychiatric patients. The
results suggested that this tool could predict falls for this population, but major limitations and an incomplete description of the tool's properties made it difficult to determine whether the tool was effective.

Three before-and-after studies evaluated interventions to prevent falls for psychiatric patients. One of the two studies evaluating multi-component programmes reported that fall rates were reduced following intervention. The third study evaluating a single intervention reported the rate of repeat falls was reduced after intervention, but not the rate of first falls.

The risk factors commonly associated with falls in psychiatric patients were reported.

Authors' conclusions
There was insufficient evidence on the effectiveness of fall risk assessment tools and fall prevention strategies for psychiatric patients.

CRD commentary
The review question and inclusion criteria were clear. The search was restricted to published studies in English; language and publication bias may have been present and some studies may have been missed. Efforts were made to minimise the risks of reviewer error and bias by independently duplicating the review processes.

Study quality was assessed using an appropriate tool, but the results were not fully reported. Study details were reported. A narrative synthesis was appropriate given the clinical and methodological differences between the included studies.

The authors' conclusion on the risk assessment tools and interventions to prevent falls by psychiatric patients reflected the lack of evidence; their recommendations for future research were justified.

Implications of the review for practice and research
Practice: The authors stated that constant observation and identification of medication side-effects, and a medication profile review by a pharmacist or doctor, could help prevent falls. The factors associated with falls could be incorporated in the fall risk assessment.

Research: The authors stated that studies with rigorous designs were needed to develop and evaluate fall risk assessment tools for adult psychiatric patients, and the psychometric properties of these tools needed investigation. Well-designed randomised controlled trials were needed to evaluate the effectiveness of those interventions currently implemented in psychiatric settings.

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