

Falls have been a special concern for society and elderly adults because of the associated morbidity, mortality, and health care costs. The fear of falling often leads older adults to restrict their activities, which can contribute to deconditioning, an increased risk for falls, and dependency. Hence, a considerable amount of research has focused on the development of risk assessment tools and fall prevention programs.

A multitude of risk factors for falls can function independently but frequently more than one of these risks exist. Risk factors for falls are similar across settings, but inconsistencies still exist between settings.
Falls in Older People: Risk Factors and Strategies for Prevention, by Stephen R. Lord, Catherine Sherrington, and Hylton B. Menz, provides an excellent comprehensive review of the literature but is less useful in specific risk assessment approaches and selection of interventions. Falls in Older People: Prevention and Management, by Rein Tideiksaar, provides a very general overview of falls research but a much more comprehensive treatment of identifying older adults at risk for falls and interventions that are specific for certain environments and deficits. In contrast to Lord and his coauthors, however, Tideiksaar does not provide a complete and documented review of the strength of evidence for fall risk factors or interventions. Such evidence is essential for determining when an older adult should be assessed for risk of falls and in the selection of the most effective interventions.

**Risk Factors for Falls**

Falls result from the simultaneous effects of personal and environmental factors operant at any given time. The pattern of these factors and their interrelationships often are different across individuals, even within the same setting. The challenge is to identify those elders most at risk for a fall. While Tideiksaar does not present sufficient information and documentation to assess the strength of the empirical support for specific risk factors, Lord and his coauthors provide a comprehensive review of the state of knowledge in this area that includes the quantity and quality of empirical support. After reviewing epidemiological studies, Lord and his coauthors question the relative importance of disease, medication, and standard clinical tests (e.g., vision, balance, and strength) as significant risk factors for falls. Neither book includes information about the specificity and sensitivity of risk assessments.

Lord and his coauthors suggest that factors related to balance control are the most significant risk factors for falls. They describe a new functional assessment tool, Physiologic Profile Assessment (PPA), based on a physiologic profile consisting of factors found to be associated with balance control. The PPA, however, does not include risk factors related to the environment and disease that are clinically important in risk assessment and disease management. Items selected for the PPA assess the major physiologic systems integral to balance control (visual, peripheral sensation, muscle strength, postural sway, and reaction time) because they were found to predict 75% of the fallers in multivariate models. Lord and his coauthors present no information about the specificity and sensitivity of the PPA or its predictive validity. Despite these weaknesses, the PPA is simple to use and provides information to target interventions to specific individual physical or functional deficits. Determination of a profile of risk factors compared to normative data for community older adults requires a computer program that can be viewed on the Internet and is available from the authors. Clearly, more research is needed to determine the usefulness of the PPA in different settings.

Tideiksaar does not provide the empirical support for the risk assessments described in the book but leaves it to the reader to refer to the general literature reviews in Chapter 2, “Causes of Falling and Fall Risk.” He includes a risk assessment checklist of all factors found to be associated with falls without reflecting on the strength of the evidence for any individual risk factor. Tideiksaar goes beyond intrinsic physiologic fall risk factors by including environmental and disease treatment factors and states that these can be used to select interventions to reduce the risk of falls. He acknowledges the multifactorial nature of falls, the differences in older adults, and environmental factors contributing to the risk of falls across settings. Similar to Lord and his coauthors, Tideiksaar states that assessment of mobility and transfer abilities is most important because they reflect balance and gait as strong predictors of falls.

Tideiksaar also describes the Performance Environment Oriented Mobility Screen (POEMS), which is a quick and easy screen for mobility and transfer abilities of even very frail older adults. He describes how this assessment can be obtained from the Minimum Data Set mandated in long-term care facilities, making it easy and less costly to use in this setting. Although some of the items of the POEMS are contained in other validated tools for assessing balance and gait, Tideiksaar provides no evidence for the reliability, specificity, sensitivity, and validity of the measure to identify fallers.

Strong risk assessment tools are needed, and the cost of this evaluation must be considered in their selection for a particular population or setting. Several medical associations (American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention, 2001) recommended a tiered approach to screening and assessment techniques that are shorter and more targeted. The panel recommended, as the first screen, the easy to use and short “Get Up and Go” test that assesses balance problems and difficulties in performing each of the functional tasks. The Get Up and Go has good specificity and sensitivity in identifying fallers.
Interventions

The complexity of the multifactorial risk factors for falls suggests that interventions must also be multidimensional. However, determining the aspects of these interventions that are most important in the reduction of falls can be difficult. Tideiksaar does not address this issue well and does not provide guidance in the selection of the most effective strategies. In contrast, Lord and his coauthors do address this issue in Chapter 15, “Targeted Falls Prevention Strategies.” They describe multifactorial interventions with clinically and statistically significant results. Both books stress the importance of targeting interventions to deficits of the older person as well as the need to compensate for nonmodifiable factors. These volumes also address the issues of whether the intervention is acceptable to older adults and whether they will adhere to it, but neither discusses strategies to increase acceptability and adherence.

Tideiksaar provides good descriptions of fall interventions. They are supported with pictures or diagrams, and specific recommendations are made about how these can be implemented and under what circumstances. For example, the location of bathroom guardrails is illustrated in a diagram, and the features of appropriate footwear are depicted in illustrations.

Although Lord and his associates do not provide the same amount of detail about implementation of interventions as Tideiksaar does, they present an extensive review of the literature about the effectiveness of interventions in Part II, “Strategies for Prevention.” These interventions include exercise, footwear, environmental modification, assistive devices, medical management, targeted multifaceted interventions, and interventions based upon the PPA.

In Part II, Chapter 12, Lord and his associates review the literature about risk factors for falls and interventions appropriate for hospitals and residential care facilities and describe the screening protocols and modification of risk factors for each setting. The literature reviewed for this chapter is limited, not because it is incomplete, but because of the few studies in these areas. In contrast, Tideiksaar addresses these issues related to settings but without much depth and without providing a referenced assessment of the literature in this area. Instead, he provides lists of the assessments and interventions appropriate for each setting and refers the reader to earlier chapters where these interventions were described.

At nearly the same time as these books were published, the American Geriatrics Society Panel on Falls Prevention (American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention, 2001) published falls guidelines based on a review of studies of falls research. The strength of the evidence supporting their recommended guidelines was similar to that of Lord and his coauthors. Community-based interventions were most effective if they included reduction of medications, exercise, and medical treatment of disease. However, modification of the home environment, advice about fall risk, and staff education were not effective in reducing falls. These guidelines were supported more recently when an intervention with home visits was effective in reducing the risk of falls (Nikolaus & Bach, 2003), and exercise was the most important single intervention through which effects increased with simultaneous management of reduced vision and reduction of environmental hazards (Day et al., 2002). The panel found only two randomized clinical trials in long-term care facilities where possibly effective components of the intervention included comprehensive assessment, staff education, and reduction of medications. A recent study (Becker et al., 2003), however, has supported the appropriateness of the panel’s guidelines as applied to nursing home care.

Acknowledged in both books and by the American Geriatrics Society Panel on Falls Prevention is the need for a multidisciplinary and multifactorial approach. Current short hospital stays may preclude some hospital-based interventions such as exercise but may increase the importance of environmental modifications (e.g., low bed height and lighting) and disease management. Environmental interventions and those targeted to the deficits of the older adult may be more possible in extended care settings where stays are often prolonged. Although still important in the hospital and long-term care, the acceptability of the interventions to the older adult is most important in the community setting where older persons assume a significant responsibility for implementing them.

In summary, both books provide useful information about fall risk assessment and fall interventions. Clinicians and educators may be most interested in the book by Tideiksaar because of the extensive attention to clinical application. In contrast, researchers and clinicians interested in evidence-based practice would find the book by Lord and his associates more useful. Although the strengths of both books are different, the researcher, student, and clinician have
complementary resources for the selection of evidence-based assessment and interventions that can easily be applied to clinical practice.

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References


