Falls, a community care perspective

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When an elderly person has a fall the injury that sometimes follows may need protracted treatment. A fall may be the first indication of undetected illness and repeated falling often heralds a decline in the patient's condition. Thus prevention of falls is an integral part of the management of old people, and those caring for them must take into account supervision of mobility, support in moving around, and restriction of exposure to risk. This approach will match the experience of most clinicians responsible for the care of elderly patients in the community yet only sketchy information about falls and the elderly is available.

"In the community" represents a heterogeneous group, ranging from the very fit and independent old person living at home to the frail and dependent patient in residential care. Our review covers those living independently and those requiring (psychogeriatric) residential care but excludes hospitals. We will look at the frequency of falls, the consequences of them, the circumstances of accidental falls, and the possibilities for prevention. We do this from the perspective of the Netherlands, and readers need to appreciate that in this country nursing homes provide medically supervised long-term residential care. Some care for patients with mainly physical handicaps or illnesses while others concentrate on psychogeriatric patients (usually dementia). The Dutch nursing home physician is a recognised specialist, and the specialty has its own vocational training programme. We review publications on falls in primary care settings and our own research in the Nijmegen Continuous Morbidity Registration which records prospectively every episode of morbidity treated in general practice¹ and a study in nine psychogeriatric nursing homes, recording all falls, again prospectively.²

Frequency

We define a fall as any incident in which the patient unintentionally ends up on the floor or ground.² This definition has consequences for reporting because in primary care it is physical injury that will usually result in patient-initiated contacts while in nursing homes a fall will be recorded whether or not there is injury. This distinction between data on independent-living old people or from general practice and information from institutions and nursing homes will be made throughout this paper.

General practitioners are consulted for falls by patients of all ages.¹ However, the elderly predominate. In the over-80s the annual rate per 1000 was 25, compared with 9 for the age-group 66-80 and under 5 for all other ages.¹ Most falls never present to a doctor.¹ When independent or sheltered living old people were connected to a monitor system, 20% raised the alarm because of falls, and a fall was the most common reason for the alarm being used.¹ In institutionalised psychogeriatric care, a fall was recorded in every other patient during an average observation period of 24 weeks.² Both in general practice and in institutions women fall more often than men.²³

Circumstances

Falls can be caused by the patient's health status—by chronic or acute illness (internal factors)—and by external factors. External factors (tripping and slipping) are responsible for half the falls in those over-65 encountered in general practice.¹ The external/internal distinction is not clear-cut—for instance, a rug on a highly polished floor may cause an infirm woman to fall when a fit one could have saved herself. The high incidence of falls in psychogeriatric patients can be explained by the fact that patients with dementia, despite locomotor consequences, remain on the move for many years while the physically ill in nursing homes will often be confined to bed. Yet even in dementia only a minority of falls are explained by a recent change in physical condition or drug therapy.² Many falls occur close to the patient's bed² and the risk increases during the day, with a peak in the evening (figure 1). This points to the complexity of factors related to falls—frequently a coincidence of health status (general and temporary), environmental circumstances, tiredness, and difficult manoeuvres such as getting in and out of bed.

Consequences

Any fall carries the risk of major injury yet the experience of primary care physicians is that the consequences are not usually serious, this being reflected in the observation that most fall-related episodes are clarified after one consultation¹ and even in the elderly many falls do not prompt the patient to consult a physician.⁴ This is true for all ages but the frequency of serious injury is higher in old people, who are more likely to be admitted to hospital (30% of the over-80s compared with less than 5% of the under 65s).¹ Table 1 gives the frequency of fall-related

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Figure 1: Timing of falls by institutionalised geriatric patients²

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Table 1: Frequency and sex differences of accidents in general practice

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<tr>
<th>Injury Description</th>
<th>15-24 yr Men</th>
<th>15-24 yr Women</th>
<th>75-84 yr Men</th>
<th>75-84 yr Women</th>
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<tr>
<td>All</td>
<td>343</td>
<td>171</td>
<td>228</td>
<td>249</td>
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<tr>
<td>All fractures</td>
<td>20</td>
<td>5</td>
<td>24</td>
<td>39</td>
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<tr>
<td>Hip</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
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<tr>
<td>Wrist</td>
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<td>1</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Distortion/luxation</td>
<td>79</td>
<td>43</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Minor</td>
<td>228</td>
<td>109</td>
<td>154</td>
<td>148</td>
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Data based on the Continuous Morbidity Registration 1989–93, department of general practice and social medicine, University of Nijmegen. 

Table 1: Frequency and sex differences of accidents in general practice

fracture in general practice for various age groups. The breakdown by sex provides an intriguing pattern: the male predominance in early life is replaced by female predominance in old age. Bone mineral status has a role but the same male/female pattern can be seen in non-fall-dependent injuries (table 1). This may indicate a difference in social roles with elderly women more inclined to face risky situations.

The highest risk of serious injury is in mobile but frail psychogeriatric patients. One-third of all falls result in minor injury and 2% to 6% cause serious injury (fractures of hip and wrist). Even in this group most falls do not cause physical damage. Some falls are purely accidental, but repeated falling should be taken as a warning of poor health status. Psychogeriatric patients, where 20% had a fall more than once in half a year, are at special risk.

The costs of a fall—to treat the injury and provide supportive care and to try and prevent a recurrence—are substantial. Estimates of annual injury-related costs for hospital care averaged over 100 every elderly person in the community range from $92 for falls to $133 when all reasons for injury are considered. The cost-effectiveness of treating conditions that increase the risk of a fall can be exemplified from a calculation of the costs of patients with severe arthritis of the hip: the net gain for each patient under treatment and operated on was $700.

Prevention

Prevention is an attractive option although the evidence to support the case for it is limited. It is possible to identify high-risk groups, and supervision can be tuned to the level of risk. In general, elderly patients should be encouraged to stay as physically fit as possible for that itself protects against falling, and a critical review of multidrug therapy helps too.

High-risk groups in general practice are the elderly with degenerative morbidity and those who have lately had one or more falls. These patients are more likely to consult their general practitioner and this consultation offers an opportunity of preventive counselling. A multifactorial approach to risk factors seems to be effective but screening for high risks does not result in more effective health promotion. Counselling works best if it is preceded by careful observation of the patient's mobility, the home environment, and the circumstances of the previous fall. Simple measures can create a safer environment with less chance of slipping and tripping—eg, rugs and wet floors should be avoided, grips for support can be provided at strategic sites, and access to a chair, bed, bath, or toilet can be made easier by devices. The primary care team can identify such needs in a "normal" (that usually means poorly equipped) home. Most elderly people do use the aids they have available. Non-use may point to ignorance or pride—but it may indicate impracticability, as when swollen feet due to ankle oedema make solid slip-safe shoes too tight to wear.

For institutionalised elderly people exercise in combination with regular rest can also help to prevent falls. More controversial is the use of restraints. The right to freedom of movement should be respected but pressure from families too often reinforces the use of restraints. Studies reveal physical restraints being used in 25–85% of institutionalised high-risk patients, though in a substantial number of cases restraints were prescribed but not used or were swiftly discontinued. Strangulation by strapping has been reported, a further discouragement to the use of restraints. Increased agitation as a consequence of restricted freedom of movement will probably make matters worse and restraints increase dependency and the risk of a subsequent fall. Freedom of movement is a basic right in our view, so the use of physical restraints is ethically objectionable. There are more patient-friendly devices that respect mobility. An alternative in high-risk situations is the bed alarm system. A sensor in the mattress records a patient moving from a lying to an upright position and, since it takes some time for the patient to lean bed, the nurses can intervene. The alarm system reduced falls from bed by more than 50%. It was acceptable to patients and nurses and could make a valuable contribution to the supervision of high-risk patients without draconian restrictions on freedom of movement.

Most falls are related to movements and since elderly people will want to preserve their freedom to move around, slipping and tripping cannot be avoided altogether. Nevertheless doctors who keep in mind the possibility of a fall will find opportunities for prevention both in the community and care in an institutional setting.

In the community general practitioners can use their personal knowledge of the patient and the home environment and any fall that has been notified should be looked at to see if a recurrence is preventable. Caution in prescribing psychotropic drugs—which should be adopted as a general principle—will have the prevention of falls among its benefits. A home visit offers the advantage of first-hand observation. The doctor may note that rugs or an item of furniture that looks like a hazard means something special to the patient, and that can be a barrier to "fall-safe" measures. With elderly couples the health of the spouse and his or her ability to provide support can be a critical factor. In our experience it is the elderly woman who is more likely to be exposed to risk in the home, and this point should be included in any counselling.

For institutional care, the argument is much the same. Protection against the risk of falling should be as patient-
friendly as possible. The objective is a restricted but otherwise hospitable living environment with supervision. Monitoring of falls is a potent tool in the assurance of quality of care. An alarm device should enable staff to supervise safely in a manner compatible with the patient’s right to freedom of movement. The use of physical restraints should be considered obsolete.

**References**

1. van Weel C. The validity of long-term morbidity recording: experience from the Nijmegen Continuous Morbidity Registration. *J Epidemiol Community Health* (in press).
5. McWhirter M. A dispersed alarm system for the elderly and its experience from the Nijmegen Continuous Morbidity Registration. *J Epidemiol Community Health* (in press).

**CORRECTION**

**Dementia: the failing brain**—In the second article in the Geriatrics Septet (J L Cummings, June 10, p 1481), the references were omitted.

**References**