Health Systems Research

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Falling can seriously damage one’s health—even in hospital

The development of a programme aimed at reducing the incidence of falls among patients in a New Zealand hospital is described in this article.

Although falls by patients in hospital have been studied in relation to age, mental status, medication, safety measures and other factors, patterns of falls in individuals have not been examined in detail and the attitudes of patients and nurses to the matter have received little attention.

In order to throw some light on these questions and on the self-care abilities of patients who fall, a study involving 24 patients and 30 nurses was undertaken at Nelson Hospital, a 280-bed general hospital in New Zealand. A self-care scale with a maximum score of 32 was used to rate mobility, mental status, feeding, dressing, and continence. All patients who fell were found to have defective mobility. The mean score was 22.5, the range 13–29. Patterns of falling evidently varied between individuals. Both nurses and patients tended to be pessimistic about their ability to prevent falls.

Nurses’ reports indicated that 56% of the patients who fell sustained no injuries, whereas only 34% of these patients considered that they had not been injured.

Falls alert system

A falls alert system was devised to help nurses to identify potential fallers and to enable better monitoring of fall prevention and follow-up. It was also intended that the system should foster positive attitudes on fall prevention, as opposed to the acceptance of falls as inevitable.

The hospital’s nursing advisory committee drew up a high-risk profile based on the study findings and a previous model (1). For patients with one or more of the following risk factors, the words “At high risk of falling” were to be written on the nursing care plan and measures taken to prevent falls.

- Mobility deficit.
- Previous falls.
- Multiple medical diagnoses.

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Falls among hospital patients

- Treatment with diuretics, sedatives or narcotics, and/or daytime medication capable of causing sedation, drowsiness or dizziness.
- Urinary incontinence or urgency.
- Confusion, disorientation or "altered mental state".
- Sensory deficits.
- Congestive heart failure, arthritis, cerebrovascular disease, neurological disorder, or diabetes mellitus.
- Poor appreciation of physical limitations.
- Terminal illness coupled with continuing mobility.
- Acute deterioration in condition over preceding 24 hours.

The patient accident form was revised to allow the collection of information on falls and the recording of medical follow-up. Nurses were asked to follow up the patients and record measures taken to prevent further falls, in accordance with guidelines issued by the committee.

Falls before and after introduction of the falls alert system

<table>
<thead>
<tr>
<th></th>
<th>During previous 6 months</th>
<th>During subsequent 6 months</th>
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<tbody>
<tr>
<td></td>
<td>(August 1986 to January 1987)</td>
<td>(February 1987 to July 1987)</td>
</tr>
<tr>
<td>Total falls</td>
<td>245</td>
<td>148</td>
</tr>
<tr>
<td>Patients who had the following numbers of falls:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>103</td>
<td>62</td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>4</td>
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<tr>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Falls/1000 patient-days</td>
<td>7.15</td>
<td>4.46</td>
</tr>
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</table>

It was decided to implement the system in adult inpatient areas other than the maternity unit. The qualified nurses in these areas were all familiar with documentation procedures and capable of assessing patients for fall risk factors and planning for fall prevention.

The system was introduced to nurses in small ward meetings. The nurse researcher, staff educators, occupational therapists and physiotherapists assisted the nurses in detecting patients at high risk of falling and guided their preventive strategies.

The wards were provided with a copy of an exploratory study containing guidelines and references on specific interventions aimed at fall prevention (2). The subjects included graduated exercise and exercise maintenance programmes for patients with defective mobility, reality orientation, management of confused patients, coping with chronic orthostatic hypotension, review of medication, monitoring of pain relief, and environmental safety.

Evaluation

A record was kept of the numbers of falls in the six months before the system was introduced and during a similar period following introduction (see table).

The accident reports of the 97 patients who fell in the first six months after the
introduction of the system revealed that the highest fall rate was in the assessment and rehabilitation unit, and that the next highest was in medical wards. The patients in the assessment and rehabilitation unit were mostly elderly people who had difficulty with self care or support care for individual daily activities and showed potential for rehabilitation towards a higher level of self care.

The risk of falling was greatest between 9.00 hours and 10.00 hours. In some areas where the risk of falling was high it has been possible to allocate extra nursing staff to cover this period of intense activity.

Over 60% of the patients who fell once were partly or wholly dependent on nurses for assistance with ordinary activities when the falls occurred. Of the patients who fell more than once, 31% became more dependent on nurses for care between falls. Thus nurses should realize that the risk of falling may increase with a patient's dependence on nursing staff.

Patients who fell more than once were receiving 3.34 medications daily on average, whereas for those who fell once only the corresponding value was 2.38 medications daily. All patients who fell more than once were on medication of some kind, but 26% of those who fell once only were not receiving any medication.

The revised accident reporting form required nurses to comment on the mental state of patients when they fell, and this was considered in relation to the drugs being administered (analgesics, antidepressants, sedatives, diuretics, laxatives, anti-diabetics, or drugs with hypotension as a side-effect). The observations suggested that the medication given to patients who fell should be reviewed in case it was increasing the risk of falling by causing disorientation.

Of the patients who fell once, 50% suffered no injury whereas 80% of patients who fell more than once were injured in at least one fall; 41% of the patients who fell sustained skin injury and 3% suffered serious injury involving fracture or joint damage. There was a marked potential for injury in patients who fell repeatedly. The early detection of a pattern of falls and the planning and implementing of specific interventions could
help to prevent these patients from sustaining serious injury.

Audits of the hospital-wide patient safety standard in March 1987 and January 1988 revealed 75% and 88% compliance respectively. The main area for improvement was that of the detection of fall risk factors or fall patterns in individuals and the implementation of specific interventions to prevent falling.

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The falls alert system in Nelson Hospital aims to prevent patients from falling. It involves individual assessment, preventive planning, and evaluation. For patients who fall more than once it demonstrates the need to detect patterns of falls in individuals and thereby to arrive at preventive measures.

Given the physical, emotional and social traumas that can result from falls, the effort to diminish their frequency is certainly worthwhile.

References


Afraid of falling

Various complications of falls may occur [in elderly people] who are unable to rise again and cannot summon assistance; these include pneumonia, hypothermia, pressure sores, and rhabdomyolysis [wasting of muscles]. Another consequence of falling, which may be of much greater significance than is generally realized, is the fear of further falls, in both the victim and the carers. Fear may inhibit mobility, and this is likely to increase the risk of further falls by impairing neuromuscular function and fitness. Fear of falls may lead carers to seek the provision of services, such as home helps and nursing auxiliaries, which may reinforce the old person's pattern of reduced activity. Fear of falls may lead to premature and unnecessary institutionalization.