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The National Clinical Audit of Falls and Bone Health—secondary prevention of falls and fractures: a physiotherapy perspective

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Abstract

Objective To establish current physiotherapy practice in the secondary management of falls and fragility fractures compared with national guidance.
Design Web-based national clinical audit.
Participants Acute trusts ($n = 157$) and primary care trusts ($n = 146$) in England, Wales and Northern Ireland.
Results Data were collected on 5642 patients with non-hip fragility fractures and 3184 patients with a hip fracture. Those patients who were bedbound or who declined assessment or rehabilitation were excluded from the analysis. Results indicate that of those with non-hip fractures, 28% received a gait and balance assessment, 22% participated in an exercise programme, and 3% were shown how to get up from the floor. For those with a hip fracture, the results were 68%, 44% and 7%, respectively.
Conclusions Physiotherapists have a significant role to play in the secondary prevention of falls and fractures. However, along with managers and professional bodies, more must be done to ensure that clinical practice reflects the evidence base and professional standards.

Keywords: Physiotherapy; Accidental falls; Bone fractures; Clinical audit

Background

Falls are a common problem in the UK, affecting one-third of people aged over 65 years and half of those over 85 years of age, leading to high levels of mortality [1] and morbidity [2,3]. Falls are the most significant risk factor for fractures, with 90% of hip fractures occurring as a direct result of a fall [4]. Fragility fractures are the most common significant injury due to falls, with UK healthcare costs in 2000 estimated at £2 billion [5]. The majority of these costs relate to hip fracture [1], where only 20% of people regain their pre-fracture level of mobility and function [6] and many will become more dependent [1]. In addition, there are high costs in terms of reduced quality of life for older people. Salkeld *et al*. [7] reported that 80% of older women would rather die than suffer a poor outcome, such as having to move into a nursing home, after a hip fracture.

Multifactorial risk assessment and targeted treatments have been shown to be effective at reducing falls in older people [8–11], although some doubt remains about the effectiveness of these interventions and the best way to organise services. Successful interventions vary widely in terms of content and evaluation, and this has led to difficulties in interpreting the evidence base. A recent systematic review and meta-analysis of multifactorial assessments [12] suggested that the evidence was limited and effectiveness was uncertain, although those falls services providing both assessment and management of falls appear to be more beneficial than those that refer on to other services or provide advice alone.

Exercise prescription is a core skill of physiotherapists and there is now strong evidence that targeted exercise, incorpo-

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rating progressive strength and balance training, is effective at reducing falls among community-dwelling older people [8,10,13–22]. However, not all exercise is effective, and it may be contra-indicated in some circumstances [10,23].

To date, systematic reviews have failed to report significant reductions in falls with physiotherapy or exercise among people with Parkinson's disease or stroke [10,24]. There is some evidence that multidisciplinary falls prevention interventions may be effective at reducing the risk of falls among those with cognitive impairment, but not for reducing falls in this population [25].

Over the past decade, a number of guidelines and policy documents have been produced relating to falls and injury prevention [23,26–29]. In 1999, the Chartered Society of Physiotherapy (CSP), in partnership with the College of Occupational Therapists, led a national sentinel audit on the rehabilitation of older people who had fallen. The results led to a number of recommendations including the need for an improvement of record keeping, the promotion of collaborative working and the development of models of good practice [30].

In 2005, the Clinical Effectiveness and Evaluation Unit of the Royal College of Physicians was commissioned by the Healthcare Commission to undertake an audit of acute trusts in England. The aim of the audit was to review the organisation and delivery of falls services following publication of the National Service Framework for Older People and the National Institute for Health and Clinical Excellence's guidelines for falls prevention [31]. An initial organisational audit indicated that 74% of participating trusts reported having an integrated falls and bone health service; however, the system for the identification of suitable patients was poor. A subsequent clinical audit was carried out and is reported here.

The clinical audit focused on two main areas: (a) the pre- and post-operative management of hip fractures; and (b) the secondary prevention of falls and further fractures. The purpose of this paper is to report the results of the latter in relation to physiotherapy, and to discuss how these results can be used to improve practice and service development.

Methods

The national clinical audit was managed by the Royal College of Physicians with the support of a multiprofessional and multi-agency steering group which included physiotherapists. All acute trusts ($n = 173$) and primary care trusts ($n = 174$) in England, Northern Ireland and Wales were invited to take part in the audit. Participating sites were required to select the first 40 consecutive patients with a non-hip fragility fracture and the first 20 patients with a hip fracture during the period 1 October 2006 to 31 December 2006. In order to be included, patients were required to be aged 65 years or more, and the fracture had to be the result of a fall, defined as 'an event whereby an individual comes to rest on the ground or other lower level with or without loss of consciousness'. Patients were excluded if they: (a) had sustained simultaneous fractures; (b) had a life expectancy of less than 1 year; (c) died within 3 months of falling; (d) had not attended an accident and emergency department for at least 5 days after falling; or (e) normally resided out of area. Those collecting data were provided with support, both written and via a helpdesk team, in order to upload data into the web-based tool. Many items had binary (yes/no) responses with additional options as appropriate; for example, where the auditor felt that an item was not relevant for a particular patient. These included activities such as taking part in a strength and balance programme when the patient was bedbound. Data collection took place between April and July 2007 using a web-based tool. One hundred percent compliance with the audit tool was expected. The full audit methodology is described elsewhere [32,33].

As this piece of work was classified as a clinical audit, research ethics and governance approvals were not required.

For an exercise programme to be considered evidence based, each of the following components were required: (a) individually targeted; (b) progressive group or home-based exercises; (c) standing balance training; and (d) planned to continue for at least 10 weeks [22]. The prescription of a falls prevention exercise programmes is usually by a qualified physiotherapist, but it was recognised that many programmes are delivered by other professionals. However, all programmes should be monitored and progressed by a physiotherapist or suitably qualified exercise instructor [22].

Results

Of the acute trusts, 172/173 (99.5%) signed up to take part in the audit and 157/172 (91%) were recruited and submitted data, in conjunction with 146/174 (84%) primary care trusts. Data were collected on 5642 non-hip fracture cases and 3184 hip fracture cases; 99.8% (3179/3184) of patients with a hip fracture were admitted to hospital compared with 34% (1942/5642) of patients with a non-hip fracture. Table 1 shows the physiotherapy-related assessments and management of older people with fragility fractures.

Assessment

Of the hip fracture patients, the auditors considered that 94% (2982/3184) were appropriate to receive a gait, balance and mobility assessment, and 1% (30/2982) declined. For those with other fractures, 91% (5151/5642) were appropriate for mobility assessment, and 1% (65/5151) declined. However, of those with non-hip fractures, only 28% received an assessment compared with 68% of those who broke their hip. Further exploration of the data found that patients who had sustained a non-hip fracture but who were admitted to hospital fared much better in terms of receiving a physiotherapy assessment to identify future falls risk than patients