Community care: Safety and injury risks for patients and staff when care is provided by solo or team working

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As many countries are seeking to deliver more care in the community there are new challenges for the care delivery services. One of these challenges is the safety of caregivers (formal and informal) and patients when care (including hygiene and mobility assistance) is delivered by staff working alone or as part of a team within a single organisation, interagency working or student supervision. In the UK the Health and Safety Executive advises that employers should consider risks associated with physical safety (e.g. lifting), violence and aggression, and communication (e.g. language). This paper reports the method and framework for a systematic literature review to consider caregiver (formal and informal) and patient safety and injury risks during home care and treatment in the community. It focuses on physical risks while carrying out a range of care procedures from treatment (e.g. pressure ulcer care) to hygiene and mobility.

Practitioner Summary: Patient and caregiver safety and injury risks in the community is an expanding field of investigation which aims to identify activities and situations needing proactive risk management for care and treatment services.

Keywords: Patient and caregiver safety, injury risk, home and community care, systematic review solo/team working

1 Introduction

As many countries are seeking to deliver more care in the community (at patient's homes) there are new challenges for the care delivery services. There are different models of home care, for example, hospital in the home (Duke et al, 2012) and patient-centered medical home (Bitton et al, 2012). A study of elderly care in France found that 'more than 1 million people aged 60 years and older need assistance from another person to perform at least one ADL [activity of daily living] (bathing, dressing, going to toilet, eating, transferring, getting outside) and about 2.5 million persons for at least one IADL [instrumental activities of daily living] (shopping, food preparation, housekeeping)' (Davin et al, 2005). They suggested that the need for assistance was based on both functional limitations and the social and environmental setting.

One of the challenges to providing care and treatment at the patient's home is the safety and risk of injury to caregivers and patients when care is delivered by staff working alone (HSE, 2009) or as part of a team (Simon et al, 2008). This could be within one organisation (Markkanen et al, 2007), interagency working (Miller and Cameron, 2011) or student supervision (Leh, 2011). The HSE (2009) advises that employers should consider:

- Does the work involve lifting objects too large for one person?
- Is there a risk of violence and/or aggression?
- Are there any reasons why the individual might be more vulnerable than others and be particularly at risk if they work alone (for example if they are young, pregnant, disabled or a trainee)?
- If the lone worker's first language is not English, are suitable arrangements in place to ensure clear communications, especially in an emergency?

This paper reports the method and framework for a systematic literature review to consider caregiver (formal and informal) and patient safety and injury risks during home care and treatment in the community. It includes a wide range of care procedures from treatment (e.g. palliative care) to daily living care (hygiene and mobility).
2 Method

The complexity of the topic proved challenging for literature searching. A string search was run on specific databases (e.g. HMIC, Cinahl, Health Business Elite, Medline, Scopus, AMED (OvidSP), Cochrane Library) and supplemented by other search strategies (grey literature, exploding reference lists etc.). The searches were divided into three areas to combine concepts for safety (A+B+C), working practices (A+B+D) and equipment (A+B+E).

A. Patients in their own home
B. Patient handling/moving and lifting
C. Safety, risks, injuries (patients and caregivers)
D. Working practices (solo working, teamwork etc.)
E. Use of equipment (hoists, lifts etc.)

The first set of keywords were agreed and tested in preliminary searches for Medline and ASSIA using the following example string search: (housebound OR homebound OR "community care" OR domiciliary OR "home care" OR "house bound" OR house OR "home health*" OR domestic OR "district nurs*" OR "at home" OR "own home") AND ("lifting and moving patients" OR "mov* patient*" OR lifting OR "patient handling" OR "manual handling" OR "assisted mobility" OR "people handling" OR positioning OR reposition OR turning) AND (safety OR injury* OR risk* OR occupational). The results were reviewed for relevance and additional keywords were added from retrieved references. The Medline search was adapted and then the same search string was used in HMIC, Health Business Elite, BNI and AMED. The ASSIA search was also revised and extended, resulting in 3 strings (Fig. 1). These formed the basis for searching PsycInfo, Scopus, Cochrane Library and Social Science Citation Index (Web of Science). Minor modifications were needed for individual databases; in Scopus and SSCI the terms domestic and positioning were removed as they resulted in many irrelevant references. ‘Domestic’ mapped to financial markets and ‘Positioning’ automatically truncated to position which brought up hundreds of irrelevant references. In order to limit searches to references about humans (Scopus includes agriculture and veterinary literature) an additional line was added to the 3 searches: (patient* OR carer* OR nurs* OR therapist* OR healthcare OR elder*).

Search 1.
(housebound OR homebound OR "community care" OR domiciliary OR "home care" OR "house bound" OR house OR "home health*" OR domestic OR "district nurs*" OR "at home" OR "own home") AND ("lifting and moving patients" OR "mov* patient*" OR lifting OR "patient handling" OR "manual handling" OR "assisted mobility" OR "people handling" OR positioning OR reposition OR turning) AND (safety OR injury* OR risk* OR occupational OR accident* OR "health and safety" OR exert* OR overexert* OR strain* OR "back pain" OR "neck pain")

Search 2
(housebound OR homebound OR "community care" OR domiciliary OR "home care" OR "house bound" OR house OR "home health*" OR domestic OR "district nurs*" OR "at home" OR "own home") AND ("lifting and moving patients" OR "mov* patient*" OR lifting OR "patient handling" OR "manual handling" OR "assisted mobility" OR "people handling" OR positioning OR reposition OR turning) AND (solo or lone or alone or team* or "with help" or "without help")

Search 3
(housebound OR homebound OR "community care" OR domiciliary OR "home care" OR "house bound" OR house OR "home health*" OR domestic OR "district nurs*" OR "at home" OR "own home") AND ("lifting and moving patients" OR "mov* patient*" OR lifting OR "patient handling" OR "manual handling" OR "assisted mobility" OR "people handling" OR positioning OR reposition OR turning) AND (equipment OR hoist* OR sling* OR sheet* OR ergon* OR belt* OR device* OR mechan* OR engineer* OR "bath* aid" OR "hygiene aid")

Figure 1. String searches for ASSIA, PsycInfo, Scopus, Cochrane Library, Social Science Citation Index
2.1 Inclusion/exclusion

References were screened at 3 levels:

1. Database inclusion criteria by setting the search to all languages where the paper had an English abstract, (1980-), worldwide (region), adult (age range) and any study type.
2. Review by title and abstract
3. Review full paper

These inclusion/exclusion criteria were adapted during the review process (emerging exclusion criteria) and the full dataset was checked for inclusion/exclusion before proceeding to critical appraisal. The study type was revised to exclude references from dissertations, conference abstracts or professional opinions. The location of care was scrutinised to exclude literature on hospital care, nursing home, residential care homes, and ambulance or emergency care.

References were retained if they investigated, reported or reviewed safety events or risks associated with interactions between patients and caregivers during physical care delivery, and solo or team working (including physical assistance, medication or equipment checking activities). References were excluded if the care involved:

- Remote monitoring technology rather than delivering care, for example falls sensors (accelerometers), dementia location (wandering) monitors and cardiac monitors. However monitoring during dialysis was included as it could involve caregiver attendance at the home.
- Pharmacy/medication errors unless being directly administered by a caregiver (e.g. team to check)
- Discharge planning and transitions in care (e.g. pre-discharge home visit)
- Care in the community for learning disabilities with live-in care
- Emergency response.

2.2 Review and Critical appraisal

A preliminary framework (scope) has been developed for the full dataset review (final inclusion check) before critical appraisal. The included references will be grouped by task and equipment (similar to Hignett et al, 2003), summarised (data extraction) and discussed (data synthesis) in the context of a critical appraisal score (Pluye et al, 2009).

3 Results

The database search produced 1613 references (Table 1.). These were screened by title and abstract and checked for duplication (between databases) resulting in 188 included papers. The review stages both reduced the number of references through further screening and also added references by exploding relevant reference lists from individual papers. The retained references are being categorized into caregiver or patient related safety issues. These include:

- Caregivers (formal and informal): musculoskeletal injuries; overexertion; stress; falls, knowledge for safe practice (novice versus experience); infection risks from, for example handling of respiratory equipment, wound treatment; sharp medical device (needle stick) injuries (e.g. hepatitis, Lenz et al, 2004); violence and aggression.
- Patients: falls (when being assisted/moved by caregivers); infections (wound, urinary tract etc.); adverse outcomes from medication errors (Craftman et al, 2013).

Treatment and care provision in the community was reported for a range of clinical and health needs including diagnostic tests (e.g. flexible bronchoscopy, Samolski & Dure, 2011), total parental nutrition, dialysis, pain management, pressure care, acute deep vein thrombosis, activities of daily living (assistance with mobility, bathing, eating etc.), rehabilitation, post-operative care, chronic diseases (including respiratory, stroke, neuromuscular) cancer, dementia, palliative and end of life care.
Table 1. Search results.

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4 Discussion and Conclusion

Home care staff are known to be at risk of musculoskeletal disorders (MSDs) and it is often assumed this only relates to moving and handling activities but there are other contributory work factors e.g. static postures, and psychological job demands (Cheung et al, 2006). Using the issues raised by the HSE (2009) guidance as a preliminary framework, research was found that identified risks associated with over-exertion (e.g. lifting objects too large for one person) and violence and/or aggression (Galinsky et al, 2012). For lone (solo) workers who are not working in their native language Manthorpe et al (2012) identified issues with ‘communication … experienced by people using care services, or family carers speaking on their behalf, of understanding and being understood by care workers whose spoken English was not easy for them to comprehend’.

A further example comparing solo and team working was reported for the use of floor and ceiling (overhead) hoists (Dutta et al, 2012; Santaguida et al, 2005) with the recommendation that ceiling hoists should be used in the home care environment where there may be a high percentage of solo caregivers. Informal caregivers are also at risk; Brown and Mulley (1997) explored the occurrence of physical injury reported by informal caregivers associated with moving and handling elderly dependants and found (from their sample group) that over 50% had sustained injuries whilst lifting and handling associated with caregiving tasks. Craftman et al (2013) explored the workload of district nurses (DNs) with respect to delegation of administration of medicine. They found that although training was provided for home care aides the DN’s had to be available to support and monitor activities (team working).

Risks associated with team and solo working can be discussed using a HFE framework (physical, cognitive and organisational, Hignett et al, 2013). The physical risks include managing challenging behaviour (e.g. aggression incidents for people with dementia), mobilising for daily activities (including hygiene) and rehabilitation, (re)positioning (pressure care), treatment (wound dressing), equipment use and management. The cognitive risks relating to solo working include medication checking and peer support, some of these could potentially be delivered through the appropriate media (e.g. telephone or video support) or telecare systems. However some cognitive support will need to be delivered in person, e.g. emotional support in palliative care services or communication for translation and visual/hearing impairment. The organisational
aspects of solo/team working include supervision (e.g. professional and educational support) and provision of monitoring or audit systems.

5 References


