Description, and pilot evaluation, of novel staff education to improve care of confused older inpatients

AUTHORS

Barbara Horner
PhD, MEd, BAppSc, RN
Associate Professor Ageing and Dementia
Curtin University, Bentley, Western Australia
B.J.Horner@curtin.edu.au

Natasha Watson
BSc PGradDipHlthProm
Project Officer, WA Centre for Health and Ageing, The University of Western Australia, Crawley, Western Australia
Natasha.watson@health.wa.gov.au

Anne-Marie Hill
PhD MSc (Physiotherapy), Grad Cert University Teaching, BAppSci (Physiotherapy)
Research Fellow, Senior Lecturer, School of Physiotherapy, The University of Notre Dame Australia, Fremantle, Western Australia.
Anne-Marie.Hill@nd.edu.au

Christopher Etherton-Beer
MB BS, PhD, FRACP
Professor, WA Centre for Health and Ageing, The University of Western Australia, Crawley, Western Australia
Christopher.etherton-beer@uwa.edu.au

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KEY WORDS

ageing, confusion, education, falls, geriatrics

ABSTRACT

Objective
To determine feasibility of novel staff education aiming to optimise care for confused older people.

Design
Pre/post qualitative study.

Setting
Tertiary teaching hospital.

Subjects
Clinical staff in two geriatric medicine wards.

Interventions
Self-directed learning modules, with access to an education resource officer to reinforce learning in real time.

Main outcome measures
Primary outcomes were feasibility (proportion of staff completing the education) and perceived effectiveness (measured in focus groups and individual interviews).

Results
Twenty-six staff agreed to undertake the education; six confirmed completion of the entire learning package. Participants were enthusiastic about education regarding confused older people. Participants who completed the education modules reported they were satisfied with the format and content of the learning materials, but cited time constraints as a major barrier.

Conclusion
Participants expressed need and enthusiasm for education but uptake of the package was less than anticipated. Organisational support (such as providing staff with protected paid time to complete education) may be required to improve adherence.

INTRODUCTION

The prevalence of cognitive impairment in Australia is increasing due to an ageing population. Health professionals will therefore be required to care for larger numbers of older people living with chronic neuro-degenerative impairments. Older people are admitted to hospitals with greater frequency (Oliver 2007; Rothschild et al 2000) and have longer admissions than younger people (AIHW Bulletin 53, 2007). Hospital admissions are associated with substantial risk of iatrogenic harm (functional decline and other adverse outcomes) among older people who are physically or cognitively frail (Podrazik and Whelan 2008; Inouye et al 1993; Gillick et al 1982). Inpatient falls are the most common adverse event (Healey et al 2008), and are associated with substantial costs to individuals and health systems (Oliver 2007).

Due to the increasing prevalence of dementia, many older people admitted to acute care settings are more likely to have pre-existing cognitive impairment (Podrazik and Whelan 2008; Siddiqi et al 2007; Douzenis et al 2010). People with pre-existing cognitive impairment frequently experience acute confusion and associated decline in cognitive function (delirium) related to the medical problem that necessitated admission to hospital (Siddiqi et al 2007; Fick et al 2002; Inouye, Wagner et al 1993). There is evidence that acute confusion is often under-recognised in acute care settings (Foster et al 2010). In addition, the researchers found that older people admitted to acute care are almost universally at high risk of delirium (Foster et al 2010). Other recent studies also report under-recognition and lack of treatment protocols for delirium (Young et al 2008; Rockwood 1999).

To date, there are few data determining how to reduce falls among people with cognitive impairments. This study has shown that self-directed patient education (reinforced by a health professional) is effective for prevention of falls among people with intact cognition admitted to acute care. However provision of education to people with impaired cognition was actually harmful (Haines et al 2011). The authors theorised that harm may accrue because cognitively impaired people have difficulty understanding, retaining, and translating falls prevention messages.

Staff education has been a component of some previous multi-factorial falls prevention initiatives (Renteln-Kruse and Krause 2007; Fonda et al 2006), and is likely to be the key to translating research evidence regarding best practice care of confused older people to acute care settings. However, translation of knowledge and management guidelines to practice is often difficult in busy clinical environments (Weinert and Mann 2008; Brennan et al 2004). Major barriers identified include time, staff education and rapid staff rotation (Inouye et al 2000). Researchers and hospital staff remain uncertain about which educational approach may be most effective in maximising knowledge and skills in the recognition and management of acute confusion on acute medical wards.

The researchers have therefore designed a pilot study to evaluate a novel, multi-modal staff education intervention focused on care for older confused patients. The aim of the study was to determine the feasibility of the proposed educational intervention in acute hospital wards.

METHOD

Ethics

This study was approved by the Royal Perth Hospital Human Research Ethics Committee. Written informed consent was provided by staff participating in individual interviews and focus groups, and from family members participating in follow-up telephone interviews.

Study design and setting

A pre-post mixed methods design was used. The study was conducted in two acute aged care wards (38 beds) at a 732 bed tertiary teaching hospital.

Participants

All clinical staff working in the two wards were approached by one investigator who attended ward staff meetings and daytime handovers for a two-week period to explain the aims of the study and distribute participant information sheets and consent forms. In addition to completing the education intervention, staff were invited to participate in a focus group and/or individual interview. Families of patients admitted during the study period were recruited by information packs left at patients' bedsides for staff to hand to visiting family members. Family members were invited to i) return a survey; and ii) participate in a follow-up interview three weeks after their family member was discharged from hospital.

Intervention

The intervention comprised an engagement phase (two weeks), formal education delivery (four weeks) and reinforcement phase (two weeks). The engagement phase comprised a ward meeting to introduce the project, explain its aims and encourage staff to complete the education package; and profiling of the study at handovers, facilitated by the ward staff development nurse. In addition, an investigator met individually with ward leaders (the ward manager, and staff development nurse). The formal intervention comprised an education package previously developed and used in an acute setting and freely accessible online (http://cra.curtin.edu.au/wadtsc/self_directed.cfm). This package aims to equip staff with the knowledge and skills to deliver evidence based care for medical inpatients with confusion. The three online learning modules were developed, supported by the WA Dementia Training Study Centre (led by one investigator), following a study that examined the knowledge of nursing staff regarding the assessment of patients with cognitive impairment (Hare et al. 2008). In the present study, staff had the option of completing the modules online, or in hardcopy format. In the present study, the education intervention included an education resource officer (who was an experienced nurse educator; see acknowledgements) who offered de-briefing to each staff member who completed the self-directed program, and attended on the ward to offer immediate support to staff in real time. The education officer attended for a total of 38.5 hours (generally for two hour blocks for four days per week) over the four-week intervention period.

Outcome data

Feasibility was measured by the proportion of staff completing the education package and their satisfaction (recorded using a feedback survey distributed with the education packages, and in focus group/interview feedback). Knowledge was measured by conducting pre- and post- module questionnaires (available as a component of the on-line package). Attitudes were surveyed using the UCLA geriatric attitudes scale (Reuben et al 1998).

Data collection

Staff who had consented to participate in the education intervention were personally handed pre/post knowledge surveys, reply paid envelopes and a feedback form with their education packs. Staff were able to post surveys back using the envelopes provided or place them in a collection box on the wards. Qualitative data were collected in semi-structured interviews and focus groups with staff conducted by one investigator prior to and after the intervention period. At baseline, a focus group of four staff was held and two individual interviews were conducted. After the intervention period, three individual interviews were conducted. These examined educational preferences, barriers and enablers relevant to education prior to the intervention and perceived change and feedback measures after the education process was completed.

Audit data were collected by one investigator for all consecutive patients admitted to the intervention wards for two weeks prior to, during, and two weeks after, the intervention period. We audited age, diagnoses, living situation, documented delirium diagnoses, use of restraints, indwelling urinary catheters and regular psychopharmacologic therapy, cognitive screens, and length of stay. The audit utilised inpatient records and

the wards' incident data. Notes for all patients were audited at baseline. Additionally, notes for 75 (31%) of patients admitted during the study period were audited at discharge. When notes could not be accessed on the ward after discharge, discharge summaries were reviewed.

Incidents of falls reported using the hospital's incident reporting system were monitored on a monthly basis. Family involvement in care was measured using the F-Involve family survey (Reid et al 2007), which was modified for the acute care setting with the original authors' permission, and follow up interviews. F-involve surveys were left in the bed tray for each individual patient, along with the participant information sheet during the eight week study period. Ward staff were asked to draw the attention of visiting family members to the survey and encourage them to complete and return the survey. Surveys were returned using an attached reply paid envelope. For those families who consented, contact was made by telephone three weeks after their relative's discharge to collect further qualitative data regarding the family member's perceptions of their involvement in care.

Data handling and statistical analysis

Audit data were handled in SPSS and summarised descriptively. Qualitative data from focus groups and individual interviews were recorded on a digital voice recorder and transcribed. Transcripts were de-identified, and a thematic analysis was completed initially by one investigator. Analysis and resulting themes were then reviewed by all investigators and consensus of themes was achieved.

FINDINGS

Patient data during the study period

There were 245 individual patients admitted to the study wards over the eight week period. Patient characteristics are presented in table 1. A cognitive screen within 48 hours of admission was documented in 129 cases (53%). Only 14 patients had a cognitive screen near discharge (6%). Confusion was noted in the records of 81 patients (33%), with delirium diagnosed in 19 cases (8%). Restraints were used in 16 cases (7%). Psychopharmacologic therapy was used in 130 cases (53%). Many of these patients were taking a combination of benzodiazepines, antidepressants or antipsychotics. Fifty patients (20.4%) had an indwelling urinary catheter inserted during their hospital admission. Nine falls and one incident of injury were recorded in the month pre-intervention.

Table 1. Demographic characteristics of patients at point of admission to ward

Characteristic	Total sample n=245
Female n (%)	141 (58)
Age (years), M (IQR)†	83 (76, 88)
Admission living situation, n (%)	
Community with family or carers	109 (44)
Community alone	81 (33)
Residential facility	46 (19)
Other	9 (4)
Admission diagnosis, n (%)	
Falls, falls related injuries	61 (25)
Cardiac, respiratory	65 (27)
Functional decline	17 (7)
Confusion	23 (9)
Urinary tract infection, constipation, dehydration	41 (17)
Stroke	10 (4)
Other	38 (16)
Average length of stay in hospital (days), mean+SD	13.7 (13.5)

†M=Median, IQR= Interquartile range

Staff baseline data

Staff expressed a need for education specific to acute care. In baseline focus group participants endorsed provision of self-paced, flexible learning and opportunities to reinforce learning in clinical practice.

> *'Sometimes it is good to do things in the comfort of your own home and at your own speed....sometimes you think it's all good and then you've forgotten...so having a hard copy is good.'*

More senior staff expressed a level of frustration at frequently being asked questions by junior staff. Participants identified time as the biggest barrier to ongoing education. There was no overlap in staff handovers, making it difficult to set aside time for professional development.

> *'They say you're supposed to be able to do it within your work hours but you never are. At the end of your shift most people just want to go home.'*

Staff reported being unaware of best practice guidelines for the management of delirium. Ward leaders cited time constraints, minimal additional resources and difficulty retaining experienced staff as recurring challenges. The mean staff attitude score at pre-test was 3.5 (5 point Likert scale).

Family feedback

Family surveys were left in patient folders/bed trays for 236 (96%) of patients. In the other nine cases (4%) there was no next of kin identified, or the patient was inaccessible. Of the 236 surveys distributed, only five (2.1%) were returned to the study team. Three family members consented to follow-up phone interview and two were interviewed. One family praised the hospital for its excellent level of care and ability to preserve patient dignity, while the other perceived the admission as a very negative experience, particularly in relation to the appropriateness of communication. Both families cited important aspects of care in an acute care setting to include vigilance in monitoring for infections or other complications that may exacerbate the admitting problem, treating people as individuals rather than medical problems, conducting interventions with a caring attitude and wherever possible, providing reassurance and reorientation:

> *"There is no substitute for a listening ear and a comforting and accepting presence for the patient. It shows an important level of humanity."*

Outcomes

Out of 60 eligible staff, only six of the 26 staff who consented to participate completed the education intervention and returned pre and post test surveys. All participating staff chose to complete the education modules in hard copy rather than online. One contributing factor for this was lack of Internet access provided for junior staff at this workplace. The education officer generally engaged two to three staff at each visit. Individual staff engagement occurred each time staff were approached by the educator, but few active approaches to the educator were made by staff. Staff that completed the module reported improved self efficacy in distinguishing between dementia and delirium and in managing patients with delirium.

> *'It's hard to be assertive if you're not confident but if you're confident you can be a bit more assertive and say "no I know this is right or wrong".'*

Staff also felt that the intervention impacted upon patient care on the ward, with staff trying different strategies before utilising medication to manage delirium.

> *'Showing us how it can work in reality!'*

Staff reinforced that time was the biggest barrier to participation in the education.

> *'It is difficult – it all revolves around staffing and time.'*

The average staff attitude score at post-test was 3.6 (p=0.12). There were also no significant differences between the pre and post test knowledge scores. Five falls were recorded in the month post- intervention across the two acute care wards and there were two incidents of injury.

DISCUSSION

Main findings

Our audit data confirm that acute aged care staff frequently care for confused older people with complex needs (such as the monitoring of psychotropic polypharmacy). Our data tended to validate participants' perception of a need for education: we found evidence that many cases of delirium/acute confusion may remain undiagnosed, since confusion was frequently referred to in patient notes, but specific diagnoses were found infrequently. In comparison, restraints and psychopharmacology (which are risk factors for delirium) were used relatively frequently. Staff working in acute aged care reported need and enthusiasm for education resources. However, uptake of the package and use of support from the education resource officer was unexpectedly low. Data from some more senior staff members suggested that ongoing education of junior staff may be viewed as an extra duty and not part of core clinical duties.

Importance of findings

Although there is substantial evidence regarding the potential benefits of e-learning (Childs et al 2005) our data emphasise that staff development utilising online learning may not be suitable whilst hospital information technology resources are constrained. Other researchers have recognised time to be a significant barrier (Inouye et al 2000). Given the recurrent focus on time as a barrier to participation in education, protected time to complete modules may be required to improve adherence. The study found that recognition of learning needs by management and staff in this project did not equate to engagement, implying that future education intervention projects need to be viewed as part of clinical duties and fully supported by management and senior staff. Embedding education as part of clinical practice may require future interventions to explicitly address aspects of organisational culture such as leadership, communication and teamwork. Regular staff turnover is also reported by other authors (Inouye et al 2000) and is a challenge which should be accounted for in definitive projects.

Patients changing ward locations, and thus environments, were observed frequently in this project. This suggests that an intervention restricted to geographic wards may have limited effectiveness. The results also suggest engagement of families needs to be more direct and this may require resources for project staff to speak with family members and personally distribute survey questionnaires and invitations to participate in interviews.

Results in context of other studies

Since the landmark studies focusing on preventing functional decline among older people requiring acute care (Inouye, Acampora, et al 1993), there have been several different approaches to improving the care of confused older people requiring acute hospital admission. There is evidence that involvement of families in care continues to be sub-optimal (Bauer et al 2011). Australian data (Moyle et al 2011) also indicate substantial knowledge deficits and absence of a clear strategy to involve families in care, and suggest that care models may emphasise patients safety at the expense of their well-being and dignity. Some projects have focused on involving families in falls prevention interventions (Ryuet al 2009). Although the importance of families is now consistently acknowledged, the data highlight the difficulty of successfully engaging families.

Similarly, the concept of ward 'champions' in acute care of confused older people has also matured (Allen and Close 2010). Strategies such as identifying multiple local ward champions, and involving 'front line' staff

in implementing education interventions, may help to overcome the challenges we observed, and increase participation in educational interventions. The concept of practice redesign (as opposed to an educational intervention per se) appears to be successful, but requires substantial buy-in from participants, and support from researchers (Day et al 2009). Other groups have focused on segregated environments to care more appropriately for people identified to have dementia (Zieschang et al 2010). The utility of this approach in populations such as ours, is uncertain given that a substantial proportion of the population are confused, or at high risk of delirium. (Foster et al 2010).

Strengths

Although a small pilot study, this work has several strengths. The authors tested a generic intervention, relevant to people with both chronic confusion (dementia) and acute confusion (delirium). The study was pragmatic and is likely to be generalisable to the 'real world' facing future researchers. The authors piloted use of a range of objective measures and used mixed methods to collect both qualitative and quantitative data. To the authors knowledge, these data are novel, comprising the first outcomes evaluation of this educational package.

Limitations

As an initial pilot feasibility study the authors restricted this study to the nursing team. Future studies need to consider how to engage the multi-disciplinary team. Frequent ward and hospital transfers limited access to notes. Very few families returned the F-involve survey (the authors recognise that many surveys may not have been passed to family), and even fewer consented to a follow-up telephone interview. Those that did respond had strongly held beliefs regarding their experiences, which are unlikely to be representative (volunteer bias).

CONCLUSION

Staff recognised the need for, and were generally enthusiastic about, ongoing education regarding care of confused older people in the acute care setting. Time constraints were cited as a major barrier to education, and uptake of the education intervention was low in spite of the numbers of confused patients on the ward. Organisational commitment to continuous improvement and recognition of the role education plays in quality care is required.

RECOMMENDATIONS

Future interventions need to be designed specifically to be relevant to the acute care setting, working to overcome barriers, and harnessing the facilitators relevant to that sector (such as availability of managers and staff development personnel). Organisational support (such as providing acute care staff with protected paid time to complete the education) may be required to improve adherence.

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