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Making decisions about delirium: A qualitative comparison of decision making between nurses working in palliative care, aged care, aged care psychiatry, and oncology

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Abstract

Background: Delirium has a significant impact on nursing practice from diagnosis and management, with under-detection and variable management of delirium being international problems. This study aimed to explore nurses' assessment and management of delirium when caring for people with cancer, the elderly or older people requiring psychiatric care in the inpatient setting.

Methods: Participants in this qualitative study were nurses working in Australian public hospital inpatient dedicated units in palliative care, aged care (geriatrics), aged care (geriatric) psychiatry and oncology. Semi-structured interviews were used to explore nurses' views about specific areas of delirium assessment and management. Purposive sampling was used and interviews conducted until thematic saturation reached. A thematic content analysis was performed from a grounded theory perspective.

Results: A total of 40 participants were included in the study. The analysis revealed four broad analytical themes: (1) superficial recognition and understanding of the operational definition of delirium or recognition of delirium as a syndrome; (2) nursing assessment: investigative versus a problem solving approach; (3) management: maintaining dignity and minimizing chaos; and (4) distress and the effect on others.

Discussion: Nurses have limited knowledge of the features of delirium regardless of their specialty discipline. Delirium was uniformly identified as a highly distressing experience for patients, families and staff alike. The majority of nurses had a superficial understanding of delirium management, and adopted a task-orientated approach aimed at addressing the more noticeable problems. These findings have implications for both education and knowledge translation. Innovative approaches are needed to align health professional behaviours with best evidence delirium care.

Keywords

cancer care, decision making, delirium, geriatric psychiatry, geriatrics, nursing, palliative care

Introduction

Delirium is prevalent in people with cancer and in older people, in acute and subacute health settings.[1-6] Delirium has a significant impact on nursing practice. This includes nurses needing to make sense of delirium features and diagnosis,

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formulating management strategies, dealing with family distress and maintaining patient and staff safety.[7,8] Delirium has been referred to as the 'silent unspoken piece of nursing practice' impacting on workload.[7,8] Nurses deal with the unpredictable and fluctuating condition of delirious patients, which may be a signal of impending 'chaos'.[9,10] Unrecognized and undertreated delirium is associated with poor outcomes such as medical complications, increased length of stay, institutionalization and death.[11,12] Witnessing delirium symptoms is associated with caregiver anxiety, and support and explanation provided to families can shape their perceptions of delirium.[13,14]

The diagnosis of delirium using the *Diagnostic and Statistical Manual of Mental Disorders* Fourth Edition, Text Revision (DSM IV TR) criteria relies on the recognition of changes in cognition which develop short period of time and fluctuation, and are temporally associated with a precipitating medical cause(s).[15] Nurses are in an optimal position to detect fluctuating symptoms of delirium yet it has been clearly demonstrated that these signs often go unrecognized.[16-20] Under-detection of delirium relates to a lack of knowledge of the criteria for identifying delirium, failure to relay or communicate detected symptoms at onset, a lack of thorough observation or incorrect interpretation of witnessed patient behaviours, and fear of offending patients or lack of confidence in undertaking a cognitive assessment.[9, 21-24] In inpatient oncology and palliative care settings, patients with advanced disease may be significantly medically unwell, whilst pre-existing cognitive impairment is not uncommon in many older people with cancer, which amplifies the challenge of noticing subtle cognitive changes or new precipitant medical conditions that manifest as delirium.

Nurses need to have the capability to navigate through the various pharmacological and non-pharmacological management options for delirium available, and also consider issues that may exacerbate delirium symptoms such as urinary retention, constipation, sensory impairment and pain. 'As required' medications give the nurse choices to treat individual symptoms prior to a definitive physician diagnosis of delirium. Nurses also need to communicate the delirium diagnosis or symptoms they have identified to their medical colleagues, to allow definitive management to improve patient outcomes.

There is limited literature about the experience of nurses caring for confused patients in surgical, acute medical and palliative care settings.[7, 9, 25,26] These studies have identified that the care of the confused patient is often stressful and distressing, with highly variable assessment and management strategies.[7, 9, 25,26] Focus of care was often on 'controlling the situation', keeping an eye on the patient and reliance on behavioural symptoms as a clue for delirium.[7,26] The experiences of nurses in oncology, geriatrics or geriatric psychiatry settings have not been compared directly before.

The aim of this qualitative study was to explore nurses' assessment and management of delirium when caring for people with cancer, the elderly or older people required psychiatric care in the inpatient setting.

Methods

Design

Semi-structured interviews were used to explore nurses' views about defining, diagnosing and managing delirium, the aetiology of distress for patients and caregivers and their level of confidence in management. Human Research Ethics approval and approval from the inpatient unit management where the study was conducted were obtained.

Setting and participants

All nurses working in public hospital inpatient dedicated units in palliative care, aged care, aged care psychiatry or oncology in South West Sydney were eligible to participate. In Australia, aged care psychiatry is a subspecialty of psychiatry concerned with the mental health of the aged (equivalent to geriatric psychiatry). Aged care (geriatric) units in Australian hospitals provide acute medical care and some convalescent/rehabilitation care to older people. Inpatient oncology units care for medical, radiation and haematological oncology patients who require acute care for problems due to the malignancy or its treatment and can include those with early or advanced disease. Specialist palliative care inpatient units provide inpatient care for patients with life-limiting illness who have complex physical symptoms or psychosocial needs, with the aim of stabilizing these to enable discharge, but also in some cases terminal end-of-life care. In the palliative, oncology and aged care psychiatry settings nursing care is provided by registered nurses supported by a smaller or equal number of enrolled nurses. In the acute aged care units and one of the palliative care units the registered nursing workforce is augmented with one care assistant per shift who assists with personal care, rather than enrolled nurses alone.

The nurse participants had to be working predominantly in their respective inpatient specialty area for at least 6 months and a minimum of 15 hours per week. The participants were approached by the relevant Nurse Unit Manager of the unit and those who indicated interest were then contacted face to face or via the telephone to discuss the study further. Purposive sampling was used to make sure different shifts, different durations in specialist fields and those with or without postgraduate qualifications in the specialist field were represented.

Data collection and analysis

Demographics for the participants were collected (age, gender, shift type they work predominantly [day, night, both], duration of work in the inpatient unit [months], total years in nursing and postgraduate qualifications in their respective inpatient specialty area).

The semi-structured interviews were conducted in person by two female research registered nurses who had significant clinical palliative care and general nursing experience, but had no management or clinical roles within any of the settings. The research nurses have qualitative research experience and familiarity with clinical issues of delirium. The question route was structured to allow for a thorough exploration of the issues identified from the literature, with open-ended questions prompts, to guide the interview. The authorship team include senior nurses, physicians and also managers and it was deemed that the participants may have found such interviewers threatening or judging their work performance and hence not have felt free to discuss their views with them directly. The interviews were conducted at a convenient location for the participant, which was usually a meeting room specifically booked for the interview in their hospital workplace but not within their ward.

The interviews were audio-taped, saved as a digital recording in de-identified format and then transcribed verbatim. The research nurses also documented notes immediately after each interview if there was a specific theme or observation in the interview to augment the transcripts. NVivo 8 (QSR International 2008) was used to organize the data. Interviews were conducted until no additional topics were raised.

A grounded theory perspective was used to develop substantive theory to better understand and interpret how nurses in a variety of clinical settings with a high prevalence of delirium work with patients with delirium with the context being pre-existing theory in this area is limited.[27,28] The transcribed material was analysed using thematic content analysis, using a constant comparative method with themes derived from the data.[29] Individual points were identified in the transcripts, and organized into mutually exclusive themes. A process of independent review and peer consensus was used to validate the findings, with all coders keeping notes of their rationale and approach to analysis. Each transcript (with accompanying research nurse notes) was read independently and coded by two researchers who discussed the coding to derive the initial coding tree (inter-coder agreement). Data and the initial coding tree were discussed with a third researcher who read 10% of the transcripts to reach consensus and finalize themes. The themes that emerged from the interviews were fed back to the interview participants in a written aggregated summary of themes and subthemes (rather than their individual transcript) with opportunity for them to provide further comment.

Results

Demographics of participants

A total of 65 participants were approached and 40 participants agreed to participate. The researchers did not have contact with the non-participants so reasons for declining participation are not known. Participant demographics are outlined in Table 1. There was a wide range for duration of work in the clinical area, from 6 months to 37 years. All of the oncology nurses were registered nurses, who also represented the majority of participants with postgraduate qualifications. Night shift was represented in all specialties except aged care. The interview duration ranged from 15 to 60 minutes, and all participants were interviewed once.

The analysis revealed four broad analytical themes: (1) superficial recognition and understanding of delirium as a syndrome; (2) nursing assessment: investigative versus a problem solving approach; (3) management: maintaining dignity and minimizing chaos; and (4) distress and the effect on others.

Data saturation was achieved for all 4 themes over the 40 participants, but not within each specialty group for theme 4 (Management).

(1) Superficial recognition and understanding of delirium as a syndrome

The description of delirium varied from ‘confusion’ to a limited but incomplete list of clinical signs. No participant referred to recognized delirium diagnostic criteria, or included all of the DSM IV criteria in their definition. Some participants were unable to define or explain what delirium actually meant.

> “It’s basically patients seeing things, […] out of themselves they’re hearing everything that’s not in the world and their surroundings. Basically they’re very confused or they don’t know where they are” (aged care participant A1).

The main clinical manifestations identified were cognitive or behavioural, with many recognizing worsening symptoms at night and sleep/wake alteration. Participants in all specialty groups referred to cognitive changes as disorientation in time, person and place, or experiencing something outside reality. The majority described hyperactive behavioural change such as agitation, wandering, verbal aggression or calling out, climbing out of bed, and pulling out intravenous cannulae or indwelling catheters. Affective and perceptual disturbances were rarely described. Hypoactive symptoms were described by very few participants in terms of the person being ‘very quiet’, refusal to allow care, not conversing, and being withdrawn from the environment.

> “They would be restless, […] saying things, incoherently, sometimes they lash out to staff. They may not eat, they may

Table 1. Demographics of the participants.

	Palliative Care	Oncology	Aged care	Aged care Psychiatry
Number of participants	10	10	10	10
Age (mean, range in years)	50 (25–59)	42 (24–66)	49 (42–62)	45 (21–60)
Duration of work in clinical area (mean (years), range)	7 (0.5–15)	5 (0.75–17)	10 (2–17)	13 (4–37)
Primary nursing qualification (*n*)*	Bachelor of nursing *n* = 2 RN *n* = 3 Diploma in nursing *n* = 2 EEN *n* = 3	Bachelor of nursing *n* = 5 RN *n* = 5	RN *n* = 6 AIN *n* = 1 EEN *n* = 1 Unknown *n* = 2	RN *n* = 2 Bachelor of nursing *n* = 1 EEN *n* = 3 AIN *n* = 2 TEN *n* = 1
Total shift hours/week	35 (24–60) (*n* = 10)	37 (24–40) (*n* = 10)	36 (24–40) (*n* = 9)	35 (16–40) (*n* = 10)
Morning shift hours/week	20 (8–45) (*n* = 9)	25 (16–40) (*n* = 8)	20 (8–40) (*n*=8)	18 (8–40) (*n* = 10)
Afternoon shift hours/week	15 (8–28) (*n* = 7)	18 (8–40) (*n* = 6)	22 (8–40) (*n*=6)	19 (8-40) (*n* = 9)
Night shift hours/week (Mean, (range), *n*)	18 (8–28.5) (*n* = 3)	10 (6–20) (*n* = 2)	16 (8–24) (*n*=2)	0
Time working in an inpatient setting (mean, range in years)	16 (8–36)	16.9 (2–45)	22.4 (4–45)	6.4 (0.75–20)
Postgraduate study in clinical area	Graduate diploma in palliative care (*n* = 1) Graduate certificate (Grad cert) in palliative care (*n* = 1) Oncology certificate (*n* = 1)	Grad cert oncology (*n* = 4) Grad cert palliative care (*n* = 2) Master of palliative care (*n* = 1) Postgraduate studies in cancer services (*n* = 1) Grad cert chemotherapy (*n* = 1) Grad cert in cancer nursing (*n* = 1)	Nil	Grad cert gerentology and graduate diploma in mental health nursing (*n* = 1)

RN, registered nurse; EEN, endorsed enrolled nurse; AIN, assistant in nursing; TEN, trainee enrolled nurse.

not drink, refuse to do things, may be very drowsy" (aged care participant A8).

Very few participants identified the core temporal feature of delirium of rapid or acute onset. Many did include the likely medical precipitant in the definition such as pyrexia, urinary tract infection, medication or hypoxia. Equally few distinguished delirium from dementia with acuity of onset, or an alteration from usual cognition.

(2) Nursing assessment: investigative versus a problem solving approach

Regardless of clinical area, the main aetiologies suggested were urinary tract infection, urinary retention or constipation. There were some differences depending on clinical area in understanding of precipitants. Participants working in oncology and palliative care more frequently mentioned hypoxia, cerebrovascular accidents, polypharmacy and pre-existing medications (in particular, opioid toxicity), nutritional status, hydration and metabolic disturbance (hypercalcaemia, liver and/or renal dysfunction), and brain metastases. No participant identified baseline vulnerability factors increasing risk of delirium. Several participants did not give any suggested aetiologies or understanding of reversibility. Constipation, urinary retention and pain were clinical issues thought to be aetiologically related to delirium by some participants, and in this context improved bowel care and pain relief was thought to be able to assist in the reversal of an 'acute confusional state'.

For the participants who listed precipitants, assessment of reversibility was linked to the suggested aetiologies. In aged care and aged care psychiatry it was also important to identify whether the confusion was new or different from baseline. In particular, nurses were able to provide a nurse-driven approach to manage urinary retention and constipation that could improve confusion. Irreversibility was associated with progressive disease affecting the brain or end of life, and for aged care it was associated with underlying dementia. Some linked medical complications of delirium or injury sustained while delirious as impeding recovery.

Many nurses discussed a baseline assessment, including observations (temperature, blood pressure and pulse), with some extending to oxygen saturations, ward urinalysis, blood sugar level, bowel care, urinary retention (bladder scan), hydration levels and pupil function. Some provided rationale for these observations whereas for others they were routine

prior to calling the doctor. A problem solving approach used a shortlist of potential problems, usually bowel or urinary problems, or making sure the patient and staff were not in danger. Other participants described undertaking a more investigative approach comparing new information with baseline, and information in the medical record and coming to their own diagnoses; an example of this is as follows:

> "[…] just to try and get information for myself and then once I've tried to do everything that I can, then I document all that, confer with the doctors, and then if everything's clear like if they're not anxious […] they're not febrile if everything's kind of been ruled out they're not retaining urine, not constipated then the doctors they take their bloods and they go from there kind of thing so. Yeah I just try to rule out as much as I can and just do what I can to try and determine the confusion (....) what's going on" (palliative care participant P1).

Overall participants' confidence was very high in the face of limited understanding of delirium and its management. Some felt they had senior-level experience and provided advice to other staff. Senior staff and clinical experience 'on the job' were the main sources of delirium knowledge, while a smaller proportion cited investing in their own continuing professional development through reading and in-services.

> "[…] just regular work with confused patients you sort of pick up how to look after them, medications, your staff, what your doctors, what the nurses are doing so you learn from each other" (palliative care participant P10).

(3) Management: maintaining dignity and minimizing chaos.

The participants believed they were involved in multiple decisions including choices about management of safety and distress, managing the underlying aetiology of the delirium requiring a nursing intervention (e.g. urinary retention), deciding when to refer to the medical team and planning the patient's physical care. For the most part, participants provided their opinion of the effectiveness or otherwise of various management options. The choice not to intervene was also mentioned with some participants suggesting that 'being pleasantly confused' did not require intervention. All specialty groups were very aware of the safety implications of delirium with wandering, falls and self-injury identified as risks to the patient, but also risks to staff and other people on the ward. Constant vigilance was a common theme that was required when assessing safety.

> "the main symptom that would require intervention is the patient's safety so if you feel that they are going to fall out of bed or try and escape through the rails then that's obviously the reason that they would need supervision. When they are just confused but they're staying in their bed, they're, maybe just messing up their sheets or talking to themselves or something like that then they're not really needing something" (oncology participant O2).

Despite medication being cited as playing a major role in the management of patient's with delirium, participants generally acknowledged that it wasn't the solution for all symptoms or situations. Some participants mentioned the need for caution particularly as sedation can contribute to further confusion. Many participants described their preference to observe closely and only resorting to medications for symptoms causing distress, physical restlessness or aggression, or for insomnia. The difficulty in deciding whether the distress was due to pain was also mentioned by nurses from all specialty groups, with analgesia then being more appropriate in this situation. Some participants mentioned that analgesia could also be wrongly given assuming distress was pain when it was part of delirium symptoms.

Preference for an antipsychotic or benzodiazepine as first-line medication management varied, with both sequential and combination use described. The more confident participants discussed in detail nurse initiated *pro re nata* (prn) medication administration whereas others only mentioned what they observed being prescribed.

> "Haloperidol's always my first line and I usually give that a good hour to see if that's getting rid of the symptoms, if that's helping, settling them down. If that doesn't help I find that- on the chart, they've got midazolam there. But if it is helping I let it go a little bit longer, it just depends on the patient. If it's had moderate effects then I might, (....) and they need it again maybe say next 2 hours get a little bit (agitated) again, I still might use haloperidol again because it has good effects and sometimes the second lot has done the trick." (palliative care participant P1).

The choice of medication varied according to clinical specialty. Haloperidol, midazolam and clonazepam were agents more often discussed in oncology and palliative care and often in the context of regular and frequent dosing; whereas in aged care and aged psychiatry reference was made to atypical antipsychotics, diazepam and temazepam often used at night. Oncology participants discussed increased doses of dexamethasone in the context of cerebral metastases to stabilize confusion. Levomepromazine was only mentioned by palliative care participants, and sodium valproate and donezepil in aged care psychiatry as agents helpful to manage delirium.

Most participants described the desired medication response occurring within a 30 minute timeframe with the result being that the patient was settled, calm, comfortable, peaceful, less anxious and/or with improved sleep and night-time symptoms. It was suggested that tailoring the right dose and drug for each patient is often 'trial and error'. Sedation was mentioned in two contexts dependent on the

situation: that the first was the desired medication effect, and second was as a potential side effect to avoid with the need to monitor for over-sedation.

Non-pharmacological interventions were highly valued with several strategies provided. A strong view was the attitude and manner of interaction with the person had a settling or aggravating effect:

> "I mean you never raise your voice to somebody that's already confused. You have to talk nicely and calmly to them." (aged care psychiatry participant AP10).

A safe environment without clutter, having the light on in the room, familiar objects, regular verbal reorientation to the environment, reducing stimulation and structured routine were environmental strategies used. The presence of family was thought to be extremely useful, however the participants were aware that this was often distressing for family and sometimes family dynamics worsened agitation. Confused patients were often moved to a single room or in view of nurses, however some participants felt relocation can worsen disorientation with a new unfamiliar environment. Specials (one-on-one nursing) was thought an ideal strategy by some, but others felt it only could improve safety and supervision in particular if those allocated did not have the authority to provide medications. Special nurses, even though they gave an extra pair of hands, did raise concern that more senior skills in assessment, communication with the patient and ability to administer medication was required for confused patients, as specials are usually junior nurses from agency services.

> "[…] one on one nurses are very limited in what they can do, and they're very inexperienced… so whilst that one person might help the nursing staff with that confused patient, that nursing staff member still has to deal with everything around that patient, like medications, treatment […]" (oncology participant O1).

Overall, consistency of staffing needed to be balanced with the high acuity of delirium care and nurses needing to have a break from the complexity of caring for the patient with delirium.

The use of physical restraints was a controversial topic with some participants feeling it was unethical to physically restrain a patient by any means and restraints reduced the patient's dignity, and made confusion worse. Some felt physical restraints were a last resort if there was significant risk the person would hurt themselves. In aged care consideration of a lap table was felt to be an option in some situations. Personal alarms were used in aged care but were not deemed highly successful. Bed rails were sometimes helpful, but also hazardous if patients climbed over them. While participants expressed a preference for non-pharmacological approaches, limitations of time or appropriate expertise often meant resorting to medication.

Some participants mentioned a need for specific changes in practice, included medication being used more proactively, attention to physical care and restraints being used infrequently. A need for further education that included alternatives to medication, a better approach to assessment, diversional therapy approaches, aetiologies and understanding pathophysiology and cultural implications/interpretations of confusion was identified.

(4) Distress and the effect on others

Participants' delineated delirium associated with patient distress with episodes that did not cause distress, and some felt that the patient was unaware of the experience. Patient distress included being kept in hospital and not understanding why, feeling frightened, awareness that they were not acting as their usual self (especially during times when lucid) or frustration in communicating their needs.

> "[…] but I think these days with the way the hospital system's becoming, […] is that the focus is more about a number and not necessarily the patient or what's actually wrong with the patient. So you know, if I can use an example, which is we're a 26 bed ward, so as long as we've got 26 patients, then you know, the hospital's happy. But what if we've got 26 confused patients?" (oncology participant O1).

The main effect on other patients was from wandering behaviours and calling out. This was not mentioned in oncology or palliative care suggesting wandering and vocalization may be more frequent in aged care and aged care psychiatry.

Distress for families was related to not knowing what was going on (or the cause of the confusion), and seeing their loved one not being their usual self or unsettled. Not being recognized was a particular source of distress, poor prognosis and the inevitability of the situation getting worse with a cancer or dementia diagnosis.

Participants were distressed while trying to provide quality care in the context of time pressures, budget restrictions, staffing mixes, inadequate environments and the high acuity of the care. Challenges included balancing the confused patient's care needs, with all of the other patients' needs. Patients who were physically or verbally aggressive and/or resistive to care also caused distress. Witnessing the symptoms delirium patient's experienced was distressing and exhausting, and in palliative care and oncology impeded achieving a 'dignified death'.

> "I find it very draining looking after demented and confused people. I go home exhausted mentally sometimes. It's always about time; having time for everybody and fitting in everything you have to do. I don't know, I find, I find that one of the hardest aspects of nursing. You can be run off your feet and not be as tired as what you experience from the mental drain from caring for someone with confusion.' (aged care participant A9).

Conflict in opinion on the level of interventions by multiple medical teams and also reluctance of medication prescribing by junior doctors were also other challenges for participants.

Discussion

In this study we have explored the views of nurses in several inpatient settings, where delirium is prevalent, to provide understanding of clinical processes and challenges of delirium detection and care. The participants had a 'snapshot' of delirium that they understood within their clinical context. The findings in an Australian context are consistent with prior studies showing under recognition of delirium by nurses and other health professionals.[11, 15] The awareness of the participants of recognized international diagnostic criteria, DSM IV TR, was limited and reliance was on overt behavioural and cognitive cues.[11, 15] Perceptual disturbance, hypoactive symptoms and more fundamentally the acute onset over a short time were not the key features identified. The participants descriptions mostly did not meet criteria for the most commonly utilized screening instrument for delirium, the Confusion Assessment Method (CAM), designed to aid nurses in the recognition of delirium[30] by identification of acute onset, fluctuation, inattention, disorganized thinking, memory impairment, perceptual disturbance, psychomotor agitation or retardation and altered sleep/wake cycle.[24] Prior studies using CAM screening by bedside nurses in acute geriatrics demonstrated particular difficulty identifying acute onset, symptom fluctuation and altered level of consciousness, features also poorly identified in this current study.[24] With chronic cognitive change, the need to observe acuteness of change is more paramount and if cognitive symptoms are predominantly being used as the delirium triggers subtle acute changes may be missed.[31]

In general there were two approaches to assessment (i) a comprehensive investigative approach with patient assessment, family collateral history and review of medical record; and (ii) a problem solving approach with a short checklist of common problems including safety, while a few participants undertook no assessment. The problem solving type approach has been described in a prior qualitative study revealing that nurses care for older adults by "taking a quick look, keeping an eye on them, and controlling the situation".[7] Another study by Taiwanese nursing students in medical and surgical acute care found early cues of delirium as a lack of concentration, irritability, exaggerated body language and gestures, difference in expression in visual cues, little eye contact or differences in behaviour.[9] Continued observation or asking a family member to inform the nurse when any changes happened were the most common nursing actions, without checking medication or physiological risk factors.[9]

The concept of baseline vulnerability (for example, sensory impairment, prior cognitive impairment, dehydration) essential to delirium prevention was not raised.[32] Reassuringly for those who had an understanding of medical precipitants the most commonly related to their clinical area were raised. All disciplines identified the challenge of assessing pain in the confused distressed patient, and appropriateness of analgesia if pain was contributing. Oncology nurses showed a high level of understanding of oncological medical problems, which may be due to them all being registered nurses with postgraduate qualifications.

The impact on nurses was clearly identified in this study, supporting prior findings. Caring for delirious patients in acute care has been described by junior nurses as stressful due to the unanticipated nature of delirium and need to balance care with other patients' needs.[9] A study of palliative care nurses described witnessing the distress experienced by these patients, and their loved ones; and the difficulty in achieving a peaceful death.[25] It is important that we consider this impact when we are planning care in our multidisciplinary teams and in the support mechanisms put in place.

Non-pharmacological strategies were highly valued in all specialties and range of interventions suggested, including the value of one-on-one nursing. This is an area of nursing practice that can be validated due to the effectiveness of systematic introduction of non-pharmacological measures[33,34] and also the participants identified the ability to utilize these strategies increased professional satisfaction (and potentially could reduce staff burnout) that high-quality care had been provided. To achieve this will require healthcare systems that value these environments, and senior leadership positively supporting such initiatives.[11] The hospital elder life programme, focusing on delirium prevention with practical non-pharmacological risk reduction strategies is an excellent example of an innovative approach with system change using quality improvement feedback mechanisms, adherence and outcome monitoring.[35,36]

The view on restraints had evolved in time, and is consistent with international policies to reduce or ban restraint use. Pharmacological strategies were varied, and are consistent with variability demonstrated in surveys of medical professionals conducted recently in the Australian context of medications to manage delirium, findings which need replication in other countries.[37,38]

It is interesting that despite the objective evidence that delirium recognition and assessment was limited for many participants, most were confident in management, gaining knowledge from clinical experience. This is contrary to prior studies which have demonstrated that hospital nurses' knowledge of delirium was generally inadequate, although in-service education lead to better knowledge levels.[39] Equally in physicians a comprehensive and sequential education intervention including both didactic, small group and case discussion sessions improved confidence and knowledge, suggesting it take multiple and reinforced modes of education to influence health professional behaviour in delirium management.[40] Knowledge of what delirium is versus what they recognize in their patients may be

different, and it has been hypothesized that although nurses recognize the confused patient in distress exhibiting inappropriate behaviour the following logical step of identifying a delirium syndrome does not occur without the knowledge or a framework in which to contextualize these symptoms.[11] This seemed to be the case in this sample with clear identification of symptoms, without a delirium definitional framework; which led to responses and management associated with a high degree of false confidence. The high risk times of inter-shift handover and also doctor/nurse handover also have been identified as key points where identified delirium symptoms may be miscommunicated or forgotten.[11] Clinical reasoning may also be altered by views on ageing, and those with a 'decline perspective' may assume cognitive impairment is inevitable.[41] It could be hypothesized that this perspective may also occur in palliative care settings, both in nursing but also other health professionals where cognitive decline or confusional states are assumed to be part of normal 'dying'.

Strengths

This study interviewed a wide range of nurses in a variety of inpatient settings, providing insight into the breadth of the decision tasks nurses' face when caring for someone with delirium, and the spectrum of decision making strategies, with use of analytical, intuitive and combined approaches demonstrated.[42] There are implications of how nurses communicate these issues to the multidisciplinary team, with delirium proposed as another 'vital sign'.[43]

Limitations

An interview methodology will only provide information about what a health professional says they do, which may not directly translate into practice. Delirium and confusion were in the questions and may have prompted participants. Thematic saturation was not achieved for some themes within the specific specialty groups, although it was achieved in the total sample.

Future directions

Any educational strategy to improve delirium screening needs to be multipronged involving education to increase awareness and skill in recognition of core delirium features, and concurrent system changes and leadership.[16,44-46] Focus is also needed in assisting nurses to choose decision strategies, which match the complex nature of delirium care and the multiple tasks at hand; which requires a balance of knowledge, more intuitive 'cue' recognition and context-related experience. New strategies also need to be evaluated to ensure they change clinician behaviour and improve patient care. This study provides the multidisciplinary team with the nursing perspective for this challenging area of care to assist in building team approaches to management. Managers also need to be aware of the level of distress caused when witnessing patients with delirium and ensure adequate support mechanisms are in place. Further research needs to consider whether the reasons for under-detection and under-management of delirium are similar in other disciplines, as multidisciplinary approaches are needed to improve delirium care. This will inform educational and healthcare services in delirium management for nurses, but may also provide some insight into strategies to improve delirium care across other disciplines.

Ethics approval

This trial was approved by South West Sydney Human Research Ethics Committee, and Hope Healthcare Human Research Ethics Committee.

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Conflict of interest

The authors declare that there is no conflict of interest.

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References

1. Voyer P, Cole MG, McCusker J and Belzile E. Prevalence and symptoms of delirium superimposed on dementia. *Clin Nurs Res* 2006; 15: 46–66.
2. Foreman MD. Confusion in the hospitalized elderly: incidence, onset, and associated factors. *Res Nurs Health* 1989; 12: 21–29.
3. Rolfson DB, McElhaney JE, Rockwood K, et al. Incidence and risk factors for delirium and other adverse outcomes in older adults after coronary artery bypass graft surgery. *Can J Cardiol* 1999; 15: 771–776.
4. Santana Santos F, Wahlund LO, Varli F, Tadeu Velasco I and Eriksdotter Jonhagen M. Incidence, clinical features and subtypes of delirium in elderly patients treated for hip fractures. *Dement Geriatr Cogn Disord* 2005; 20: 231–237.
5. Agar M and Lawlor P. Delirium in cancer patients: a focus on treatment-induced psychopathology. *Curr Opin Oncol* 2008; 20: 360–366.
6. Lawlor PG, Gagnon B, Mancini IL, et al. Occurrence, causes, and outcome of delirium in patients with advanced cancer: a prospective study. *Arch Intern Med* 2000; 160: 786–794.

7. Dahlke S and Phinney A. Caring for hospitalized older adults at risk for delirium: the silent, unspoken piece of nursing practice. *J Gerontol Nurs* 2008; 34: 41–47.
8. Olson JK. Who's watching the wanderers? *Contemp Long Term Care* 24(Suppl.): 10–12.
9. Lou MF and Dai YT. Nurses' experience of caring for delirious patients. *J Nurs Res* 2002; 10: 279–290.
10. Serghis D. Confusion means chaos for aged care nurses. *Aust Nurs J* 1998; 5: 28–29.
11. Steis MR and Fick DM. Are nurses recognizing delirium? A systematic review. *J Gerontol Nurs* 2008; 34: 40–48.
12. Inouye SK, Schlesinger MJ and Lydon TJ. Delirium: a symptom of how hospital care is failing older persons and a window to improve quality of hospital care. *Am J Med* 1999; 106: 565–573.
13. Morita T, Hirai K, Sakaguchi Y, Tsuneto S and Shima Y. Family-perceived distress from delirium-related symptoms of terminally ill cancer patients. *Psychosomatics* 2004; 45: 107–113.
14. Buss MK, Vanderwerker LC, Inouye SK, Zhang B, Block SD and Prigerson HG. Associations between caregiver-perceived delirium in patients with cancer and generalized anxiety in their caregivers. *J Palliat Med* 2007; 10: 1083–1092.
15. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition, Text revision (DSM IV TR). Washington DC.: American Psychiatric Association, 2000.
16. Gaudreau J-D, Gagnon P, Harel F, Tremblay A and Roy M-A. Fast, systematic, and continuous delirium assessment in hospitalized patients: the nursing delirium screening scale. *J Pain Symptom Manage* 2005; 29: 368–375.
17. Inouye SK, Foreman MD, Mion LC, Katz KH and Cooney LM, Jr. Nurses' recognition of delirium and its symptoms: comparison of nurse and researcher ratings. *Arch Intern Med* 2001; 161: 2467–2473.
18. Laurila JV, Pitkala KH, Strandberg TE and Tilvis RS. Detection and documentation of dementia and delirium in acute geriatric wards. *Gen Hospital Psych* 2004; 26: 31–35.
19. Rando EV. Delirium in elderly cancer patients: nursing management. *Dimen Oncol Nurs* 1990; 4(2): 5–8.
20. Inouye SK. The dilemma of delirium: clinical and research controversies regarding diagnosis and evaluation of delirium in hospitalized elderly medical patients. *Am J Med* 1994; 97: 278–288.
21. Eden BM and Foreman MD. Problems associated with under-recognition of delirium in critical care: A case study. *Heart Lung* 1996; 25: 388–400.
22. Inaba-Roland KE and Maricle RA. Assessing delirium in the acute care setting. *Heart Lung* 1992; 21: 48–55.
23. Wu LF. Nurses perception of acute confusion. *J Nurs Res* 1995; 31: 17–26.
24. Lemiengre J, Nelis T and Joosten E, et al. Detection of delirium by bedside nurses using the confusion assessment method. *J Am Geriatrics Soc* 2006; 54: 685–689.
25. Brajtman S, Higuchi K and McPherson C. Caring for patients with terminal delirium: palliative care unit and home care nurses' experiences. *Int J Palliat Nurs* 2006; 12: 150–156.
26. Andersson EM, Hallberg IR and Edberg A-K. Nurses' experiences of the encounter with elderly patients in acute confusional state in orthopaedic care. *Int J Nurs Stud* 2003; 40: 437–448.
27. Glaser B and Strauss A. *The Discovery of Grounded Theory*. Chicago, IL: Aldine, 1967.
28. Jeon Y. The application of grounded theory and symbolic interactionism. *Scand J Caring Sci* 18: 249–256.
29. Pope C and Mays N. *Qualitative Research in Health Care*. London: BMJ Books, 2000.
30. Cameron Hay M, Weisner TS, Subramanian S, Duan N, Niedzinski EJ and Kravitz RL. Harnessing experience: exploring the gap between evidence-based medicine and clinical practice. *J Eval Clin Pract* 2008; 14: 707–713.
31. Fick DM, Hodo DM, Lawrence F and Inouye SK. Recognizing delirium superimposed on dementia: assessing nurses' knowledge using case vignettes. *J Gerontol Nurs* 2007; 33: 40–47; quiz 48–49.
32. Inouye SK. Predisposing and precipitating factors for delirium in hospitalized older patients. *Dementia Geriatric Cognitive Disord* 1999; 10: 393–400.
33. Cole MG. Delirium: effectiveness of systematic interventions. *Dementia Geriatric Cognitive Disord* 1999; 10: 406–411.
34. Tabet N and Howard R. Non-pharmacological interventions in the prevention of delirium. *Age Ageing* 2009; 38: 374–379.
35. Rubin FH, Neal K, Fenlon K, Hassan S and Inouye SK. Sustainability and scalability of the hospital elder life program at a community hospital. *J Am Geriatrics Soc* 2011; 59: 359–365.
36. Inouye SK, Bogardus ST, Jr, Baker DI, Leo-Summers L and Cooney LM, Jr. The Hospital Elder Life Program: a model of care to prevent cognitive and functional decline in older hospitalized patients. Hospital Elder Life Program. *J Am Geriatrics Soc* 2000; 48: 1697–1706.
37. Agar M, Currow D, Plummer J, Chye R and Draper B. Differing management of people with advanced cancer and delirium by four sub-specialties. *Palliat Med* 2008; 22: 633–640.
38. Tropea J, Slee J, Holmes AC, Gorelik A and Brand C. Use of antipsychotic medications for the management of delirium: an audit of current practice in the acute care setting. *Int Psychogeriatrics* 2009; 21: 172–179.
39. Hare M, Wynaden D, McGowan S, Landsborough I and Speed G. A questionnaire to determine nurses' knowledge of delirium and its risk factors. *Contemp Nurse* 2008; 29: 23–31.
40. Ramaswamy R, Dix EF, Drew JE, Diamond JJ, Inouye SK and Roehl BJO. Beyond grand rounds: a comprehensive and sequential intervention to improve identification of delirium. *Gerontologist* 2011; 51: 122–131.

41. McCarthy MC. Detecting acute confusion in older adults: Comparing clinical reasoning of nurses working in acute, long-term, and community health care environments. *Res Nurs Health* 2003; 26: 203–212.
42. Lauri S, Salantera S, Chalmers K, et al. An exploratory study of clinical decision-making in five countries. *J Nurs Scholarsh* 2001; 33: 83–90.
43. Bellelli G and Trabucchi M. Delirium as the sixth vital sign. *J Am Med Dir Assoc* 2008; 9: 279; author reply 279-280.
44. Yates C, Stanley N, Cerejeira JM, Jay R and Mukaetova-Ladinska EB. Screening instruments for delirium in older people with an acute medical illness. *Age Ageing* 2009; 38: 235–237.
45. Tabet N and Howard R. Prevention, diagnosis and treatment of delirium: staff educational approaches. *Expert Rev* 2006; 6: 741–751.
46. Tabet N, Hudson S, Sweeney V, et al. An educational intervention can prevent delirium on acute medical wards. *Age Ageing* 2005; 34: 152–156.