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Exploring how registered nurses assess and identify delirium in older persons in the hospital setting

Miriam Anne Coyle
University of Wollongong

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School of Nursing

Exploring How Registered Nurses Assess and Identify Delirium in Older Persons in the Hospital Setting

Miriam Anne Coyle

**"This thesis is presented as part of the requirements for the award of the
Degree of Master of Philosophy
of the University of Wollongong"**

May 2015

Thesis Certification

I, Miriam Anne Coyle, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Master of Philosophy, in the School of Nursing, Faculty of Sciences, Medicine and Health, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

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Miriam Anne Coyle

Dated:

Abstract

Aim

The aim of this study was to explore how Registered Nurses assess and identify delirium to inform education and improved delirium care practices in the healthcare environment of the researcher.

Background

Delirium is a common event for older people during a hospital admission (50 per cent). An episode of delirium may cause a range of adverse outcomes for older people: new dementia, worsening dementia, re-location into residential accommodation, and death. The prevention, recognition and management of delirium in hospitals are inadequate and demonstrated to be challenging for nurses. Multi-component interventions including education are recommended as strategies to address these issues. Clinical practice and research provide evidence of the under-recognition of delirium in hospital by medical and nursing clinicians. Although Registered Nurses are key to the provision of delirium care there was scant literature exploring how they assess and identify delirium in older people.

Methods

This was a qualitative descriptive study. The setting was a regional referring hospital in New South Wales, Australia, and the participants were Registered Nurses with experience of delirium care. Data collection consisted of in-depth, face-to-face group interviews (n=8). Transcribed and de-identified data underwent thematic analysis concurrent with the data collection.

Findings

Registered Nurses (n=24) who worked on surgical, medical, renal, aged care, rehabilitation and emergency units participated in the interviews. A total of three themes were identified to explain how Registered Nurses assess and identify delirium: (1) It's not my job; (2) It is my job; and (3) It's complex.

Conclusion and implications for practice

The findings demonstrated that hospital delirium care education needs to target Registered Nurses across unit specialties to build mastery in delirium assessment and identification, and reinforce nurses' integral role in recognising delirium in older persons.

Keywords

Delirium, Confusion, Recognition, Clinical, Acute Care, Aged Care, Elder Care

Acknowledgements

This study is dedicated to and acknowledges those older people who have given me the privilege of collaborating in their hospital care. One such person was 91-year-old Betty, who experienced an undiagnosed delirium for many days and underwent several transfers between units and even hospitals, before falling and fracturing her hip in her delirious state. Following surgery, a belated referral was made to the Dementia Delirium Clinical Nurse Consultant for 'behaviour management strategies to facilitate her discharge'. On the morning of the consult Betty was drowsy. The physiotherapist had attempted to mobilise her. She became agitated so the Registered Nurse then administered her morning analgesia (also belated), plus a prn dose of Haloperidol 'while her mouth was open'. Betty was not going to walk that morning. 'Can you hold my hand?' Betty asked. Betty weakly but gratefully held my hand. Betty, who had not been referred to by her preferred name throughout her long hospital stay, now had an advocate to remind the busy nurses of the delirium pathway and the need to provide physical and emotional comfort.

Another was Fred, who in his frightened, delirious state had been sedated and physically restrained. No referral had been made but my attention was drawn to the tall, young security guard ordering the elderly gent back to his room. The nurses were keeping a wide berth. I initiated an introduction to Fred and we spoke about his home country, football and family. Soon he was relaxing on the bed. After orientating him to his surroundings and formally introducing the security guards, lunch came and I said goodbye. Fred stood up, alarming the security guard. Nonplussed, Fred continued and gave me a gallant kiss on the cheek, thanking me for the short visit. He then settled to his lunch, clearly now feeling more supported, rather than, as only a short time ago, frightened and ready to 'fight or fly'.

I would like to acknowledge the Registered Nurses who gave their time so willingly, despite the complexity and challenges of the topic, and their continued support of this study and the Dementia Delirium Clinical Nurse Consultant role. I trust studies such as this will help them to develop efficacy and satisfaction in working with people who have cognitive impairment.

This study was made possible by the brilliant help and support of my supervisors and family. I would like to thank my supervisor, Associate Professor Victoria Traynor, who has been constant in inspiring progress in this study and in my professional development. Thank you to Professor Ken Walsh, Dr Kylie Smith and Dr Pippa Burns, who all gave expert, timely advice and support at crucial points in this study. I would also like to acknowledge my husband, David, and our children, Patrick, Rachel, Jonathan and Thomas, as I am so grateful for their consistent support, wisdom and encouragement.

Outputs

Presentations

- Coyle, M, Traynor, V & Walsh, K 2014, 'Registered Nurses explain assessment and identification of delirium among older people in hospitals', paper presented to Royal College of Nursing UK: Annual International Research Conference, Glasgow, Scotland, 02-04 April 2014.



- Coyle, M, Traynor, V & Walsh, K 2014, 'ISLHD Aged Care Research Meeting: Registered Nurses Explain Assessment and Identification of Delirium in older persons in hospital', paper presented to UOW SNM Research School, Wollongong, Australia, 11 June 2014.
- Coyle, M, Traynor, V & Walsh, K 2014, 'ISLHD Aged Care Research Meeting: Registered Nurses Explain Assessment and Identification of Delirium in older persons in hospital', paper presented to ISLHD Aged Care Research Meeting, Wollongong, Australia, 03 September 2014.
- Coyle, M, Traynor, V & Walsh, K 2014, 'Registered Nurses explain assessment and identification of delirium among older people in hospital', paper presented to Dementia Collaborative Research Centre: National Dementia Research Forum 2014, Sydney, Australia, 19 September 2014.

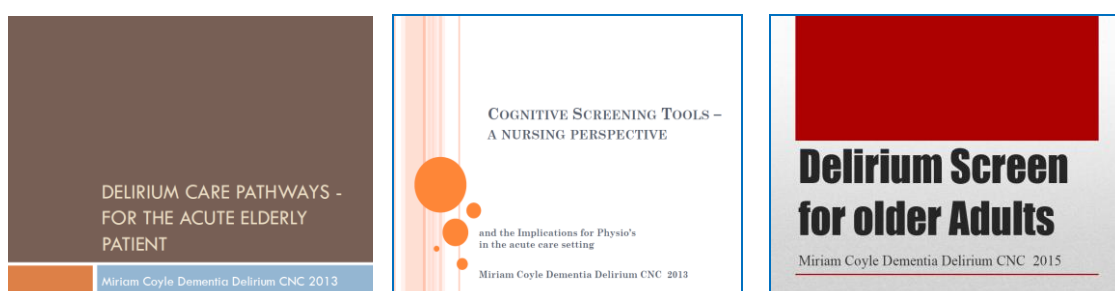


- Coyle, M, Traynor, V & Walsh, K 2014, 'A9 - Registered Nurses explain assessment and identification of delirium among hospitalised older people', *Australian Journal of Dementia Care*, vol. 3, no. 5, p. 25.
- Coyle, M, Traynor, V & Walsh, K 2014, 'Registered Nurses explain assessment and identification of delirium among older people in hospitals', paper presented to Australian Association of Gerontology: National Conference 2014, Adelaide, Australia, 26-28 November 2014.



Educational resources

- Delirium Screening for Older People—using the Abbreviated Mental Test Score (AMTS), Delirium Risk Assessment Tool (DRAT) and Confusion Assessment Method (CAM): developer and facilitator of this training package for hospital clinicians, designed to target and enable nurses to use the delirium screening tool. The program can be given in 25 to 30 minutes, incorporating the video vignettes. The package follows previous education on the delirium pathway and includes links to the national delirium guideline, the delirium pathway and further education. It is made available to the Clinical Nurse Educators on the ward following the session/s for access by all staff. Feedback from staff includes: ‘surprised how easy it is; very informative; (helpful) the videos showing how to assess an older person with delirium; understanding delirium and how it can change so quickly—really like this tool; understanding the difference between delirium and dementia; short and informative; video with the tool in use very helpful.’



- Delirium half-day workshop for hospital Registered Nurses—developer and facilitator of this pilot project. Participants provided feedback evidencing presentations were clear and relevant to their work. Those providing feedback showed preparedness to provide cognitive assessments to older people and to assist others in providing cognitive assessments to older people. Comments included: ‘the speakers were great; finding out different ways delirium can be recognised, the importance of recognising it, other Assessment that can be used and not as available, how to make patients feel comfortable; great morning of information, inspirational; Definitely essential workshop for all. Thank you for all your hard work; great morning, well worthwhile.’

Recognising Delirium in Hospital

WHEN: Thursday 19th June 2014
TIME: 8.30am to 12.30pm
WHERE: Shellharbour Hospital Conference Room

PROGRAM

8.30am	Registration
8.45am	Introduction
	<i>Ms Narelle Evry Nurse Manager Aged Care & Rehabilitation</i>
9.00am	Recognising delirium in the hospital setting-what we all need to know!
	<i>Dr John McKenzie Staff Specialist Geriatrician</i>
10.00am	Cognitive Assessment Tools for delirium recognition
	<i>Dr Tabitha Hartwell Staff Specialist Geriatrician</i>
10.30am	Morning Tea
11.00am	Current Tools & Resources and practical application
	<i>Ms Miriam Coyle & Ms Karen Shepherd Dementia Delirium CNC's</i>
12.00pm	Current & Future Initiatives
	<i>Ms Cathy McPhail Aged Care CNC, Ms Karen Shepherd, Ms Miriam Coyle</i>
12.20pm	Evaluations & Close

RSVP 16th June
See registration form for details

A workshop for ALL NURSES who work in the hospital setting.
An opportunity to gain knowledge and practical skills in cognitive screening of older people.

This is a NMSF project and **FREE** for all ISLHD Nurses.
Funds for backfilling positions has been made available.

A photograph showing a young woman with dark hair, wearing a red top, hugging an elderly woman with white hair, wearing a patterned top. They are both smiling.

-
- ✧ Delirium Flip Chart—Collaborated and contributed to the writing of this project with the University of Wollongong. The Delirium Flip Chart has now been disseminated to all wards at the hospitals in the Illawarra Shoalhaven local health district and other private and public health facilities.



Consultancy activities

- ✧ Implementing the TOP 5 programme: Project lead in developing a supportive, collaborative model of mentoring undertaken at ward level in the hospital aimed at empowering Registered Nurses to lead colleagues in implementing integrative and inclusive care practices using the 'TOP 5'. TOP 5 is an initiative which includes carers and families in care planning with the older person experiencing cognitive impairment.



© CCLHD, NSW

- ✧ HETI dementia delirium online training module: Consulted and collaborated on the online educational module targeted at all clinicians working in New South Wales hospitals by the NSW Health and Education Training Institute.



-
- ✧ UOW Advanced Clinical Skills Workshop: Collaborated with the University of Wollongong to develop case study scenarios for this workshop targeting Registered Nurses in community settings to enhance clinical skills, including delirium recognition.

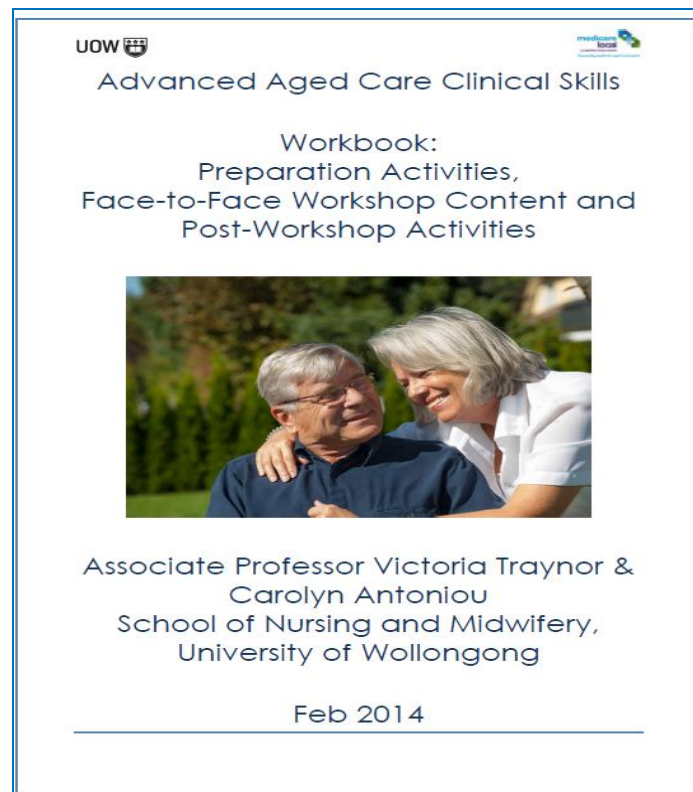


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Glossary

BPSD	Behavioural and Psychological Symptoms of Dementia – refers to changes in mood, personality and behaviour impacting on the social and interpersonal interactions of the person with dementia which can include agitation and aggression (Brodaty, Draper & Low 2003).
CAM	Confusion Assessment Method, validated tool to assist in the diagnosis of delirium (Inouye et al. 1990).
Common Cognitive Screens	Mini Mental State Examination (MMSE) Rowland Universal Dementia Assessment Scale (RUDAS) Abbreviated Mental Test Score (AMTS)
Delirium	Clinical condition characterised by acute onset of confusion, associated with adverse health outcomes. Can be erroneously referred to as, or confused with, dementia, BPSD and ‘sundowning’.
Delirium brochure	Provided by the Agency for Clinical Innovation the delirium brochure was designed to inform and engage family and friends in collaborative care of the older person with delirium in hospital. The brochure has been useful in staff education too.
Enrolled Nurse	Nurse qualification by Certificate IV, unable to administer medications unless trained and enrolled as an Endorsed EN. US equivalency Licenced Practice Nurse (LPN).
Medical Officer	General term for Medical Doctor, can include newly trained and specialist roles.
Registered Nurse	Nurse qualified by Bachelor degree, 3 years full time equivalent, tertiary trained. Supervises the Enrolled Nurse role.
Sundowning	A term coined to describe an increase in restlessness a person with dementia may experience in the afternoon or evening impacting on their ability for self-care.

Chapter 1: Introduction

Overview of the thesis

In this thesis, a study is presented with the overall aim to improve the workplace of the Master of Philosophy candidate, specifically the patient journey of older people who experience delirium during a hospital admission. Delirium is known to cause adverse health outcomes for older people in hospital. This study investigated the role of Registered Nurses in delirium recognition by exploring their practices in assessing and identifying delirium in older people during a hospital stay, seeking to discover the enablers and challenges Registered Nurses experience. This thesis presents the research methods and findings from this study.

Firstly, the background to the topic of Registered Nurse recognition of delirium is provided in the context of local, national and international research and policy. Delirium has been documented and studied for centuries, yet it continues to be under-recognised by clinicians (Irving, Fick & Foreman 2006). One group of healthcare practitioners, Registered Nurses, is well placed to take the lead in delirium assessment and identification, as their bedside role requires them to provide 24- hour monitoring of patients to observe the complexities and fluctuations in health status which characterise delirium (Irving, Fick & Foreman 2006; Rice et al. 2011). Clinical practice and research demonstrates that Registered Nurses are effective in identifying individuals in their care who are confused but they do not use assessment tools to determine the presence of delirium (Hare et al. 2008; Steis & Fick 2012). A national clinical guideline and care pathway are available with evidence-based recommendations for delirium care, including its assessment and identification (DOHA 2006, 2011). We know that dissemination of research findings and guidelines on their own do not result in knowledge being translated to clinical practice (Grimshaw et al. 2012) but they are a good starting point. What is also important is relevant and easily accessible education to enable Registered Nurses to develop knowledge and skills on a particular clinical topic—in this thesis, about delirium care (El Hussein, Hirst & Salyers 2014).

The literature review undertaken for this study sought to find evidence of the effectiveness of interactive methods in delirium care education. Interactive education was viewed as a means to develop high-impact interventions suited to busy clinicians with time restrictions and competing priorities. As with most aspects of delirium care, the literature on interactive delirium education was scarce and the research lacked reliable and valid measures which could provide strong evidence to assure effectiveness to improve delirium care (El Hussein, Hirst & Salyers 2014; Tabet et al. 2005). In keeping with adult learning principles and with the evidence available, interactive education is one strategy likely to gain engagement from participants and provide a means to identify practice gaps. The literature review revealed gaps in knowledge which would assist in the development of effective educational interventions.

The methods chapter explains the qualitative research design used, detailing the setting and sample, and the means of data collection and analysis. The identification of barriers and enablers to practice provides the opportunity for targeted educational interventions which will resonate with participants and a means to ensure the resources needed to support best practice are in place (McCormack, Manley & Walsh 2008). The findings chapter explains the themes generated from the data analysis. These themes are already informing educational interventions in delirium care at the site where the research was undertaken. The educational interventions developed are grounded in research evidence, aiming to strengthen the evidence base used in clinical practice and thereby improve health outcomes for older people with cognitive impairment.

Recommendations for clinical practice and research extrapolated from this study are discussed. Ongoing work will be needed to gain and sustain improvements in the cascading series of negative effects caused by the multi-layered syndrome of delirium. A focus on the assessment and identification of delirium will raise awareness and provide clarity to clinicians, promote adherence to the national guideline and pathway and, as a consequence, improve care outcomes for older people with cognitive impairment in hospital.

Chapter 2: Background

Introduction

The focus of this thesis is a research study exploring how Registered Nurses assess and identify delirium in hospital settings. The aim of this chapter is to provide an explanation of the background to the research study by providing the contextual information on the evidence in literature, current practice and policy. From the literature reviews undertaken and the reflections on clinical practice, it was recognised that gaining improved understandings of delirium assessment and identification practices by Registered Nurses would be a means to discover the challenging and enabling factors experienced by Registered Nurses in recognising delirium, creating opportunities to improve the effectiveness of delirium care education interventions for nurses.

Delirium

Delirium is an under-recognised condition characterised by a multi-factorial aetiology and associated with increased rates of new onset dementia, worsening of existing dementia, mortality, morbidity, functional decline and longer hospital stays (Flaherty 2011; MacLulich et al. 2013; Marcantonio 2011; Witlox et al. 2010). Delirium is a major unmet medical need, affecting one in eight patients across all age ranges and requires increased attention by health professionals. It is a syndrome experienced by older people and is preventable in at least one-third of patients (Inouye 2004; Irving, Fick & Foreman 2006; MacLulich et al. 2013; Quinlan et al. 2011). Delirium occurs in up to 50 percent of older people admitted to hospital and frequently persists beyond discharge, causing consistently worse outcomes compared to those who had recovered from delirium, yet it remains unrecognised in 32 to 66 percent of patients, possibly due to overlapping symptoms with dementia and uncertainty around baseline cognition (AIHW 2013; Cole et al. 2009; Flaherty 2011; MacLulich et al. 2013). All age data indicates high rates in intensive care units (80 percent) and in palliative care settings (85 percent). Childhood delirium is important, with existing studies indicating 10 percent of all inpatient referrals to child and adolescent consultation-liaison psychiatry services involve delirium (Hatherill & Flisher 2010). However, older populations over 70 years in hospital are most at risk of delirium with approximately

one-third experiencing delirium in acute medical hospital services, with even higher rates post-surgery (up to 74 percent) (Flaherty 2011; Marcantonio 2011).

The experience of delirium

Characterised by acute cognitive decline, delirium is distressing, with negative personal, social and organisational outcomes (Day, Higgins & Koch 2008; Flaherty 2011; Wong, Geddes & Inderjeeth 2009). The lived experience of delirium is commonly described as frightening (Bélanger & Ducharme 2011; Brown, Fitzgerald & Walsh 2007; Grover & Shah 2011; Neville 2006). Staff report feelings of discomfort when caring for people with delirium, potentially affecting the care they provide (Bélanger & Ducharme 2011; Day, Higgins & Koch 2009; McDonnell & Timmins 2012; Teodorczuk et al. 2010). Older age is a significant risk factor, raising concerns that under-recognition is influenced by ageist attitudes (Irving, Fick & Foreman 2006; Neville 2006; Schofield, Tolson & Fleming 2011).

National context

International interest in delirium is growing, evidenced by increasing policy, research and education interest, and the introduction of professional organisations such as the European Delirium Association and the American Delirium Society (MacLulich et al. 2013). Likewise, Australia has shown growing awareness and concern, with the publishing of the delirium clinical practice guidelines and care pathways, and the more recent commencement of the Australasian Delirium Association (DOHA 2006, 2011). Research studies have confirmed delirium is a common and serious concern in Australian hospitals for older people (Speed et al. 2007; Travers et al. 2013; Wand et al. 2013).

Local clinical context

In New South Wales, Dementia Delirium Clinical Nurse Consultants have a leadership role in the local health districts. This includes the responsibility to disseminate evidence-based knowledge, such as the *Delirium Care Pathways*, and promote knowledge transfer to clinical practice (AIHW 2013; DOH 2010). For a clinician holding the Clinical Nurse Consultants role, clinical practice corroborates with the evidence found in literature. Delirium is poorly recognised and it follows that it is also poorly

managed, highlighting the need for training in recognition, prevention, management and treatment across the continuum of care (DOH 2010; DOHA 2006; Moyle et al. 2008).

Literature evidence

A literature search was undertaken to find evidence to support the use of simulation techniques in delirium care education for health professionals (Appendix A). This literature review identified a growing interest in delirium education but a historical neglect of the topic across disciplines. A multi-layered approach which incorporated education was overall seen to be the most effective means to improve delirium care practice. Although there were few studies to compare or support particular methods, education which included interactive techniques was viewed as more effective than traditional didactic presentations (Tabet et al. 2005; Teodorczuk et al. 2010; Wand 2011). Interactive techniques for education included role play, interactive discussion, problem-solving scenarios, learning games, short lectures incorporating discussion, and simulation (Curran 2014).

A total of 24 research papers were included in this literature review. The findings from the literature review generated four themes which explained the methods and effectiveness of the interactive delirium care education: i) Health outcomes; ii) Organisational (healthcare services); iii) Programme; and iv) Practice / competence. While all interactive interventions were found to enhance learning, simulation was found to be enjoyable and reveal practice gaps. The need for more underpinning work to support the development of an effective educational intervention was identified. Registered Nurses were identified as key to improving the recognition of delirium (Akechi et al. 2010; Bergmann et al. 2005; Rice et al. 2011; Steis, Shaughnessy & Gordon 2012). Thus, Registered Nurses should be leading the delivery of delirium care education.

A second literature review was undertaken to explore current understanding about the practices of Registered Nurses in assessing and identifying delirium. Keywords were identified to locate research relevant to the question of 'how do Registered Nurses recognise delirium' using CINAHL, Web of Science and Medline databases. Only articles relating to the nursing care of the older person in

hospital published between the years 2005 and 2012 were included. A total of (n=6) papers were determined to be relevant to this review (Figure 1).

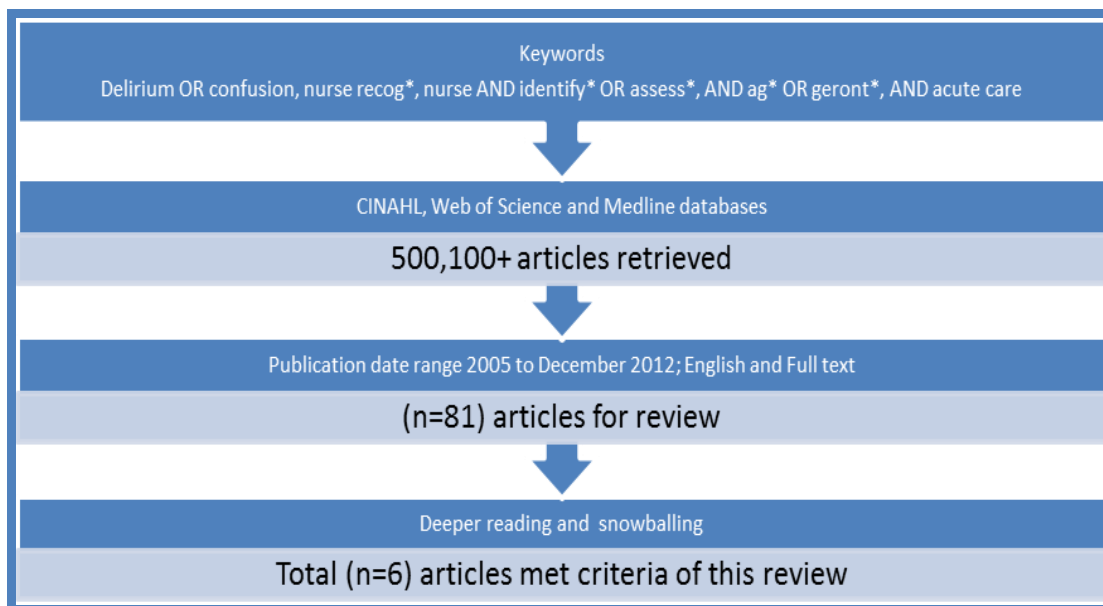


Figure 1: Second literature review search results: How Registered Nurses recognise delirium

Only a few articles were located on this specific topic and therefore there was insufficient research evidence to develop the findings into a group of themes explaining how Registered Nurses recognise delirium. The findings of this second literature review revealed that more questions were raised about the critical thinking and decision-making processes of Registered Nurses in recognising delirium and the possible barriers to the recognition of delirium by Registered Nurses (Lemiengre et al. 2006; Speed et al. 2007; Steis & Fick 2012).

From the USA one study compared recognition of delirium by nurses using case study vignettes and from Belgium another evaluated the assessment of delirium by nurses using the CAM, both studies revealed nurses had difficulty in identifying delirium in elderly patients and effective educational interventions were needed (Fick et al. 2007; Lemiengre et al. 2006). Only 14% of patients were identified with delirium by nurses using the CAM (Lemiengre et al. 2006). While 83% of nurses accurately identified dementia only 41% recognised hypoactive delirium in a case vignette (Fick et al. 2007). From Australia two papers from one study of hospital delirium prevalence found only 36% of patients who were likely to have delirium had a diagnosis made (Hare et al. 2008; Speed et al. 2007).

Nursing documentation failed to evidence use of cognitive assessment tools and the consistent use of the non-specific term 'confusion' was considered to be a barrier to accurate reporting and further clinical investigations (Hare et al. 2008; Speed et al. 2007). Likewise, from the USA a study of nursing documentation found descriptors of behaviours and cognition were not specific, assessment tools were not used, and there was little evidence of investigations into the causes of documented behaviours (Steis & Fick 2012). Another study from the USA specifically measured nurse recognition of delirium in the hospitalised older person and found nurses failed to identify delirium 75% of the time (Rice 2008). From this study the authors reported significant opportunity for nursing education to foster knowledge and confidence in delirium assessment, emphasising use of the CAM rather than orientation and neurological assessment (Rice et al. 2011). Greater exploration of current practice by Registered Nurses in delirium recognition was seen to be valuable in informing the development of education interventions which are high-impact.

The research question identified

The opportunity to focus attention on broad-ranging concern about delirium was taken through this Master of Philosophy study to explore how Registered Nurses assess and identify delirium. It is well established that delirium is not a new diagnosis (Irving, Fick & Foreman 2006). While evidence identifies multi-disciplinary care as best practice in the provision of delirium care, nurses are seen as well placed to ensure delirium is recognised (Rice et al. 2011). Historically, nurses have intuitively managed patient care without offering diagnoses or articulating the strategies used (Gobet & Chassy 2008). Anecdotally, clinical handover statements about the fluctuating cognition of an older person in hospital have been made without the accompanying use of validated delirium screening or assessment tools. Referrals are made for medical attention when patients 'have gone off'. If they do not use screening tools how are those nurses recognising delirium assessing and identifying it?

Change Management

By reviewing the literature and reflecting on clinical experience a shift in approach to the research topic of delirium was made. Tools for assessment and identification of delirium were available yet

remained unused and not integrated into policy. While delirium education remained an important tool in the translation of research evidence to clinical practice, a model of knowledge translation was accessed to target the appropriate development of interventions (Clarke & Wilson 2008; Dewing 2008). There are many models of change management but the one focused on in this thesis is the 4 As of Knowledge Translation (Grimshaw et al. 2012; Pathman et al. 1996). This model was developed to understand the barriers and enablers to guideline adherence by clinicians and provides a framework to compare the study findings, identifying the stage clinicians were at and a means to develop interventions to move through the model, from awareness, to agreement, adoption and adherence (Pathman et al. 1996).

Conclusion

This chapter provides context to this Master of Philosophy study. The research question developed through a process of articulating clinical concerns within the responsibilities and priorities of the researcher's clinical role. The negative impact of delirium for older people in hospital, their families, and the staff supporting them, and the potential for improved care outcomes by following evidence-based guidelines already available provided impetus to this study. The initial focus was to inform the development of interactive education which are high-impact interventions in delirium care. A literature review on interactive techniques in delirium care was undertaken, revealing a small pool of evidence but a growing interest in delirium education. Two literature reviews inform this research study, the findings confirming the need for more underpinning work. Nurses were considered key to delirium recognition and the reduction of adverse outcomes for older people in hospital. Finding a means to enhance delirium recognition by Registered Nurses in the hospital setting became the focus of this research study. This objective will be aided by gaining understanding of current practice and of the challenges and enablers experienced by Registered Nurses in the hospital setting who do assess and identify delirium.

Chapter 3: Literature review, evaluating the effectiveness of interactive delirium care education intervention

Introduction

In Australia, the importance of delirium was recognised when the delirium clinical practice guidelines and care pathways were published (DOHA 2006, 2011). Subsequent studies confirm delirium as a common and serious concern for older people in Australian hospitals (Travers et al. 2013; Wand et al. 2013). Internationally, evidenced by the increasing focus of researchers and educators, and accompanied by the growth of professional organisations, delirium is widely acknowledged as a common and deleterious illness for elderly people, a condition frequently hospital-acquired and persisting beyond hospital discharge (Cole et al. 2009; MacLulich et al. 2013).

The Australian state of New South Wales has 15 local health districts, corporate entities responsible to the Ministry of Health for providing public health services in a range of settings (MOH 2013a). Dementia Delirium Clinical Nurse Consultants (CNCs) have a leadership role in the local health districts. This includes the responsibility to disseminate evidence-based knowledge, such as the *Delirium Care Pathways*, and promote knowledge transfer to clinical practice in the hospitals (AIHW 2013; DOH 2010). Determining what are effective means of knowledge transfer is challenging. Hospital-based nurses are well placed to identify and manage geriatric syndromes, such as delirium, yet few have been exposed to education in aged care. In hospital settings the change of shift period remains a common time-slot to provide education to nurses, despite concerns about the efficiency and effectiveness of this method of training (Wendel et al. 2010).

Interactive education interventions—including role play, interactive discussion, problem-solving scenarios, learning games, short lectures incorporating discussion, and simulation—are used to enhance learning in the clinical environment to promote knowledge transfer through relevant and meaningful learning (Curran 2014). Simulation techniques are gaining popularity, with hospitals now providing purpose-built laboratories for interactive, immersive, experiential learning for individual clinicians and teams. The versatility of simulation has allowed application to a wide range of technical and non-technical domains across disciplines and specialties to aid practice change (Gaba 2004).

This literature review sought to find evidence for the effectiveness of interactive delirium care education interventions. The search included all papers describing interactive forms of delirium education studied within the broader health sector. Four themes were generated from the review of 24 papers to explain the effectiveness of interactive delirium care education interventions: i) Health outcomes; ii) Organisational (healthcare services); iii) Programme; and iv) Practice / competence. Interactive education interventions were found to be aligned with adult learning principles, learner-centred, flexible and relevant approaches to enhance learning; in particular, simulation was found to be enjoyable and reveal practice gaps (Curran 2014). Evidence of changes in practice were suggested. However, finding evidence of the direct impact of education on clinical outcomes was challenging.

Background

Delirium is an acute confusional state characterised by inattention and a fluctuating course, often precipitated by an organic condition such as infection, dehydration, pain or polypharmacy (AIHW 2013; Marcantonio 2011). Adverse outcomes associated with delirium include new onset dementia, worsening dementia, an increased risk of institutionalisation and death (MacLulich et al. 2013; Witlox et al. 2010). Delirium occurs in up to 50 per cent of older people admitted to hospital, yet remains unrecognised in 32 to 66 per cent of patients, possibly due to overlapping symptoms with dementia and uncertainty around baseline cognition (AIHW 2013; Cole et al. 2009; Flaherty 2011).

The Australian delirium guidelines and pathways provide an evidence-based framework for delirium care (AIHW 2013; DOHA 2006, 2011). International evidence reinforces the local concern and supports the need to determine the most effective means to inform clinicians of available evidence and effect practice change to improve outcomes for the older person in hospital (NICE 2010). Delirium is not a new condition, yet it continues to be under-recognised and poorly managed, requiring strategies to embed evidence-based practice (Brown, Fitzgerald & Walsh 2007; Irving, Fick & Foreman 2006; MacLulich et al. 2013; Moyle et al. 2008). Interactive education interventions employ adult learning principles promoting reflective, relevant learning and were chosen by the

researcher as a strategy to promote knowledge transfer, and a literature review was undertaken to guide development of a future interactive education intervention (Clarke & Wilson 2008).

Aim

The aim of this literature review was to determine what is currently known about the effectiveness of interactive delirium care education interventions.

Method

This study was a systematic literature review guided by the research question, 'What do we know about the effectiveness of interactive delirium care education interventions?' (Higgins & Green 2011; O'Leary 2010).

Searching strategy

A range of strategies were adopted to locate sources to be reviewed for this study (Table 1).

Table 1: Literature review: Databases searched

Database
CINAHL
Cochrane Review
Web of Science
Publishers' Databases
Google Scholar
Google
'Snowballing'

A total of four search strategies were used:

- *Search strategy 1:* Academic databases, consisting of CINAHL and Web of Science;
- *Search strategy 2:* Publishers' databases, Wiley InterScience and Sage;
- *Search strategy 3:* 'Google' search to identify grey literature; and

- *Search strategy 4:* Snowballing technique: (i) references listed in sources reviewed for this literature review and (ii) publications located during role as a Dementia Delirium Clinical Nurse Consultant.

These four strategies were used to ensure as much relevant literature as possible could be located and considered for review in this study.

Search terms

A range of search terms were developed to locate as many relevant sources as possible (Table 2).

Table 2: Literature review: Search terms used

Search terms
delirium education training
practice development
simulated learning environments simulation methods simulation models OSCE
aged care ger* 'not' paediatric or alcohol specific, 'not' critically ill (ICU)

Limits

A range of search limits were applied to the search terms to ensure relevancy and access to papers (Table 3).

Table 3: Literature review: Search limits applied

Search limits
English Language
Years 2002-2012
Available as full text on WWW or host institution library

Inclusion and exclusion criteria

The settings of studies located for review included all healthcare settings. All studies included an element of interactive education in the intervention and evaluated the effectiveness of the intervention. Sources located which simply described future plans for an intervention were excluded and not reviewed in this study.

Findings

A total of 85 sources were identified as possibly relevant for this literature review. First, the titles and abstracts of the sources were reviewed to identify duplicates. Next, exclusion criteria were applied to ensure all sources reviewed included the implementation of an educational intervention about delirium care. Full text of the remaining sources were accessed (Higgins & Green 2011). At the end of this stage of searching, a total of 27 sources were identified as relevant. The final group of sources consisted of review studies and opinion pieces (n=3) and reports from a total of 20 different interventions (n=24) (Figure 3). The studies had an international perspective, with sources from Australia, Canada, Ireland, the UK, the USA, Japan and Sweden (Figure 2).

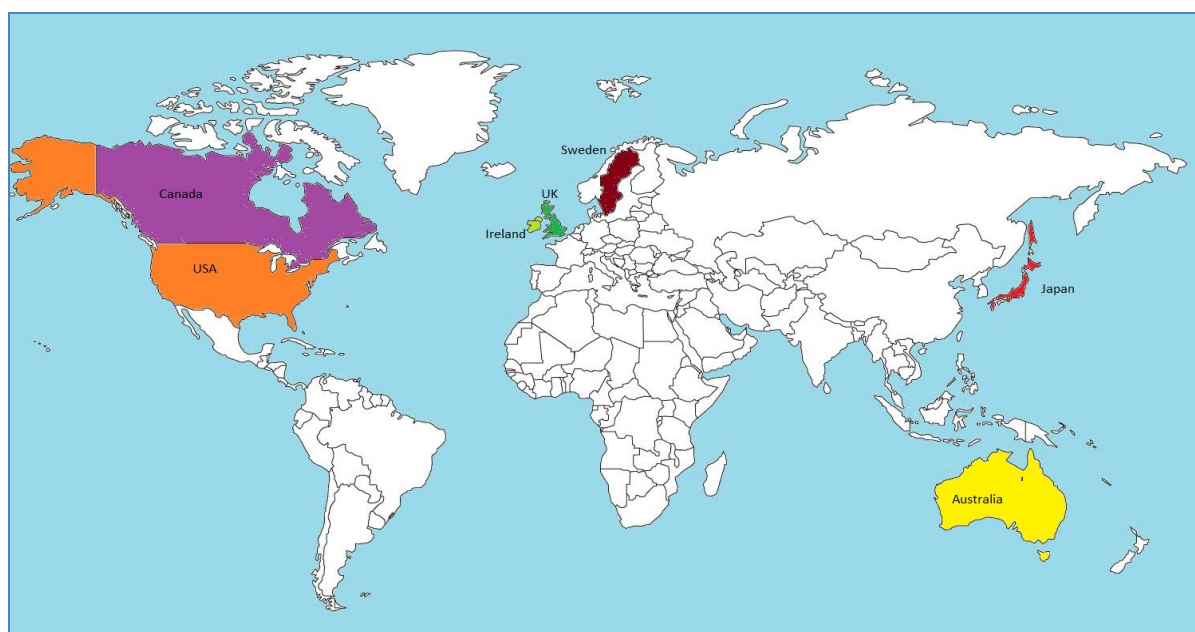


Figure 2: World map highlighting countries where literature review studies undertaken

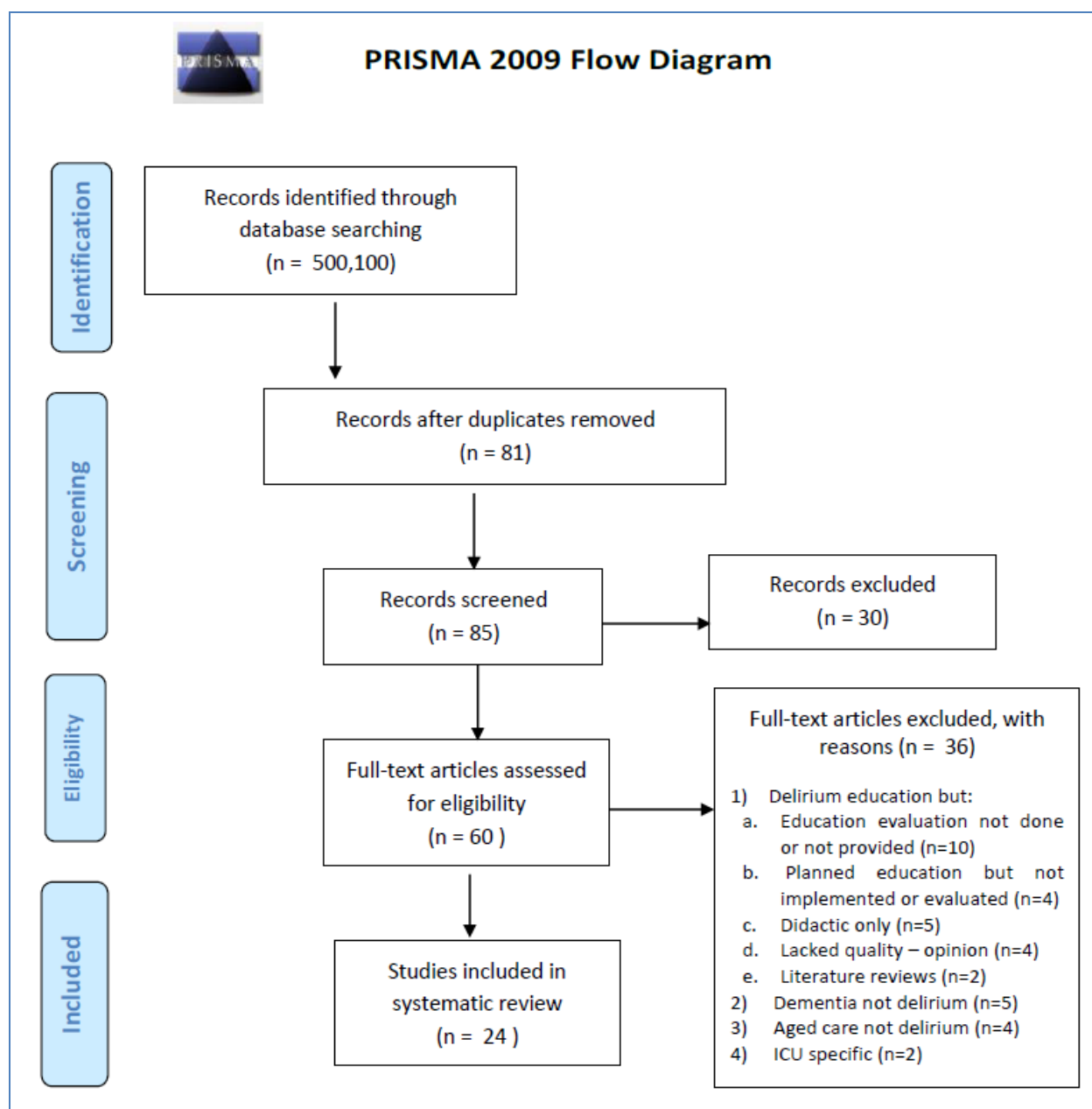


Figure 3: PRISMA diagram: Summary of literature search outcomes

Quality review

A critical review of all relevant sources (n=24) was undertaken using the Critical Appraisal Skills Programme (CASP) criteria (PHRU 2006). Gold standard evidence is found in randomised controlled trial studies (Higgins & Green 2011). However, in this review there was a paucity of studies adopting this method, with only one study reporting this level of evidence. Most other studies reported lower-level evidence from cohort studies through to action research. The literature reviews (n=2) provided background information of interest to this review but did not meet the inclusion criteria and were excluded along with an expert opinion (n=1) study because of their low-quality evidence.

Table 4: Literature review: Summary of sources reviewed by hierarchy of level of evidence

Hierarchy of evidence	Sources (n)	Studies (n)
Randomised controlled trials (cluster)	2	1
Cohort studies	2	2
Case controlled studies	2	2
Cross sectional studies and surveys	13	12
Mixed methods	2	1
Action research	3	2
<i>Total</i>	<i>24</i>	<i>20</i>

In total, 24 sources were included in the literature review and of those sources there were 20 different research studies: quantitative (n=14); mixed methods (n=3); and qualitative (n=3) studies (Table 4).

Themes generated to explain effectiveness of interactive delirium care education interventions

Themes were generated from this literature review to provide an understanding of the effectiveness of educational interventions on delirium care. The literature review commenced with the summarisation of the methods adopted and findings of each source (Appendix A). The analysis stage progressed with the identification of commonalities and differences across these sources, and post-it notes were used to capture similar findings between sources. Lastly, the synthesis was undertaken using a concept map generated from the post-it notes to explain the findings from this literature review (O'Leary 2010). The findings are presented as themes explaining the effectiveness of interactive delirium care education interventions (Table 5).

Table 5: Literature review findings: Summary of themes generated by title of theme and sources included

Theme No.	Title of theme	Sources (n)*
Theme 1	Health outcomes	5
Theme 2	Organisational (healthcare services)	4
Theme 3	Programme	8
Theme 4	Practice / competence	20

*Some studies included more than one theme.

The overlap of themes is represented by diagram (Figure 4).

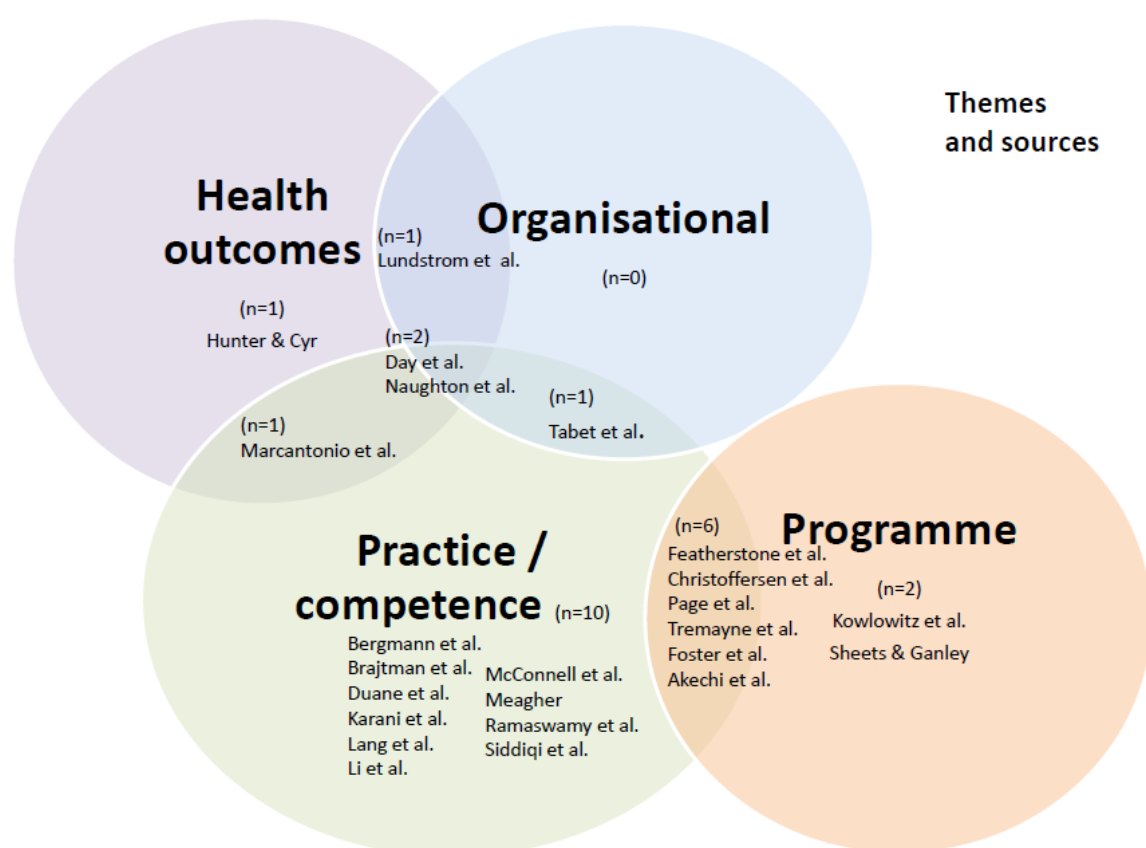


Figure 4: Findings of the literature review: Summary of themes and sources

Outcome measures

The outcome measures used in the sources reviewed varied, consisting of the effectiveness of the education intervention for healthcare staff (n=17) and the clinical impact for patients (n=9) (Table 6). Healthcare measures used were the length of hospital stay, delirium prevalence, delirium persistence and medication administration patterns. Learning was identified by structured testing or self-assessment in knowledge and confidence, and evidence of raised competence, such as

increased identification of delirium. Study outcomes were also identified by the introduction of clinical initiatives and the development of resources to improve practice.

Table 6: Literature review findings: Summary of outcome measures used in studies to evaluate effectiveness of educational interventions

Outcome measures	Sources (n)*
Clinical	9
Learner	17
Guideline/tool/practice change	7

*Some studies included more than one type of outcome measure.

Theme 1: Health outcomes

In this theme, a total of five studies were identified as relevant (Day, Higgins & Koch 2009; Hunter & Cyr 2007; Lundström et al. 2005; Marcantonio et al. 2010; Naughton et al. 2005). The studies reviewed were undertaken in the USA (n=2), Sweden (n=1), Canada (n=1) and Australia (n=1). All studies implemented an interactive delirium care education intervention and included a range of staff from the multi-disciplinary healthcare team, four in hospitals and one in a post-acute healthcare setting. The interventions consisted of a blend of group face-to-face sessions and one-to-one observation and feedback activities (n=4) or didactic presentation with interactive discussions following (n=1).

Medication use was measured by two studies (Hunter & Cyr 2007; Naughton et al. 2005). Changed practices in medication use were evidenced, with less benzodiazepine used at nine months ($p>.01$) than at baseline (Naughton et al. 2005) and a reduction in dimenhydrinate of 20.9 per cent pre-session to 11.1 per cent post-session ($p=0.011$) (Hunter & Cyr 2007). Delirium persistence was measured by two studies (Lundström et al. 2005; Marcantonio et al. 2010). No effect was found on delirium persistence in the study by Marcantonio et al. (2010); however, a shorter duration of delirium occurred in the intervention group on day 7 ($p=.001$) in the study by Lundström et al. (2005). Mortality was also lower on the intervention ward, where two delirious patients died compared to nine on the control ward ($p=.03$) (Lundström et al. 2005). Day et al. (2009) reported an absence of physical and chemical restraint in the three months following the study.

Theme 2: Organisational (healthcare services)

In this theme, a total of four sources were identified as relevant (Day, Higgins & Koch 2009; Lundström et al. 2005; Naughton et al. 2005; Tabet et al. 2005). The studies reviewed were undertaken in the USA (n=1), Sweden (n=1), the UK (n=1) and Australia (n=1). All studies implemented an interactive delirium care education intervention and included a range of healthcare workers from the multi-disciplinary team in hospital settings. The interventions consisted of a blend of group face-to-face sessions and one-to-one observation and feedback activities (n=4).

The length of hospital stay was measured in two studies (Lundström et al. 2005; Naughton et al. 2005). A significantly lower length of hospital stay (9.4 ± 8.2 versus 13.4 ± 12.3 days, $p < .001$) was evidenced in the study by Lundström et al. (2005). Naughton et al. (2005) found savings in three days per patient stay for every case of delirium prevented. Delirium point prevalence was measured by Tabet et al. (2005), demonstrating a reduction, 9.8 per cent in the intervention ward versus 19.5 per cent in the control ward, ($p < .05$). Day et al. (2009) reported delirium incidence on the ward was reduced following the intervention, evidenced by the observations of the Nurse Unit Manager.

Theme 3: Programme

In this theme, a total of eight sources were identified as relevant (Akechi et al. 2010; Christoffersen et al. 2010; Featherstone, Hopton & Siddiqi 2010; Foster et al. 2010; Kowlowitz, Davenport & Palmer 2009; Page, Kowlowitz & Alden 2010; Sheets & Ganley 2011; Tremayne, Burdett & Utecht 2011). The studies reviewed were undertaken in the USA (n=4), the UK (n=2), Japan (n=1) and Australia (n=1). The interventions consisted mainly of simulated learning activities (n=5) and group face-to-face sessions and one-to-one observation and feedback activities (n=3). The simulated learning was undertaken online (n=1) and in workshops (n=1) for the professional development of Registered Nurses (RNs), Licensed Practical Nurses (LPNs) and Nursing Assistants (NAs). Undergraduate nursing students participated in simulation learning stations (n=1) and in the use of a simulation body suit to enhance understanding of the physical changes associated with age (n=1). Pre-recorded role plays were used (n=1) to facilitate small group and larger group discussion for undergraduate nursing

students, and nurse leaders (n=1) were identified to facilitate confidence and improved practices in delirium care in hospital (n=1) through education and support. One study set in care homes used case studies and problem solving in groups of healthcare staff to facilitate learning and practice improvement in delirium care.

Evaluations were used to measure the effectiveness of the learning programmes (n=8). Evaluations consisted of five-point Likert-type scales to assess the satisfaction with the educational intervention (n=4) and the degree of difficulty (n=2). Qualitative data were gained by reflective journals (n=1), open questionnaire (n=1), interviews (n=1) and anecdotal feedback (n=1). Sheets et al. (2011) demonstrated a satisfying experience, with participants obtaining mean=4.37 SD=0.39 by survey and positive journal reflections. Kowlowitz et al. (2009) and Page et al. (2010) surveyed participants demonstrating 84 per cent and 88 per cent respectively, who found the intervention very good or excellent. Workshops given by nurse leaders to nurses were perceived as useful (n=32; SD 8 and 7.8 (1.4) respectively) (Akechi et al. 2010).

Difficulty was determined as just right by 86 per cent of participants in one study (Page, Kowlowitz & Alden 2010) and by 80 per cent in another (Kowlowitz, Davenport & Palmer 2009). Tremayne et al. (2011) used surveys to determine that 46 per cent of participants found the intervention excellent and that qualitative responses indicated improved understanding. The intervention was found to be relevant (99 per cent) and time well spent (97 per cent) by participants (Featherstone, Hopton & Siddiqi 2010). Foster et al. (2010) met or exceeded participant expectations in quality of information, presentation and the meeting of objectives. Anecdotal responses provided positive feedback, prompting plans to develop evaluation processes (Christoffersen et al. 2010). Demographic information was gathered in one study which revealed characteristics of registrants of the web-based education (n=919), including role (68 per cent RN), place of work (49 per cent acute care), student (35 per cent), instructor (10 per cent), gender (female 92 per cent) and ethnicity (white/non-Hispanic 69 per cent, black 20 per cent) (Kowlowitz, Davenport & Palmer 2009).

Theme 4: Practice / competence

In this theme, a total of 20 sources were identified and three sub-themes emerged to explain intervention effectiveness: knowledge, skills and attitude (Figure 5).

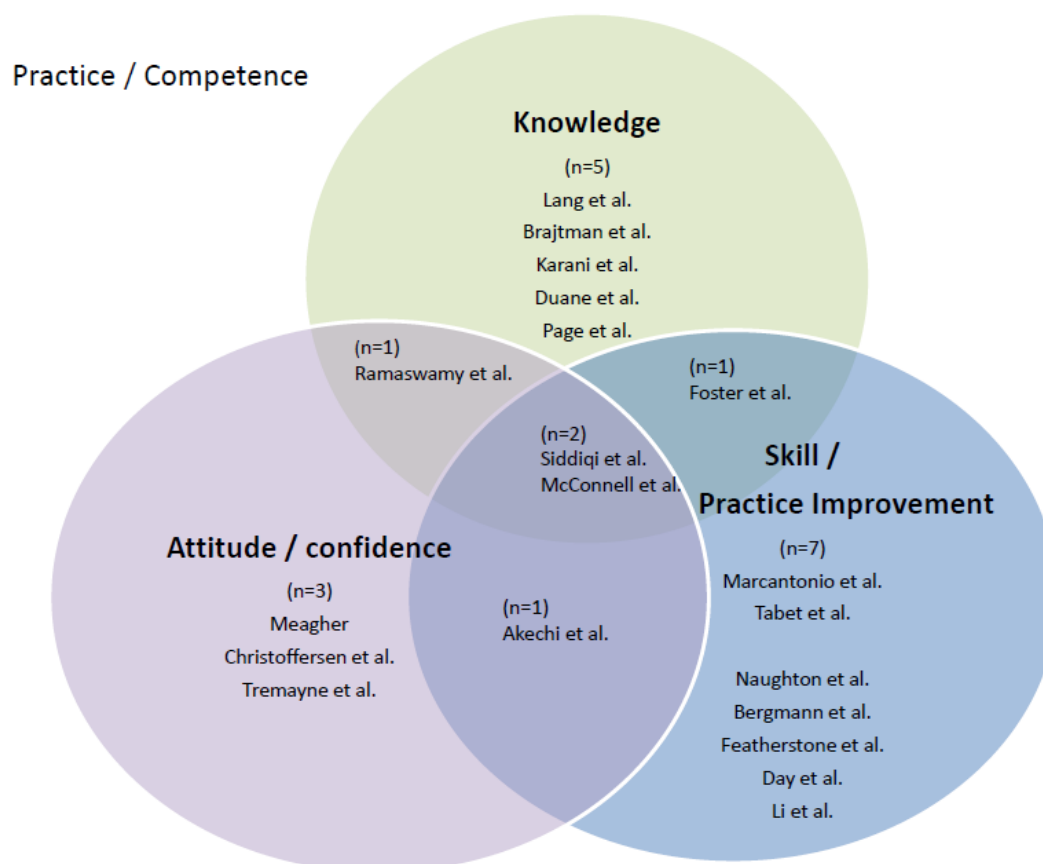


Figure 5: Literature Review Theme 4: Practice/ competence

Sub-theme 1: Knowledge

In this sub-theme, nine sources were identified as relevant (Brajtman et al. 2008; Duane et al. 2011; Foster et al. 2010; Karani et al. 2004; Lang et al. 2008; McConnell et al. 2009; Page, Kowlowitz & Alden 2010; Ramaswamy et al. 2011; Siddiqi et al. 2011). The studies reviewed were undertaken in the USA (n=6), the UK (n=1), Australia (n=1), and Canada (n=1). The interventions consisted of a blend of group face-to-face sessions and one-to-one observation and feedback activities (n=4) or unfolding case study workshops (n=4) or didactic presentation with patient simulation (n=1). Most interventions were set in hospitals (n=6) for the multi-disciplinary team (n=3), medical students and residents (n=3). Nursing interventions were held across settings (n=2) and for care home staff (n=1).

Effectiveness was measured by surveys (n=9). Surveys were given before and after (n=6) and in four of these studies, combined with a simulated patient exam (n=2) or document audit (n=1) or interview reviewing the care of older persons in hospital (n=1). Knowledge scores increased (2.9 points, $p<.001$) (Ramaswamy et al. 2011), and Foster et al. (2010) evaluated the education interventions to demonstrate an increase in correct answers from 23 percent to 50 percent. Brajtman et al. (2008) developed a delirium knowledge test and stated the scores increased from pre- to post-test. A knowledge increase of 0.84 points (9.3 percent, $t_{117}=2.87$, $p=0.0048$) compared with the control group was demonstrated by Lang et al. (2008) and improvements on knowledge for most modules (t tests, $p<0.05$) by McConnell et al. (2009). Interview data supported surveys showing increased awareness of delirium (Siddiqi et al. 2011). Workshop participants 'agreed/strongly agreed' they increased their ability to identify strategies and improve cognitive function for acutely confused older patients (96 per cent, n=480) (Page, Kowlowitz & Alden 2010). Test scores showed significant improvement in delirium knowledge (53.1 per cent, $p=0.0074$) but did not correlate with simulation exams (Duane et al. 2011). Likewise, while significant improvements in knowledge were identified by surveys (five-point Likert) the OSCE identified performance deficits (Karani et al. 2004).

Sub-theme 2: Skills/delirium recognition/practice improvement: Guideline development

In this sub-theme, a total of 10 sources were identified as relevant (Bergmann et al. 2005; Day, Higgins & Koch 2009; Featherstone, Hopton & Siddiqi 2010; Foster et al. 2010; Li et al. 2010; Marcantonio et al. 2010; McConnell et al. 2009; Naughton et al. 2005; Siddiqi et al. 2011; Tabet et al. 2005). The studies reviewed were undertaken in the USA (n=4), the UK (n=3) and Australia (n=3). The interventions consisted of a blend of group face-to-face sessions and one-to-one observation and feedback activities (n=9) or unfolding case study workshops (n=1).

Naughton et al. (2005) demonstrated an increase in delirium recognition of 8/12 compared with 6/23 on the control ward ($p<.156$). Nurses detected delirium at study sites in 41 per cent of participants versus 12 per cent in usual care sites ($p<.001$) (Marcantonio et al. 2010). Delirium

recognition by doctors was higher on the intervention ward (8/12 cf. 6/23 $p<0.01$) and the diagnosis was more likely to be recorded ($p=0.156$) than on the control ward (Tabet et al. 2005). Using a random audit, Foster et al. (2010) demonstrated little change in recognition rates of delirium by doctors ($n=5$; 50 per cent to $n=4$; 44 per cent) or nurses, who continued to document patients' experiencing confusion more frequently than doctors. Although Mini Mental State Examination (MMSE) use had increased ($n=13$; 36 per cent, $p=0.035$), cognitive assessing was still reported as low (4/10 Abbreviated Mental Test Score (AMTS) by nurses and 5/10 MMSE by doctors) (Foster et al. 2010). Siddiqi et al. (2011) reported an increase in recorded delirium episodes (8 per cent; 8/113 cf. 11 per cent; 12/113) post intervention.

Application of contextual learnings was demonstrated in three studies. From the same study two sources reported on the development of a bedside delirium alert protocol (Day, Higgins & Koch 2009; Li et al. 2010), and Naughton et al. (2005) adapted screening tools to encourage use in the emergency department. Participants enhanced their learning by leading practice improvement initiatives in the workplace and reporting on the projects in face-to-face sessions. Examples of projects are provided across settings and include the development of a pain assessment pocket card, hydration management, and delirium risk assessment and preventive and restorative nursing interventions (McConnell et al. 2009). Evidence of practice improvements post intervention were provided anecdotally ($n=3$). Healthcare workers developed a dehydration pathway and a delirium checklist for residents in care homes (Featherstone, Hopton & Siddiqi 2010). Resources were obtained to provide environmental cues to patients such as orientation boards, clocks and radios (Bergmann et al. 2005). A rummage box suitable for use by older persons with delirium in hospital was collaboratively developed (Foster et al. 2010).

Sub-theme 3: Attitude (confidence): Self-efficacy

In this sub-theme, a total of seven sources were identified as relevant (Akechi et al. 2010; Christoffersen et al. 2010; McConnell et al. 2009; Meagher 2010; Ramaswamy et al. 2011; Siddiqi et al. 2011; Tremayne, Burdett & Utecht 2011). The studies reviewed were undertaken in the UK ($n=2$),

the USA (n=3), Japan (n=1) and Ireland (n=1). The interventions consisted of a blend of group face-to-face sessions and one-to-one observation and feedback activities (n=3) or case study workshops (n=2) or novel interactive learning activities (n=2). Interventions were aimed at the multi-disciplinary team (n=2), undergraduate nurses (n=2), nurses in hospitals (n=1), nurses across healthcare settings (n=1) or healthcare workers in care homes (n=1).

A 15-item measure demonstrated a positive effect on self-confidence in 12 items ($p < 0.05$) and included improved confidence in delirium identification ($p = 0.01$) (Akechi et al. 2010). Self-reported increases in confidence in delivering delirium care by care home workers (34 per cent to 68 per cent; $\chi^2 = 22.8$, $p = 0.000$ [95 per cent CI -45.0, -19.6]) were demonstrated by survey and supported by qualitative data describing empowerment through expressing their expertise in the working groups (Siddiqi et al. 2011). Confidence in identifying delirium in older persons increased by 28 per cent ($p < .001$) and self-assessed ability to use CAM increased by 36 per cent ($p < .001$) (Ramaswamy et al. 2011). High self-efficacy for managing geriatric syndromes including delirium (mean=4.6 of 5, $SD = 0.5$) was demonstrated (McConnell et al. 2009).

Undergraduate nurses gained understanding of changes caused by ageing by using simulation body suits demonstrated by qualitative data from open feedback questions (Tremayne, Burdett & Utecht 2011) and nursing student narratives evidenced increased comfort and confidence in responding to complex scenarios in aged care (Christoffersen et al. 2010). Pre- and post-surveys of a novel interactive 'game-show' style intervention measured a change of response from 70 per cent to 45 per cent to one of four categories regarding psychotropic drug use, indicating a change of attitude (Meagher 2010).

Discussion

The themes display a growing interest in effective delirium care education and a willingness to collaborate and creatively incorporate interactive techniques (Gaba 2004; Higgins & Green 2011). Overall, some positive changes in health outcomes were achieved in the reported studies through

using interactive delirium care education interventions. These include the potential for organisational wins in reducing the length of stay caused by delirium, and increased knowledge or awareness about delirium that was translated to practice improvements, such as the increased recognition of delirium by participants. The education interventions used were shown to be highly regarded by participants in content and presentation. Online and work-based interactive methods were able to achieve practice change by mentoring participants to engage in evidence-based learning and problem solving to reach potential solutions and projects. Projects engaged healthcare colleagues in mutual learning and solution-focused activities. Siddiqi et al. (2011) report healthcare workers found these processes empowering.

Combining learning methods such as information presentations with simulation activities and group feedback provided an opportunity to improve collaboration, promote reflective practice and increase understanding and empathy (Christoffersen et al. 2010; McConnell et al. 2009; Page, Kowlowitz & Alden 2010; Tremayne, Burdett & Utecht 2011). Engaging participants in simulation exercises for examination or review evidences mastery and practice gaps, as demonstrated by two studies in this review where knowledge did not carry through to practice: when Medical Officer participants failed to match knowledge improvements with OSCE results (Duane et al. 2011; Karani et al. 2004). Undergraduate nursing programmes demonstrated the use of simulation interventions to provide students with a forum to gain understanding and confidence (Christoffersen et al. 2010; Sheets & Ganley 2011; Tremayne, Burdett & Utecht 2011). Professional development for nurses provided a meaningful and relevant learning intervention by including unfolding case study simulations in workshops or online, with outcomes indicating growth in leadership and knowledge through practice improvement initiatives (Kowlowitz, Davenport & Palmer 2009; McConnell et al. 2009; Page, Kowlowitz & Alden 2010). Simulation costs are potentially high (Gaba 2004). However, simulation was found to be flexible and reusable, integrating new knowledge and reflecting student skill and organisational need (Kowlowitz, Davenport & Palmer 2009; Meagher 2010).

Significant within all themes in this review was the impact of workplace culture as a barrier to effective delirium education. It was recognised that nurses do detect confusion in older people yet even after training, cognitive assessment was not routinely attended to (Foster et al. 2010; Ramaswamy et al. 2011). Nurses were reported to be essential to successful outcomes in delirium care interventions (Lundström et al. 2005; Naughton et al. 2005). Financial incentives to the organisation were reported to enhance assessment compliance by nurses but had little effect on engaging staff in adhering to guidelines sufficiently to reduce the duration of delirium (Marcantonio et al. 2010).

Multi-component interventions containing education, feature in this review as delirium was recognised to be complex and requires consideration of cultural barriers, such as clinician attitudes and the boundaries created by specialising (Brown, Fitzgerald & Walsh 2007; Lang et al. 2008; Teodorczuk et al. 2010). Evidence to date from studies such as the Elder Life Program has shown successful delirium care interventions need to be multi-factorial and multi-disciplinary (Inouye et al. 1999).

The most effective educational interventions were interactive, combined with enabling and reinforcing strategies, findings supported by two earlier literature reviews presenting aspects of delirium education demonstrated by varying outcomes showing improved clinical outcomes or clinician knowledge (Teodorczuk et al. 2010; Wand 2011). From Australia, Wand (2011) reviewed educational interventions to prevent delirium. From the UK a review was undertaken to determine the learning needs of hospital clinicians working with confused older people to inform education interventions (Teodorczuk et al. 2010). This review shared four sources with these two previous literature reviews. All three reviews note the scarcity of literature and concern about the strength of studies due to design limitations. Delirium care education is considered important and adult learning principles significant in ensuring effectiveness, yet passive forms of education remain

entrenched in healthcare settings (Teodorczuk et al. 2010; Wand 2011). This review specifically sought information on interactive delirium education interventions.

Recommendations

Findings from this review suggest greater use of simulation activities in education interventions within innovative practice projects supported by expert nurse leadership. Nurses are considered critical to achieving effective delirium care and should be targeted within a multi-disciplinary team approach. In Australia, commitment to the key worker role, significant in these findings, is evidenced by New South Wales Health Dementia Delirium Clinical Nurse Consultant positions to improve care for older people (NSW DOH 2010). Determining a means of evaluating the effectiveness of these positions and the education interventions implemented by them is ongoing. The achievement of changes in practice is difficult to measure, requiring time and recognition of confounding factors (Wilson & Walsh 2008).

Understanding the barriers and enablers experienced by clinicians providing delirium care would assist development of supportive environments, processes and educational interventions (Wilson & Walsh 2008). Future delirium education interventions need to embrace strategies for promoting changes in workplace culture regarding delirium care if they are to be more successful than previous delirium education interventions—for example, strategies to increase recognition and diagnosis of delirium. Before we can do that, we need to know more about current practice and gain understanding of how Registered Nurses recognise and interpret confusion in older people in hospital.

Conclusion

This systematic review of the literature was undertaken to explain the effectiveness of interactive delirium care education. The search identified sources describing interactive forms of delirium education studied within the broader healthcare sector and generated four themes from a review including 24 papers: i) Health outcomes; ii) Organisational (healthcare services); iii) Programme; and iv) Practice / competence.

The literature supported the use of interactive education interventions, with simulated activities using adult learning principles found to be particularly engaging by clinicians and likely to facilitate knowledge transfer. Comparison between studies was limited due to the varied research design, including the evaluation methods and outcome measures used. Some studies focused only on learner outcomes rather than provision of healthcare outcomes to ensure an effect in practice. Development and validation of evaluation tools are warranted to improve generalisation in future research. In reviewing the literature on education in delirium care, it has become evident greater understanding is required of the challenges and enablers clinicians experience in providing delirium care to develop relevant, high-impact educational interventions which promote knowledge transfer to practice.

The findings from this literature review were used to identify a research question for the Master of Philosophy empirical study, and outcomes are informing the development of interactive educational interventions by the Dementia Delirium Clinical Nurse Consultant who is the Master of Philosophy candidate undertaking the empirical study, to enhance the implementation of the *Delirium Care Pathways* (DOHA 2011). To gain important perspectives on the development of this education package, further work will be undertaken to explore how Registered Nurses assess and identify delirium in older people in hospitals to find evidence of enabling and challenging factors in delirium recognition.

Chapter 4: Methods

Research design

The purpose of this chapter is to explain the research design adopted in this study in order to generate understanding of Registered Nurses' practice in assessment and identification of delirium in older people in hospital. As explained in previous chapters, currently older people in hospital are at high risk of developing delirium and experiencing associated adverse outcomes, which can include increased length of hospital stay, the development of new dementia, and death (MacLulich et al. 2013). Registered Nurses are well placed due to their close patient contact to recognise delirium and initiate appropriate interventions, yet delirium continues to be seriously under-recognised in hospitals nationally and internationally (Speed et al. 2007; Steis & Fick 2012; Wand et al. 2013). Understanding of enablers and challenges in current practice in the assessment and identification of delirium by Registered Nurses will provide evidence to inform education initiatives and influence policy.

A descriptive exploratory study was undertaken to generate understanding of Registered Nurse practice in the assessment and identification of delirium (Sandelowski 2010; Thorne, Reimer Kirkham & O'Flynn-Magee 2004). Healthcare involves complex concepts and the contextual enablers and challenges for nurses in everyday practice can remain tacit and poorly articulated (McCormack, Manley & Walsh 2008). Clinical decision making can be drawn from knowledge generated from a wide range of sources, including nurses' own practical experience and the expertise of others, processes which can remain implicit and therefore unacknowledged and unquestioned (McCormack 2011; Rycroft-Malone et al. 2004). Qualitative methods in research provide a means to investigate a phenomenon as it is lived and intentionally reflect on it for the purpose of gaining meaning, providing an approach that is able to expand understandings about that which is known by others sharing similar situations and challenge practice assumptions (Silverman 2006; Thorne, Kirkham & MacDonald-Emes 1997; van Manen 1990). Qualitative designs provide a means to inform clinical understanding by making implicit knowledge accessible and by making sense of subjective, shared

experiences in a coherent and meaningful way not available through the reduction of data to numbers (DePoy & Gitlin 2011; Thorne, Reimer Kirkham & O'Flynn-Magee 2004).

As a Dementia Delirium Clinical Nurse Consultant in the hospital setting, the researcher's key concern is the poor rates of delirium recognition, which are the focus of this study's question and aims. Historically, nursing knowledge has been implicitly applied in practice and, although intuitiveness can be considered a valuable aspect of expertise, assumptions can become deeply rooted invisible influences on practice (Meerabeau 1992). By exploring Registered Nurse assessment and identification of delirium in hospitals using qualitative methods, an understanding of current practice can be articulated. Qualitative methods of research are flexible and holistic and recognise there can be multiple realities to explain the lived experience. A naturalistic inquiry using creative processes responsive to the context and aim of the study was core to the design (O'Leary 2010; Silverman 2006). To ensure the study provided meaningful clinical understanding and had potential for clinical application, an interpretive description of Registered Nurse practice in delirium assessment and identification was undertaken. The aim of the study design was to be transparent, authentic, transferable and open to auditing for scientific rigour and credibility (O'Leary 2010; Thorne, Reimer Kirkham & O'Flynn-Magee 2004).

Ethics

The research design of this study was reviewed by the Joint University and Local Health District Health and Medical Human Research Ethics Committee. Access to the study site was granted by the local health district. The research design consisted of low-risk ethical issues focusing on the experience of Registered Nurses who have assessed and identified delirium in older people in hospital. The role of the researcher as a Dementia Delirium Clinical Nurse Consultant did not include any managerial responsibilities relating to the participants and there was no formal dependent relationship between participants and the researcher. All participants were voluntary and consented to a digitally recorded group interview. Transcripts were coded by assigning a number to the participant and using their title acronym (for example, RN1 for the first Registered Nurse to

participate and CNC1 for the first Clinical Nurse Consultant) to protect and maintain participant anonymity. Maintaining an identification of the role provided context on the seniority of the participant during analysis. Nationally approved protocols for participant recruitment, consent, maintaining anonymity, data collection and storage were adhered to throughout the study (NHMRC 2007).

Setting and sample

The setting for this study was within a local health district (LHD) located in the state of New South Wales, Australia, just over one hour south of Sydney in a coastal strip of land about 250 km long (Figure 6). The primary purpose of the LHD as outlined in legislation is to ‘promote, protect and maintain the health of the community, and to provide relief to sick and injured people through care and treatment’ (MOH 2013bp.8).



Figure 6: Orientation map for location of study: New South Wales, Australia

The population served by the LHD was just under 400,000 people and the health services are delivered by nine public hospitals, as well as community and outpatient services. In the local community, 8.5 per cent of residents were 75 years and over, a percentage greater than the state

average of 6.9 per cent and one expected to increase by 32 per cent by the year 2021. On average the community served by the LHD was more socioeconomically disadvantaged than the state population. Culturally and linguistically diverse (CALD) communities were well represented; in 2011, 23 per cent of the population was estimated to have been born overseas (ISLHD 2012). Within the LHD, the area supported by the major referral hospital contained the highest percentage of people born overseas and people who have poor English skills. Within the LHD communities, people aged over 65 often lived alone (40 per cent to 56 per cent) (ISLHD 2012, 2014). As one of the largest employers in the region, the LHD workforce comprised 6,800 staff, of which 47 per cent were nursing staff (ISLHD 2014). This research targeted one hospital with 15 units, excluding midwifery and paediatric units, and employed over 800 Registered Nurses (Table 7).

Table 7: Background: Nursing workforce profile at participating site

Registered Nurses	Full Time	Part Time	Grand Total
Registered Nurse	405	252	657
Nursing Manager	45	11	56
Nurse Educator	16	5	21
Clinical Nurse Specialist	43	41	84
Clinical Nurse Consultant	24	6	30
Nurse Practitioner	3	3	6
Total Registered Nurse workforce	536	318	854

Sample target

Qualitative studies do not generally need a large sample size, as the aim is to be exploratory rather than definitive, and to develop themes and patterns to illustrate the process of interest; an understanding which can be more deeply acquired from the few rather than the many (O'Leary 2010; Silverman 2006; Thorne, Reimer Kirkham & O'Flynn-Magee 2004). A smaller-scale investigation for this study was in keeping with descriptive exploratory qualitative inquiry. One hospital from the LHD was the target for recruitment. Previous qualitative research studies with Registered Nurse participants (n=15 and n=21) using semi-structured interviews provided findings which were able to identify obstacles and opportunities in nursing practice and deliver recommendations for future directions (Hallin & Danielson 2008; Perry et al. 2003). Similar to these

studies, this design aimed for a sample of Registered Nurses (n=24) to participate in semi-structured interviews. To identify trends in this emergent research topic, this number was determined to be efficient and potentially sufficient to raise significant issues or awareness of questions requiring further investigation (Silverman 2006). Data saturation was not planned as a required goal for continuing data collection but rather the development of a sense of understanding or crystallisation of a concept or concepts. This is because a phenomenon can be viewed in many ways and it was anticipated that what would be articulated would be driven by the study goals, question and the researcher, as well as the participants and context (Ellingson 2009; O'Leary 2010; van Manen 1990).

The target hospital was a district-wide tertiary referral centre for acute inpatient services and was considered a major emergency and trauma centre, with aged care and non-aged care units providing care to older persons potentially vulnerable to delirium (ISLHD 2012, 2014). The first interview was an exception to this recruitment strategy, as senior aged care clinicians, the Aged Care Clinical Nurse Consultants (n=2), who were based at other sites across the district, were invited to participate. The inclusion of senior aged care practitioners in the first interview was designed to provide an opportunity to gain insights from their experience, both in the direction of the study and in clinical practice of assessment and identification of delirium in hospitals (Silverman 2006). The purposeful sample was to include participants who had experience in assessment and identification of delirium in hospital, and the participant group was intended to reflect current healthcare employment statistics with both male and female nurses represented (9 females, 1 male), congruent with the study aim (Hickson 2008; O'Leary 2010; Santiago 2014).

Recruitment

Recruitment strategies were developed in line with the study aims and in recognition of the structure and hierarchy of the local setting. A purposive sample of Registered Nurses experienced in the assessment and identification of delirium in the hospital setting were recruited. Within the selected tertiary regional referral hospital, wards providing care to older people at risk of delirium were the focus of recruitment. Intensive care and drug and alcohol settings were excluded in

keeping with the focus of the literature, the literature review undertaken, and expert clinical and academic consultation, in recognition of the specific clinical interventions and environments in these particular settings.

The study had the support of the executive from the LHD Aged Care division, which provided guidance on the following recruitment strategy:

1. The hospital's Director of Nursing (DON) was informed of the study:
 - a. The DON approved the study; and
 - b. Informed other managers, supporting participation by the hospital Registered Nurses;
2. The researcher then made contact with Nurse Unit Managers (NUM) at targeted wards, such as the Emergency Department, Cardiac Step Down, Neurological, Renal, Medical and Surgical wards where contact with older people was common. The researcher made contact by:
 - a. Personal ward visits following notification authorising Registered Nurse participation by the DON; and
 - b. Email and flyer requesting dissemination to Registered Nursing staff;
3. Nurse Educators on each ward were given a personal invitation and encouraged to promote participation with colleagues.

Voluntary participation was supplemented by snowballing; individual invitations were given to Registered Nurses by colleagues or the researcher as referrals were received to achieve recruitment aims (O'Leary 2010). From the targeted units, response was strongest from the emergency and medical wards, despite particular attention for recruitment being paid to the surgical units, where delirium was a particularly high risk for older people.

Group interview times and dates were promoted by flyer, often with a personal invitation as described. Participation was increased when interviews were held on the wards in ward meeting rooms at mid-afternoon during the change of shift, when there was an overlap of staff. While no monetary or gifting incentives were offered, Registered Nurses requested the sessions be included on their education records to add to their accumulation of continuing professional development points. The Dementia Delirium Clinical Nurse Consultant role includes a responsibility for increasing delirium awareness and educating on issues related to delirium; hence, this was considered a useful request by the participants.

Participant Information Sheets (PIS) were made available to Registered Nurses contemplating participation and issued to all participants prior to group interviews. Opportunities for questions were provided, with the researcher's contact details made available before and after interviews. The criteria of having assessed and identified delirium were addressed at the beginning of interviews to establish group understanding of the purpose of the research, and individuals self-identified their eligibility. This meant there was a diverse range of experience and knowledge about delirium, as was representative of the workforce. Consent forms were issued and signed prior to the commencement of interviews. Group consensus was reached regarding confidentiality and ways of working before each interview was commenced.

Data collection

The data collection strategy for this study consisted of recorded semi-structured group interviews undertaken over two-months. Demographic data were obtained by questionnaire prior to commencement of the interview and designed to generate a profile of participant characteristics relevant to the study, including gender, nursing experience, aged care unit experience, if any, and professional education levels (Appendix B: Demographic survey). A total of eight interviews were undertaken with participants (n=24). All interviews were undertaken by the same interviewer.

The techniques of undertaking a phenomenological study informed the data collection and the data analysis even though a phenomenological approach was not fully adopted to undertake this research (van Manen 1990). This influence created a framework to flexibly develop interview questions in response to the concurrent data collection and analysis, responsive to the varied experiences of the diverse participant group (O'Leary 2010). Spontaneous follow-up questioning for depth and detail flows more readily with concurrent analysis (Rubin & Rubin 2012). For example, a more open response was obtained when participants were asked about their motivation to assess and identify delirium, a question not included in the original script. This question was found to lead to a deeper level of engagement with senior Registered Nurses in particular, who were able to share personal practice experience, moving away from textbook or more routine responses. While it was enlightening to ask knowledgeable participants about the more difficult-to-assess condition of hypoactive delirium, such specific questioning was not pursued with the less practised participants to maintain openness, engagement, and a willingness to share their experiences (Seidman 2012). Participants' depth of understanding about their experiences varied. Some had critically reflected on the process; for others, the knowledge was more intuitive and articulation was difficult, requiring a flexible approach to gaining a general sense of the experiences of the novice practitioner in delirium recognition, and becoming deeper and more specific with more advanced practitioners, who were able to give more vivid and focused accounts (van Manen 1990).

Naturalistic inquiry is inductive and begins as broad information gathering, becoming more focused as analysis of data begins (DePoy & Gitlin 2011). As analysis was concurrent with data collection, the interviews reflected subtle shifts determined by the level of experience or knowledge participants had of the topic and the developing understanding of the researcher. Therefore, maintaining a sense of the overall purpose of the study was important to guide the research processes within this flexible approach (O'Leary 2010; van Manen 1990).

Interview format

The researcher used a semi-structured, pre-planned interview format. A pilot group interview with experienced researchers was undertaken to initiate familiarity in the complex interviewing relationship. The pilot group provided an opportunity to commence the establishment of practical processes in conducting an interview, including making contacts and accessing a suitable venue. This group of select interview participants was also able to identify interviewer techniques which supported or detracted from the study objectives (Seidman 2012). The pilot interview group was not used for collecting data. The pilot group informed future interview design and style, particularly in encouraging the establishment of a strong introduction and valuing breaks in discussion. Clarity of the study objectives and the interview processes were important to establish rapport; any discomfort with silence by the interviewer can be projected to the participants and close discussions, reducing the time and space needed for thoughtful responses (Rubin & Rubin 2012; Seidman 2012).

The interview protocol was developed to provide consistency in processes, and a question guide to provide prompts was used to encourage free-flowing, open dialogue to explore how Registered Nurses assess and identify delirium in older people in hospital (Appendix C: Interview Protocol). A sample question guide with key questions was given to participants to reduce possible concerns about the interview questions. Participation entailed one digitally recorded group interview for a maximum time of 60 minutes. Time was recognised as a potential barrier to participation due to the unpredictable and busy pace of the hospital setting, requiring attention to interview timing and length.

Data analysis

As previously stated, data analysis was concurrent with data collection (O'Leary 2010). A systematic approach to analysis was undertaken to provide findings firmly grounded in the data (Koch 2006). Analysing the data using organised processes, commitment, thought, reflexivity and flexibility provided a framework for progress in what is essentially a creative exercise where in fact there are 'no rules' (Burgess 1984; Hickson 2008). The transcribed texts provided accessible data to develop

meaning and to identify themes underlying current practice by Registered Nurses in the assessment and identification of delirium (DePoy & Gitlin 2011). The research question guided the reflective process of qualitative data analysis undertaken in this research (Figure 7) (O'Leary 2010). Extraneous material was excluded from the data, leaving only material important to the research question to undergo analysis (Hickson 2008).

The process of data analysis is cyclical and iterative as the data is read, reviewed and engaged with (O'Leary 2010). The following reading template was adapted from Moss and Walsh (2012) to provide a framework to demonstrate rigour in the analytical process (Appendix D: Reading frame):

1. General impressions:
 - a. Reread the transcript to gain a sense of the whole and make general notes.
 - b. Make general notes on the impression of the interview processes and structure.
 - c. Make notes of the general sense of what was gained within the topic.
2. Specific information:
 - a. Transcript annotation
 - b. What is revealed about the topic from the transcript?
3. Insights into themes emerging: thematic analysis:
 - a. Record emergent themes/concepts/aspects.
4. Alternative and non-conforming perspectives:
 - a. Look at the transcript afresh, consider alternative perspectives, make notes.
 - b. Are there other ways of explaining what the transcript has uncovered? Look for non-conforming and disconfirming perceptions and make notes.
5. Summarise information in relation to the research aim and question.

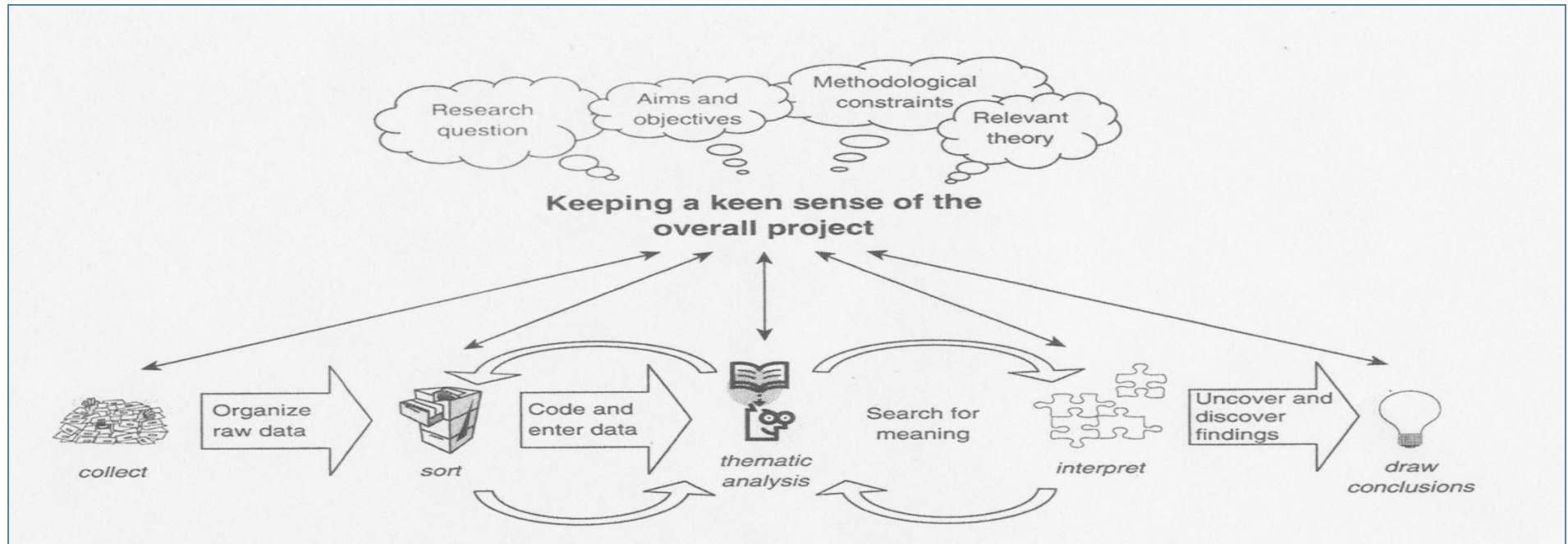


Figure 7: Qualitative data analysis technique: The process of reflective analysis

Adapted from O'Leary (2010 p.231)

Template use provided a systematic means for data analysis and formed part of an audit trail able to be verified by others (DePoy & Gitlin 2011; O'Leary 2010). Interpretations of the data were dynamic as new information was gathered. The audit trail not only provided credible evidence of key points in the journey but formed part of the creative exercise in shaping the interpretation of the data (Koch 2004).

Mind mapping was used to brainstorm ideas and to identify themes, using linkages to create broader categories and absorb similar concepts where indicated, building interconnectedness and meaning with the raw data (Burnard 1991; O'Leary 2010) (Appendix E: Methods - Mind Mapping). Rereading the transcript against the developed list of themes established the coverage of the analysis against the whole transcript, with the goal to account for all relevant data (Burnard 1991). In effect, a process of construction, deconstruction and reconstruction was undertaken, as key impressions were made, explored and refined (Hickson 2008).

Finding sound practical steps in achieving these iterative and creative processes of data analysis was challenging. Whether computer programs are preferable to more traditional methods was a debate considered in this research. In this study, manual means were found to be creative, functional and manageable (Figure 8). A strong visual access and closeness to the data were provided by using readily available resources to incorporate the steps of listening, note-taking, mind-mapping and grouping the data using colour coding.



Figure 8: Qualitative data analysis: Practice step-by-step guide

Using several guides from texts, taking advice from experienced researchers, maintaining a strong focus on the purpose of the research, and recognising personal strengths and limitations led to the following steps:

1. interviewed, made notes of impressions immediately after the interviews;
2. listened, re-listened to digital recordings, made notes of impressions;
3. transcribed and cleaned the data;
4. read, re-read, made notes of impressions;
5. annotated the interview, developed a table;
6. following all interviews, thematic impressions were developed and a mind map drawn to discover linkages and disconfirming data; (n=5) themes suggested;
7. underlined and highlighted colour themes and made post-it points to paper copy of scripts;
8. photocopied on coloured paper, multiple copies, colour theme identified which interview group, as interviews tended to group nurses from particular units or specialties;
9. coloured cardboard used to identify potential themes (n=5) by attaching manually cut and pasted data from coloured paper scripts;
10. mind mapping re-attended and cardboard sheets physically laid out to reflect linkages identified in the mind map; and
11. (n=5) themes then merged by linkages understood by previous process into (n=3) themes.

Computer Assisted Qualitative Data Analysis Software NVivo10 (QSRInternational 2013) was accessed for this study. However, the software was predominantly used to store data, as exploring ways to make greater use of the computer program for the analysis process would have impacted on the study timeline. As acknowledged by literature, the researcher was the main tool for analysis, even though computer programs can provide an efficient means to record, store, index, sort and code if the researcher is familiar with the software (Johnston 2006; Leech & Onwuegbuzie 2011; O'Leary 2010). Maintaining a sense of the whole while considering the parts in qualitative research

was essential to bring a clear understanding to the research question and not get lost in side issues (O'Leary 2010; van Manen 1990). Using manual means to analyse the data allowed for a constant visual field of the whole project, with ready access to the developing themes as well as individual data. To keep focused on the process being studied, the research question was kept physically in view by keeping the recruitment flyer in sight at the interviews and by writing the question out to have in sight during the process of analysis. Guided by the research question, the data analysis undertaken used a systematic, iterative approach informed by the literature and experienced researchers. The means undertaken was effective for the size of the study and provided a basis for further developing analytical skills, whether using manual or computer-assisted technology. Linkages and themes emerged from the data using the process undertaken.

Conclusion

This chapter described the research design adopted to explore how Registered Nurses assess and identify delirium in the hospital setting. The descriptive exploratory qualitative approach used semi-structured interview techniques to obtain data from a purposive sample of (n=24) Registered Nurses working in the hospital setting. This design aimed to ensure a meaningful understanding of current nursing practice was developed with potential for clinical implications. The study had low-risk ethical considerations, and appropriate approvals were obtained from the ethics committee and the study site organisation for access. All participants were voluntary and gave informed consent.

Challenges in recruitment and data analysis were met by informed, collaborative and creative responses to the context. Data analysis was achieved through systematic iterative and inductive processes using predominantly manual methods. Thematic analysis commenced concurrent to data collection. Techniques used in data analysis promoted an overarching awareness of the aim of the study while enabling focused attention to detail, preventing the analytical process from becoming bogged down in inconsequential data coding and keeping on track to the purpose of understanding how Registered Nurses assess and identify delirium. Thematic analysis generated three themes to be discussed in the following chapter.

Chapter 5: Findings

Introduction

The purpose of this chapter is to report the findings on Registered Nurse assessment and identification of delirium. An overview of the participant profile is provided and the details of the key themes described. The study consisted of group interviews (n=8) undertaken over a two-month period in a regional referral hospital. Interviews were conducted face to face, digitally recorded and transcribed verbatim into Microsoft Word documents. Demographic and qualitative data were generated from a purposive sample of Registered Nurses (n=24) who self-identified as having experience in assessment and identification of delirium in older people in hospital. Concurrent thematic analysis commenced with data collection, and themes were generated from the first interview. Through mind mapping techniques, these initial themes were found to have common links and were modified with subsequent interviews, reducing the number of primary themes generated to three (Figure 9).

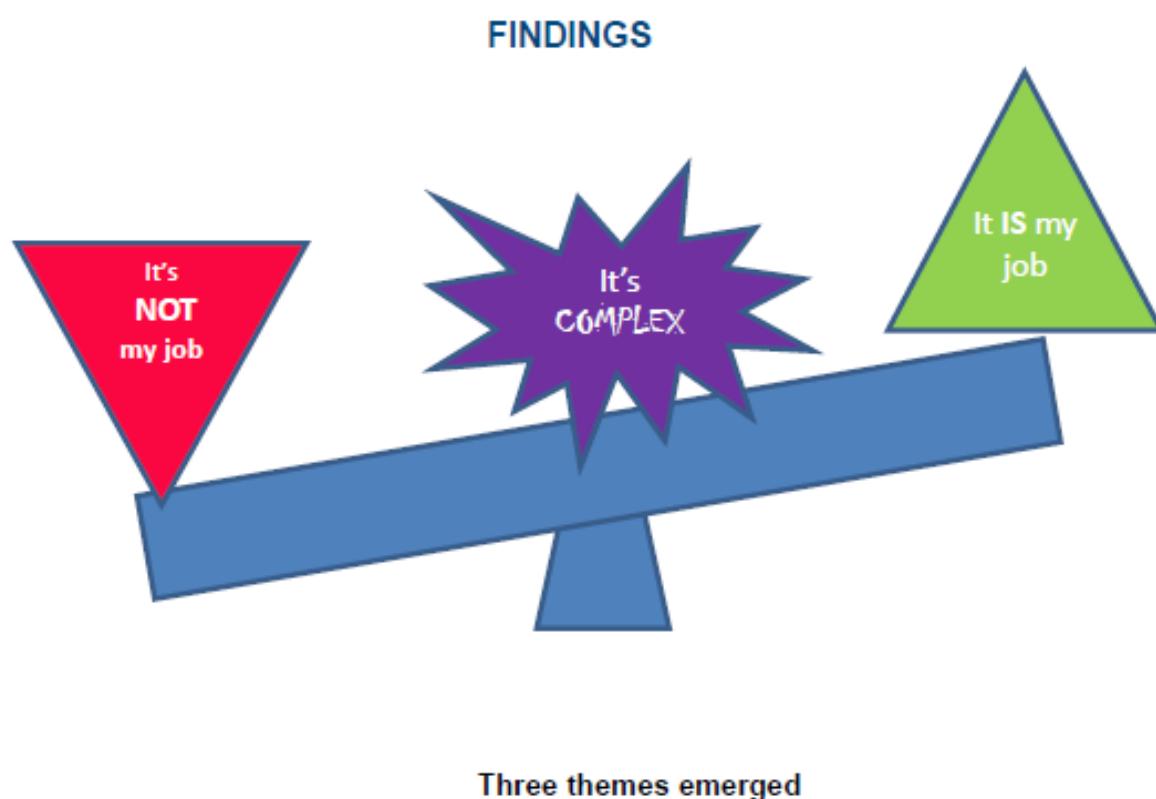


Figure 9: Study Findings: Three themes

Demographic profile of participants

A total of 24 Registered Nurses were included in the study. In one interview, two participants were excluded from the study: one self-identified as a student, who requested the opportunity to observe, and the other identified by the demographic survey as an assistant-in-nursing. These participants' information was removed from the transcript prior to data analysis. Interest in the research process was expressed by two other non-registered nurses in another interview, who with group consent observed but did not participate. Each Registered Nurse participated in one of eight interviews in groups of up to seven Registered Nurses with one researcher. All interviews were undertaken by the same researcher.

Male and female Registered Nurses participated—males (n=5) and females (n=19)—an over-representation of males, given that overall less than 10 per cent of Registered Nurses in the workforce have been identified in an international census as male (Graph 1) (Santiago 2014). The participants came from a diverse range of hospital units (n=6). Several participants worked across the hospital settings in the casual pool or as Clinical Nurse Consultants (Graph 2). Two Aged Care Clinical Nurse Consultants who were based at other hospital sites within the same LHD were recruited for the first interview for their expertise in aged care nursing in hospital settings. Specialties represented included emergency, renal, aged care and medical wards; no representatives from surgical wards participated. More than 50 per cent of all participants had more than 10 years' experience (Figure 10), more than one-third of participants had postgraduate qualifications (Figure 11) and more than half held senior roles as Clinical Nurse Educators (CNEs), Clinical Nurse Specialists (CNSs) or Clinical Nurse Consultants (CNCs) (Figure 12).

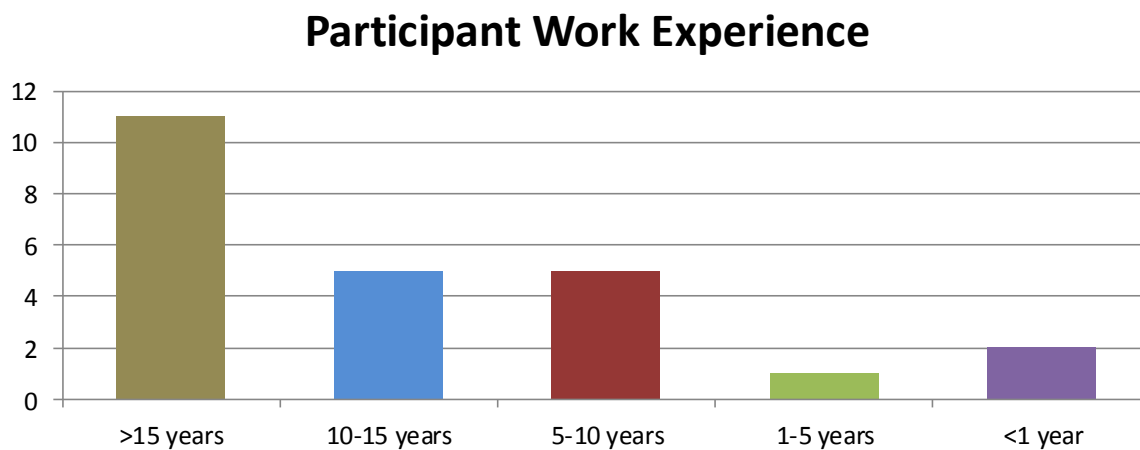


Figure 10: Participant work experience in years

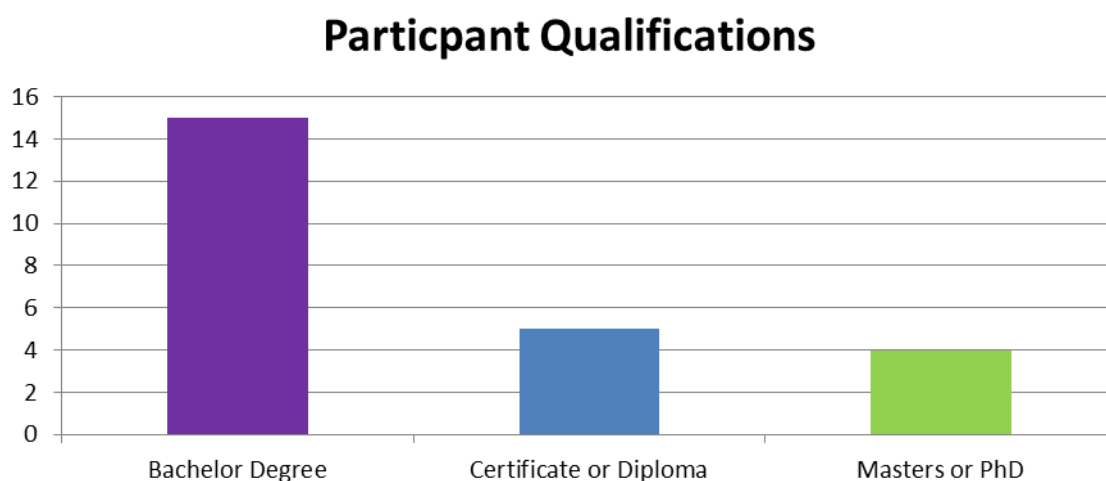


Figure 11: Participant education by qualification

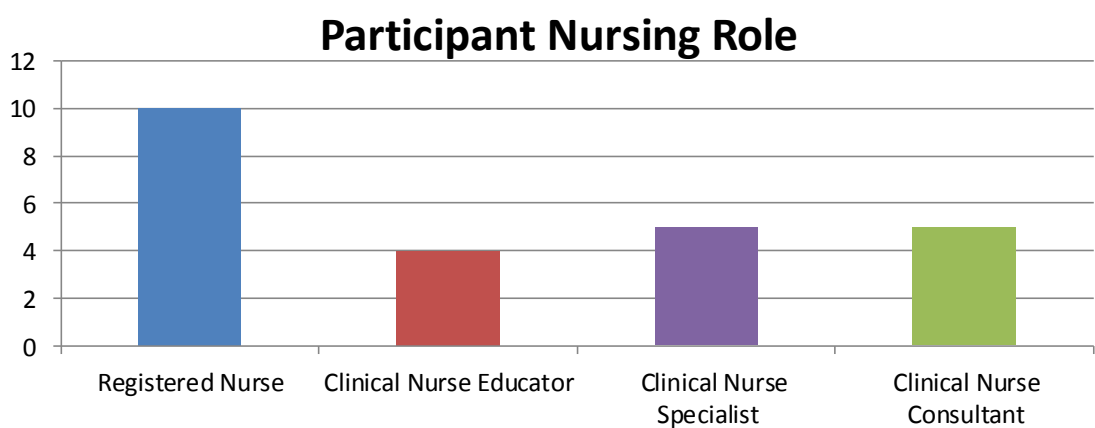


Figure 12: Participant experience by job role

Themes generating an understanding of Registered Nurse assessment and identification of delirium

Registered Nurse responses in the group interviews described their current practice in assessing and identifying delirium, providing understanding of their perception of responsibilities, knowledge and organisational expectations in providing delirium assessment and identification in caring for older persons in hospital. Participants all self-identified as experienced in delirium assessment and identification of older people in hospital. Their evidence revealed a dichotomy in their perceptions of responsibility. These responses were organised into three broad themes: 'It's not my job'; 'It is my job'; and 'It's complex', each with a number of sub-themes presented below (Figure 13).

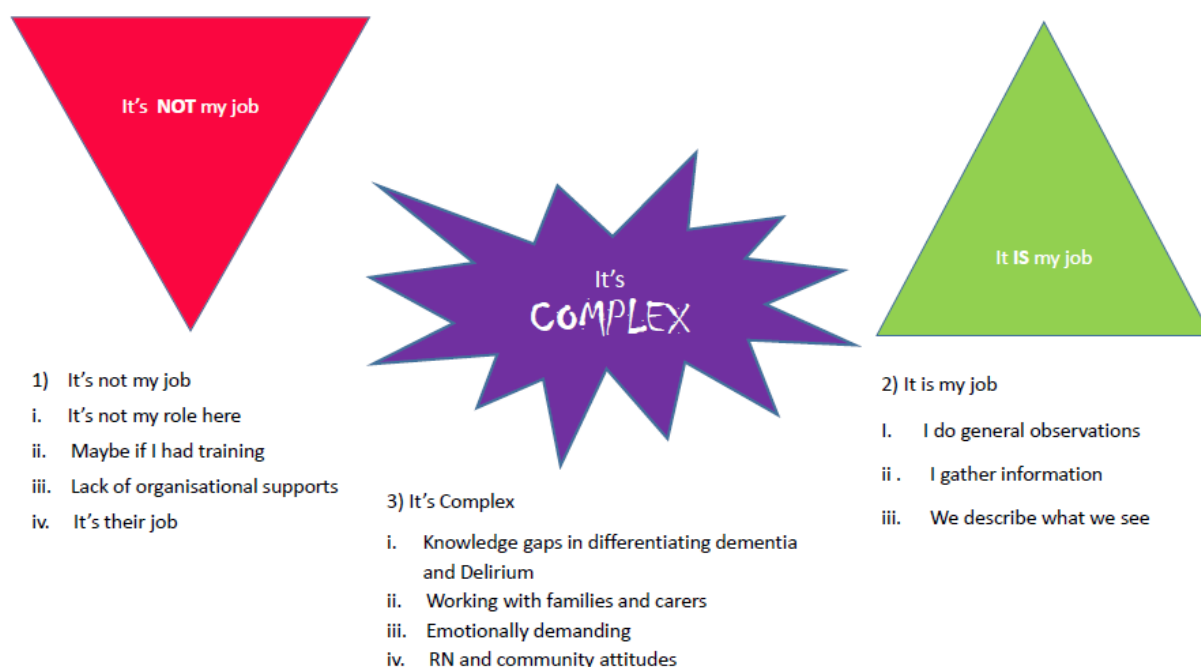


Figure 13: Study findings: Themes and sub-themes

Theme 1: It's not my job

This theme explores responses that related to participants' perceptions of whose job it was to undertake delirium assessment and identification of older persons in hospital. These responses are organised into four sub-themes: 'It's not my role here'; 'Maybe if I had training'; lack of organisational supports; and 'It's their job' (Figure 14). This theme explores how Registered Nurses, apart from aged care specialists, did not see delirium assessment and identification for the older person in hospital as their job.

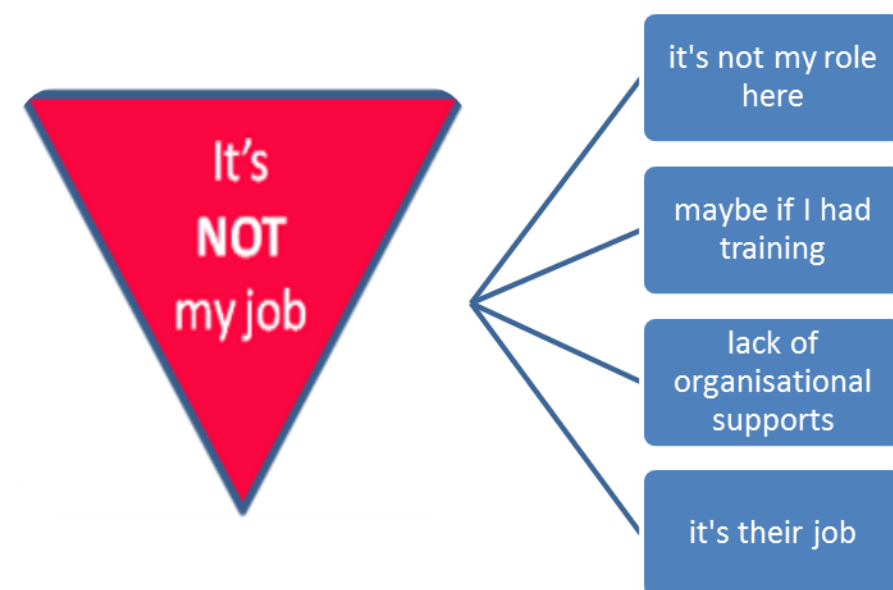


Figure 14: Study findings: Theme 1: It's not my job

It's not my role here

In this sub-theme of 'It's not my job', Registered Nurse responses provided context to the nursing role in delirium assessment and identification of older people in hospital. Registered Nurses did not state there was no nursing responsibility for delirium assessment and identification but spoke in terms of the role belonging to others within this setting. In discussing the role of cognitive screening to assess for delirium, Registered Nurses explained that cognitive assessment was formally attended by allied health staff (Occupational Therapists) in this hospital and, on occasion, the medical staff or specialist aged care nurses, supporting their belief it was not their role at this site.

... so it's more something [Aged Services] do than what we do. (RN10:IV7:P6:L7)

Concern was expressed about crossing over boundaries by assuming responsibilities possibly belonging to the role of others.

But I just sort of felt I didn't want to step over anyone's toes because here I was just coming in as a, just reviewing this person for something completely different—not for their specific confusion. (CNE2:IV3:P11:L24)

Registered Nurses reported they had attended to formal cognitive assessment at residential and other hospital settings in previous positions. While noting it had been their role in other settings, they did not perceive it to be their role here.

In my previous hospital I worked, we had an admission form where we would go through everything ... and we had a mini like mental thing which you would score out of 10 [AMTS] ... that was just a nursing thing where you would ask everything including social, social background ... (RN4:IV3:P8:L1)

A number of participants stated they would use orientation questions and the parts of cognitive assessment or screening tools they remembered from former use to ascertain cognitive status, even though they would not use the tools here. The results were not necessarily documented.

You tend to ask those questions, 'What day is it?' and, 'Where do you think you are?' And we do stuff like that but it's not that formal. (CNE4:IV6:P10:L7)

Orientated, time, place, person ... Has got an insight of his behaviour. Has got judgement ... the memory as well ... So yeah, I use parts of it. (RN9:IV5:P7:L1)

Responses indicated recognition of a barrier to Registered Nurse participation in assessment and identification of delirium through organisational culture.

I don't know why it is, culturally. Mini Mentals [MMSE] are done by OTs or CNCs. I, I can't see a good reason for that ... I've been here over five years and it's never been a routine, targeted, specific part of nursing practice ... on the ward. (RN5:IV4:P11:L8)

I mean just historically I've never, I've never actually, oh a few, yeah, I probably have a few times in the past done a bit of a Mini Mental [MMSE] with somebody who was obviously really confused but it's never sort of been perceived as my role, in some ways ... (CNE4:IV6:P9:L12)

Registered Nurses described perceptions that the role of delirium assessment, especially through the formal processes of cognitive screening, was outside their scope of practice at this hospital setting.

Maybe if I had training

Within the theme 'It's not my job', this sub-theme provides understanding of the participants' concerns that they were under-prepared to provide delirium assessment and identification. This sub-theme crosses over with the sub-theme identifying the lack of organisational supports. In this sub-theme, 'Maybe if I had training', the belief that delirium assessment and identification were not part of the job was further verified by participant expressions of a lack of specific training mandated or offered in the workplace. New graduates recalled learning about delirium in their studies but had found the workplace did not support formal practices in delirium assessment. Apart from specialist aged care nurses, there was little knowledge of evidence-based tools for delirium assessment and identification, such as the Confusion Assessment Method (CAM), and even where Registered Nurses were aware of such tools they were not confident in using them or fully confident in the tool.

I've read, like I've read through it, but I wouldn't know how to do one [CAM]

myself without like probably reading more ... (RN11:IV8:P5:L15)

... I don't rely just on the CAM itself but also the, as I said, the collateral history from the family is probably one of my biggest sources. (CNC3:IV1:P8:L3)

I think more education on delirium ... would be helpful. (CNE3:IV5:P14:L4)

Postgraduate studies in aged care provided knowledge on delirium assessment and identification, raising awareness of the lack of knowledge without further education.

... 'cause I got the benefit of having recently completed the subject in aged care, in postgraduate work, that I am actually aware of that pathway. Had I not completed that subject, I definitely would have been ... quite unaware of some of these tools that are available for delirium assessment. (CNE2:IV3:P9:L6)

Participants expressed concern about using the term 'delirium' unless a Medical Officer had made a diagnosis. Delirium identification was viewed as diagnostic and the role of the Medical Officer.

I don't think I'd be qualified to do it. (RN7:IV5:P11:L15)

And you don't wanna mis-diagnose them either ... dementia or something.

(CNE1:IV2:P18:L16)

Yet some participants could see a role for diagnosis of delirium by Registered Nurses.

... it's a nurse's place to do it [diagnose] but it's something that you need to be trained to know and know how to do. (RN7:IV5:P10:L14)

... I think it's reasonable to make a, a nursing diagnosis that the person has a possible delirium. And that way ... quicker interventions take place, the quicker it will resolve. No, I don't feel uncomfortable making a diagnosis. If I'm wrong, I'm wrong. (CNS1:IV4:P15:L1)

Participant responses acknowledged the benefits of delirium assessment and identification by Registered Nurses in potentially reducing adverse outcomes for older people in hospital, but expressed a lack of knowledge, confidence and competence in providing evidence-based screening. Registered Nurse participants emphasised a need for support to gain skills, with informal delirium education continuing after the interview sessions and requests made for in-services by participants.

Lack of organisational supports

This sub-theme explores the understanding that participants felt unsupported by the organisation in providing delirium assessment and identification for older people in hospital. Along with the training needs previously identified by Registered Nurses as an organisational responsibility, participants introduced matters related to the lack of supportive organisational processes and resources for delirium assessment and identification. Validated delirium screening and assessment tools were not readily available to ward staff, nor was there ready access to, or knowledge of, the clinical pathway.

Where electronic or paper tools had been made available, Registered Nurses indicated they were not aware of them or they expressed a hesitancy to use them for lack of training or instruction to do so.

The wards aren't using any sort of delirium assessment tool because they haven't got any in the hospital other than what's on the, the database for the [Aged Services] team. (CNC2:IV1:P7:L5)

... there's probably a lack of streamlined or a lack of easily, well not accessible 'cause there probably is accessible but just a lack of ... I don't know. I know there's a pathway as well but I'm just, like an access or like a utilisation of a delirium-specific pathway. (CNE2:IV3:P9:L3)

There's not really a set guideline that, you know ... (RN2:IV3P17:L20)

Participant responses indicated delirium had not been targeted as an organisational priority.

... I remember having an in-service about it but I only remembered it because I have this now. Like we've spoken, I only spoke about it at uni and we had like another in-service about it a little while ago—probably a year ago—but, no, I don't initially think like delirium. (RN11:IV8:P7:L20)

Participant responses indicated a perception that the organisation did not support the training and resources needed to provide evidence-based assessment and identification of delirium by Registered Nurses, resulting in the belief it was not their role.

It's their job

In this sub-theme, participants identified the role of delirium assessment and identification as a specialist role, confirmed by the presence of specialist aged care teams and Clinical Nurse Consultants in the hospital. Occupational Therapists were the predominant discipline providing cognitive assessment and were referred to by Medical Officers for this purpose. Medical Officers would attend to cognitive assessment themselves too, so Registered Nurses were neither asked for, nor felt

responsible to provide, cognitive assessment or screening and were hesitant to initiate a referral pathway.

... really nurses need permission ... [to] activate that contact [Aged Care or Dementia CNC]. Like we have permission to activate ICU Liaison so nobody has any issue picking up the phone and ringing [them] ... So, if somebody has, well confused, 'Do they have delirium, do they have dementia, what's going on here?' I don't know whether we realise we have permission ... you know what I mean?

CNE4:IV6:P15:L16

Usually, it's the medical team organises for the OT to do the Mini Mental [MMSE] or the RUDAS. I don't think that's really very nurse-led at the moment. Not nurse-led at all. (CNE5:IV6:P9:L2)

A participant explained the role of the aged care specialist in their unit in the following quote, emphasising that the priority for aged care work is with the aged care team.

They love that stuff and that's their niche ... So they see it every day. Like we see it every day but they see it, they have the time to spend, to sit there, ask the questions, go through whereas we don't, not in [our non-specialist unit] ... And not considering we know they're there too so it's just ... (RN11:IV8:P5:L18)

Assessment and monitoring of behavioural and cognitive changes were described as too time consuming for some units where patients were only meant for short stay, suggesting that the responsibility was for the next setting or unit.

Look, they're only meant to stay on our ward for two days. (CNE1:IV2:P11:L11)

... takes a bit of time to do that sort of stuff too ... And, and if you're say at the triage area and you're assessing this person, you don't have a lot of time to go

back and do a lot of that ... if you're the nurse at the bedside, you might have a bit more time to look through, back through the old notes. But you rely pretty much ... on what information you can get at hand ... (CNE6:IV7:P4L19).

Where aged care specialists were available, participants explained they would look to them to provide appropriate care for the older person, again affirming their belief delirium assessment and identification in the older person were not their role. Where specialist aged care teams were not seen to be readily available, Registered Nurses described reliance on the medical team to initiate assessments and identification of delirium.

Theme 2: It is my job

In this theme, Registered Nurses explain delirium assessment and identification as their job. Participant responses were framed by an understanding of nursing responsibilities, of what nurses generally do and what they do not do. The theme was generated from three sub-themes: 'I do general observations'; 'I gather information'; and 'We describe what we see' (Figure 15).

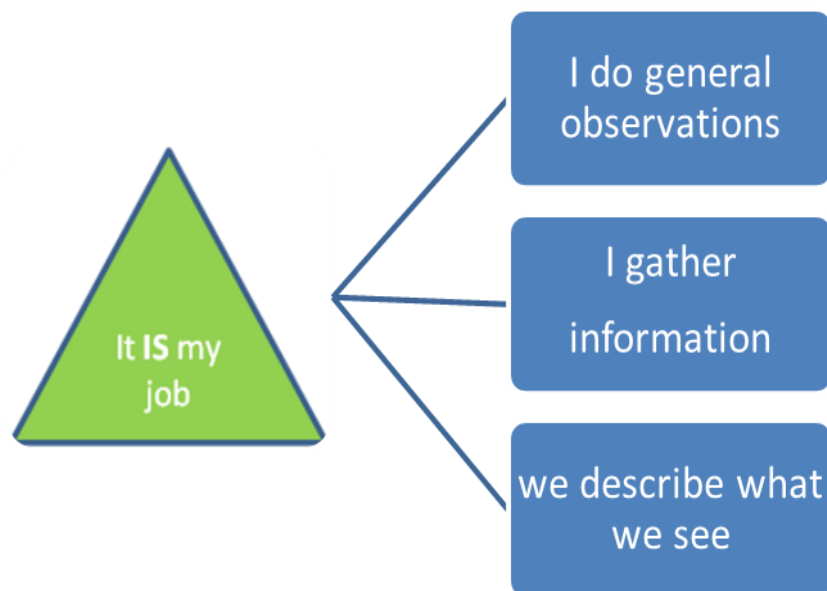


Figure 15: Study findings: Theme 2: It is my job

I do general observations

This sub-theme explains the scope of practice for Registered Nurses attending to delirium assessment and identification within general nursing processes. Registered Nurse participants emphasised their

role in delirium assessment and identification in terms of monitoring vital signs and observing for physiological and behavioural changes. Confusion was identified as a key indicator of delirium, yet little emphasis was placed on screening or monitoring cognition. Participants from aged care specialties included cognitive changes in their explanations of delirium assessment and identification. Otherwise, only one participant discussed cognition specifically, without a prompt from the interviewer.

And then we sort of do the vital things that we do, checking the vital signs, temperatures, and we do things like urine dipstick ... (RN4:IV3:P12:L10)

But like, if you say 'possible delirium', you're then going through what we do, you know ... I mean the basics is urine and bloods first ... and then trying to find a, a foci [sic] for why they're, you know, their low sodiums. They've had new medication introduced. They've had a fall and cracked their skull open. Like there's a possible, many things. (CNE2:IV4:P15:L5)

The Confusion Assessment Method (CAM) was described as a useful tool for the identification of delirium by participants. Participants discussed the CAM in terms of the tool being useful in validating their concerns about the likely presence of delirium—concerns determined by knowledge of delirium, previous experience and intuition—rather than feeling confident in the results of the CAM alone.

It's [the CAM] an indicator. It's a good thing to take to the geriatrician ... I must admit though it's more the whole picture when you're assessing ... even if I did get something ... on the CAM, it's all the other information that I rely on. (CNC1:IV1:P7-8:L14)

... it's largely intuition and clinical judgement. ... If you don't know the patient, get what history you can. And you ascertain if this appears to be normal or you think this is normal ... You get your history and, if ... you do know the patient well,

it becomes obvious ... I mean you can see the deterioration, you see the change of the repeated encounters ... you link that to either the physical disease, the pathological process ... (RN8:IV5:P7:L7)

Recognition of the significance of physiological changes indicates delirium was recognised as a medical condition. The emphasis on behavioural changes provides insight into a key understanding held by the participants of how delirium presents in older persons. Behavioural charts were cited as a tool used for identifying changed behaviours which might indicate the presence of delirium, although the practical day-to-day benefit of a behaviour chart was expressed as a means to provide evidence for obtaining one on one nursing support for an agitated patient.

I guess the most obvious one is confusion. Person is confused and their behaviour is just a little bit odd. And probably a little bit odd for that individual as well. So that, that's probably the biggest ... that would be the biggest sort of areas I'd be looking at. (CNE2:IV3:P2:L5)

Oh yeah we do use the behaviour monitoring log. That can be helpful. (RN5:IV4:P22:L6)

... we start them on a behaviour chart. (RN11:IV8:P5:L13)

... [behaviour chart] gives us evidence to be able to ... have special carers on for them ... (CNE1:IV2:P10:L6)

Hypoactive delirium was not well understood or identified in the criteria being applied by participants.

... I guess you do see it [hypoactive delirium]. I guess it's probably not as common or recognisable as the ... hyperactive acute delirium. (CNE6:IV7:P12:L15)

In hindsight, I definitely think we have and we ... just haven't recognised it. And I don't think that particular patient had a very good outcome. And like, now that

I'm sort of learning a little bit more about delirium, it's like, 'Oh, we could have done something.' ... The hypoactive, I don't know, I don't know that I would actually recognise that even now. (CNE5:IV6:P8:L6)

Participants who understood hypoactive delirium explained this type of delirium was more likely to be recognised retrospectively. Responses indicated an older person with hypoactive delirium may be ignored, as they do not attract attention as the person with hyperactive delirium does.

*I'm sure, I'm sure we have. And, and we haven't [recognised hypoactive delirium]
... And, in fact ... we've probably gone, 'Oh, thank God!' (CNE4:IV6:P8:L11)*

I think maybe hypo-delirium needs to be pushed more. I think that gets missed a lot because they're nice and quiet. I think that's something that's maybe not recognised as much. (CNC4:IV2:P18:L5)

Responses emphasised the recognition of delirium by agitated behaviours and patho-physiological changes, with little emphasis on the possibility of hypoactive delirium and the need for cognitive monitoring for evidence-based assessment and identification of delirium. Registered Nurse participants understood their role to be pivotal in ensuring general observations were attended to in order to capture evidence of physical disease.

I gather information

In this sub-theme, there was a continuation of participants explaining that delirium assessment and identification is their job through progressively creating a fuller clinical picture by gathering information. Responses indicated the importance of collaboration and communication in assessing and identifying an older person at risk of delirium, as explained by the Registered Nurse participants. Participants recognised the significance of an acute change in the person's behaviour and the necessity of gaining a clinical history. Terms such as 'normal' and 'baseline' were used to establish a benchmark to gauge changes. Family members were identified as key sources of information by participants, who recognised those people closer to the patient were more readily able to recognise

significant changes in their presentation. Aged care specialists were more likely to have a broader range of informants and to be proactive rather than opportunistic in accessing information relevant to the older person's function prior to hospital presentation.

... it's always, is the change ... I always ask the family, 'Is this different for this particular person?' That's the number one, you know, well they're highlights for me to maybe think delirium even if it's not, if it's something ... they may already be confused but if it's different to what is normally confusion for them ...
(CNE2:IV3:P3:L13)

... you can say to a family member, 'Is this what, would they normally know that it was Tuesday today? ... Would they normally know that this was the date or the year?' (RN10:IV7:P7:L10)

... If the family member is there present, then you can say, 'Is this how they would normally be or is this different?' (CNE4:IV6:P4:L9)

Handover featured as a means of recognising possible delirium. Verbal reports on the overall observations of the older person, including behavioural changes during the shift, provided an opportunity to compare findings and to recognise changes in older persons on the wards.

... patient has confusion or, if they are normally confused before, they have a history of dementia, we do that information during handover and also, if it's delirium ... Get some of the information from the handover. (RN3:IV3:P5:L3)

Getting to know the older person by having continuity in patient assignments impacted on their ability to assess and identify delirium in the older person in hospital.

Oh like how, whether this patient had any falls. How was this patient before? Was it how she's normally? Because, if you do not know this patient ... if we had

looked after the patient the previous day, we would suddenly notice a change. If you had not, then you would be inclined to ask these relatives whether she's like this normally. Or, if it's a new presentation to the hospital ... how is this patient at home? (CNE3:IV5:P3:L15)

This also highlighted the time factor required in these methods of assessment and identification, as older persons could only be identified with delirium when Registered Nurses had the opportunity to observe changes over time. Time pressures were reported to impact on the Registered Nurses' ability to gain a thorough clinical and social history by reading previous documentation.

I've spent an hour on one patient who was confused, like too confused to actually give a coherent picture ... They weren't very good for history-taking. So I had to go through the emergency notes and just, you know, do the admission discharge risk assessment form from that and that was like squeezing blood from a stone. (CNE5:IV6:P4:L3)

Gathering information on a wide range of holistic factors was described as the Registered Nurses' role in delirium assessment and identification by participants. Within this sub-theme, a number of barriers were identified—predominantly time and opportunity.

We describe what we see

In this sub-theme, participants emphasised their role to observe and report. Participants were careful to observe traditional professional boundaries and avoid being seen to diagnose. The term 'delirium' was viewed as a medical diagnosis and therefore its application belonged to the domain of Medical Officers. Senior aged care specialists would use the word 'delirium' but preferred to not be seen as diagnosing delirium and would couch the term with words such as 'possible'.

... I wouldn't be diagnosing ... I'd be saying to the doctor, 'Do you think they've got delirium?' ... bringing it up as a possibility. (CNC4:IV2:P17:L19)

Well I think doctors are the only ones that can actually diagnose. That's how it's supposed to be ... you can say, 'I suspect', to the doctors. 'I suspect this patient might be in a delirium.' (CNC2:IV1:P11:L14)

As previously described, the participants would report and record their observations and information gathering to create a clinical picture. They would not identify the presence of a delirium; they do not apply a label.

I document that, you know, that I, that the patient has all the indications for delirium ... based on the outcome of the CAM, talking to the family.
(CNC3:IV1:P12:L2)

We document what we observe, what the patient is exhibiting. We don't ... I don't target it as delirium. The patient is having delirium—I don't write that.
(RN8:IV5:P10:L3)

The term 'confusion' was overwhelmingly the preferred descriptor by all participants and was not viewed as a label.

I understand the word delirium but, as I said, it doesn't get used.
(RN11:IV8:P6:L17)

... we just tend to go for confusion, really. Patient is confused. That's what we would say. (RN4:IV3:P12:L6)

Participants argued the term 'delirium' was not well understood and that its use was a modern construct. Confusion had always been considered the proper and appropriate term to use.

Once ... the patient's diagnosis would have been confusion ... not delirium ... I think the words have changed but I'm not sure that the actual signs and symptoms from the patient have changed all that much. (RN10:IV7:P16:L19)

And it's only in the last few years that it's, it's kind of like [been called delirium], yeah. It's like a trendy word ... you know, the, the buzz word that everyone uses for a little while. 'Delirium' has sort of like just become that. (CNC5:IV2:P15:L11)

This interrelates to the theme 'It's complex', as Registered Nurses explain their concern with differentiating diagnoses and possibly incorrectly labelling someone with delirium. In avoidance of labelling with delirium, an array of terms were used in the interview apart from 'confusion', including 'acute confusion', 'going off', 'aggressive', 'agitated', 'disruptive', 'screamer', 'restless', 'pleasantly confused', to explain how participants describe the behaviour or presentation rather than label. 'Sepsis' was presented as an interchangeable term with 'delirium', where participants saw delirium as typically caused by a urinary tract infection.

... if we see a change in cognitive behaviour, I think most of us think, 'Is this sepsis?' you know ... 'Is there an underlying infection ...' Maybe that's because there's been a focus on that sort of stuff but ... certainly not a big push with delirium ... I would very rarely think a patient's got delirium ... we'd [think] sepsis. (CNE6:IV7:P14:L10)

... and have they got an infection that's causing them to be confused. (CNE1:IV2:P5:L15)

That person's got a UTI so it's like, yeah, that's why ... they're off. Like it wasn't like, 'That person's got a UTI so therefore that's a delirium.' It's like, 'Oh yeah, they've got a UTI ...' (CNC5:IV2P3:L6)

It was just all people go a bit off ... All oldies ... go off when they've got UTIs ... (CNC4:IV2P3:L9)

In this sub-theme, participants explained their role in delirium assessment and identification in terms of describing the patient's presentation and avoiding language which was seen to diagnose or label.

Theme 3: It's complex

This theme explores responses related to the complexities of delirium assessment and identification experienced in practice by Registered Nurses in a hospital setting. There was more divergence in practice within this theme, as the experience, training and workplace setting of individual Registered Nurses varied. However, all found the practice of delirium assessment and identification complex (Figure 16).

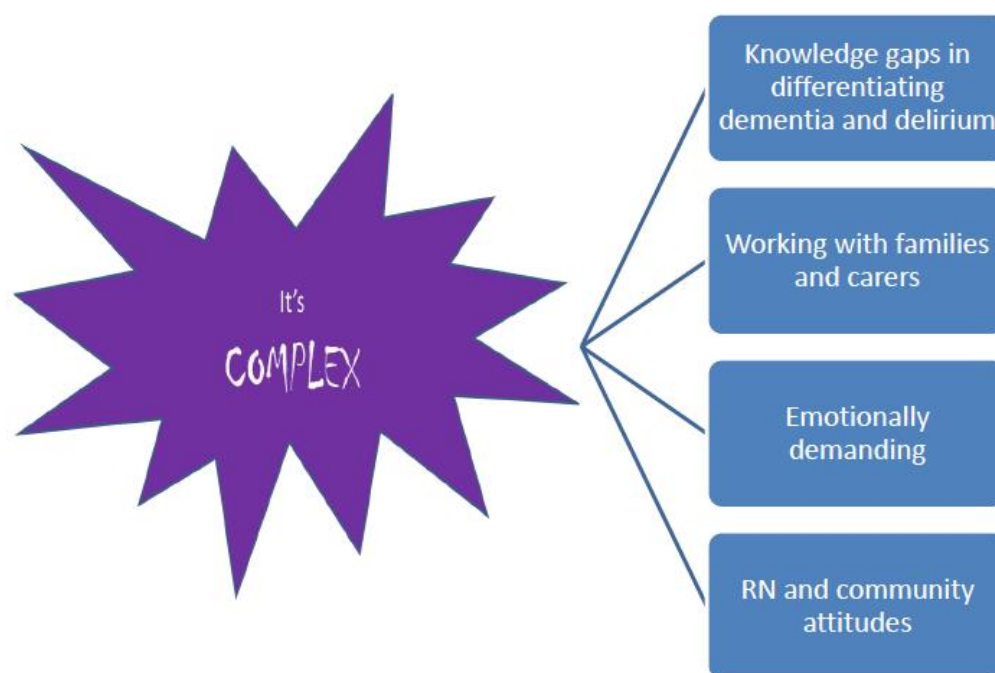


Figure 16: Study findings: Theme 3: It's complex

Knowledge gaps in differentiating dementia and delirium

Knowledge gaps relating to the assessment of identification of delirium were evident, including a lack of understanding about dementia and the interrelationship with delirium. Overall, participants described delirium as acute confusion causing behavioural and functional changes. Assumptions about the 'types' or 'levels' of confusion older people may experience in hospital were expressed, along with references to dementia, which was described as a common occurrence in the older person in hospital. Participants identified that reflection, or hindsight, provided them with the insight to identify delirium, or intuition based on experience.

I think what you were saying before about past experiences ... if you've got an ED background ... but I've got, a like, an acute background where they come from ICU a lot ... I sort of could pick that probably more. But I realise, I saw a lady the other day who was admitted here for a long time and it was discovered she had delirium here which I didn't click onto at all 'cause she's not that sort of presentation to me of delirium. But I saw her the other day on one of the other wards and she's completely [different] ... her normal ... 'Oh how did I not ever pick that?' ... So I think it is your past experiences where you've seen the delirium from. So I haven't had formal training but ... (RN6:IV5:P12L19)

... Even the, the medical team are, the teams were writing, you know, 'Patient's confused, patient is agitated.' There was no 'delirium' ... tag. But, you know, in hindsight, it's exactly what it was ... he did have that background of dementia but the, the family had actually stated in the ED notes that ... his confusion has been increasing over the last week or so. (CNE5:IV6:P19:L6)

Registered Nurse participants were reliant on their own experiences and their commitment or opportunity for reflective, critical analysis of practice to learn about the differences in delirium and dementia.

... you just look at them and go, 'Oh, I bet he's got a delirium.' It's not something that I go step-by-step ... (CNC5:IV2:P4:L11)

So I think it is your past experiences where you've seen the delirium from. So I haven't had formal training but ... (CNE4:IV6:P10:L7)

Behavioural and Psychological Symptoms of Dementia (BPSD) were raised by Registered Nurses as a confounding factor when determining whether a person had dementia or delirium. Time was cited as a critical factor, especially when it was not possible to gain a reliable history. Participants found

challenges in finding the time to monitor for fluctuations in behaviour and cognition, and to exclude any medical causes for the confusion.

... is it at the end of the day just BPSD we're looking at? ... it can be, it can take a while. So we, we're kind of used to dealing with people in delirium potentially for some time until a definitive diagnosis is made. (RN5:IV4:P17:L12)

And also trying to decipher whether that is somebody who's not had a diagnosis of dementia but obviously has and this is more about BPSD rather than a delirium, you know. (CNC3:IV1:P10:L16)

During the interviews Registered Nurses became aware of limitations in their knowledge raising concern about the need for education, as described earlier in the theme 'It's not my job'. Participants indicated that they may have too narrowly defined the term 'delirium' and that they had become aware the implications of having a delirium were more wide ranging than their current understanding. This was particularly noted when the interviewer alluded to the multiple risk factors for delirium and the hypoactive subtype of delirium.

I mean what's the actual definition of delirium? ... that's what I guess we need to know ... What do you actually mean by 'delirium' ... I mean to me a patient with delirium ... is someone that's probably a bit confused, agitated that turns out to have a UTI or a chest infection and then we stick this label of delirium on it. That's the way it works for me ... (RN10:IV7:P15:L8)

You know, I can't remember in my whole career ever having a day where we've just talked about delirium necessarily ... or an in-service on, on just delirium. And that's working in the hospital for quite a, over 10 years. It's really only been recently that, 'cause of my own interest, that I've been able to increase my own knowledge on delirium. (CNE2:IV3:P18:L5)

There was awareness of the possibility of getting diagnoses of dementia or delirium confused, and concern about differentiating accurately.

I wouldn't feel, you know, with my limited experience, confident enough to, you know, say that this person has delirium as opposed to something else that they might have. (RN1:IV2:P17:L8)

Some Registered Nurses identified psychosis as an alternative diagnosis. In discussions about hypoactive delirium, Registered Nurse participants identified depression as a confounding factor and felt this would be a factor in misidentification. Even experienced aged care specialists found differential diagnoses challenging, as the older person often presents to hospital with multiple co-morbidities. Referral to other specialist services was recognised as important to correct assessment and identification of delirium.

... And often our patients don't have just one; they'll have delirium with some psychotic features with some depression. You know, we can have all three ... it's not a clear picture of just one issue. (CNC3:IV1:P18:L1)

... is it a psychosis rather than a delirium, rather than a BPSD. But it does get quite complicated then. (CNC3:IV1:P5:L16)

... that's when, and even as CNCs, and even the geriatricians ask for second opinions from older persons' mental health ... And even we use neurology a lot to exclude any other neurological conditions there could be as well. (CNC3:IV1:P16:L7)

As interview participants engaged in deeper discussions about delirium, the complexities around assessment and identification of delirium became more evident. Participants became aware of limitations in their knowledge of delirium and dementia and the complex presentation of persons they have cared for.

Working with families and carers

Family members were identified as key sources of information across all interview groups, yet no tools or processes were formally used by participants to gain, share or use information. Participants cited preferences for proactive engagement by family members rather than having to approach them themselves.

It's quite helpful sometimes when the family do come forward themselves and say, 'If you have any problems, don't hesitate to phone us or call us in to come,' when the patient is confused, so it is quite helpful when they come forward themselves. (RN4:IV3:P7:L7)

So she [the patient's wife] was quite forthcoming with information, their lifestyle, what he did at home, things he could do and how it had changed ... which was a lot easier than someone ... from a nursing home and them not knowing too much background and giving us little information, us going off that. (RN11:IV8:P2:L17)

Issues of confidentiality and patient privacy were hinted at when participants described challenges in identifying suitable informers for background history. Difficulty in contacting family members included concern with ringing the family at night time, as well as ward busyness, and the challenge of coordinating the use of interpreters for persons from non-English speaking backgrounds.

The challenge is if they don't have carers or they're not present, or you're not sure who you're s'posed to be ringing and maybe they're too confused to tell you ... or ... triple whammy of acute confusion, non-English-speaking background and family not there, then you just ... you have no chance. (CNE4:IV6:P4:L18)

Knowledge of the culture, usual personality and behavioural traits of the older person were recognised as significant and complicating factors.

I mean some people, some people that come in from aged care facilities are screamers. Like, so is their screaming related to being out of their normal environment or is their screaming because [of] their non-English-speaking background? So you might have to find out that information about is that their normal behaviour ... CNS2:IV4:P4:L3)

... onion layers, peeling the onions away to try to get to the core of what the problem is. (CNS2:IV4:P17:L19)

Issues requiring time and attention were identified. Being able to recognise who to speak to, and having the cultural sensitivity to effectively engage families to obtain pertinent and timely information were described as a complex challenge by participants.

Emotionally demanding

Registered Nurses recognised delirium was distressing and sad for the family and the older person experiencing delirium. Caring for the older person with delirium was acknowledged as distressing and sad for the nurses too.

The sad thing is that sometimes ... they remember that they punched the nurse and that they were swearing their heads off and stuff like that ... it's sad, really sad for them. It's terrible. (CNC2:IV1:P19:L5)

Agitated and aggressive behaviours resulting from hyperactive delirium are concerning and challenging for Registered Nurses as well as the person with delirium and their family.

... They don't appear to be septic. They don't appear to be hypoxic. They don't appear to be withdrawing from anything ... They're not dehydrated. Please tell us what's wrong. Because, you know, this is quite distressing. (CNE4:IV6:P14:L17)

Participants at times knew the patients over time and observed their deterioration during and after delirium. Along with the sadness expressed over watching the person's deteriorating condition, nurses felt little prepared to deal with the accompanying changes in behaviours.

It's just ... anxiety and stress for everyone involved ... (CNS2:IV4:P24:L6)

The challenges of dealing with emotionally demanding scenarios add complexity to the workload. Evidence-based processes or workplace strategies for managing these stresses were not evident in the dialogue.

RN and community attitudes

In this sub-theme, the attitudes of Registered Nurses and community members are explored as factors which add complexity to the assessment and identification of delirium in older persons in hospital. Ageism was rarely overt in the interviews. However, there was evidence delirium care, a particular concern for older people, was not perceived as a priority. Other conditions and nursing responsibilities were seen to be given priority, despite the significance of delirium recognition for this client group. As identified previously, time limitations require Registered Nurses to prioritise their workload, ultimately resulting in the omission of aspects of care which could increase recognition of delirium in older people.

... that there is that kind of glaring practice gap but again you don't necessarily always have the chance to do anything or do everything that you would want to for the patient. Even with the, the ratios the way they are ... you're still, you're flat-out from the beginning of the shift to the end, so, while you'd like to do all this stuff, you don't necessarily get the chance to. (CNE5:IV6:P19:L19)

You know, someone who's, if you gave me a presentation of someone in their early twenties ... [who might seem to be in some ways] ... delirious, I'm more likely to say it's acute psychosis. You know, you, you bring your prejudice to your assessment as well. (RN7:IV5:P11:L17)

The need to assess and identify delirium was not seen as the main concern where clients may be experiencing conditions such as a heart attack.

... I don't initially think delirium ... I think heart attack. (RN11:IV8:P7:L23)

Registered Nurses discussed the issue of needing to 'convince' the medical team when they suspected delirium.

It does get difficult sometimes to convince the team, convince the doctor that we definitely know the patient, that this patient is not normally like this ... (RN4:IV3:P17:L12)

They also need to educate families to understand the significance of cognitive changes and report them, and not to assume the older person has dementia.

Maybe you can identify some things here with your family that you've seen before. And they'll read it, and say, 'Oh yeah, okay, all right.' So we kind of, in the course of finding out about the person's history, we'll use the delirium brochure to make people think, 'Okay, so this is part of the person's history,' and is this what they've seen as presentation. And also use it as an educative tool for people. (RN5:IV4:P13:L8)

Although GPs can diagnose dementia ... it's interesting to say that some family members will come and say, 'Oh they've just got dementia.' And I say, 'Well how did you get that diagnosis?' 'Oh we just worked it out.' Like they haven't got any diagnosis from anyone so therefore it, see that's another thing about, well maybe they're not, haven't got a dementia. Maybe they've got a delirium. (CNS2:IV4:P18:L7)

Delirium was identified as more of a drug and alcohol concern than aged care.

... when someone says 'delirium', I think about alcohol ... I think alcohol withdrawal. (RN7:IV5:P11:L15)

Yet another participant identified delirium as a concern for aged care.

... Delirium's more something that's usually in the aged care setting rather than in an emergency setting. (RN10:IV7:P9:L14)

Participants cited unclear professional responsibilities in the practice of assessment and identification of delirium. This perhaps influenced a wider range of comments indirectly.

Especially 'cause they don't, well you don't want, if a doctor hasn't diagnosed technically, we can't diagnose. And, if we write something like that in the notes and you go to court, it's like you've diagnosed ... You can't go 'delirious'. You just like 'presents with confusion, agitation', what you see. (RN11:IV8:P7:L1)

There were participants who expressed personal agency as an outcome of unintentional learning. Their learning raised awareness and the development of professional competency in their practice in the assessment and identification of delirium.

And like, now that I'm sort of learning a little bit more about delirium, it's like, 'Oh, we could have done something,' you know. (CNE5:IV6:P8:L8)

... I'd probably been a Registered Nurse for 12 years before then ... and I didn't know what delirium was. So I knew people came in confused and the older people I'd just think, 'Oh they're old and confused. That's how they normally are.' And I'd go along with the whole, 'Oh they're sundowning. Everybody gets confused when you move them.' ... And I didn't ... at all recognise that there was a thing, a medical cause, delirium. So it's only through that learning that I actually am now more aware. (CNC4:IV2:P1:L12)

Participants identified attitudes as barriers to identifying delirium due to assumptions about dementia and delirium by colleagues and family members. Participant responses indicated concerns about Registered Nurse attitudes too, as inferred by workload prioritising and the acceptance of workplace practices relegating delirium assessment and identification to others, or to not be attended at all despite the Registered Nurse recognising confusion in an older person. Terms such as sundowning and BPSD were identified as confounders to the assessment and identification of delirium, confirming a lack of knowledge about delirium and dementia despite the high numbers of older people being cared for in hospital. An enabling factor identified was the professional development of Registered Nurses who reflected and critically analysed their clinical practice, seeking out opportunities to enhance their practice and improve their knowledge in delirium recognition when they were confronted with knowledge and practice gaps.

Conclusion

This chapter presented the findings generated from a series of semi-structured group interviews with Registered Nurses (n=24) to explore how they assess and identify delirium. An overview of the demographic profile of participants was presented, identifying a sample of hospital Registered Nurses who self-identified as experienced in assessment and identification of delirium in older people in hospital. The group was well represented with experienced Registered Nurse participants, most had over 10 years of nursing experience and held senior clinical positions within medical and emergency units. Within the purposive sample a significant number of participants had post-graduate qualifications, and new graduate Registered Nurses were also represented, adding to the diversity of the group and enhancing transferability.

Qualitative data from the thematic analysis revealed a dichotomy, with Registered Nurses explaining that current practice in delirium recognition was both within and not within their scope of practice, and identifying delirium recognition as a complex process with overtones of stress and distress, not only for the person with delirium but for all those supporting them. The three themes generated were:

- It's not my job;
- It is my job; and
- It's complex.

Registered Nurse participants emphasised a lack of knowledge and organisational support in providing assessment and identification of delirium in older people in hospital. Registered Nurses understood their role in terms of observation and reporting, taking care not to cross professional boundaries with other disciplines. Where reflective practice and learning were undertaken, participants increased their awareness of the clinical implications and opportunities provided by Registered Nurse assessment and identification of delirium in older people in hospital. The implications for practice through the identification of challenges and enablers in the themes and sub-themes will be discussed in the following chapter.

Chapter 6: Discussion

Introduction

The purpose of this chapter is to discuss the study findings in context of evidence from the literature and professional experience to make recommendations for research and clinical practice. The findings focused attention on the challenges of current delirium assessment and identification practices in the hospital setting and the new roles Registered Nurses could fulfil in improving rates of delirium recognition in older people. The multi-layered nature of delirium provides a multifaceted dilemma of opportunities for practice improvement, as reflected in the literature review, which highlighted the varied approaches to improving delirium care education by researchers on this topic. The literature review identified the need for greater understanding of how Registered Nurses assess and identify delirium in older people to capture the challenges and barriers they experience in hospital practice. This knowledge is vital to ensure that education is relevant to the needs of Registered Nurses and that the information is made available in a manner which will promote knowledge transfer to practice. The current high incidence of delirium in older people in hospital and the evidence in the literature for the capacity to prevent delirium mean there is significant potential to improve and reduce these rates, thereby reducing the physical and emotional stress on all those impacted (MacLulich et al. 2013). The study findings were developed into three broad themes: 'It's not my job'; 'It is my job'; and 'It's complex', each with a number of sub-themes. Finding ways to achieve improved practices in delirium care will be discussed, focusing on delirium recognition through assessment and identification processes. The study findings will be compared with the Awareness to Adherence model of knowledge translation (Pathman et al. 1996). The robustness of this study will be outlined with an explanation of strengths and limitations, and recommendations for research and practice will be presented.

Background

As a Dementia Delirium Clinical Nurse Consultant (CNC), the researcher has a leadership role targeting improvements in hospital care for older people affected by cognitive impairment. Delirium poses a real risk of adverse outcomes, such as the development of new dementia, the worsening of existing

dementia, functional decline, transfer of residence and death for older people in hospital (Flaherty 2011; Maclullich et al. 2013; Marcantonio 2011; Witlox et al. 2010). Delirium is preventable in at least one-third of cases, yet it occurs in up to 50 per cent of older people in hospital, often persisting beyond discharge, and is seriously under-recognised by healthcare workers (AIHW 2013; Cole et al. 2009; Flaherty 2011; Maclullich et al. 2013). Delirium care guidelines and pathways provide an evidence-based approach to delirium care, and finding a means to effectively disseminate this information to healthcare workers, and transferring this knowledge into practice, is a focus of the Dementia Delirium Clinical Nurse Consultant role (DOHA 2006, 2011).

Themes from the literature review

A literature review was undertaken on the effectiveness of interactive delirium care education interventions. Interactive techniques meet adult learning criteria, encouraging the transfer of knowledge to practice (Curran 2014). The findings were generated from a review of 24 papers. Four themes with sub-themes were generated to explain the methods and effectiveness of the interactive education: i) Health outcomes; ii) Organisational (healthcare services); iii) Programme; and iv) Practice / competence (Figure 17). While all interactive interventions were found to enhance learning, simulation was found to be enjoyable and revealed practice gaps when compared with knowledge test results. The engagement of healthcare workers in education is essential to achieve effective learning. The identification of practice gaps is important, as substantiating positive impacts for the older person in hospital at risk of delirium through education interventions is challenging. The findings indicated a growing interest in delirium education and informed evidence-based interactive delirium education interventions delivered to the hospital where the research was undertaken.

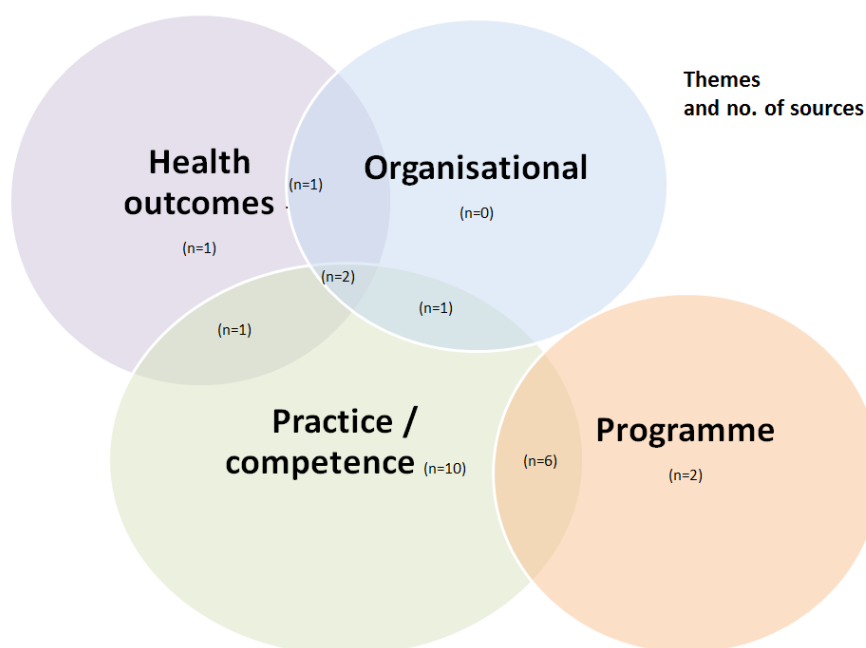


Figure 17: Literature review findings: Themes

Workplace culture was identified as a barrier to effective delirium care education (Foster et al. 2010; Lang et al. 2008; Marcantonio et al. 2010; Ramaswamy et al. 2011; Teodorczuk et al. 2010). Studies have shown nurses detect confusion in older people yet, even after training, cognitive assessment was not routinely attended to (Foster et al. 2010; Ramaswamy et al. 2011). Nurses were reported to be essential to successful outcomes in delirium care interventions and their bedside role with the older person in hospital crucial to delirium recognition (Lundström et al. 2005; Naughton et al. 2005).

Gaps in the literature reviewed substantiated the author's experience in clinical practice, leading to the development of the research question which was designed to increase understanding of current practice and how Registered Nurses recognise and interpret confusion in older people in hospital. More needs to be known about how Registered Nurses can achieve mastery in delirium recognition in clinical practice. The translation of knowledge into practice requires identification of modifiable barriers, characteristics of adopters and environmental considerations, and interventions need to target elements pinpointed as critical to effectiveness (Grimshaw et al. 2012). Evidence of the enabling and challenging factors Registered Nurses experience in assessing and identifying delirium is

needed to develop relevant, high-impact educational interventions which promote knowledge transfer.

Themes from the study findings

The study findings were generated by thematic analysis from group interviews (n=8) with Registered Nurses (n=24) who self-identified as experienced in assessing and identifying delirium in older people in hospital. The themes reflected the current practice described by Registered Nurses of their responsibilities, knowledge and organisational expectations in providing delirium assessment and identification when caring for older people in hospital. These responses were organised into three broad themes: 'It's not my job'; 'It is my job'; and 'It's complex', each with a number of sub-themes (Figure 18).



Figure 18: Study findings: Themes and sub-themes

The findings revealed Registered Nurses are strongly defined by their perceived roles and avoid crossing boundaries with other disciplines. Nursing responsibility was described in terms of observation and reporting. Participants emphasised a lack of knowledge and organisational support in providing assessment and identification of delirium in older people in hospital. Participants increased their awareness and initiative in assessment and identification of delirium when they had undertaken learning opportunities and reflected on clinical practice. Despite the participants identifying as

experienced in assessment and identification of delirium in older people in hospital, the findings were heavily weighted to the theme 'It's not my job' (Figure 19).

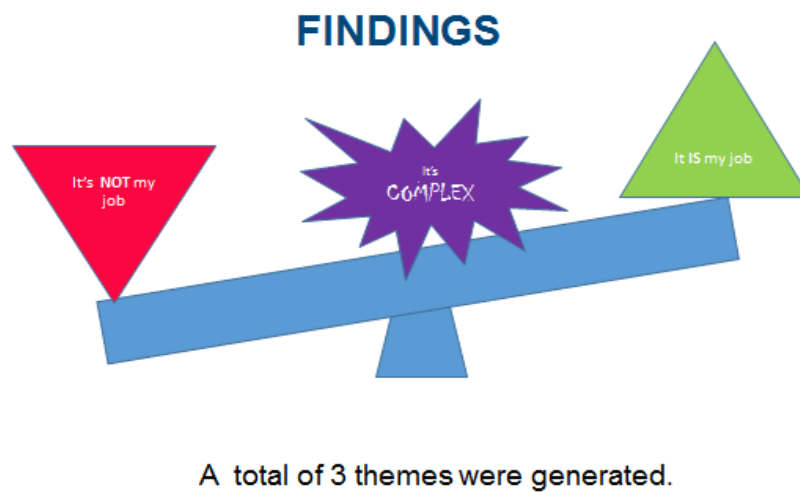


Figure 19: Study findings: Theme: Balance

This discussion will explore opportunities to alter the weighting of these findings, with the goal of Registered Nurses in future emphasising 'It is my job'. To guide this discussion, a theoretical framework will be applied, the Awareness to Adherence model of knowledge translation (Pathman et al. 1996).

Theoretical framework

The Awareness to Adherence model of knowledge translation was developed to understand the barriers and enablers to guideline adherence by clinicians, and thereby develop mechanisms to promote compliance (Figure 20) (Pathman et al. 1996). This model provides a useful framework to consider delirium assessment and identification by Registered Nurses in hospitals)

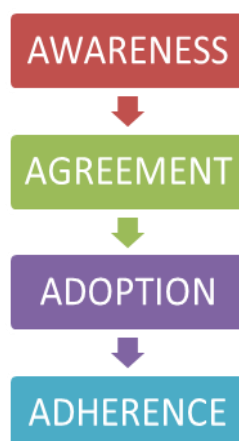


Figure 20: Knowledge translation model: Trajectory of awareness to adherence

Four cognitive steps are described in this linear model, and the clinician must embrace each step before being able to move sequentially forward to ultimately achieve adherence to recommended practice (Pathman et al. 1996). When applied to this study, the four steps become:

- Awareness: the Registered Nurse has heard or read something about delirium assessment and identification of older people;
- Agreement: the Registered Nurse has agreed with the recommendations to carry out assessment and identification of delirium in older persons in hospital;
- Adoption: the Registered Nurse provides care—that is, assesses and identifies delirium, as per the national recommendations for some older persons in hospital; and
- Adherence: the Registered Nurse carries out recommended practice for all of the older people in their care (90 percent plus).

The following discussion explains the findings of this study within the four steps of this model and outlines strategies for moving forward to adherence to an evidence-based, recommended practice of assessment and identification of delirium by Registered Nurses.

Awareness

Consistent with previous studies, the findings reveal Registered Nurses recognise and report confusion but are often unable to use the recommended assessment processes to accurately and confidently identify delirium (Hare et al. 2008; Lemiengre et al. 2006; Steis & Fick 2012). Examples of

retrospective identification of delirium were provided in the interviews by participants. This increased their acknowledgement and awareness of delirium but did not provide the older persons involved with timely assistance and treatment, or support for their families. This is congruent with the theme 'It's not my job', as participants passively identified confusion but failed to proactively consider delirium in the older people in their care. The interview questions did not focus on the delirium care guidelines or pathway specifically; rather, the questions related to what experiences the Registered Nurses could recall in identifying and assessing delirium, and what they actually did when suspecting delirium. The findings revealed there was poor awareness of the guidelines by participants, evidenced by requests for clarification about the recommended assessment tools and their hesitancy to use the term 'delirium'. Those who had further education in aged care or were aged care specialists knew of the tools but were not fully confident in the tool or their ability to use it, preventing progression to the next phase, agreement. The findings indicated continued emphasis is needed to raise awareness of the processes and tools recommended for assessing and identifying delirium.

Agreement

To reach agreement, clinicians must first have knowledge. As there was a widespread lack of knowledge of the guidelines it cannot be assumed that failure to implement the recommended assessment practices was due to disagreement. For those with awareness of the recommended assessment tools the lack of confidence in using the tools equated to a lack of agreement. Registered Nurses indicated they did not agree that the tool would add to their clinical expertise. However, participants did express value in the tool for obtaining support from Medical Officers in exploring diagnosis and treatment options for older people in hospital that they suspected had delirium (Mickan, Burls & Glasziou 2011). Where there is disagreement the dissonance between research and practice may need exploration. Delirium assessment tools currently recommended may need further validity testing (El Hussein, Hirst & Salyers 2014). It is important to acknowledge that Registered Nurses found delirium to be 'complex', as evidenced by this study, and not assume there is clarity and understanding when seeking agreement. Greater exposure through further distribution of the

guidelines and elucidation of the research evidence are recommended strategies to raise awareness and reach agreement (Mickan, Burls & Glasziou 2011). The provision of education and training using simulated learning techniques, with a strong evidence base, potentially provides a means to engage Registered Nurses in education which resonates with their clinical practice and will promote adoption to practice.

Adoption

The adoption of evidence-based practice generally requires the clinician to know and agree with the recommendations. Adoption is therefore facilitated by appropriate clinician knowledge and skill (Widyahening et al. 2014). Community and peer attitudes, medico-legal implications and organisational expectations can influence adoption to occur with or without agreement (Mickan, Burls & Glasziou 2011). Even with agreement, adoption cannot occur where the resources are not available. In this study, the cognitive assessment tools were not easily accessible or widely available and Registered Nurses generally held the belief that the tool use was the responsibility of other disciplines. Time, knowledge, skill and competing priorities were cited as constraints to assessing and identifying delirium. Such barriers require commitment not only from the individual Registered Nurse but from managers and policy makers to overcome them.

Targeting policy makers and senior health managers with knowledge translation activities is another action which could potentially educe the gap between research and practice, encouraging adoption and adherence (Grimshaw et al. 2012). The Australian Safety and Quality in Health Care Standards (ASQHCS) were established to drive the implementation of safety and quality systems and improve the quality of health care in Australia. Although there is not a standard specific to the health needs of older people, a recent innovation has been the release of a guide aimed at improving care for people with cognitive impairment (dementia and delirium) within the context of the current standards, along with a commitment to developing a Clinical Care Standard for Delirium (ACSQHC 2014). This will provide opportunity for increased dissemination activities on evidence-based delirium care interventions, strengthened by organisational and policy support. Vigilance in advocating for the care

needs of older people in hospital with managers at all levels and attention to policy directions in the local context will provide ongoing opportunities to not only raise awareness but empower clinicians through improved organisational support.

Adherence

Adherence to evidence-based practice recommendations generally requires that the clinician has moved through the previous steps from awareness, agreement and adoption. Costs and resources should be accounted for, as they could be barriers. While time in staff training can be costly, preventing delirium and putting in place processes which reduce the length of delirium are cost saving. Identifying modifiable and non-modifiable barriers to adoption of behaviour change is important so they can be addressed (Grimshaw et al. 2012). Adherence is affected by clinician and the older persons characteristics and benefits from the cooperation of the older person and their families, requiring collaboration and education of all parties (Mickan, Burls & Glasziou 2011).

As indicated by this research and local health district incident review processes, a need to focus on improving delirium care has occurred and lead to developments in the local context. Through collaborative processes, validated delirium screening tools are now available to wards across the hospital where the research was undertaken and the hospitals across the wider health district. Ensuring these tools are appropriately applied remains a major task in education and training to gain progress through the awareness to adherence phases. The tool use is only one aspect of the multiple issues identified by Registered Nurses, as delirium assessment and identification are 'complex'. Registered Nurses spoke of difficulty in collaborating with families. A brochure on delirium has been made available to them to promote opportunities to engage families and partners in developing supportive care strategies. Research continues to support the need for ongoing education in the differentiation of dementia and delirium, as raised by Registered Nurses in this study (El Hussein, Hirst & Salyers 2014). Adherence to processes supporting delirium recognition provides a focus that is vital to addressing the negative series of events associated with delirium and prevents Registered Nurses being overwhelmed by the complexity of the issues they have recognised.

Knowledge translation in practice

With the understanding that the dissemination of evidence based guidelines is insufficient to effect change in clinical practice, the Awareness to Adherence model of knowledge translation provides a framework to explore the challenges and enablers experienced by clinicians along the pathway to adherence (Mickan, Burls & Glasziou 2011). Identifying the stage clinicians are at within the model provides an opportunity to develop appropriate strategies, crucial to progression is the acquisition of the required knowledge and skills focussing a continued interest in education and training (Widyahening et al. 2014). In the local context a continued vigilance is needed to raise awareness and provide Registered Nurses with the tools and skills to follow the Delirium Care Pathway.

Robustness of the study

Strengths

The researcher's role as Dementia Delirium Clinical Nurse Consultant provided impetus to the study through the clinical and strategic function of the position. The capacity to work together with a broad range of key stake-holders concerned with the care of older people with cognitive impairment in hospital informed the development of this study and identified delirium recognition as a priority for action. Through liaison with senior health management, the mentoring of healthcare workers and clinical consultation with older people and their families, a sound background was established to identify organisational and clinical strengths and opportunities.

Limitations

This study is limited to a local context in a regional hospital in Australia. Transferability of this study is likely to be possible to many settings and geographic contexts, as indicated by the literature, and the dissemination activities undertaken of the findings at local, national and international venues, but this cannot be assumed (Coyle, Traynor & Walsh 2014a, 2014b, 2014c, 2014d, 2014f, 2014e).

Where to from here

The findings of this study identified a dichotomy in Registered Nurse practice in delirium assessment and identification. Participants described delirium assessment and identification as complex, and both their job and not their job. The experience of delirium care provision was described as complex by

participants who used a variety of constructs in explanation, suggesting the existence of cultural and attitudinal barriers, indicated by their reports of a lack of resourcing and organisational support, and workload prioritising. By combining the findings of this study, as represented in the following diagram, a model is formed which can articulate a framework for considering future strategies (Figure 21).

Findings framework for practice improvement in delirium recognition



Figure 21: Findings: Proposing a framework for practice improvement in delirium recognition

This framework recognises the Registered Nurse works within systems and teams which can enhance or impede best practice. The framework encourages consideration of the Registered Nurse role in delirium assessment and identification in relationship to the healthcare team they are part of. It recognises they work within organisational priorities, at least partly expressed through resourcing and policy, and identifies the meaning ascribed to delirium as an encompassing element affecting care practices across the organisation as well as by individual clinicians. These practices are reflected in the health outcomes of the older person in hospital with, or at risk of, delirium.

To translate evidence to practice a continued need to focus on raising awareness, while aiming to progress forward to the agreement phase, is apparent in the findings. Educational interventions remain a key component to achieving these aims. At each step of the Awareness to Adherence model of knowledge translation there is an opportunity for clinicians to opt out, as is seen in practice, confirming guidelines alone are not sufficient to implement research (Mickan, Burls & Glasziou 2011). Strategies need to be considered for each phase of the Awareness to Adherence model of knowledge translation as factors are identified which enable or challenge clinician progression to adoption of recommended practice. Education for healthcare workers, including Registered Nurses, should result in clinical practice with a sounder evidence base that is witnessed in changed professional behaviours and measurable quality indicators (Grimshaw et al. 2012). The literature review supports the use of interactive methods to enhance learning, and simulation provides opportunities to identify knowledge to practice gaps. Interactive methods potentially influence attitudes, a significant barrier recognised in this study and in practice. Individual clinician characteristics and beliefs influence progression through the awareness to adherence continuum (Mickan, Burls & Glasziou 2011; Widyahening et al. 2014). The application of adult learning principles through simulation and interactive methods provides an effective means to tailor learning experiences to the clinical setting and the clinician (Gaba 2004).

Having the appropriate knowledge and skills with access to the required tools facilitates adherence (Widyahening et al. 2014). Progression at the study site in delirium recognition has occurred

synergistically with this study. Dissemination activities on the delirium guidelines and pathways have become more interactive, and collaborative processes have led to the delirium screening tools being made available to Registered Nurses. A new Admission and Discharge Risk Assessment template with cognitive screen and prompts is also in development at the study site. Along with the work previously mentioned by the Australian Commission on Safety and Quality in Health Care (ACSQHC), much more has to be done for effective dissemination of the delirium care resources and the evidence base for practice change. However, as seen through the Awareness to Adherence model of knowledge translation, raising awareness is the first step. Registered Nurses then need to agree that assessment and identification of delirium are their role and that they have the ability and resources to do it, so they own delirium assessment and identification and can uniformly say 'it is my job'.

Of the Registered Nurses who said of delirium assessment and identification, 'It is my job,' there was an expression of ownership and responsibility for their practice. They identified an issue and sought out improved practices within available resources. Self-efficacy was not tested in this study and the literature review had only one study reporting self-efficacy as an outcome, yet self-efficacy, a person's belief they can succeed, that they can be confident that they are competent, is a strong predictor of behaviour (Bandura 1997; Pike & O'Donnell 2010). Self-efficacy requires the appropriate physical and affective attributes along with positive experiences in observing success and experiencing success (Eccles et al. 2012). Simulation was shown to provide such opportunities. Mentoring through key worker roles also provided a means to learn, observe and model, as discussed in the literature review.

Collaboration with families was identified as complex by participants, and literature supports the need for improved communication and understandings between healthcare workers with older people and their support persons. Guidelines and processes for integrating carer and patient knowledge into care plans have already been developed (ACI 2014; ACSQHC 2014), and require implementation in the local context. Educational interventions developed in collaboration with specialist cultural and carer

services, appropriate to the needs of the busy hospital environment, are being designed by the Dementia Delirium Clinical Nurse Consultant where this study was undertaken..

Implications for practice

This study shows that it cannot be assumed that Registered Nurses are able to assess and identify delirium or believe it to be their role to do so, even though they recognise confusion in the older persons in hospital. The findings provided evidence that the awareness and agreement phases of the Awareness to Adherence model of knowledge translation are yet to be achieved. If there are to be forward gains to adoption and adherence with evidence-based practice in assessment and identification of delirium, dissemination of the national recommendations needs to continue. Ensuring information is given in a manner providing relevancy and engagement is important if it is to be effective. Delirium is multifaceted and Registered Nurses in this study explained assessment and identification as 'complex'. In busy environments such as hospitals, competing priorities require attention to develop clarity of the learning objectives and application of evidence for practice within the local context. Disagreement will prevent progress to the adoption and adherence phases, so identifying barriers, such as ambiguous, confusing or contradictory evidence is crucial for achieving agreement.

Evaluation measures for delirium education and delirium care key indicators need to be developed and implemented for appropriate monitoring of effectiveness and benchmarking with national and international standards. Determining clinician self-efficacy, clinician knowledge and improved outcomes for older persons in hospitals and their families, along with organisational efficiencies, is clearly possible, yet these have not been prioritised locally at the time of writing.

In this study Registered Nurses appeared to fall into two groups regarding professional development: those who took personal responsibility for their learning and proactively sought out information about delirium and those who assumed the organisation was responsible for providing education on significant concerns. Reflective practice, raising awareness of the need for delirium assessment and

identification, was linked to adverse incident reviews in the workplace or opportunistic learning, such as that provided by processes like the interviews for this study. Workplace opportunity for reflective practice may provide a productive environment for healthcare improvements beyond delirium assessment and identification (Clarke & Wilson 2008). The organisation can fulfil a role in promoting reflective practices on the care of older people and synergistically raise awareness of, and share understandings in, delirium in individual clinicians as well as teams.

When considering the Findings Framework Model (Figure 21) the role of specialist aged care services is pivotal and the findings indicate future education modules and consultation opportunities should be inclusive and capacity building to ensure others do not see delirium recognition as only a specialist area. Development of special delirium clinics or a delirium unit could provide a best practice exemplar in delirium recognition and management for the local health district. This study has shown, however, a tendency for Registered Nurses to view the recognition and care of delirium as the domain of the aged care specialist services, reinforcing their belief, that 'It's not my job'.

Recommendations for future research

Delirium recognition by Registered Nurses can be better understood and implemented. Research broadening the group of participants, by extending the geographical area and including Nurse Practitioners, would further develop understanding. Future research should also seek understanding about delirium prevention and management practices by Registered Nurses. However, findings from this study reinforce the need to continue to raise awareness to see the establishment of evidence-based practices in delirium assessment and identification, indications of moving through the Awareness to Adherence Knowledge Translation model used in this study.

The Findings Framework (Figure 21) provided a means to consider the interrelationships involved in Registered Nurse recognition of delirium. Identifying who the members of the healthcare team are, what they believe to be their role and the role of others in the team, how the organisation supports delirium recognition and the meaning of delirium applied by all participants provides a framework to

consider the barriers and enablers in delirium recognition. Considering these perspectives can guide development of educational strategies, including broadening the education to include others as well as Registered Nurses, to enhance shared understandings of the meaning of delirium across the team and wider organisation.

Future research is needed to determine time-efficient, high-impact education interventions in delirium care. The development, piloting and testing of simulation learning activities should be aimed at reaching Registered Nurses across specialty settings to promote collaboration, communication and person-centred practices which engender respect for older persons. These interactive learning interventions should build Registered Nurses' knowledge and mastery of delirium assessment and identification and be shared across wider networks. Development of evaluation strategies is crucial, and evidence of improved outcomes for older persons and their families should be included. Older people at risk of delirium can present to a wide range of hospital units, such as emergency and surgical units, and may not be brought to the attention of the aged care team. Overall, it is crucial that strategies are implemented which mean Registered Nurses will see delirium recognition as their job, altering the weighting evidenced in this study, so that older people across hospital settings can experience improved care practices (Figure 22).

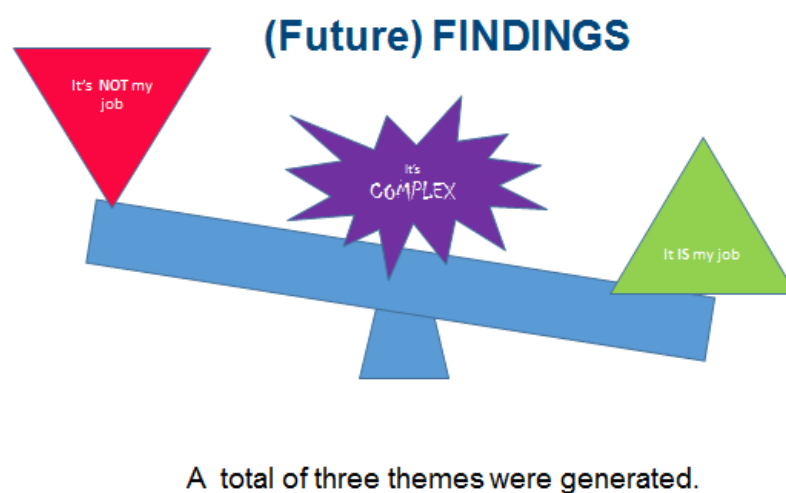


Figure 22: Future research: Counter balance of study themes: Changing the balance of priorities

Once awareness raising and screening tool education has occurred, audit and feedback mechanisms could be used to measure compliance with delirium screening. Rates of compliance could again be considered using the Awareness to Adherence model of knowledge translation to identify factors underlying adherence or non-adherence. Within each phase the enablers and challenges experienced by Registered Nurses will need to be recognised and appraised to promote forward movement to improve delirium care practices.

Conclusion

The multifaceted syndrome of delirium can create a messy and confusing picture—that is, ‘It’s complex.’ Clinical practice, literature and this study identify delirium recognition by Registered Nurses as a crucial link to improved outcomes for older people at risk of delirium in hospital. While collaborative multi-layered strategies are needed, education will remain significant, as newly generated knowledge will always require translation to clinical practice.

The ability to recognise delirium requires a focus on assessment and identification processes. Registered Nurses do observe and report confusion in older people in hospital but do not apply evidence-based assessment or identify delirium. As identified in this study many Registered Nurses do not see delirium assessment and identification as their job. Clearly, Registered Nurses do not work in isolation and broad-ranging strategies are required to support best practice in delirium recognition. However, findings from the literature review and this study demonstrated that delivering delirium care education to Registered Nurses will improve healthcare outcomes for older people. One way to ensure Registered Nurses understand that delirium care ‘is their job’ will be to use education which includes simulation activities which are known to be high-impact interventions.

In clinical practice it cannot be assumed that there is understanding and skill in delirium recognition by Registered Nurses. Research providing evidence for effective educational interventions and key indicators of improvements in delirium care for older people will be a strategic step towards a safer

and improved healthcare system. Real opportunities are available to reduce hospital lengths of stay, organisational costs and adverse outcomes for older people at risk of delirium.

Chapter 7: Conclusion

Thesis summary

This thesis presents a study undertaken by a Master of Philosophy candidate to provide an evidence base for her role as a Dementia Delirium Clinical Nurse Consultant (CNC) across a local health district consisting of nine public hospitals, including one regional teaching hospital targeted for this study. Older people in hospital have a high risk of developing delirium and experiencing a range of adverse outcomes, including death. A significant means of improving the health outcomes for older people in hospital is to embed evidence-based practices in delirium assessment and identification. This qualitative descriptive study sought to understand current practices in delirium recognition by exploring how Registered Nurses assess and identify delirium in hospital.

The background, including national and international influences, the local context and the reasons for the study, has been described in this thesis, elucidating the current adverse outcomes for older people in hospital affected by delirium and the potential opportunities to improve these health outcomes through evidence-based clinical practice. The literature review identified the available evidence on the effectiveness of interactive delirium care education. This underpinned the development of the study question as the need to gain greater understanding of the challenges and enablers Registered Nurses experience in the assessment and identification of delirium was recognised. Qualitative research methods used were explained, the methods used were aimed at supporting the study goal to develop understanding of the topic.

In summary, data were collected by recording and transcribing 8 semi-structured interviews with groups of Registered Nurses (n=24) who self-identified as experienced in delirium assessment and identification. Systematic and reflexive processes were used for the data analysis, analysis commenced with collection enhancing responsiveness (O'Leary 2010). Three themes were generated to explain Registered Nurses' experiences in delirium assessment and identification: i) It's not my job; ii) It's complex; and iii) It is my job. Registered Nurses explained their role in delirium recognition through their understanding of the nursing process: they observe, report and document. Delirium assessment and identification were viewed as a specialist role, the aged care teams', and in the

domain of other disciplines such as Occupational Therapists or Medical Officers. They recognised delirium as a complex syndrome and harboured concerns they could not legitimately use the term 'delirium' or accurately differentiate between dementia and delirium. There was a lack of knowledge about the national guidelines and validated tools recommended for assessment and screening for delirium.

In the discussion the implications for practice and recommendations for future research were explored using the Findings Framework developed in this study, and the Awareness to Adherence model of knowledge translation (Pathman et al. 1996). The timely translation of research knowledge to practice is a concern across healthcare settings and disciplines (Grimshaw et al. 2012). Delirium is costly to individuals, families, organisations and communities. Delirium is not a new condition and with an ageing population it is becoming increasingly significant. It is important that more work is undertaken to embed improved delirium care practices in our healthcare settings. The Awareness to Adherence model of knowledge translation provided an approach which promotes clarification and evaluation at each phase, which can assist with targeting educational interventions and organisational supports, ensuring identified enablers to best practice are strengthened and barriers addressed within the local context.

This study has identified a lack of ownership in delirium recognition by Registered Nurses and a lack of knowledge in the evidence-based processes recommended to assess and identify delirium. The key to future practice improvements will be influential educational interventions which develop shared understandings of the meaning of delirium, and which have appropriate measures to demonstrate effectiveness and to guide continuing improvements in the care of older people in hospital. Interactive education interventions are likely to be the most effective means of developing Registered Nurses knowledge and confidence in delirium assessment and identification. As evidenced by the literature review, such interventions may contribute to a change of attitudes further benefitting the

older person in hospital as Registered Nurses develop greater understanding of the impact of delirium on the person experiencing it.

The study findings are informing educational interventions at the hospital where the research was undertaken. Collaboration between academics and the local health district is underway to develop a delirium education intervention which will be interactive and promote Registered Nurse recognition of delirium. Organisational supports enable and reinforce nursing practices and educational interventions. Strong leadership and commitment are required from across disciplines and levels of management to improve clinical practices and transition culture change within organisations (McCormack et al. 2008). Opportunities for improvement in health outcomes for older people at risk of delirium are within the scope of Registered Nurse practice, and research such as this study endeavours to bring clarity to a complex topic and encourage Registered Nurses that delirium assessment and identification is 'their job'.

Appendices

Study aim/research question	Method (e.g. intervention)	Setting and sample	Themes	Outcomes (impact and specific details of study outcomes e.g. stats and effect size)	What interactive educational methods are used? How effective are they?
Brajtman et al. (2008) <i>Canada</i>					
To develop inter-professional delirium education to enhance team cohesiveness and effectiveness in managing delirium.	Innovative educational intervention. Interactive, case-based. Adult learning principles. Tool developed to evaluate knowledge pre- and post-intervention. Validated tool to measure pre- and post-perceptions of effectiveness and cohesion of team.	Non-hospital setting Palliative care unit.	Theme 4: Practice / competence. Inter-professional. Set within a palliative care team but principles possibly transferable.	Findings suggest increased appreciation for the emotional support available in a team, increase in coping strategies. Concepts re teamwork, communication and conflict woven into activities. Tool developed to evaluate knowledge.	Three one-hour sessions with case study, interactive discussion and activities (e.g. role play). Case scenarios. Facilitated discussions have potential to build knowledge, skills and teamwork.
Christoffersen et al. (2010) <i>USA</i>					
Discussion of the evolution of psychiatric consultation-liaison model.	Use simulation role play to develop psychosocial aspects of care, allowing for spontaneous real-time interaction and active engagement. Students also get to observe skill use. Workshops: two days per semester eight students per clinical group two clinical instructors. Eight semesters of workshops have so far been attended.	Simmons College. Undergraduate program. On-campus in the nursing laboratory with video and audio equipment, and one-way mirror.	Themes 3 & 4: Programme & Practice / competence. This is not yet fully evaluated but provides some low-level evidence and interesting background.	Student evaluation, through written assignments, reported increased comfort and confidence in complex psychosocial interviews. Anecdotal responses from faculty. Plans for a qualitative study to provide evidence and ongoing support of program.	Workshop with nursing faculty writing and presenting scripted vignettes. Students observed then discussed in small groups, followed by psychiatric faculty facilitated large group discussions. Learning is active and immediate, relevancy is vital.

Study aim/research question	Method (e.g. intervention)	Setting and sample	Themes	Outcomes (impact and specific details of study outcomes e.g. stats and effect size)	What interactive educational methods are used? How effective are they?
Featherstone et al. (2010) <i>UK</i>					
This paper provides context for the 'Stop Delirium' study, discussing delirium and the enhanced educational package developed for care home staff to prevent delirium.	Provision of an enhanced educational package: Uses a variety of interactive teaching methods Identifies individuals to champion the change Encourages staff ownership Measurement: understanding and knowledge questionnaires.	Six care homes. Nine units.	Themes 3 & 4: Programme & Practice / competence. Working groups put theory into practice, identifying barriers to care in their units and implementing strategies to local context. Identifies 'change champions'.	91% of staff received training. 99.7% provided feedback stating education was relevant and 97% said it was time well spent. Interactive teaching methods engaged the staff. Collaboration occurred as staff developed tools they then shared with others.	Education and empowerment to take action, recognising staff expertise resulted in development of interventions effective to local need. <i>Report:</i> http://www.europeandeliriumassociation.com/delirium-information/health-professionals/stop-delirium-project/

Study aim/research question	Method (e.g. intervention)	Setting and sample	Themes	Outcomes (impact and specific details of study outcomes e.g. stats and effect size)	What interactive educational methods are used? How effective are they?
Foster et al. (2010) <i>Australia</i>					
Implementation of a best practice approach to assessment, management and prevention of delirium.	Action research method. Identification of delirium care practice limitations using focus groups, multi-disciplinary staff surveys and ward audit. Demographic and medical information of older people 65+ yrs. Identified local nurse as 'champion'. Dementia education sessions with (n=81) staff. Pre- and post-testing with education.	Tertiary hospital. Two general medical wards, (n=30) older people in baseline audit. (n=34) in follow-up audit. (n=100) staff surveys distributed with (n=55) returned. (n=15) multi-disciplinary staff in baseline focus group.	Themes 3 & 4: Programme & Practice / competence. Designed a model of delirium care for older people, local context, with key stakeholders. Included: I. screening tools II. local pathway III. delirium care IV. prevention strategies. Delirium education: I. staff (discussion) II. older people and carers (leaflet).	Staff perception surveys showed improved, overall poor scoring (23.3% to 50%). Similar numbers of older people in hospital with delirium pre- and post-intervention. Pre-intervention: five out of 10 (50%) delirium recognised by medical team. All 10 people plus two recognised as confused by nurses. Post-intervention: 44% of delirium diagnosed by medical team. Nurses noted confusion in 14 of 34 randomly selected files, doctors noted confusion in 10, only (n=4) cognitively assessed. Staff post-survey given to (n=119), 21.8% returned. 63% unaware of study tools.	Education package and resources seen as useful and acceptable to participants. Low rate of behaviour change—may take longer and need sustained effort. Delirium resources for wards: older people rummage box and staff information box.

Study aim/research question	Method (e.g. intervention)	Setting and sample	Themes	Outcomes (impact and specific details of study outcomes e.g. stats and effect size)	What interactive educational methods are used? How effective are they?
Li et al. (2010) <i>Australia</i>					
The clinician experience of action research to improve delirium care in older people.	Weekly meetings generated collaborative discussion around older person profiles to develop actions (pseudonyms used).	Tertiary hospital. Medical ward. Ward-based nursing and allied healthcare staff.	Theme 4: Practice / competence. Collaborative. Demystified research.	PAR increased clinician awareness and knowledge about delirium, giving insight into ways of changing practice and demonstrating effective improvements.	Adjunct to (Day, Higgins & Koch 2008). See also Peek et al. (2007).
Lundström et al. (2005) <i>Sweden</i>					
To investigate whether an educational program and a reorganisation of nursing and medical care improved outcomes for older people with delirium.	Multi-disciplinary staff training. Prospective case controlled study, measured cognitive status using MMSE and OBSS at days 1, 3, 7 and post-admission. Regular nursing guidance with 1:1 education comprised of observation of practice then feedback and discussion.	N=400 patients aged over 70+ years. Two medical wards, one control, one intervention. Random consecutive patient allocation to wards. Staff sample details not reported here or in another study.	Themes 1 & 2: Health outcomes & Organisational. A multi-component intervention can improve outcomes for older people with delirium. Nursing care crucial to success.	i. Mortality—(two died in intervention cf. nine in control group) (p=.03). ii. Shorter LOS (p<.001). ii. Shorter duration of delirium on day 7 in intervention group (p=.001).	Multi-component interventions shown to be most effective. System changes support learning.

Study aim/research question	Method (e.g. intervention)	Setting and sample	Themes	Outcomes (impact and specific details of study outcomes e.g. stats and effect size)	What interactive educational methods are used? How effective are they?
Page et al. (2010) USA					
Describes the processes in developing and using a scripted unfolding case study for a continuing education workshop.	Innovative instructional strategy for nurses designed for small groups. Versions vary for level of nurse. Five-point scale survey post-workshop. 35 workshops with the delirium case presented and data from surveys analysed.	Flexible to setting and audience, facilitators need to identify most appropriate scenario to context.	Themes 3 & 4: Programme & Practice / competence. Gives outline for developing a simulation script.	Workshop participants gave positive feedback, 'agreed/strongly agreed' they increased their ability to identify strategies and improve cognitive function for acutely confused older people (95.7%, $n=480$).	Scripted unfolding case study, low-fidelity case simulation. Adaptable, process for development provided.
Ramaswamy et al. (2011) USA					
Would a comprehensive sequential intervention improve delirium knowledge and change practice?	Multifaceted, interactive. Interdisciplinary education, four didactic sessions interspersed with interactive small groups and case conferences. Measured confidence and knowledge ($n=71$). Pre- and post-test surveys ($n=50$) didactic session.	305-bed hospital, university affiliated. 58 nurses, 18 MOs, 19 trainees, 24 allied staff and directors attended two or more education sessions.	Theme 4: Practice / competence. Use of multiple reinforcing modes may be more effective in behaviour change than traditional grand rounds.	Improvements in knowledge with room for improvement. 28% $p<.001$ confidence increase. Self-assessed ability to use CAM increased 36% $p<.001$. Behaviour changes were not measured nor were any clinical indicators to measure whether knowledge did change practice. There were no measures to extrapolate comparison with Grand Rounds.	Interactive small groups promoted interdisciplinary dialogue and confidence. Staff collected CNE points.

Study aim/research question	Method (e.g. intervention)	Setting and sample	Themes	Outcomes (impact and specific details of study outcomes e.g. stats and effect size)	What interactive educational methods are used? How effective are they?
Sheets and Ganley (2011) <i>USA</i>					
Describes the process and outcomes of an educational strategy aimed at streamlining knowledge acquisition and enhancing learning experiences in aged care.	Used a simulation laboratory for case scenarios, requiring students to rotate through seven stations for education in gerontological nursing assessment and care. The Cognitive Assessment scenario station includes instruction on delirium and CAM use.	Second semester sophomore Bachelor of Science in Nursing students (n=56).	Theme 3: Programme. Student journals reflected positively. Faculty responses also enthusiastic about their roles.	Evaluations provided by use of index cards initially, completed surveys at end ('8 th station'). Content validity by experts in testing and simulation. Reliability measured.	Day-long Geri Sim Fair (GSF): active learning stations and a team case conference. Case-based education. Each station developed by a facilitator/teacher, creative and flexible to learner need.
Siddiqi et al. (2011) <i>UK</i>					
To test the feasibility of an intervention 'Stop Delirium' to prevent delirium in aged care residential facilities.	Mixed methods. Delirium specialist facilitated education and work groups. Data including pre- and post-intervention staff interviews, post-intervention staff focus group, delirium practitioner log, staff questionnaires, education feedback, primary care data, study documents.	Residential Accommodation Facilities for older people. Nine units from six sites. (n= 286) residents included in the study.	Theme 4: Practice / competence. Data collection to reliably reflect practice needs ongoing consideration. Consider factoring hospital admission as measurable outcome in Residential Accommodation delirium intervention.	Interviews and survey showed an increased awareness of delirium and change of practice. Not powered to evidence effectiveness. Examining individual resident records resource intensive. Focus groups more challenging than interviews for care staff. Authors conclude study to be feasible.	Interactive, flexible, relevant, multi-component education shows positive signs for potential improvements in delirium care.

Abbreviations for Table 9: Summary of literature review findings

CAM:	Confusion Assessment Method
MMSE:	Mini Mental State Examination
OBSS:	Organic Brain Syndrome Scale
MO:	Medical Officer
PAR:	Participatory Action Research
OSCE:	Objective Structured Clinical Examination
LOS:	Length of Stay
CNE:	Clinical Nurse Educator

Table 10: Data collection: Prompt questions for group interviews

Exploring How Registered Nurses Assess and Identify Delirium in the Hospital Setting Question Guide	
Part 1: Assessing Delirium	
1) How do you know when a patient has a delirium? a) What information do you gather to ascertain whether a patient is experiencing a delirium? b) What information do you gather to eliminate a delirium? 2) What processes do you use to assess delirium? a) What assessment tools do you use? b) Please tell us about an occasion where you used the CAM (if used).	
Part 2: Identifying Delirium	
1) How is a delirium identified? 2) How did you determine this patient did not have a delirium?	

3. Notes:

These notes and thoughts acted on contemporaneously and evidenced through subtle changes in interview questions/style, e.g. asking participants about what prompted their interest in delirium care was sparked by the process of interviewing and generally maintained, as it allowed free expression from the individuals on their own/individual experience.

4 Other general impressions

Is there anything else that should be noted?

4 Notes:

Interviews tended to clump with recruits from same or similar units due holding the interviews at ward meeting areas. Within the groups different levels of seniority and experience. Qualifications noted to not always match role, e.g. some more qualified participants at Registered Nurse level.

Participants generally displayed interest in the care of older people in hospital and delirium, openness to learning.

Some knew more than others on delirium (generally) because of 1) specialising or 2) incidental learning which then lead to purposeful learning/reflective practice.

(Adapted from: Moss, C & Walsh, K 2012, 'Reading Frame', unpublished, University of Wollongong, Australia)

