Barriers to Frontline Surgical Nurse Detection of Delirium in the Hospitalized Older Adult

By

Vera Duncan
BN, University of Manitoba, 2002

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Abstract

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Many older adults experience complications related to hospitalization. The most prevalent of complications is delirium which often goes undetected and untreated and results in increased morbidity and mortality. Nurses are in an ideal position to detect and manage delirium because of their close patient contact, however delirium remains underrecognized even when using a valid screening tool. This study adopts a qualitative descriptive approach to identify the barriers to nurse detection of delirium. Ten frontline surgical nurses participated in semi-structured interviews from which five major themes emerged through an inductive thematic analysis. Nurses have a knowledge deficit of the features of delirium and find it difficult to access information regarding their patients' baseline cognitive function. Nurses reported inadequate time with patients that led to a self-perpetuating delirium cycle and furthermore, nurses stated that hyperactive delirium symptoms prevented adequate assessment and care. Nurse-physician communication plays an important role in delirium detection and treatment with both psychological and feminist perspectives offered. Recommendations include improvements in nursing knowledge, management of time and enhancements to current written and verbal communication about delirium.

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Chapter 1: Introduction

The Canadian population of older adults is quickly growing, placing increased demand on the healthcare system (Canadian Nurses Association, 2009). Half of all hospitalized adults are over the age of 65 years (Hartford Institute for Geriatric Nursing, 2008). Advanced age is a risk factor for a number of health consequences and the older adult faces additional risk when hospitalized (Burns, Gallagley, & Byrne, 2004; Carr, 2007; Hanley, 2004; Milisen, Lemiengre, Braes, & Foreman, 2005; Olenek, Skowronski, & Schmaltz, 2003).

Statement of the Problem

The most common complication a hospitalized older adult is likely to experience in any in-patient area is delirium (Jones et al., 2010). Post-operative delirium has a particularly high prevalence rate and is associated with increased rates of mortality, prolonged length of stay, long term care placements and an overall increase in health care costs (Rudolph et al., 2010).

Delirium is a medical emergency, yet it often goes undetected and this leads to negative consequences for the hospitalized population (Milisen et al., 2005; Rigney, 2006). There are a number of reasons for delirium detection problems and in the older adult, this lack of detection is in part associated with delirium symptoms being attributed to advanced aging, depression or dementia (Milisen et al., 2005; Rigney, 2006). The negative and potentially fatal consequences of delirium can be minimized by early recognition and timely treatment (Ski & O'Connell, 2006).

Nurses and physicians, however, have high rates of underdetection and misdiagnosis of delirium (Ski & O'Connell, 2006; Neitzel, Sendelbach, & Larson, 2007). These issues indicate the need for staff to use of a valid screening tool for delirium detection. The Confusion Assessment Method (CAM) is currently considered the gold standard for delirium detection

(Wei, Fearing, Sternberg, & Inouye, 2008; Wong, Holroyd-Leduc, Simel, & Straus, 2010). The CAM has been researched extensively, recommended in a number of practice guidelines, and tested with a variety of patient populations including the hospitalized older adult (Inouye, Foreman, Mion, Katz, & Cooney, 2001; Lemiengre et al., 2006; Wei et al., 2008; Wong et al., 2010).

In several studies of frontline nurse detection of delirium the CAM is used, but despite the availability of a valid tool for delirium detection, researchers found that nurses continue to have low rates of detection (Gillis & MacDonald, 2006; Wong et al., 2010). Nurses are in a key position to detect delirium in the older adult because of their close and regular patient contact. Therefore, research specifically targeting the barriers to nurse recognition of delirium is needed. It is important that we learn why, exactly, nurses seem unable to identify delirium in their patients.

Chapter 2: Literature Review

Population Aging in Canada

An estimated 4.2 million Canadians are older adults, aged 65 years and over (Hickman, Newton, Halcomb, Chang, & Davidson, 2007). According to Statistics Canada (2005), the proportion of older Canadians will grow 25% by the year 2016 and the numbers of older Canadians will more than double to 9.8 million older adults by the year 2036 (Canadian Nurses Association, 2009). As the size of the older population increases, the number of older adults who are hospitalized will also rise, based on current patterns of healthcare utilization. At present, nearly half of all hospitalized adults are over the age of 65 years (Hartford Institute for Geriatric Nursing, 2008).

The Hospitalized Older Adult

Older adults are a unique group not simply because of their age and increasing numbers. Many older adults have multiple chronic health conditions that are associated with greater healthcare utilization (Carr, 2007; Hickman et al., 2007). On average hospitalized older adults stay in the hospital longer, have increased safety issues (e.g. delirium, falls), and experience more functional declines than patients under age 65 years (Flagg, Cox, McDowell, Mwose, & Buelow, 2010; Thornlow, Auerhahn, & Stanley, 2006). Half of hospitalized older adults experience at least one complication while in hospital such as urinary incontinence, falls, depression or delirium (Carr, 2007; Hartford Institute for Geriatric Nursing, 2008; Olenek et al., 2003; St. Pierre, 1998). Of these, delirium is the most frequent adverse effect of hospitalization for the older adult (Carr, 2007; Jones et al., 2010; Olenek et al., 2003).

Delirium

Delirium is a state of acute confusion and inattention, characterized by a sudden onset, fluctuating course, and disturbances in behaviour, thought, short-term memory and perception that typically lasts between ten and twelve days (American Psychiatric Association, 2000; Flagg et al., 2010; Neitzel et al., 2007). Delirium has an overall prevalence rate that ranges from 5 to 80 percent, depending on the hospital setting and population (Carr, 2007; Gillis, & MacDonald, 2006; Hanley, 2004; MacLeod, 2006; Milisen et al., 2005; Neitzel et al., 2007; Rigney, 2006). In the hospitalized older adult population delirium occurs in one-third to one-half of patients (Lemiengre et al., 2006; Marcantonio et al., 2005).

Etiology of delirium.

There are a number of theories that explain the pathophysiology of delirium in the older adult. Hanley (2004) suggests that changes to the brain that develop through the aging process place the older adult at increased risk of developing delirium**.** These changes contribute to a vulnerable brain that affects brain chemistry and metabolism of medications (Hanley, 2004). Most agree that delirium etiology is a complex multifactorial interrelationship between the organic and environmental factors that produce the syndrome (Hanley, 2004; Jones et al., 2010).

Several researchers offer descriptions of factors that make the older adult more vulnerable to delirium such as advanced age, lower education levels, multiple comorbidities, frailty, decreased functional status, cognitive impairment, malnutrition, depression, and hearing or visual deficits (Flagg et al., 2010; Jones et al., 2010). Other factors that may precipitate delirium, include uncontrolled pain, electrolyte imbalance and the addition of three or more medications to a patient's regular regime (Flagg et al., 2010).

Consequences of delirium.

Delirium in older adults in the hospital is a life threatening medical emergency. It is associated with adverse health outcomes, including increased morbidity and mortality (Jones et al., 2010). Mortality rates for delirium are substantial for both short-term and long-term outcomes. Mortality rates for the hospitalized patient increase with the number of days of delirium and may be as high as 33 percent (Flagg et al., 2010; Jones et al., 2010). In the short-term, hospital post-operative delirium is associated with early post-operative mortality (Rudolph et al., 2010). Additionally, mechanically ventilated patients with delirium have a four-fold increase in mortality rate over patients' who were not ventilated (Flagg et al., 2010).

Long term or persistent delirium is associated with increased premature mortality. Persistent delirium is associated with substantial 1-year mortality rates that were substantially higher than the one-year mortality rates for other acute medical conditions such as heart disease (27%), and pneumonia or influenza (3% each) (Kiely et al., 2009). At one-year follow-up, patients were three times more likely to die if they encountered a delirium that persisted in hospital than patients with a resolved delirium (Kiely et al., 2009). In their study, Kiely and colleagues (2009) adjusted analyses to take into account sex, age, functional status, dementia and comorbidities.

Delirium in the hospitalized older adult is also associated with substantial morbidity. Hospitalized older adults with delirium experience higher rates of falls, incontinence, pressure sores, infections and a number of social consequences (Milisen et al., 2005; Neitzel et al., 2007). Consequent morbidities contribute to an overall poor quality of life for the older adult with loss of independence and increased functional deficits (Carr, 2007; Gillis & McDonald, 2006; Jones et al., 2010; Kiely et al., 2009). When researchers isolate post-operative delirium, they find

demonstrable evidence of increased long term care placements, prolonged hospital length of stay and increased health care costs (Neitzel et al., 2007; Rudolph et al., 2010).

Cost to the health care system.

Studies indicate that the financial burden of delirium is significant. Delirium is estimated to cost the American hospital system between 6.9 million dollars to 8 million dollars in additional hospital costs each year (Jones et al., 2010; Neitzel et al., 2007). This figure increases to 100 billion dollars in total healthcare costs when costs for home care, rehabilitation and long term care institutionalization are included (Jones et al., 2010). Overall, delirium increases the cost of hospitalization for an individual by about twenty-five hundred dollars (Neitzel et al., 2007).

Flagg et al. (2010) note that the burden of delirium on the health care system also includes costs related to the need for a higher level of nursing care and/or a prolonged stay in an intensive care unit (ICU) setting. Researchers suggest that there is a 39% higher cost for an ICU patient who is delirious a total hospital cost of $41, 836 versus $27, 106 for a non-delirious patient (Flagg et al., 2010). Prolonged delirium post-operatively contributes to these increased costs.

Post-operative delirium.

Rates of delirium post-operatively are as high as 47 percent and the prevalence increase with age (Noimark, 2009). Post-operative delirium is also independently associated with an increase in length of stay and long term care placement (Noimark, 2009). In one study of patients post-hip surgery, the researchers found that 41 percent of these patients experienced post-operative delirium. Of this 41%, 32% percent remained delirious at one month and 6% at six months (Neitzel et al., 2007).

There are specific risk factors for post-operative delirium, many of which are similar to those of delirium in general, but with some differences. Post-operative delirium risks include pre-operative hematological and biochemical abnormalities, co-morbidities, smoking, increased age, impaired functional status, alcohol and drug use, gender and cognitive impairment (Noimark, 2009).

Treatment of delirium.

Untreated delirium has a substantial negative impact on the individual, family, and the healthcare system. Delirium interventions fall into one of two categories: prevention or early detection and treatment (Neitzel et al., 2007; Rigney, 2006; Ski & O'Connell, 2006). The negative impact can be minimized through early detection and timely treatment and is the first step toward delirium treatment (Ski & O'Connell, 2006). Most persons who experience delirium in hospital will recover with early detection and effective treatment of the underlying cause (Neitzel et al., 2007; Rigney, 2006). Flagg et al. (2010) suggest that early detection and treatment of delirium is associated with better patient outcomes. Unfortunately, there are a number of barriers when it comes to delirium detection.

Detection of delirium.

Delirium in the older adult is undetected by clinicians in general, and this is associated with a number of consequences, most seriously an increase in mortality rates (MacLeod, 2006; Rigney, 2006). Delirium is either undertreated or misdiagnosed in up to 94 percent of hospitalized older adults and frequently goes unrecognized by both nurses and physicians (Neitzel et al., 2007; Ski & O'Connell, 2006). One of the main reasons for underrecognition of delirium in the older adult is that cognitive changes are often attributed to depression, dementia or advanced age (Milisen et al., 2006; Rigney, 2006).

There are a number of tools that have been used to detect delirium in the older adult. One well-documented tool is the Confusion Assessment Method (CAM). The CAM was developed specifically for use by nonpsychiatrically-trained professionals to increase delirium detection (Wei et al., 2008).

The CAM consists of four main criteria: (a) acute onset and fluctuating course; (b) inattention; (c) disorganized thinking and (d) altered level of consciousness (Inouye, 2003). *Acute onset and fluctuating course* refers to evidence of a sudden change from the patient's baseline mental state and the course changes throughout the day in both severity and demonstrated behaviours (Inouye, 2003). The second criterion, *inattention*, indicates the inability of the patient to follow what is being said; he or she distracts easily or finds it difficult to focus attention (Inouye, 2003). The third criterion, *disorganized thinking*, consists of the patient's level of confusion or how logical the flow of ideas is in his or her speech (Inouye, 2003). The last criterion involves the patient's *level of consciousness* and includes hyperactivity such as vigilance or agitation, as well as hypoactivity such as lethargy or stupor (Inouye, 2003). The CAM is an all or nothing screening tool; one is either CAM negative or positive, and in order to be considered CAM positive and thus have been screened to have delirium, the patient must demonstrate having both criterion a and b as well as either c or d (Inouye, 2003).

The CAM is a valid and reliable tool for identifying delirium in the older adult in hospital (Gillis, & MacDonald, 2006; Rigney, 2006; Ski & O'Connell, 2006). The CAM is user-friendly and reliable with good sensitivities of between 94 and 100%, specificities from 90 to 95% and interobserver reliability from 0.81 to 1.00 (Wei et al., 2008). Although there are other tools for delirium detection, the CAM has been tested widely in a variety of patient populations (Inouye et al., 2001; Lemiengre et al., 2006).

Nurse recognition of delirium.

Many delirium experts believe that screening with the CAM is the key to detection of delirium and that nurses play a pivotal role in the process of delirium detection (Inouye et al., 2001; Waszynski & Petrovic, 2008). Nurses are in a key position for prevention and early detection of delirium because of their frontline contact with the older adult patient (Rigney, 2006). However, researchers' opinions varied when actually exploring the use of the CAM by bedside nurses despite agreement that the tool is valid for delirium detection.

Many of the early detection delirium studies focus on nurses and their use of the CAM, however nurses appear to have difficulty recognizing delirium even when using it. For example, Inouye et al. (2001) examined why nurses do not recognize delirium by comparing differences in the ratings of nurses and researchers in the recognition of delirium and its symptoms. This was a quantitative prospective study carried out within the context of a larger epidemiological study of the older adult. Participants were older Americans aged seventy or older admitted to medical and surgical hospital units (Inouye et al., 2001). The researchers conducted paired ratings on seven hundred ninety-seven patients over the age of 70 years using the CAM tool. The authors identified four independent risk factors for underrecognition, and rates of underrecognition increased with the number of risk factors involved. Researchers determined that nurses often did not identify delirium when it was present but rarely identified delirium when it was absent. Recommendations emphasized a need for nursing education and training.

Lemiengre et al. (2006) studied bedside nurses screening for delirium in a prospective, descriptive study. They examined the validity of the CAM when used by bedside nurses in daily practice compared with trained research nurses. Two different scoring methods of the CAM were compared, the specific (SPEC) and the sensitive (SENS). The SPEC scoring method uses

the CAM criteria a and b and either c or d, whereas the SENS method specifies that the first criterion may be either a fluctuating course *or* acute onset rather than having both present in the SPEC method (Lemiengre et al., 2006). Two hundred fifty-eight older adult inpatients were enrolled and control and intervention groups were matched. The SENS method had greater accuracy, however, the authors identified that bedside nurses still had difficulty recognizing delirium. Nurses were very accurate in identifying patients who did not have delirium. Findings supported the need for nursing education and training in delirium assessment strategies.

Overall, based on the literature, it would appear that the negative impact of delirium can be minimized by early recognition and timely treatment. Nurses are in a unique position to monitor and recognize early mental state changes such as that seen in emerging delirium due to their frequent patient contact (Rigney, 2006). This has not, however, translated into high rates of recognition; in fact, in reports of frontline nurses' ability to detect delirium, researchers have demonstrated consistently low rates of delirium detection. Steis and Fick (2008) systematically review 10 studies related to nurse detection of delirium and concluded that nurses struggle with adequate assessment, detection, communication and documentation of delirium in the older adult. Their literature review identified inadequate nursing knowledge, assessment and documentation as well as issues related to nursing frustration when communicating with physicians (Steis & Fick, 2008).

The literature suggests that delirium detection increases when nurses receive comprehensive education on delirium and training in the use of a validated screening tool such as the Confusion Assessment Method (CAM) (Lemiengre et al., 2006; Neitzel et al., 2007; Rigney, 2006; Steis & Fick, 2008; Waszynski & Petrovic, 2008). After an extensive review of the literature related to screening of delirium using the CAM, Wei et al. (2008) concluded that the

CAM should not be used as the sole means of delirium detection. Clinical judgment and additional, more comprehensive cognitive screening methods should be included in any strategy for delirium prevention and detection (Wei et al., 2008).

Barriers to nurse detection of delirium.

Several studies identify limited knowledge and awareness about delirium symptoms and detection as barriers to delirium detection by nurses (Inouye et al., 2001; Lemiengre et al., 2006; Ski & O'Connell, 2006). This points to the need for more extensive training in the use of a screening tool such as the CAM (Inouye et al., 2001; Lemiengre et al., 2006; Ski & O'Connell, 2006). Overall, research identifying the barriers to delirium detection by nurses is limited despite the potential cost-benefits and impact on patient well-being.

In two recent studies, barriers to nurse detection of delirium were explored. Hare, Wynaden, McGowan, Landsborough, and Speed (2008) explored nursing knowledge about delirium and its risk factors in the form of a questionnaire. The questionnaire contained a demographic survey and 28 statements about delirium and risk factors that nurses would answer "agree", "disagree", or "unsure" (Hare et al., 2008). The researchers confirmed a lack of knowledge about delirium, specifically regarding risk factors, and suggested that nurses have difficulty recognizing delirium and differentiating it from other conditions (Hare et al., 2008). Hare et al. (2008) suggest a need for improved nursing education on delirium in their professional preparatory programs and once employed.

Flagg et al. (2010) also specifically examined barriers to nurse recognition of delirium but using a descriptive cross-sectional approach. They recruited 61 registered nurses in a cross-sectional study using a survey with Likert scale and true/false questions (Flagg et al, 2010). The questions focused on nursing knowledge about delirium symptoms, its sequelae and nursing

confidence levels associated with delirium assessment. Flagg et al. (2010) concluded that further nursing education related to delirium and standard cognitive assessment is essential to future delirium detection and prevention strategies. In another study, Truman-Pun et al. (2005) revealed that time, inadequate confidence in the use of a screening tool, and physician buy-in were additional barriers for nurses. Flagg et al. (2010) also suggested that improvement in these areas would improve nursing confidence with strategies aimed at nurse detection of delirium. The study by Flagg et al. (2010) is not specific to barriers to nurse detection of delirium and qualitative indicators were not included to allow nurse's to elaborate on their answers.

Research Question

The research question for this study is: What are the barriers to frontline surgical nurse detection of delirium in the hospitalized older adult? A qualitative study using a semi-structured approach to examine nursing knowledge, and the experience of nurses caring for delirious patients, offers an opportunity to identify and understand barriers not yet explored in the literature.

Chapter 3: Methodology

To begin to understand the barriers to nurse detection of delirium an in-depth qualitative approach is required. A descriptive qualitative study was conducted consisting of interviews with 10 surgical nurses at the Health Sciences Centre in Winnipeg, Manitoba, Canada. Interviews were conducted mostly on site at the hospital or in one case a location identified as more convenient to the participant. The researcher completed the interviews and conducted an inductive thematic analysis of the data collected.

Qualitative Description

According to Houser (2008), researchers use descriptive qualitative methodology to describe a phenomenon of interest, and then explore this phenomenon through identification of common themes. The researcher then explores the possible meaning in these themes.

Descriptive qualitative studies need to be well thought out and often use a combination of data collection and analysis techniques (Sandelowski, 2000). This type of study is appropriate when little is known about the specific research question and an authentic, unadorned description of the phenomenon is sought (Houser, 2008; Sandelowski, 2000). A descriptive qualitative study is also appropriate when baseline knowledge about a subject of inquiry is unknown such as nurses' perceptions of barriers to detection of delirium (Houser, 2008).

A qualitative descriptive approach is an appropriate method for my research question and to explore the current gap identified in the delirium literature. The goal of this study was to explore the perspective of the frontline surgical nurse participants, and examine the meaning participants ascribe to the phenomenon of interest (Sandelowski, 2000). Data that were highly relevant and meaningful to nurses were gathered and analyzed. Furthermore, this research question has not yet been explored using this methodology.

Qualitative research on the barriers to nurse detection of delirium is limited. A rare example is the recent study by Flagg et al., (2010). In this study the authors examined the phenomenon descriptively, however, they used structured true/false and Likert style surveys to acquire this information. Although this is one of few examples of the use of a descriptive methodology to examine barriers to nurse detection of delirium, the researchers collected a different type of data that would not provide the broader understanding of the phenomenon possible in semi-structured interviews. Sandelowski (2010) suggests that the essence of a qualitative descriptive methodology is for the researcher to explore the data less interpretively than in other qualitative methods thus staying closer to the data when processing it for meaning. By interpreting the meaning without the confines of a specific pre-determined theory or framework the researcher is free to view the data unfiltered (Sandelowski, 2000; Sandelowski, 2010). Of course, no study is completely without a theoretical influence or framework. Sandelowski (2010) explains qualitative description not as atheoretical but rather as the least theoretical of the qualitative approaches. Naturalistic inquiry best encompasses the approach of studying a phenomenon without the usual constraints that typically comprise research underpinned in a specific qualitative approach such as phenomenology (Sandelowski, 2010).

Naturalistic Inquiry

Qualitative description, as outlined above, does not draw on a traditional methodological framework as typically seen in other types of qualitative inquiry, for example, phenomenological, grounded theory, ethnographic, or narrative study (Sandelowski, 2000). Researchers adhering to the tradition of qualitative description often adopt its perspective from the view of naturalistic inquiry (Sandelowski, 2000).

Naturalistic inquiry is a generic approach to a subject, with the goal of observing it in its natural state (Lincoln & Guba, 1985; Sandelowski, 2000). The purpose of adopting this type of approach to inquiry is to allow for freedom in the observation of the phenomenon without the influence of a specific theoretical framework that can lead to interpretation in a predetermined direction. In naturalistic inquiry there is an absence of obligation to one particular theoretical framework and therefore there is no selection or manipulation of variables (Lincoln & Guba, 1985; Sandelowski, 2000). Researchers using this perspective observe the subject within the natural environment (Lincoln & Guba, 1985; Sandelowski, 2000). This perspective allows the researcher to appreciate the worldview of the participants without the lens of a preset theoretical framework and reinforces the goal of obtaining unadorned data for analysis that held relevance to clinical nursing practice (Caelli, Ray, & Mill, 2003; Sandelowski, 2000).

Participant Recruitment and Data Collection

A purposive sample of registered nurses was recruited from three diverse adult surgical units at the Health Sciences Centre in Winnipeg, Manitoba. Participants were recruited via poster invitation (Appendix D) on the selected surgical in-patient units, as well as snowball sampling from nurses who had already agreed to contribute. Potential participants were asked to voluntarily contact the researcher by telephone or in person if they were willing to engage in a 45-60 minute interview that would be conducted at a later date.

Interviews were face-to-face and included a standard introduction and schedule of semi-structured questions (Appendix B) specific to delirium and delirium detection as well as a demographic survey (Appendix C) outlining their education, experience and delirium training. The original interview protocol (Appendix A) evolved early in the interviewing process and progressed to include more questions (Appendix B). Interview questions were open-ended to

encourage dialogue and discussion to gain information related to barriers to nurse detection of delirium. The methodology allowed for exploratory discussion outside the schedule as required which occurred with all participants. No reimbursement was offered to participation in this study.

Inductive Thematic Analysis

Once the data are collected, inductive thematic analysis is conducted in the tradition of qualitative description. According to Fereday (2006) a thematic analysis is a process of identifying themes from data collected about a particular phenomenon of interest. A theme is a recognized pattern in the data that the researcher organizes and interprets as important to the phenomenon in the study (Fereday, 2006). Re-occurring themes are identified and categorized using a coding template (Fereday, 2006). The coding template is created either prior to data collection (deductive approach) or afterwards (inductive approach) to highlight important phenomena to be analyzed (Fereday, 2006).

An inductive approach is adopted for this study. This method was chosen to reduce the constraints of a structured methodology (Thomas, 2003). This approach allows for flexibility within the interview with participants determining what issues are relevant. The researcher is able to explore these issues further as they arise (Connelly & Yoder, 2000). Thematic coding took place after data were collected since an inductive approach does not allow for prediction of future trends (Connelly & Yoder, 2000; Field & Morse, 1985). The goal is to examine a phenomenon and infer patterns within the phenomenon that can be generalized to a certain setting or event (Field & Morse, 1985).

Interviews were audio recorded and transcribed verbatim. Next an inductive approach was used to identify themes in the raw data (Thomas, 2003). Interview transcripts were read and

re-read and line by line notation was made about the meaning in the data. These notes were then cut into pieces, separated, then compiled based on the similarity of the content or the interpreted meaning. No computer software was used for this process. This produced 21 groupings of content that were coded with a letter of the alphabet. The data contained in each letter code were examined individually to determine the meaning of the content then each of these letter codes was labeled with a phrase, such as "nursing knowledge", that summarized its content. This process was repeated for each of the 21 letters of the alphabet that were used (A-U). Once this was complete, the 21 groups of data were collapsed when thematic content was interpreted as repetitious or eliminated if the content did not answer the research question. This process eventually yielded five major themes. This approach illuminated themes that may otherwise have been hidden or reframed if a deductive analytical approach was used (Thomas, 2003). Field notes from the interviews were also examined as a means of reinforcing the intended participant's meaning from the interviews.

Several assumptions accompany the method of analysis. Findings for this study are the result of both the research objectives of the study and careful exploration of the raw data (Thomas, 2003). The main method of analysis involved developing themes from codes located in the raw data and deemed to be important by the researcher (Thomas, 2003). The importance of the themes was based on preexisting experiences and assumptions about the phenomenon of interest. Another researcher conducting this study may not arrive at findings that are exactly the same (Thomas, 2003).

Rigor

For years, researchers have been debating how to appropriately evaluate the rigor of qualitative research. Qualitative researchers recognize that the quantitative research tradition of

measuring validity is not applicable to the evaluation of rigor in qualitative studies (Houser, 2008). Many researchers agree that one of the main criteria for evaluating rigor in qualitative research is trustworthiness (Houser, 2008). Evaluating trustworthiness in qualitative research consists of an examination of the credibility, confirmability, dependability, and transferability of the research (Houser, 2008). A number of safeguards were built into the current study to ensure rigor. Specifically, the focus was on increasing credibility, dependability and confirmability of data collection procedures by tape recording the interviews and using nurses from several different surgical units (Tuckett, 2005). Taped interviews were transcribed and the data were audited for accuracy against the audio recording by the researcher. I chose to transcribe the interviews myself rather than hiring an external transcriber to ensure close contact with the data. During this part of the process I logged major themes that emerged during the auditing process (Tuckett, 2005). Although time consuming, it allowed me to have confidence in the accuracy of the data.

I further increased credibility, dependability and confirmability in this study by keeping a field journal throughout the data collection process to ensure objectivity and maintenance of a neutral position during the collection process (Connelly & Yoder, 2000; Tuckett, 2005). My use of field journaling also created an additional data source as well as the opportunity to reflect on the data and identify any potential influences that may have impacted data collection (Connelly & Yoder, 2000; Tuckett, 2005). I compared the field journal against the transcribed interviews to determine the accuracy of the interpretation of the data as well as highlighting any potential biases in the analysis stage.

I ensured that the sample population was described in sufficient detail. Data collection from participants provided rich descriptions of the sample population in their own words as well

as through a demographic survey that contributed to transferability and credibility (Fereday, 2006; Houser, 2008). This provided the reader with a good understanding of the sample characteristics and enhanced the studies overall level of transferability (Houser, 2008). In this study the participants gave detailed descriptions of both themselves and their colleagues that provided useful information that could be generalized to other populations.

Limitations

This study has several limitations. Researchers adopting a more flexible, less structured approach are at greater risk for their personal and professional values, beliefs and views to impact the interpretation of the data (Cohen & Crabtree, 2008). This study was no exception. My background is in mental health nursing which influences my assumptions about meanings in interpreting the data (Cohen & Crabtree, 2008). These assumptions may not have been the intended meanings of the research participants. This issue was partially addressed through review of field notes and comparison to the transcribed interviews.

Another limitation of this study is the lack of a second investigator. Having an additional investigator would increase the trustworthiness of the study by introducing more than one possible interpretation of the data and a consensus process through discussion to interpret meanings within the data.

Finally, participants were all from one facility that may have unique characteristics compared to other facilities. This limits the generalizability of the findings from this study.

Ethical Considerations

Ethics approval was obtained from the University of Victoria Human Research Ethics Board. The study took place in the province of Manitoba so ethics approval was also obtained from the University of Manitoba Research Ethics Board. Furthermore, an application to the

Health Sciences Centre Research Impact Committee was completed and approved for permission to access the Health Sciences Centre facility for the purpose of research.

Research participants were staff at the Health Sciences Centre and included nurses who could request consultation from me in my previous paid position as Mental Health Consultation Liaison Nurse for all adult in-patient units of the hospital. The study was not conducted during paid employed time. Although I had professional working relationships with some participants interviewed, there was no direct supervisory or power over relationship role with staff agreeing to participate in this study.

Permission was obtained from the director of the surgical program to ensure cooperation and access to surgical nurse participants (Appendix F). Interviews took place at the Health Sciences Centre and in one case at a location the participant identified as more convenient.

Participants completed an informed consent form (Appendix E) with the details of the study and were given as much time as they need to examine the consent form fully and to ask for clarification or other questions they had prior to signing. Participation was completely voluntary and they could withdraw at any time without any consequence or explanation required. Participants were told that if they withdrew from the study, the data would not be used and would be destroyed.

Participants used pseudonyms they selected prior to the interview to assure confidentiality of data. The pseudonym was the only identifying feature on the data during the analysis process. All data and audio equipment were stored in a locked filing cabinet in a facility accessed only by the researcher. Audio files were password protected on a secure computer system. Once audio files were transcribed, they were not part of the analysis process.

Digital audio recordings were used to record all responses to interview questions. Field notes were also used as back up information to the audio recording as well as a prompt for the interviewer to consider follow-up questions. All information from audio recordings was transcribed and used in analysis.

Summary and Conclusion

Delirium is a medical emergency in the hospitalized older adult that is associated with a number of health and financial consequences when it is left unrecognized and untreated. Frontline nurses, although in a prime position to recognize delirium, have not had much success in doing so. Researchers targeting nurse detection of delirium have focused on frontline nurses use of the gold-standard screening tool, the CAM. Despite the use of a valid screening tool nurses' rates of delirium detection have been low. The literature suggests possible barriers to this lack of detection but few formal studies have addressed the specific question "What are the barriers to frontline surgical nurse detection of delirium in the hospitalized older adult?".

In this study the research question is approached using a semi-structured, qualitative descriptive methodology involving thematic analysis. Interviewing participants using a semi-structured schedule and allowing the themes to emerge, unadorned, demonstrates the quality of the data and provides vital information improving delirium detection by nurses.

Chapter 4: Findings

Description of Participants

The sample consisted of 10 registered nurses employed on three surgical units at the Health Sciences Centre, Winnipeg, Manitoba. Six participants possessed Bachelor of Nursing degrees and four were diploma prepared registered nurses, with one of those having a Bachelor of Arts degree as well. The mean number of years of nursing experience was 9.9 years and the mean length of time in their current surgical area of employment was 7.4 years. Three participants had over 15 years of experience, one had eight years and six had fewer than five years of experience. Three participants cited having had an in-service or workshop related to delirium at either work or school.

Themes

Semi-structured interviews were conducted with participants. The descriptive qualitative nature of the study design allowed for flexibility in follow up questions that were a departure from the original interview schedule. Upon completion and transcription of the interviews the researcher conducted an inductive thematic analysis of the 10 interviews yielding 21 preliminary themes. The researcher then collapsed these themes until repeating themes were no longer identified to create five final overall themes that qualitatively explore the research question "What are the barriers to frontline surgical nurse detection of delirium in the hospitalized older adult?". The five themes are nursing knowledge of delirium, inadequate baseline patient information, inadequate time with patients, barriers to assessment and care related to delirium symptomatology, and nurse-physician communication.

Nursing knowledge of delirium.

When participants were asked the question "The literature has identified that nurses have low detection rates of delirium, why do you think this is?" many participants demonstrated surprise that delirium recognition was a problem and expressed that this was likely not in fact true for their particular surgical unit. One nurse's reaction to this question was:

> Low detection rates? [puzzled] That's an interesting one because that's something that is very easy to pick up on, you know it could be by a simple statement they [patients] say or a simple action they're doing, whether you know them or don't know them, something that you could in my thoughts you can pick up very easily.

However, participants recognized that identification of delirium was important and that recognition was likely a problem on other units and had even expressed barriers on their own unit through their responses to other questions asked in the interviews. Participants unanimously identified that care of the patient with delirium needed improvement and that delirium was a problem in their hospital.

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM IV-TR) the key features of delirium are a disturbance in consciousness, change in cognition, acute onset with fluctuation throughout the day, and lastly, evidence of causal link with a general medical condition (American Psychiatric Association, 2000). The participants in this study were asked to provide a description of delirium. Most participants provided limited responses, citing cognitive changes such as the development of confusion and emphasizing the acuteness of onset such as the sudden change from baseline. Participants also cited hyperactive delirium symptoms such as agitation and restlessness. A typical response when asked to describe delirium was "[it is a]

sudden change in patient's baseline behaviour, maybe acute confusion, agitation, restlessness…". One nurse's description of delirium focused on cognitive changes and hyperactive symptoms:

> I would say odd behaviours…confusion to date, time, place….inappropriate activities like someone wanting to go to work or wandering down the hallway not knowing what they're looking for…strange comments…for example, "get my cat out of the swimming pool" although there's not a swimming pool or a cat here…and aggressive behaviour.

The four diagnostic features of the CAM are: (a) acute onset and fluctuating course, (b) inattention, and one of either (c) disorganized thinking or (d) altered level of consciousness (Inouye, 2003). Comparing responses to the criteria of a screening tool such as the CAM participants generally identified a change in baseline mental state, an important part of the first criterion, but failed to identify the fluctuating course of delirium. No participant identified inattention, a required inclusion criterion. All participants identified confusion as a prominent symptom of delirium, characterized in the CAM as disorganized thinking, however they made no reference to the patient's level of coherence in speech, another aspect of assessing disorganization. When describing a delirious patient's level of consciousness, most participants included only hyperactive symptoms such as agitation, combativeness or restlessness. Furthermore, they were able to describe hyperactive symptoms that indicated an increased challenge for providing nursing care such as trying to get out of bed or wandering behaviour. Very few participants identified any hypoactive symptoms of delirium in their description. One participant stated:

> Sometimes I think too that it takes something drastic to happen before we really go "Oh, wait, what's going on here!". You know, sometimes the subtle little signs get missed, as

> I said sometimes you just…you don't see them for what they are 'til something bigger happens….number one, there [are so many] different factors…and so many different levels of delirium.

Hyperactive symptoms are more "drastic" and obvious, whereas hypoactive symptoms are more "subtle" and thus "get missed".

Several participants expressed a belief that nurses and other members of the team often mislabel delirium. Participants stated that confusion was a commonly used term in the hospital to describe the mental state of the older adult rather than using the diagnostic label of delirium. Participants suggested that labeling delirium incorrectly as confusion alone was a barrier to nurse detection of delirium. Furthermore, nurses felt it minimized the importance of delirium and the seriousness of its consequences. This insight was highlighted when a participant shared his thoughts on this nursing knowledge deficit:

> …when we have a diagnosis and we know it's delirium I think we respond better to treating that patient because then we know that there is an underlying cause and we're trying to aggressively find that underlying cause of delirium...delirium just sounds more serious so most times, if the patient…isn't worsening, otherwise we just think they're confused, they could be delirious but we just…relate delirium with a serious psychological or cognitive behavioural change…

Participants also demonstrated limited knowledge about the causes of delirium. Many participants only identified medications as the cause of postoperative delirium in their patients, in particular, narcotics and anesthesia. Participants did acknowledge that when medication was the

cause, it was often a new medication introduced during the current hospitalization. One participant described this:

> …sure we're eliminating their pain but now look what we've caused. So it's a catch 22, are we going to alleviate their pain and have them pulling strings out of their mouth [patient hallucination] or should we maybe stop that ketamine and all of a sudden they're not pulling strings out of their mouths anymore. What's worse? Mmm to me it's the delirium. It's very scary and it's very real.

Another participant described the same phenomenon and alluded to the potential of other etiologies at play:

> …often times it's us, it's the medication we're giving them…and it could be...often times it's "oh, they just have so much morphine on board right now that they're out to lunch" and really it could be from days and days and days and days ago that they last got something…

Participants were much better at describing knowledge about the consequences of delirium in the hospitalized older adult. They effortlessly identified that delirium in this patient group led to increased cost, length of stay, poor patient outcomes and inadequate patient care. Participants also observed consequences related directly to nursing as well. They shared that observing these consequences in their practice was a common occurrence. One nurse described this when she said "I think cost factor for sure because the cost of constants [attendants] to be with patients. …safety issues, you know we've had nurses get harmed by people that are in delirium. We've had them be put on workman's comp [Worker's Compensation] because of people in delirium, so it is a big cost factor."

Most participants described a lack of formal or informal nursing education related to delirium. On the job work experience was the method cited by all participants for obtaining knowledge and skills in delirium. Some participants stated they had received a one hour presentation in their undergraduate degree or diploma program or a one-time in-service at work. None of the interviewed participants had received any extensive education in the area of delirium nor had any participants cited having learned about or used any screening tools or specific methods for recognition of delirium. Participants did not indicate that they completed any formal cognition testing as part of their daily patient assessment. One participant said "…we're not well…educated in delirium because to be honest I don't remember what we talked about in school in terms of delirium and stuff that…I just think that fewer nurses are educated in aspects of cognition."

The interviews also highlighted that participants lacked the knowledge required to adequately assess and manage delirium in their patients. Although they demonstrated extensive knowledge of the consequences of delirium, participants could not adequately identify its features or causes thus presenting a barrier to recognizing and advocating for treatment of the underlying etiology. Participants shared a consensus that a lack of nursing knowledge is a barrier to nurse detection of delirium in the hospitalized older adult.

Inadequate baseline patient information.

Participants also identified that a lack of baseline information about the patient's cognition was another theme that reflected a barrier to nurse detection of delirium. Nurses working on surgical units most often begin caring for their patient after they have already had surgery. Participants identified that it was difficult to ascertain what their patient's baseline

mental state or level of cognitive functioning was prior to admission to hospital or their surgery. Participants stated that very little information about the patients' prior mental state is gathered as part of the admission process by any member of the health care team. One participant stated, "You just don't know the patient's baseline and it can make detecting changes very difficult. I don't really know what could be done to improve that. You don't get to meet your patients pre-op."

Study participants discussed their experience that most often this baseline information is gathered by talking to the patient's family or by the family presenting this information to staff. Family members are often the ones who notice the change from the patient's baseline in hospital. Participants recognized that this is a valuable source of information and if the patient does not have family or nurses do not, or are unable to, speak to the family for whatever reason, this information does not get collected and this may be a barrier to nurses detecting delirium.

> …we don't usually see them [patients] until they're post-op. At that point they already got the anesthetic on board, they've already got the narcotics on board so we have no comparison. So we do very much rely on verbal report, to give you an idea of where they're coming from…family members.

Many participants recognized that having baseline mental state information is very important and acknowledged that very little of this type of information is currently available on admission and cognitive changes may be normalized in the older adult patient. One nurse described this when she said, "It's hard for us to know exactly what a person's baseline is…how they are at home, if this is kind of what they're like.".

Inadequate time with patients.

Participants explored two aspects of time constraint. The first is a lack of time with their patients, in particular on the night shift when patient loads increase. Participants were aware that night time is a critical time for increased delirious behaviour and the increase in the number of patients a nurse cares for during this time was cited as a barrier to nurse detection. Decreased time at the bedside with patients was cited as a possible reason why nurses might not recognize delirium in their patients.

> I've seen assignments with eight patients…and if you have eight patients you're concerned about getting…the essentials done. You know, you're getting your vital signs, you're getting your meds done, getting your dressings done, and hopefully getting your charting done…and anything over and above that well, there's just not time for it. I mean, unfortunately it happens.

Second, nurses report that delirious patients require more time to provide their care. Two key issues identified were the time spent reorienting/redirecting patients and correcting medical interfering behaviour such as pulling out lines and tubes. One participant described this:

> I tend to spend a lot more time with them, just to reorientate them constantly just to take that fear away so they know where they are. Um, just letting. you know, reorientating them, constantly going in their room just making sure that they're safe…that they're not pulling on their tubing, or they haven't pulled anything out. That they're doing okay, so you spend a lot of time in those rooms actually.

Participants suggested that when they are caring for a patient with delirium they spend much more time at the bedside and away from their other assigned patients, thus decreasing their level

of care. Participants stated that another area of time constraint was mitigating complaints from other patients and families related to decreased attention by their nurse and disruptions caused by the patient with delirium.

Barriers to assessment and care related to delirium symptomatology.

Another theme that participants identified was the difficulty associated with providing nursing care to patients with delirium because of their inability to follow a task or their level of aggression. Participants stated that the agitated and/or aggressive patient with delirium makes it difficult for nurses to provide complete and thorough assessment and care. They noted that care for the patient with delirium was often substandard because of the lack of physical contact due to these issues. Participants also noted that aspects of nursing assessment and treatment may be omitted, and because of these omissions, medical consequences may ensue. Therefore, a nurse's difficulty managing the delirium symptoms prevent the nurse from obtaining the assessment information needed to provide a complete picture of the patient and recognize that these are indeed symptoms of a delirium. The symptoms of delirium are so overwhelming to the nurse that they prevent assessment and therefore detection of the delirium. This may cause the patient's delirium to continue, worsen or re-emerge.

> So, that's how it impacts the patient I think they have minimal contact they…marginally get their basic needs met. And I think that other medical sorts of things get overlooked like because they're not being touched they're not…they're getting their vital signs taken, maybe, but I mean a brewing infection may not be identified as early for these patients as for other patients.

Participants recognized that delirious patients' inability to focus on a task or what the nurse is trying to get them to do is a barrier to nursing care. Nurses are unable to provide any teaching to patients because they cannot follow the instructions or retain the information because of short-term memory deficits that may be present in a delirium. Regular post-operative care is challenging because patients with delirium have a substantially more difficult time participating in health promoting activities. Delirious patients do not progress post-operatively as well as patients without delirium and this delays discharge. Furthermore, participants stated that these patients are often not safe for discharge because they do not have a reasonable level of understanding with the post-operative teaching.

Nurse-physician communication.

Participants in this study reported communicating with physicians as one of the barriers to delirium detection and treatment. A number of the participants interviewed expressed frustration when communicating their assessment findings to physicians. Nurses were aware that they may not have recognized that their patient was suffering from a delirium but knew that the symptoms were a change from the patient's baseline mental state. When nurses presented findings related to these symptoms in their patients many nurses identified a feeling of not being heard. Specifically, nurses expressed that often physicians either delayed or failed to act on the information provided by nurses. Participants believed that this resulted in a delay in treatment of the patient's delirium as well as impacting future detection of delirium. One participant described:

> The most difficult piece I think is communicating these concerns to a physician and getting them to listen to you. I think sometimes our physicians are at risk of the same

> busyness and the same lack of time…It's easy to overlook it [delirium] because it isn't clinically something you can put your finger on or you know …it's easy to fix the broken toe but it's like "he's fine he was always weird" or you know they [the physicians] don't seem to recognize it really enough either. So it falls on deaf ears for a few days I think… at the time we're intervening I think with it…the poor patient has been struggling with it already for quite some time.

Participants describe caring for patients with delirium experiencing distress as a difficult experience for them which led to their own distress. One participant described a recent experience that resulted in a negative patient outcome:

> [It was] very difficult...one of the worst in my 31years of nursing. Do I feel he was in his right state? No. Do I feel there was some type of delirium going on there? Absolutely. Do I think it got missed for quite some time? Absolutely. And it manifested on our unit [voice breaking up]. That's the sad part, something that went undetected for whatever reason be it long term illness…be it he was hallucinating, thinking people were talking about him…those are all signs of delirium…there's a lot more going on with this man than people realized and no one really caught it...including myself [voice breaking].

This participant also described the frustration and distress experienced when this information was brought to the physician:

> I think if the service [physicians] would have been listening better, I think the service, as the medical professionals wouldn't have labeled this man, I think he could have been, I think things could have worked out differently for him, I truly do, I truly do. I don't think it should have been my catch, days after this man was admitted.

Participants noted that, although most physicians are approachable, their perceived inaction contributes to a delay by nurses who do not believe that informing physicians of the delirium will lead to action. Participants suggested that this leads to nurses investigating potential causes on their own and waiting until they have a very specific request for the physician before they would call. They described waiting until they saw the physician on the unit rather than phoning to relay this information. For example, many said that unless they specifically wanted an order for a medication to be reviewed that was believed to be a cause of the delirium or a medication added to manage delirium symptoms they would not call the physician. When discussing delirium symptoms or changes with physicians, nurses reported needing to be persistent. They stated that they would rarely call a physician at night even though delirium symptoms were most evident then. In speaking of the percentage of time delirium is not being acted upon when nurses bring to physicians attention, this participant stated:

> High, like 85 [%]…they eventually listen but it takes banging it into the floor before they hear you I think. So I very much see that as our ***job*** by saying you know "we are with this person 24/7 and this is not right, something is going on here and we need to investigate it!" either diagnostically or whatever but something is up.

Participants also suggested that physicians underrecognize delirium as much as nurses because of a lack of knowledge and the subjective nature of some of the criteria in the delirium diagnosis. They believed that this contributes to delays by physicians to seek consultation on delirium treatment with specialists. Services identified included psychiatry, medicine or the acute pain service. Participants also suggested that if delirium is not identified by physicians they may fail to seek out assistance from other services:

> …if they feel maybe as poorly equipped to deal with it [delirium]. They don't know where to look to kind of get the answers either? I'm not sure. It's not tangible…like a fever or something is and this is like you're giving them subjective information and they seem to be more willing to cope with objective. People with delirium don't turn green so [it] really is subjective.

Participants felt that physicians are under a lot of systemic pressure to discharge patients because of the need to free up surgical beds for patients awaiting surgery and to decrease wait lists. This pressure was thought to impact the level of participation and buy-in physicians had with delirium detection and treatment.

> …as far as the surgical part, they [physicians] just kind of often leave it "oh they'll get better when they get home" let's just get them better and get out because there's a big crunch for beds and you've got to get them out of here…you know it's not…I think we need to put more priority on it, as far as nurses go, because it's more time consuming for them, it…definitely requires more care [delirium]…

Chapter 5: Discussion

Nursing Knowledge of Delirium

Participants revealed a number of issues related to nursing knowledge including a lack of nurse recognition of the complete diagnostic picture of delirium. Participants demonstrated knowledge deficits of delirium criteria, symptoms of hypoactive delirium, and causes of delirium. They were able to identify that some of the barriers to nurses' detection of delirium stemmed from nurses' mislabeling delirium as confusion and that there is a lack of both formal and informal knowledge about delirium for nurses.

Participants most often identified confusion, a change from baseline and hyperactive symptoms such as agitation and restlessness as the main symptoms of delirium. This definition is incomplete and favors symptoms consistent with a hyperactive delirium. Steis and Fick (2008) reviewed 10 articles related to nurse recognition of delirium and identified that all but one study implied a lack of nursing knowledge as a key component to nurse underrecognition of delirium. Nurses may recognize behavioural changes in patients including distress and confusion but failed to recognize other key features of delirium (Rice, 2008; Steis & Fick, 2008). Participants consistently omitted inattention or a fluctuating course when describing delirium which suggests that these symptoms are more likely to go undetected by nurses. This is important when looking at a screening tool such as the CAM because inattention and fluctuating course are essential criteria in the tool that were often overlooked by the participants in this study.

Inouye et al. (2001) discussed how patients with hypoactive symptoms of delirium were less likely to be identified by nurses, probably because they were more cooperative with nursing

care and quieter. Patients with hyperactive delirium symptoms such as agitation were more likely to be labeled as delirious because of the challenges associated with providing nursing care (Flagg et al., 2010; Inouye et al., 2001). Participants were also more likely to identify symptoms such as restlessness, agitation, or combativeness and commented on how these hyperactive type symptoms can lead to inadequate patient care because of their disruptive nature (Inouye et al., 2001).

Participants rarely commented on hypoactive symptoms of delirium. These symptoms are actually more prevalent than hyperactive symptoms and are often mistaken for depression or a lack of motivation (Wiesenfeld, 2008). Inouye et al. (2001) found that underrecognition of delirium by nurses was increased 20-fold if 4 risk factors were present: dementia, visual impairment, age 80 or older and the hypoactive subtype of delirium. This may be a barrier to nurse recognition of delirium that could be a target for nursing education.

All participants identified confusion as an aspect of the disorganized thinking criterion. They made no reference to other aspects of this criterion such as the patient's level of coherence, clarity or logic in their speech. This suggests that if the patient responded correctly to the three typical orientation questions asked by nurses related to person, place and time, the patient would likely not be identified as meeting the criterion of disorganization on such screening tools as the CAM. Rice (2008) purports that nurses fail to detect other delirium symptoms because the extent of their cognitive assessment may focus on orientation alone. Participants in this study report that nurses recognize confusion in isolation of other aspects of cognition and suggested that delirium is often mislabeled as confusion by nurses and other members of the healthcare team. Rice (2008) identified this as a barrier to nurse recognition that delays prompt identification of delirium as a syndrome in its entirety.

Nurses are not able to specify key aspects about the diagnosis of delirium. Participants stated that education would play an important part in teaching nurses how to improve their detection of delirium. Nurses need to be able to identify the criteria for delirium in order to effectively utilize existing screening tools such as the CAM. If nurses cannot detect delirium in their patients they cannot advocate for identification of potential underlying etiology. Delirium assessment and treatment of reversible causes is the core of delirium treatment and resolution and therefore a comprehensive nursing education plan will be an essential part of any delirium initiative. Nursing education is identified as a potential barrier to nurse recognition of delirium repeatedly in the literature (Eden & Foreman, 1996; Steis & Fick, 2008).

Implications for nursing practice and education.

Information gathered from participants about delirium education and training has many implications for nursing practice and program and in-service education. Improvements in delirium assessment and treatment are an essential part of improving delirium care in the older adult patient. Delirium education needs to start with improved screening to increase detection of delirium by nurses. None of the nurses in this study were utilizing a screening tool to identify delirium. The literature on nurse recognition demonstrates that screening for delirium is important however even with a valid screening tool such as the CAM nurses continue to have low detection rates (Gillis, & MacDonald, 2006; Rigney, 2006; Ski & O'Connell, 2006).

Participants demonstrated a consistent failure to identify signs and symptoms of delirium. Nursing education and training on dementia to address this gap in knowledge is needed. Recognition of symptoms such as inattention and fluctuating course may be key to improving delirium detection. Delirium education will likely need to transcend the classroom and also take

place at the bedside with effective mentorship to help identify at-risk patients as well as hands-on use of a tool such as the CAM. Participants in this study identified that practical application of educational strategies for delirium would be ideal over didactic lecture-style teaching.

The participants in this study made a number of suggestions for improving their ability to detect delirium in their older adult patients that educators should considered when implementing any delirium initiative. Participants suggested providing education in the workplace in the form of educational sessions as well as visual cues. They mentioned posters, flow sheets, screening questions, criteria sheets and brief education sessions on the unit as potentially effective modes of education. Some participants suggested that having a dedicated nurse expert in the area of delirium would be helpful. This expert would be available around the clock and would help with nurse detection, treatment, mentorship and delirium care. Another participant suggested that a committee to monitor delirium care on the units would also be an effective approach to improve delirium care.

Several participants in this study noted that delirium detection improves when a team model for nursing care was used. They discussed the idea of a culture of community on their unit. This meant that although the patient with delirium is assigned to a nurse for a shift, the entire team contributes to monitoring and managing the patient. The patient is moved closer to the desk and all team members receive communication from the primary nurse to observe this patient so that if the nurse assigned to care for the patient is busy caring for another patient, the team will fill in the gap by providing the required monitoring and management in the nurse's absence. The units that currently use this strategy find that the "burden" of delirium care is lessened by such a team approach.

Formal education in basic nursing programs also needs to improve. Nurses in this study who had received delirium education in their nursing program noted that it consisted of a one-hour lecture style presentation that also included dementia. This combination of content may confuse delirium and dementia for some students. It is important that students understand the difference between these two diagnoses as well as appreciate the presentation of delirium when it is superimposed on a dementia, a common occurrence. Participants also stated that they learn best in real life clinical situations, therefore future nurses should be able to work with a screening tool such as the CAM as part of the clinical practicum in basic nursing education programs. Nursing faculties at the university level need to acknowledge the importance of delirium, especially in the older adult, and place a stronger emphasis on this topic.

Inadequate Baseline Patient Information

Many of the participants interviewed recognized the lack of patient baseline information prior to surgery as a barrier to nurse detection of delirium. Researchers have rarely explored this potential barrier, however those who did, thought it could play a key role in delirium detection by nurses (Rice, 2008; Steis & Fick, 2008). If nurses understand a patient's baseline cognitive functioning they can then compare current cognitive functioning and determine if there is a change. A sudden change from baseline is a key criterion for screening for delirium and an essential aspect of delirium detection by nurses. Participants suggested that they would have a better understanding of their patients' baseline if they saw them pre-operatively. Some participants explored this idea but decided it was not logistically feasible in the current hospital structure to begin caring for these patients prior to surgery. Participants commented that if they did care for patients pre-operatively, there is no guarantee they would have the same nurse post-operatively to have this desired continuity to observe changes from the patients baseline.

Rice (2008) found that nurses who cared for patients on consecutive days were no better at recognizing delirium in those patients. This suggests that it is not as important how patients are processed through the hospital system but rather what information is collected and how that information is communicated to the health care team. For example, underrecognition of delirium is greater for the older adult patient with a history of baseline cognitive impairment such as dementia, despite delirium being more prevalent in that population. Dementia clouds the issue because nurses are more likely to attribute observed deficits in cognitive functioning to the patient's dementia diagnosis. The nurse then does not investigate whether the current cognitive functioning is different from the patient's usual deficits or part of an emerging or established delirium (Milisen et al., 2005; Rigney, 2006). If nurses have knowledge of their patients' baseline cognitive functioning they will be more likely to compare current functioning to the patients' baseline despite a diagnosis of dementia. Currently a standardized system for ensuring that baseline information about the patient's pre-operative mental state is not available to the staff taking care of these patients post-operatively. Gathering pre-operative cognitive assessment data during the admission process might allow nurses to identify subtle changes from baseline therefore detecting delirium early before symptoms become unmanageable.

Participants indicated that knowledge provided by family members about patients' baseline mental state is a critical part of delirium recognition by nurses. Steis and Fick (2008) state that in 6 of the 10 articles they reviewed, identification of baseline information from family was an essential part of delirium recognition. This suggests that nurses need to consolidate information about the patient from multiple sources (Rice, 2008).

Implications for nursing practice and education.

Nurses need to ensure they have knowledge of the patient's baseline mental state. Establishing this information needs to start as part of the admission process and continue with nurses' initial and ongoing assessment that includes a cognitive component. This information allows nurses to compare acquired patient baseline data with the results of their current assessment. It may be difficult for nurses to acquire baseline patient information for a number of reasons. Health care professionals rarely document the patient's baseline information in the patient chart on admission and nurses trying to gather baseline information from the patient's family may find this difficult. For example, the patient may not have strong family involvement to relay this information or family members aren't accurate or reliable in their history of the patient. Regardless of the reason, lack of this type of baseline information for any reason is a barrier that potentially leads to delays or absence in nurse recognition and therefore diagnosis and treatment of delirium in the older adult. This will in part be the responsibility of the nurse but there is also a role for nursing administration.

Improvements in both communication and documentation on patient admission should be investigated to determine potential ways to enhance this type of information and fill in the gaps that currently exist. Screening questions could be included in the patient's admission assessment or even as part of the pre-admission process if applicable and should include the family whenever possible. Nurses should ensure that there is a cognitive component as part of their initial assessment of the patient. Having a standardized screening tool such as the CAM performed on all patients at risk of acquiring delirium would be a good initial intervention to improve delirium detection and treatment. A comprehensive training program in the use of the

CAM would be essential to overcoming some of the barriers with nurses using the CAM that have been demonstrated in the literature.

Nursing administration needs to explore ways to improve the existing system for documentation and communication between professionals. The hospital involved in this study continues to utilize paper charting, when perhaps a computerized system of documentation could prompt nurses or physicians to complete the cognitive component of their assessment. A computerized system of documentation could prompt the user that the patient is at risk of delirium based on a list of risk factors in the system. This might streamline this information so that all members of the team using the system are aware that the patient is at risk and should be monitored more closely and screened regularly.

Inadequate Time with Patients

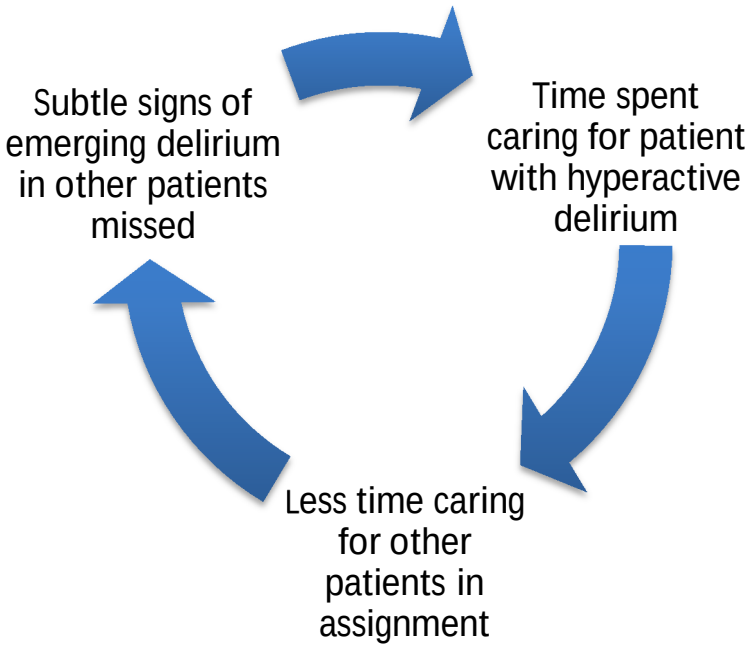
Most participants expressed that inadequate time with patients was a barrier to nurse detection of delirium. Participants suggested that if they had more time to engage their patients at the bedside they would be able to detect delirium more effectively because of the degree of ongoing cognitive assessment. Researchers have found that time constraints are a barrier to delirium recognition and this lack of detection results in a worsening of the patient's condition (Flagg et al. 2010; Kiely et al., 2009; Steis & Fick, 2008).

Participants report being unable to provide effective patient care because of hyperactive symptoms of delirium such as agitation and combativeness. Participants describe managing medical interfering behaviours such as pulling out intravenous lines and frequent reorientation of their patient, as requiring increased nursing time and resources. Nurses need time not only to provide hands-on care, but also to develop the nurse-patient relationship to build trust and plan

care goals, and then deliver optimal patient care based on these goals (Jones, 2010). When nurses focus their time on managing the patients' hyperactive delirium symptoms, they do not have the time to provide complete and thorough nursing care. Jones (2010) discovered that time constraints impacted nurses' ability to provide effective patient care. In fact, the researcher identified that nurses omitted aspects of nursing care because of insufficient physical time with their patients (Jones, 2010).

Participants indicated that when their patient's delirious behaviour was disruptive it affected other patients in their assignment. Participants felt that the extra time required in providing care to the patient with hyperactive delirium meant less time providing nursing care for the other patients in their assignment. When nurses spend less time with these patients they are unable to establish adequate knowledge about them. Nurses who do not know their patients are unable to recognize subtle changes in their condition, such as a fluctuating course, the first criterion of the CAM. They may not identify changes because they do not know their patient well enough to determine their baseline or if the patient is experiencing an emerging delirium. This is a self-perpetuating delirium cycle (Figure 1, below) where the time spent caring for the patient with delirium results in putting other patients at greater risk of suffering from an untreated delirium. This is especially important during times when staffing decreases.

Figure 1: Self-Perpetuating Delirium Cycle



Participants explained that time constraints on the night shift were especially important and may be a barrier to nurse detection of delirium. They stated that staffing decreased on the night shift on all three units included in this study. Participants' experiences suggested that patients' delirious behaviour worsened in the evening and overnight which is consistent with the literature (Gillis & MacDonald, 2006). Many participants said that, with the number of patients in their assignment on the night shift, they only had time to complete the essential elements of their patient care. They stated that they usually did not have time to engage their patients for longer periods of time which might have provided an opportunity for delirium detection.

Implications for nursing practice and education.

Organizational leaders ought to look at patterns of time usage by nurses and how this affects patient care and generate solutions if the quality of patient care diminishes due to these

constraints (Jones, 2010). Establishing a culture of delirium detection by nurses as well as the entire health care team is critical. One aspect of this might include more appropriate assignments that acknowledge that delirious patients require more time for their care. Perhaps nurses who are caring for patients experiencing a delirium ought to have fewer patients in their assignment or staffing numbers could reflect the unit's number of patients with delirium at any given time. Initiatives for delirium prevention and early recognition will reduce the overall number of patients with delirium as well as decreasing the demands of the delirious patient because of recognition of delirium before the behaviours become extreme.

Researchers discuss a number of strategies that improve the issue of time constraints include examining technology, patient acuity, unit layout as well as the sequencing and timing of the care provided to patients (Jones, 2010). Such strategies would be aimed at improving the amount of physical time spent with patients as well as the added value of the psychological time nurses spend building relationships with their patients in the face of the demands of the current health care environment (Jones, 2010).

Some hospitals have well established volunteer programs that assist with the need for frequent re-orientation/redirection and diversion activities for the older adult patient with delirium. This is a fiscally responsible way of improving care for the older adult patient with delirium. Of course this type of service requires committed and well-trained volunteers who are able to consistently fill this gap. The hospital in this study has a program that performs this task called the ROAD (Respectful Older Adult Diversion) program however nurses struggle getting volunteers to return on a regular basis and the program is not well known in the hospital. Perhaps a program like ROAD could be better coordinated, advertised and utilized so that more volunteers could be recruited, trained and sustained. Nurses and health care assistants also need

additional education in caring for the confused and/or aggressive patient. There are a number of workshops and training programs that target this specific behaviour both online and in the classroom.

Barriers to Assessment and Care Related to Delirium Symptomatology

Participants recognized that certain delirious behaviours such as decreased focus/attention or aggression led to a decreased level of care. This included the ability to assess effectively and to provide basic post-operative care as well as post-operative teaching. Participants report that aggression behaviours in particular made it difficult to care for the patient with the same standard as the patient without delirium because of the challenges with making physical contact and the risk of harm to nurses and the patient. Nurses need to feel safe in the workplace as well as having the skills to manage the aggressive patient. The literature suggests that staff need to provide individual treatment plans, participate in training in behaviour management, and receive peer and organizational support as key components to successful care of the aggressive patient (Narevic et al., 2011).

Nurses recognized a change in their patients' behaviour however they did not necessarily recognize that this behaviour was related to delirium symptomatology. Patients' hyperactive symptoms of delirium prevented a complete assessment and therefore act as a barrier to detection of the delirium leading the patients' delirium to continue, worsen or re-emerge. Nurses are so involved attempting to manage patients' hyperactive delirium symptoms that they aren't able to step back, see the complete picture, and integrate this information into a comprehensive finding that the patient has delirium.

This finding also suggests that hyperactive delirium symptoms are a main source of information that indicates deterioration with their patients' condition for nurses. If patients are

exhibiting symptoms of a hypoactive delirium it is likely nurses would not detect any change in their patient's condition.

Implications for nursing practice and education.

There are a number of implications for nursing practice and education related to the information participants provided in these interviews. Badger and Mullan (2004) explained that nurses need to ensure that they are diligent in both reporting incidents of aggression to their administration and advocating for nursing education around managing aggressive behaviour. Badger and Mullan (2004) identified that nurses believed that nursing leadership did not understand the barriers to providing care for patients exhibiting resistant behaviours. Improved dialogue between frontline nurses and management will raise the level of awareness that this is an issue that is impacting nurses as well as their ability to provide patient's with a quality standard of care. Administrative support will be paramount in improving this aspect of delirium care.

Nurses also need to utilize strategies to reduce aggressive behaviour in their patient with delirium. They need to recognize symptoms of agitation and learn physical and environmental strategies that have been shown to decrease agitation in the older adult patient with delirium (Somes, Stephens Donatelli, & Kuhn, 2011).

Nurse-Physician Communication

Researchers rarely explore nurse-physician communication as a barrier to nurse detection of delirium. In Eden and Foreman's (1996) case study they identified frustration by nurses when communicating to physicians changes in their patient's mental state. In this case nurses reported mental state changes to the physician on 3 occasions prior to action on the part of the physician (Eden & Foreman, 1996). The researchers in this study thought that nurses recognized delirium

symptoms sooner than physician's because of their increased time at the bedside with the patient. Neither the nurse nor physician attempted to identify a cause of the delirium in this case (Eden & Foreman, 1996).

If nurses and physicians shared their observations of cognitive changes in their patients, recognition of delirium might improve thus mitigating consequences related to the lack of delirium recognition (Bowler et al., 1994). Nurses and physicians need to improve documentation of cognitive assessment on admission and throughout the patient's hospitalization. The literature indicates that nursing protocols for delirium with standing orders for investigations and treatment may improve recognition and treatment of delirium (Eden & Foreman, 1996). Another nurse-physician communication barrier to delirium recognition is that physicians rarely read nursing documentation (Steis & Fick, 2008). Therefore if nurses fail to communicate their concerns verbally, the physician may not know about delirium concerns. These are all areas to consider when implementing ideas to improve delirium detection and care.

In this study participants explored what happens when they bring their assessment information about the patient's mental state to the physician. Nurses described frustration with this process, in part related to a perceived lack of action by the physician to investigate and treat delirium. This frustration led to delays in nurses communicating with physicians. They stated that they often did not present their findings to the physician because they did not believe it would be acted upon. Participants admitted that they may not have identified the change in the patient's mental state as being delirium but they knew something was "different" or that the patient was "not themselves". Participants interviewed with more years of experience seemed to have less difficulty with this communication and more action by physicians. This may indicate a

generational or level of confidence component to communicating with physicians and delirium recognition.

Nurses described experiencing distress when caring for a patient with delirium who was in distress. Breitbart, Gibson and Tremblay (2002) purport that nurses and other caregivers experience substantial distress when caring for a patient with delirium, especially when the patient was experiencing perceptual disturbances. In another study, Borbasi, Emmanuael, Farrelly and Ashcroft (2010) recognized that this distress can lead to long-term illness and burnout in caregivers.

One explanation for why participants experience this ongoing communication breakdown with physicians could be clarified by drawing from Seligman's (1972) theory of learned helplessness. Seligman states subjects experience a debilitating effect in which they feel they have no control over changing the outcome, resulting in the experience of uncontrollability and three deficits that occur as a result of learning that an outcome is out of the subjects' control (Abramson, Seligman & Teasdale, 1978; Seligman, 1972). These deficits are categorized as emotional, cognitive and motivational. The emotional deficit describes that learning outcomes are uncontrollable cause negative affective changes in the subject. Cognitive deficits are present when the subject learns that an outcome is uncontrollable which makes it challenging for the subject to think that the response will create the desired outcome in the future. Lastly, motivational deficits describe when the subject learns that when they exhibit the response the outcome is uncontrollable and the likelihood that they will exhibit this response in the future decreases (Abramson et al., 1978).

When the participants in this study described the nurse-physician communication barrier, the underlying psychological process is consistent with learned helplessness theory. Participants describe recognizing a change from their patients' baseline mental state. They acknowledged that recognizing this change did not equate to detecting delirium as a complete syndrome. Often they recognized this change because the patient was distressed which subsequently caused the nurse to experience distress from observing the patient in this state. This is the debilitating effect described by Seligman as the start of learned helplessness. Unfortunately this is not an unusual experience in nursing.

The Canadian Nurses Association (2003) describes nurses experiencing moral or ethical distress as a result of situations in which they feel uncontrollability. Amichai-Hamburger, Mikulincer and Zalts (2003) also describe how exposure to situations viewed as uncontrollable can weaken a response resulting in a state of cognitive fatigue that causes the subject to be unable to process the information as required. When nurses feel worthlessness, helplessness or incompetent as a professional they are unable to make effective decisions and problem-solve effectively for their patient (Golbasi, Kelleci & Dogan, 2008). This is an important finding because ethical or moral distress that has not been managed effectively not only leads to ineffective communication patterns but also to nurses resigning from positions, leaving the profession or experiencing burnout (CNA, 2003).

Next, participants described bringing this information about their patient to the physician and a lack of physician response. Seligman describes this lack of response as the uncontrollable outcome. As a result nurses delay informing or neglect to inform physicians about their assessment of the patients change in mental state. Subsequently, nurses feel helpless and believe they have no control over the desired outcome, recognizing and treating patients with delirium

and reducing patient distress. According to Seligman's theory, the result of this helplessness is that nurses will not only cease to provide information about their patient to the physician but they will also ultimately stop exhibiting the response of looking for delirium symptoms in their patients in the first place. Essentially, this demonstrates both the cognitive and motivational deficits described in Seligman's theory.

Participants also describe a belief that physicians have a knowledge deficit regarding delirium identification and treatment. This is consistent with literature that identifies recognition rates amongst physicians ranging from 30%-70%, similar to the rate amongst nurses (Bowler et al., 1994; Neitzel et al., 2007; Rice, 2008; Ski & O'Connell, 2006). Nurses felt that this lack of physician knowledge led to a reluctance on the part of physicians to consult other services such as psychiatry, medicine or the pain service. Participants felt that involving these services could assist with identification and treatment of delirium. It was also suggested by participants that physicians were under pressure to discharge patients and free up surgical beds and this may result in a reluctance to pursue investigations that would delay discharge. Gillis and MacDonald (2006) purport that on discharge as many as 90% of older adults may have unresolved delirium.

Another explanation comes from adopting a feminist perspective on the problem. Daiski (2004) suggests that nursing is historically a female dominated profession and medicine a male dominated profession. As a result physicians view nurses as subordinates and nurses feel powerless, exhibiting oppressed behaviour as a group (Daiski, 2004; Golbasi et al., 2008).

Nurses feel they have had minimal control over their own working conditions as well as little respect from physicians and thus are often not included in decision-making (Daiski, 2004). This dynamic results in nurses remaining silent even when they were given the opportunity to

engage in decision-making about their patient (Daiski, 2004; Golbasi et al., 2008). Although this is not a complete explanation for the issues related to nurse-physician communication it does offer some additional evidence to support a complex dynamic that is effecting nurse detection of delirium in the hospitalized older adult.

Implications for nursing practice and education.

Nurses and physicians need to improve their communication with each other and this starts with building knowledge around delirium assessment and treatment. Both disciplines need to acknowledge the importance of the other in delirium care. Perhaps one way to approach this deficit is to educate and train nurses and physicians together in delirium screening and treatment. This may bring the two disciplines together and reduce the level of helplessness and disparity nurses feel when communicating with physicians.

Another important aspect for consideration is the issue of written communication. Documentation by nurses is not usually read by physicians and is therefore not included in the decision-making around care of the patient with delirium. Currently nurses and physicians are approaching delirium care in isolation and need to pool their collective written and verbal knowledge to create an accurate picture of the patient at risk of or suffering from delirium. Perhaps electronic charting will assist with merging the documentation of these two disciplines.

Future Research

Future researchers should continue to explore nurse detection of delirium using screening tools such as the CAM. However, they need to add more comprehensive education and training on delirium and the tool itself. Educators need to examine delirium training for nurses both in basic nursing education programs and once nurses are employed as part of regular employee

development. They need to promote delirium educational initiatives that integrate both classroom and clinical training in assessment and treatment which will hopefully improve the rates of nurse detection of delirium.

Nurses need to have better access to baseline patient information. Researchers can focus on comparing different models for delivering this information to the nurse taking care of the post-operative patient. Researchers could explore utilization of a standardized document for pre-operative assessment that would include baseline cognitive information about the patient as well as a current cognitive screening. Researchers could also explore having nurses who typically only see their patients post-operatively assess their patients as part of the pre-operative process.

Finally, researchers need to focus on exploring the way nurses and physician communicate. They need to examine the dynamics of this relationship and how it impacts delirium detection and treatment in the hospitalized older adult. Nurses and physicians should consider combining their research forces in a joint study between the nursing and medicine faculties to stress the importance of this area of study to both groups. Nurses and physicians need to take responsibility for how they communicate with each other and how this communication affects patient care and service delivery.

Conclusion

This study contributes to our knowledge about the barriers to nurse detection of delirium. The semi-structured interviews allowed for an unencumbered qualitative exploration of the experiences of the frontline surgical nurse. Study findings are consistent with the existing delirium literature that has outlined a nursing knowledge deficit and need for further education related to delirium, as well as barriers related to inadequate baseline patient information. This

study adds first-hand nurses' accounts of the challenges that are associated with managing the patient with hyperactive delirium. As well, the nurses explored barriers that they have recognized in their practice that have not been extensively explored in the literature related to nurse detection of delirium in the hospitalized older adult. These included inadequate time with patients, barriers to assessment and care related to delirium symptomatology and nurse-physician communication. Exploring this research question using qualitative methodology contributes significantly to the literature that currently exists related to barriers to nurse detection of delirium.

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Appendix A: Sample Interview Questions

Barriers to Nurse Detection of Delirium in Hospitalized Older Adults

1) Can you tell me about what your experience has been with delirium in the hospitalized older adult?
2) How do you know delirium when you see it? What would I see if I had a patient with delirium? (What are the symptoms of delirium and how do you detect it?)
3) The literature shows that nurses have very low detection rates of delirium. Why do you think this is?

Appendix B: Revised Interview Schedule

BARRIERS TO NURSE DETECTION OF DELIRIUM IN HOSPITALIZED OLDER ADULTS

You have been asked to participate in this study because you are a direct care surgical nurse who cares for older adults who may experience a delirium while hospitalized. The goal of this study is to gather information about what some of the barriers are to nurse detection of delirium in the older adult surgical patient. I would like to remind you that this interview is being audio-recorded. If at any point in the interview you feel uncomfortable and wish to stop please let me know. Take as much time to think about and answer the question as you need. Your responses are confidential and only the researcher team will have access to them for transcription purposes. Once transcribed, there will be no identifiable features of your interview.

Interview Questions

1) How do you know delirium when you see it? [Probes: What would I see if I had a patient with delirium? What are the symptoms of delirium? How do you detect delirium?]

2) Can you tell me about your experience with delirium in the hospitalized older adult? [use follow up probes++]

3) Researcher presents DSM criteria for delirium.

Diagnostic Criteria for Delirium

1. Disturbance of consciousness
- *Decreased clarity of awareness of environment*
- *Decreased ability to focus, sustain or shift attention*

2. Change in cognition:
- *Memory deficit*
- *Disorientation*
- *Language disturbance*

3. Develops over a short period of time and fluctuates throughout day

4. History, physical exam or lab findings show delirium is caused by direct physiological consequences of a general medical condition.

Clinical Features of Delirium

- *Develop over short period*
- *Fluctuating*

- *Evenings and nights worse*
- *Fluctuating LOC*
- *Decreased ability to maintain attention*
- *Decreased ability to shift attention*
- *Perceptual disturbances*
- *Disorganized thinking*
- *Disturbed sleep-wake cycle*
- *Change in psychomotor activity*
- *Disorientation*
- *Memory impairment*

3) (continued)
Have you or other nurses you work with had many patients exhibiting these symptoms in the last 6 months? How often do you see this?

4) What did you think the patient was experiencing?

5) The literature shows that nurses have very low detection rates of delirium. Why do you think this is?

6) What do you do when you detect delirium?

Appendix C: Demographic Survey

1) Participants name:

2) Pseudonym:

3) Nursing Education:

[ ] Diploma Year Completed_____

[ ] Baccalaureate [ ] Year Completed_____

[ ] Graduate Degree (Explain below) Year Completed_____

_____

[ ] Other (Explain)

_____

[ ] Special Education on Delirium (Explain below)

4) Other Education:

[ ] Diploma Year Completed_____

[ ] Baccalaureate [ ] Year Completed_____

[ ] Graduate Degree (explain below) Year Completed_____

_____

[ ] Other (Explain) _____

5) Years of nursing practice:_____

6) Length of time working in current area of nursing practice:_____

Appendix D: Recruitment Poster

Health Sciences Centre Winnipeg

Do you want to help recognize delirium in the older adult?

You are invited to share your experiences in providing care to older adults with delirium.

For more information on this qualitative nursing study, please contact Vera Duncan @ vduncan@hsc.mb.ca or 787-5070.

This study fulfills the requirement for the Masters of Nursing Degree at the University of Victoria

Appendix E: Consent Form

University of Victoria

Participant Consent Form

Barriers to Frontline Surgical Nurse Detection of Delirium in Hospitalized Older Adults

You are invited to participate in a study entitled "What are the Barriers to Nurse Detection of Delirium?" that is being conducted by Vera Duncan.

Vera Duncan is a graduate student in the department of Nursing at the University of Victoria and you may contact her if you have further questions by calling (204) 787-5070 (work) (204) 453-8054 (home) or email vduncan@hsc.mb.ca or vidovic11@hotmail.com.

As a graduate student, I am required to conduct research as part of the requirements for a degree in Masters of Nursing. It is being conducted under the supervision of Dr. Rita Schreiber, Professor in the Faculty of Nursing at the University of Victoria. You may contact my supervisor at (250) 721-6462.

As a participant in this study you are a surgical nurse at Health Sciences Centre and may or may not be a colleague of the investigator in her paid position as Mental Health Consultation Liaison Nurse. In this position I have the potential to have been consulted by potential participants in this role at the Health Sciences Centre. I will not be conducting research during my paid employed time and this research is in no way affiliated with my employed role. I do not, nor have I ever had a direct supervisory or power over relationship role with any potential participants in this research study. Potential participants should not feel obligated to participate due to a relationship with the researcher. Health Sciences Centre is not involved in this research study and employment will not be affected in any way if participants choose to participate or not.

Purpose and Objectives

Delirium is a serious health problem for the hospitalized older adult. The rates of delirium in hospital can be as high as eighty percent. When people have delirium in hospital they have longer hospital stays, functional deficits, increased risk of death, illness as well as discharges to long term care facilities. Nurses are in a key position to identify delirium early because of their frontline contact with the older adult patient, however, nursing rates of delirium detection are low even when using a valid screening tool. The objective for this study is to identify barriers to nurse recognition of delirium in hospitalized older adults.

Importance of this Research

Rates of delirium and the costs to the older adults' quality of life, and the financial costs to the healthcare system make this an important topic. Delirium is related to longer hospital stays, functional deficits, and increase risk of illness, death and discharges to long term care facilities. Delirium is either under treated or misdiagnosed in up to 94% of hospitalized older adults. This

research study will contribute to identifying barriers to nurse detection of delirium in the hospitalized older adult. Nurses are in a key position to detect delirium but detection rates are low. Reasons for low rates of nurse detection has been speculated but rarely examined in interviews with nurses in the literature.

Participants Selection

You are being asked to participate in this study because you are a direct care surgical nurse who cares for older adults who may experience a delirium while hospitalized. Selection of participants for this study is voluntary based on response to poster advertisement and/or word of mouth.

What is Involved

If you agree to participate in this research, you will be asked to take part in an interview that will take approximately 60 minutes. The interview will be conducted at a time and place of your convenience. The interview will be audio-tape and transcribed exactly. You will also be asked to complete a short questionnaire about your nursing education and experience.

Inconvenience

Participation in this study may cause some inconvenience to you, including the time it takes to be interviewed and complete demographic survey.

Risks

As a participant in this study you may feel uncomfortable with questions related to your knowledge or ability to detect delirium being under scrutiny. This could possibly make you feel demeaned or embarrassed. If at any point in the interview you feel uncomfortable and wish to stop please let me know. As a participant you have the opportunity to withdraw from the study at any time. I am a trained mental health nurse and therefore, interviewing persons is part of my employment on a daily basis. I feel comfortable discussing any emotional discomfort you may have during the interview process. If you do not wish to discuss a particular question please let the investigator know and the question will be omitted and you will be reminded that you can withdraw from the study at any time with no consequence and data from the interview will not be used and will be destroyed.

Benefits

The potential benefits of your participation in this research include the potential that the research project will uncovers barriers to nurse recognition of delirium in hospitalized older adults. This could be a potential benefit to the improve state of knowledge about delirium and improve nurses' ability to care for the delirious patient.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If the participant withdraws from the study, data will not be used and will be destroyed.

Anonymity
In terms of protecting your anonymity all information you provide during the research study will be held in confidence, and your name will not appear in any report or publication of the research. Your data will be safely stored in a locked facility and only the researcher and her academic supervisor will have access to this information.

Confidentiality
Your confidentiality and the confidentiality of the data will be protected by use of pseudonyms and data will be stored in a locked facility and only accessed by research staff.

Dissemination of Results
It is anticipated that the results of this study will be shared with others in the following ways. Published article as well as thesis presentation.

Disposal of Data
Data from this study will be disposed of once dissemination is complete. Paper copies will be shredded and electronic files will be deleted.

Contacts
Individuals that may be contacted regarding this study include Vera Duncan (principle investigator) and supervisor, Rita Schreiber (refer to contact info at beginning of consent).

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca). Ethics approval from the University of Manitoba and request for access to Health Sciences Centre have also been obtained for this study.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

_____	_____	_____
Name of Participant	*Signature*	*Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.

Appendix F: Letter of Permission from Institution

Health Sciences Centre
Winnipeg, Manitoba
820 Sherbrook St.

Vera Duncan
84 Evanson St.
Winnipeg, Manitoba
R3G 1Z9
(204) 453-8054

Sir/Madam,

RE: REQUEST TO CONDUCT A RESEARCH PROJECT

I hereby request permission to conduct a research project at the Health Sciences Centre (HSC), Winnipeg, Manitoba. I am in the employment of the Health Sciences Centre as a Mental Health Consultation Liaison Nurse and also working on my Masters in Nursing from the University of Victoria.

The aim of my study is to explore barriers to nurse detection of delirium in hospitalized older adults on surgical in-patient units at HSC. Your hospital has been identified because it has an abundance of surgical units and the researcher already has established relationships with surgical unit nursing staff. I hope to obtain permission to interview approximately 10-12 nurses for 30-60 minutes each on their work time.

The Faculty of Nursing research committee at the University of Victoria has approved the research proposal and it is attached for your attention. I hope to publish my findings so that improvements in nursing care of delirium may develop.

I hope my request will be favorably considered.

I thank you in advance.

Yours sincerely,

Vera Duncan RN BN