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Delirium Rates Increasing in Elderly Hospitalized Patients

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Delirium Rates Increasing in Elderly Hospitalized Patients:
An Integrative Review of Literature
Sarah Jane Soffel
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Abstract
Delirium commonly affects hospitalized elderly patients, and is associated with increased mortality and morbidity, among other detrimental outcomes. Delirium is increasing in prevalence, yet remains under detected. Many of the negative effects of hospitalization, such as immobility, dehydration, and polypharmacy, increase the risk for developing delirium. Early detection of delirium remains an important factor for treatment and reversal. The aim of the integrative literature review was to determine whether delirium rates are increasing among elderly hospitalized patients, as well as to identify risk factors associated with delirium and nursing interventions that may prevent the increasing prevalence of delirium. The study is an integrative literature review, in which literature was analyzed to determine rates of delirium, risk factors to developing delirium, and interventions needed to decrease the rates and the risks. The literature used for the integrative review was found in the following databases: CINAHL Complete, ScienceDirect, PubMed and SAGE. The terms searched while researching this topic included: delirium, elderly, and hospitalized. Delirium remains under detected in elderly hospitalized patients, and those it affects have poorer outcomes and higher mortality rates post-hospitalization. Nurses must tailor their interventions to best prevent and treat patients with delirium. Further research is needed on alternatives to hospitalization that provide a multidisciplinary approach with skilled and passionate providers knowledgeable in caring for the complex needs of elders.

*Keywords:* delirium, elderly, hospitalized
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Chapter 1: Introduction

Background and Significance

Delirium is defined by the American Psychiatric Association as a disturbance in attention, awareness, and cognition over a short period of time, typically hours or days. The disturbance defined as delirium is not explained by another preexisting neurocognitive disorder, but is attributed to an underlying medical condition, substance use or withdrawal, or a medication side effect. It may be present but does not always include psychomotor behavioral disturbances and emotional disturbances. Rates of delirium are highest among hospitalized patients in intensive care units, emergency departments, hospice care, and post-acute units (Francis & Young, 2014). According to Popeo (2011) at the National Institute of Health, the prevalence of delirium among the general population is 1-2%, whereas the prevalence of delirium among hospitalized adults increases to 6-56%. The prevalence of death due to delirium developed in the hospital is 22 to 76% (Alagiakrishnan, 2016).

Delirium is a complex issue involving many contributing factors, yet it is often under detected. It is associated with “longer hospital stays, increased mortality and an increased rate of institutional care” (Elie, 2000, p. 977). It is most commonly a condition that occurs in elderly hospitalized patients, and an even more common occurrence in patients with underlying dementia. One study found that the prevalence of delirium is higher in patients with less education and those who have been institutionalized, such as living in a nursing facility, as well as those patients with more severe underlying medical conditions. Delirium may be a reversible condition, and early detection is an important factor in reversal and treatment (Elie, 2000). Nearly one half of patients who develop delirium have dementia, and the other cases are commonly precipitated by such factors as polypharmacy, infection, dehydration, immobility, use of restraints, malnutrition and the use of bladder catheters (Francis & Young, 2014).
Delirium is becoming a great issue of concern since prevalence of population longevity is increasing due to medical advances. With people living longer, “elderly patients are a growing clientele for hospitals, a trend that will only accelerate as Baby Boomers age” (Kaiser Health News, 2016, p. 4). Older patients present a unique challenge to the healthcare system. They are often hospitalized for an acute exacerbation of an illness, yet their underlying chronic conditions may be overlooked during the hospitalized period. While hospitalized, many elderly patients experience greater levels of immobility, dehydration, and malnutrition. These factors combined with medical interventions may serve as precipitators to developing delirium (Kaiser Health News, 2016).

In order to prevent the functional decline in older adults, nurses play an integral role in identifying risk factors and intervening. It is important to assess the patients’ baseline functioning, and try to maintain this while they are hospitalized. Early mobilization is extremely important, as well as adequate hydration and nutrition. It is also extremely important to assess our hospitals on a higher level. Graf (2006) suggests that the evaluation should include information on whether hospital environments are elder friendly, their capacity to prevent sensory deprivation, and resources to promote self-care, education, and safety. Wald, Glasheen, Guerrasio, Youngwerth & Cumbler (2011) identify the benefits of a hospitalist run acute care for elderly patients. Acute Care for Elders (ACE) units are hospital units “developed by geriatric researchers to address the adverse events and functional decline that often accompany hospitalization” (Wald et al., 2011, p. 313). ACE units employ interdisciplinary teams to provide comprehensive care for patients over 70. While these units purport better care for elderly patients, they require extensive training and resources.
An alternative to hospitalization for elderly patients is providing home-care services. Johns Hopkins University developed a home hospital program to bring care to patients in their homes, thereby avoiding the risks associated with hospitalization. The program involves at least daily visits from trained nurses, medical care and technology, and regular visits from a provider (Gillick, 2014). Unfortunately, there are few such programs, and many of these programs require extensive planning, funding, and education. It will be beneficial to continue exploring alternatives to hospitalization for elderly patients, as well as devoting time and resources into identify risk factors, precipitating causes, and treatments for delirium.

**Problem Statement**

Addressing the issue of increasing rates of delirium in elderly hospitalized patients is important as elderly patients often enter the hospital and leave with more problems than when they came in. It is not uncommon for hospitalized elderly patients to develop delirium, and this may be a result of the inherent risks involved in hospitalization. Lack of resources, immobilization, invasive procedures, dehydration and malnutrition are among the causative factors leading to delirium in elderly patients with underling medical conditions. Once delirium develops, prognosis starkly declines (Francis & Young, 2014). Delirium is a multifactorial syndrome rather than a condition caused by one singular factor. It is therefore important to address the risk factors and other contributors to identify reasons for increasing rates and methods to prevent the onset (Inouye, 1998). Addressing risk factors and contributors to delirium requires resources, education, a manpower. There are some alternatives to hospitalization and specific hospital units geared to providing care to the geriatric population, but these are few and far between. There is thus a knowledge gap in how to provide competent and effective care for
the geriatric population. Strides must be made to help geriatric patients come out of the hospital or acute-care settings strong than when they entered.

**Purpose of Integrative Literature Review**

The purpose of the intended integrated literature review is to explore the prevalence of delirium in hospitalized adults and identify whether these rates are increasing. Additionally, the literature review will explore whether current nursing practices are contributing to the increasing rates of delirium as well as potential alternatives to hospitalization and nursing interventions to decrease the rates of delirium. The review will also explore risk factors and other contributors to delirium onset in hospitalized adults. The literature review will provide evidence regarding nursing and other interventions that have been successful in arranged better outcomes for elderly hospitalized patients. The review will also recognize areas of need for further research. From the review, new and alternative interventions will be identified to improve care and reduce rates of delirium in elderly hospitalized patients.

**Research Questions**

1. Is the present nursing approach toward hospitalized dementia patients resulting in poor outcomes, and are there certain nursing interventions that prevent or lessen the onset of delirium in elderly hospitalized patients?

2. Are there alternatives to hospitalization that provide care for elderly patients without the same high rates of developing delirium?

3. What are the barriers to providing adequate care to geriatric patients to avoid delirium?

**Conceptual Framework**

The prevalence of delirium in elderly hospitalized patients may be due in part to the lack of staffing, poor knowledge and training needed to prevent modifiable risk factors, and decreased
communication surrounding the complex needs of elderly patients. The conceptual framework used demonstrates the need for effective health education, protection, and disease prevention. This includes change from the beside to the lawmakers. The Tannahill Model focuses on facilitating health by changing “the knowledge, beliefs, attitudes, and behaviors” about health practices (Raingruber, 2014, p. 63). These changes should aim to decrease risk factors, minimize consequences, and prevent disease. There is also a focus on promoting health on a legal and political level. The theory looks at promoting health and preventing disease from all angles of patient care and advocacy. Figure 1 shows the main concepts of The Tannahill Model, which includes health education, health protection, and disease prevention. The literature review is focusing on the need to promote health for elderly hospitalized patients in a way that prevents risk factors for delirium. All patients deserve the best care, regardless of age or preexisting conditions, and often elderly patients fall through the cracks. The review will focus on methods to increase the skills and awareness of providers to provide the best, most comprehensive care for elderly patients. The review will also identify barriers to care, nursing interventions, and alternatives to hospitalization.
Chapter 2: Methods

Research Design

The design of the study presented here is an integrative literature review aimed to discover factors contributing to the high rates of delirium in elderly hospitalized patients, discover effective interventions to decrease the rates of delirium, and discover nursing interventions and alternatives to hospital care that promote wellbeing in elderly patients. This integrative literature review will be conducted following the framework of Whittemore and Knafl (2005). The review will follow the framework’s four stages: problem identification, literature search per databases, data evaluation, and data analysis. The effectiveness of each study will be analyzed and examined in order to determine what needs to be done in further research to address delirium detection in elderly hospitalized patients. The information presented...
in the integrative literature review can be used by nurses as well as researchers in order to conduct further research on what needs must be addressed in order to decrease the prevalence of delirium in elderly hospitalized patients.

**Literature Search Strategies**

For the integrative literature review, the DePaul University library search engine was used to access databases. The following databases were searched: CINAHL Complete, ScienceDirect, PubMed and SAGE. The keywords that were used to search the aforementioned databases were “delirium”, “elderly”, and “hospital*”. The years searched were between 1995 and 2016. Many of the articles came from nursing and medical disciplines. A few articles were retrieved from the bibliographies of articles retrieved in the database search. The resources were easy to search and included important and relevant information for the analysis.

**Literature Search Limitations and Inclusion/Exclusion Criteria**

The search for the integrated literature review was limited to journal articles published between 1995 and 2016. An initial search using the keywords “delirium” and “hospital*” and “elderly” returned 4,268 results. The search was limited to full-text, resulting in 2,646 articles. Further limitations included were English language and peer-reviewed, resulting in 2,371 articles. The articles were reviewed for relevancy and 15 were selected for the literature review.

**Data Analysis**

The studies that will be used will be categorized in a table. The table will be organized by the following categories: author/year, study purpose, sample, design/method, and findings and notes. The table will be used to assist in comparing and contrasting each article, and to determine if delirium rates in elderly hospitalized patients are increasing. The table will also be used to
analyze potential interventions used to decrease the prevalence and incidence of delirium in elderly hospitalized patients.

Chapter 3: Results

The results of the integrative literature review are to follow. The chart matrix will be used to analyze the studies that will be used in the systematic literature review. The key variables reviewed will be rates of delirium in elderly hospitalized patients, interventions to decrease rates, and identification of modifiable risk factors related to development of delirium. The study will also address any gaps identified in the literature. Below is a preview of the measurement table that will be included in the final integrative review.

Discussion

Nursing Approach

Nurses provide essential care to elderly patients in the hospital setting. The nursing model’s focus on assisting patients with their activities of daily living naturally includes assistance with mobilization, hygiene, and nutrition. According to Francis & Young (2014), some of the most common precipitating factors leading to delirium in elderly hospitalized patients include polypharmacy, infection, dehydration, immobility, and malnutrition. Many of these precipitating factors are issues that can be addressed in nursing care of the patient. In an ideal setting, nurses would assist their patients with adequate mobilization, maintaining a state of adequate nutrition and hydration, and remaining free from infection. Unfortunately, nurses are often assigned multiple patients with many needs, and may be unable to provide all of these services to their patients. Assisting elderly hospitalized patients who need maximum assistance becomes a team effort, as other professionals such as physical therapist, nutritionist, and
occupational therapist may be needed to assist their patients holistically. According to Dasgupta & Brymer (2014), in today’s medical community such as hospitals, there is insufficient time to address all of the needs of a patient that may precipitate their onset of delirium. And unfortunately, ignoring the factors that lead to delirium lead to poorer outcomes and lower rates of recovery in these patients (Dasgupta & Brymer, 2014).

Graf (2006) suggests that nurses may implement several interventions to assist their elderly patients and prevent onset of delirium. Some of these interventions include providing an elder-friendly environment, equipped with large-text clocks, hand/grab-rails, and shower chairs. Hearing aids, dentures, and eye-glasses should be kept close to the patient and used as needed. Patients should have a regular routine for exercise, meals, and hygiene, and should be kept safe with low beds and clear walking paths. Graf (2006) further states that due to the hazards of hospitalization, discharge should not be delayed in patients who are “clinically fit”, as longer hospitalizations are associated with further decline in functional and mental status (p. 65). Graf (2006) suggests a greater focus on restorative care, providing adequate exercise, counseling and emotional support, environmental adjustments, and nutrition assistance to restore patients to a higher level of functioning and prevent decline.

Alternatives

According to Gillick (2014), although hospitals provide excellent diagnostic and treatment methods, “it can also be a dangerous environment for frail elderly patients” (p. 201). The author continues that alternatives to hospitalization should be considered in order to provide adequate safety to this patient population, and thus lower rates of delirium. Some options of alternatives to hospitalization include hospice care, yet this is limited to patients who are close to death. For patients who are frail and ill, yet still wanting to preserve life, other options such as
the home hospital program at Johns Hopkins may be a viable option. This program brings nurses, physicians, and technology directly to the patient’s home, both cutting down costs and providing more focused and holistic care for the patient. Another program called The Program of All-Inclusive Care for the Elderly (PACE) works to provide interdisciplinary care to elderly patients in hospitals, at home, or in nursing facilities. Programs such as these that focus on the complex and dynamic needs of elderly patients have had high success rates, high satisfaction rates, and lower rates of delirium and poor prognoses for their patients (Gillick, 2014).

**Barriers**

Providing adequate care to elderly patients, including the alternatives to hospitalization described above, involves comprehensive case management and orchestration of multidisciplinary care for the patients, a task that may not be attainable for some providers or communities. Gillick (2014) believes that assessing patients for their goals in receiving treatment will further assist providers in obtaining the proper care and the proper setting for this care, but many providers are not equipped to obtain higher levels of care for their patients, and too few of these programs exist. Another barrier to providing adequate care to elderly hospitalized patients is the lack of identification methods for delirium. Francis & Young (2014) state that as many as 70% of delirium cases go unnoticed by the provider, either for lack of adequate assessments and diagnostic testing, or because symptoms of delirium may wax and wane or may be confused with underlying dementia. Francis & Young (2014) suggest the use of the Confusion Assessment Method (CAM) or the Intensive Care Delirium Checklist for Screening (ICDSC) to adequately assess and diagnose delirium in elderly hospitalized patients. More education and teaching on how to use these screening tools is needed in order to better assess and diagnose patients with delirium. Inouye, Schlesinger, & Lydon (1999) state that delirium is commonly overlooked, or
mistaken for dementia or depression. They continue that delirium should be treated as an emergent medical condition, so it is important to have adequate measure to recognize the condition. The authors purport that some healthcare providers view elderly patients as “hopeless and unable to benefit from preventative, therapeutic, and rehabilitative measure” (p. 567). This makes it increasingly important to find providers and alternatives to hospitalization that focus on caring for elderly patients and their complex needs, to break some of the barriers that keep elderly patients from receiving adequate care that they need and deserve.

**Conclusion**

Delirium is a serious medical condition associated with poor outcomes and poor prognosis for those it affects. As many as 56% of hospitalized adults experience delirium, and upwards of 70% of those affected by delirium will die due to complications associated with delirium (Alagiakrishnan, 2016). Delirium is under detected, with up to two thirds of cases missed by providers, leading to elderly hospitalized patients with further complications and higher mortality rates. Francis & Young (2014) suggest a few screening tools to better detect delirium, such as the Confusion Assessment Method and the Intensive Care Delirium Checklist for Screening. Graf (2006) states that facilities caring for elderly patients must implement interventions to better serve them, such as using equipment to assist and protect safety of the patients, as well as employing providers that are knowledgeable and passionate about providing care for elderly patients. Alternatives to hospitalization may include home care, hospice care, and facilities specifically set up to care for the complex needs of elderly patients. A few of these alternatives have been explored and shown to have higher rates of delirium detection, lower rates of development of delirium, and better outcomes for patients (Gillick, 2014). Delirium is a
serious medical condition that should be taken as such, and requires skilled, attentive care from a multidisciplinary team passionate about caring for elderly patients.

**Future Directions and Nursing Implications**

According to Gillick (2014), “achieving high-quality geriatric care and minimizing the need for hospitalization will require good transitional care; optimum management of geriatric syndromes; and an integrated, coordinated system of care” (p. 202). There is a great need for further education and development in caring for elderly hospitalized patients. Few alternatives to hospitalization exist, and development of new alternatives may prove beneficial in providing excellent elder care in our communities. It is also essential to provide better education and preparation for hospital staff to provide adequate and comprehensive care to patients in order to prevent delirium and the negative sequelae. Nurses can play an important role in providing essential care to elderly patients, such as mobility, nutrition, hydration, and hygiene, and they can also play an essential role in identifying needs for change and implementing changes on their units. Nurses are the eyes and ears for their patients and places of work, and identifying gaps in diagnosis of delirium or further needs of their patients is a great place to start in implementing effective change to better serve the elderly hospitalized population.
References


Francis, J. & Young, G. B. (2014). *Diagnosis of delirium and confusional states.* UpToDate.


Figure 2: Diagram of Review Process and Study Selection.
<table>
<thead>
<tr>
<th>Author Year</th>
<th>Study Purpose</th>
<th>Sample</th>
<th>Design/Method</th>
<th>Findings and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elie, Cole, Primeau, &amp; Bellavance 1998</td>
<td>To identify risk factors associated with the development of delirium in geriatric hospitalized patients</td>
<td>101 studies</td>
<td>Systematic literature review, Medline searched for articles published between 1966 and 1995. Limited to prospective studies of patients over 50 in French or English. Key words searched “delirium”, “risk factors”, “aged”</td>
<td>101 studies were reviewed with 61 risk factors identified. Fixed and modifiable risk factors identified associated with development of delirium</td>
</tr>
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<td>Elie, Rousseau, Cole, Primeau, McCusker, &amp; Bellavance 2000</td>
<td>To determine the prevalence of delirium in emergency department patients over 65, to determine sensitivity and specificity of clinical assessment by an ED physician to detect delirium</td>
<td>447 patients admitted to the ED aged 65 and over</td>
<td>Research study, all patients aged 65 and older presenting to the ED screened for delirium by a psychiatrist. Mini Mental State Examination and Confusion Assessment Method used to screen for delirium by ED psychiatrist</td>
<td>447 patients were screened with a prevalence of delirium determined to be 9.6%. A need to improve detection of delirium by ED physicians was identified</td>
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<tr>
<td>Wald, Glasheen, Guerrasio, Youngwerth, &amp; Cumbler 2011</td>
<td>To evaluate a Hospital-Run Acute Care (Hospitalist-ACE) for elderly service</td>
<td>122 Hospitalist-ACE patients and 95 usual care patients aged 70 and older</td>
<td>Quasi-randomized, controlled trial. Medical inpatients aged 70 and older assessed for abnormal functional status. Hospitalist attendings, daily interdisciplinary rounds,</td>
<td>122 Hospitalist-ACE patients compared to 95 usual care patients, the former found to have significantly greater recognition of abnormal functional status than the latter. Hospitalist-ACE service found to improve care processes</td>
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<td>Author Year</td>
<td>Study Purpose</td>
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<td>McNicoll, Pisani, Zhang, Ely, Siegel, &amp; Inouye 2013</td>
<td>To describe the occurrence of delirium in a cohort of older medical intensive care unit (ICU) patients, and to determine the association between preexisting dementia and the occurrence of delirium.</td>
<td>118 consecutive patients admitted to ICU, over age 65</td>
<td>Prospective cohort study in a 14-bed medical ICU. Out of 1,000 admissions, 43% are over age 65, and 118 of these patients were interviewed daily for delirium status</td>
<td>Out of 118 patients, 37 presented with delirium on admission and 45 presented with normal mental status. 14 of these 45 became delirious during their admission, and 40% had post-ICU delirium. 70% of total patients had delirium during their hospitalization.</td>
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<td>Author</td>
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<td>Pompei, Foreman, Cassel, Alessi, &amp; Cox 1995</td>
<td>To detect delirium rates in older hospitalized patients in order to identify tools useful in diagnosis of delirium</td>
<td>432 patients 65 years and older admitted to one of four medical and surgical ICUs</td>
<td>Prospective cohort study, patients admitted to one of four medical and surgical ICUs at University of Chicago between November 1989 and June 1991. All patients subject to four instruments used to identify delirium after a 40 minute admission interview to determine baseline mental status</td>
<td>Delirium occurred in 14.8% of subjects studied. The Clinical Assessment of Confusion proved to be the best instrument in detecting delirium, and combining multiple tests did not increase efficacy of detection.</td>
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<tr>
<td>Renjel, Pandy, Eeles 2013</td>
<td>A literature review to explore four hypotheses as to why poor outcomes continue to be associated with delirium and propose new areas of research</td>
<td>Review of literature starting in 1981 which represented the first published diagnostic criteria for delirium</td>
<td>Literature review, adverse outcomes, and their causes, associated with medical inpatients diagnosed with delirium have been examined in appropriate literature. Three recent systemic reviews were utilized to determine if any studies reporting on morbidity and mortality associated with delirium also reported on causes of adverse outcomes</td>
<td>Further research on causes of poor outcomes is needed and the findings used to develop management strategies in delirium. Future studies must also study the factors such as underlying illness, complications and explore how clinical decision-making is modified by delirium.</td>
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<td>Dasgupta &amp; Brymer 2014</td>
<td>To determine early prognostic indicators of poor recovery following an episode of delirium in older medical in-patients</td>
<td>1,235 hospital in-patients greater than 70 years old between October 2009 and July 2011</td>
<td>Consecutively admitted medical in-patients from October 2009 and July 2011 older than 70 at the London Health Sciences Centre were screened for delirium. Delirious patients were followed to identify outcomes at discharge and 3 months after discharge</td>
<td>Delirium was identified in 29% of patients studied. Of this 29% (355 patients), 69% had a poor outcome and 55 died. Poor recovery was associated with advanced age, lower baseline function, hypoxia, higher delirium severity scores, and acute renal failure</td>
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<td>Eeles, Hubbard, White, O’Mahony, Savva, &amp; Bayer 2010</td>
<td>To investigate the hypotheses that delirium affects the most vulnerable older adults and is associated with long-term adverse health outcome</td>
<td>278 hospitalized patients greater than 75 years old</td>
<td>Patients were screened for delirium at presentation and on alternate days throughout their hospital stay. Assessments included preadmission cognition, co-morbidity and functional status. Patients were followed for 5 years to determine rates of institutionalization and mortality</td>
<td>Delirium was detecting in 103 of 278 patients screened. Median length of time to death was 162 days for patients with delirium, compared to 1,444 days for patients without delirium. Delirium was found to be associated with high rates of institutionalization and an increased risk of death up to 5 years after index event</td>
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