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Alcohol Withdrawal Syndrome

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by

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Abstract

Alcohol withdrawal syndrome (AWS) is a very serious problem that may affect the
patient when admitted inpatient for a traumatic or non-traumatic diagnosis. Chronic
Alcohol consumption in moderation may put the patient at risk for delirium tremens
which is the most severe form of alcohol withdrawal. Management of alcohol withdrawal
in acutely ill hospitalized patients is challenging for healthcare providers (Riddle, Bush,
Tittle, & Dilkhush, 2010). Signs and symptoms of AWS are caused primarily by
neurophysiologic changes in the brain, which may be mild to severe, and may develop
within 6-72 hours after abstaining from alcohol. Mild symptoms of withdrawal may
include anxiety, nausea, and diaphoresis, while severe symptoms of hyperthermia, severe
tremors, and disorientation are possible (Skinner, 2014). An accurate nursing assessment
on admission is essential for the identification and treatment of alcohol related health
risks. The challenges involved in early detection of alcohol related health risks, such as
AWS, support the need for improved assessment skills and tools for healthcare providers
in acute care settings. Nurses need to be able to assess patients at risk for AWS as early
as possible, and implement treatment for symptoms as they manifest in the patient.

Keywords: alcohol use, alcohol withdrawal, CIWA-Ar, delirium tremens,
polysubstance abuse, trauma, poly-trauma patient, and traumatic event with onset of
substance abuse.

Acknowledgments

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CHAPTER I

Introduction

Significance

Jorge is a 39 year old Hispanic male, who was admitted to the trauma ICU following involvement in an altercation, he required intubation at the scene due to combativeness. There was an elevated alcohol level present at time of admission. Within 24 hours of admission, Jorge was extubated, and transferred to the trauma floor for progression of care. Within two hours of transfer, Jorge started exhibiting signs of anxiety, agitation, hallucination, diaphoresis, and experienced two episodes of tonic-clonic seizures. Jorge was re-admitted to the ICU due to his high risk for alcohol withdrawal syndrome.

"About 40% of all hospital beds in the United States (except for maternity and intensive care beds) are being used to treat health conditions related to alcohol consumption" (Skinner, 2014). The most common alcohol-related chronic condition for hospitalization is alcohol dependence, which can lead to an alcohol withdrawal syndrome (Daly, Kermode, & Reily, 2009).

Management of alcohol withdrawal in acutely ill hospitalized patients is challenging for healthcare providers (Riddle et al., 2010). Alcohol Withdrawal Syndrome (AWS) is often a diagnosis considered in patients admitted with trauma; however, it may be confused with other differential diagnoses when patients are admitted with non-traumatic illness. Investigators estimate up to one in four patients admitted to general hospitals meet diagnostic criteria for alcohol dependence (Riddle, Bush, Tittle, & Dilkhush, 2010).

Alcohol dependent patients are at greater risk for AWS (Riddle, Bush, Tittle, & Dilkhush, 2010). According to the authors, the signs and symptoms include altered concentration, tremulousness, psychosis, seizures, and delirium tremens (DT). Delirium tremens is the most serious manifestation of AWS which may develop in up to 20% of hospitalized patients, if the symptoms of withdrawal are not treated (Riddle, Bush, Tittle, & Dilkhush, 2010).

Signs and symptoms of AWS are caused primarily by neurophysiologic changes in the brain, which may be mild to severe, and may develop within 6-72 hours after abstaining from alcohol. Mild symptoms of withdrawal may include anxiety, nausea, and diaphoresis, while severe symptoms of hyperthermia, hallucinations, severe tremors, and disorientation are possible (Skinner, 2014).

Patients treated for AWS and other alcohol-related illnesses also may experience longer and more complicated hospital admissions, resulting in increased total hospitalization costs (Skinner, 2014). The rate of morbidity and mortality due to cardiopulmonary insufficiency and metabolic or infectious complications have been estimated to be as high as 15% (Donnelly, Kent-Wilkerson, & Rush, 2012).

Alcohol abuse results in specific health problems, including withdrawal syndrome, hepatitis, cirrhosis, and pancreatitis, and cancers of the liver (Black & Hawks, 2009). In addition to diseases clearly associated with alcohol abuse, *problem drinkers* do not present with manifestations of dependence that would immediately result in identification, but have increased mortality from all causes. Problem drinkers are defined as men who have four or more drinks per day and women who have two or more drinks per day (Black & Hawks, 2009).

Problem Statement

An accurate nursing assessment on admission is essential for the identification and treatment of alcohol related health risks. Fullwood (2014) stated that a thorough history and assessment is required to identify patients with or at risk for alcohol use disorders. Clear communication and a caring, nonjudgmental manner on the part of the caregiver will illicit better patient cooperation in giving an honest account of the daily alcohol intake. The patient needs to be made aware of the risks associated with AWS; therefore, the nurse's role is critical when assessing the patient at risk for AWS. The challenges involved in early detection of alcohol related health risks, such as AWS, support the need for improved assessment skills and tools for healthcare providers in acute care settings. Nurses need to be able to assess patients at risk for AWS as early as possible, and implement treatment for symptoms as they manifest in the patient.

Another important issue which may affect accurate AWS assessment is the nursing turnover rate, which can impact the quality of care. Sellergren, Kajermo, Ekvall, and Tomson, (2009) states turnover rate is a global problem and known to lower the quality of nursing care. The authors also stated that nursing in a large, acute care hospital involves great variation in working tasks. Nurses may require competency-based education to identify patients at risk for AWS and knowledge of symptom-based medication dosing for patients showing signs of AWS. Opportunities for continued education and professional growth were perceived as being motivators and a lack of these opportunities were associated with the intention to leave. Currie and Carr-Hill (2012) stated that high turnover in nursing and maintaining adequate number of nurses to cover clinical and staffing requirements is an ongoing problem.

Theoretical Framework

Betty Neuman's Systems Model served as the theoretical framework for this nursing problem. The Neuman Systems Model is based on the systems perspective within which clients are reviewed to be an open system responding to environmental stressors in order to maintain system stability and integrity (Neuman, 1998).

Neuman's theory has been used when patients requiring nursing care are undergoing alcohol detoxification (Norrish & Jooste, 2001). Neuman's System Model is predominantly holistic in nature and wellness oriented. The model frames the client as an open system, in constant interaction with the environment. Stressors and the reaction to stressors influence health. Nursing practice focuses on the alleviation of stressors experienced by the client through primary, secondary, and tertiary interventions to retain, attain, and maintain optimal client stability (Norrish & Jooste, 2001).

Interventions based on these assumptions serve as primary when a stressor is suspected or identified, the degree of risk is known and the purpose is to reduce the possibility of encounter with the stressor or decrease the possibility. Secondary prevention occurs when interventions or treatment is initiated after symptoms have been manifested based on the stressors. And, tertiary prevention occurs after the active treatment or secondary prevention stage. It focuses on readjustment toward optimal client system stability (Freese & Lawson, 2007).

Neuman (1982) believed that nursing is concerned with the whole person, and viewed nursing as a unique profession which is concerned with all of the variables affecting the individual's response to stress. The nurses' perception influences the care given; therefore, Neuman stated that the perceptual field of the caregiver and the client

must be assessed. The person is an open system which may present as the individual, family, client group, community or social issue. The client system is a dynamic composite of interrelationship among physiological, psychological, sociocultural, developmental and spiritual factors. Neuman views health as a continuum of wellness to illness that is dynamic in nature, and the environment as all the internal and external factors that surround and influence the client system (Freese & Lawson, 2007).

Neuman (1995) defined environment as all the internal and external factors that surround and influence the client system. Stressors (intrapersonal, interpersonal, and extrapersonal) are significant to the concepts of environment. Neuman further identified three relevant environments: internal, external, and created. The internal environment is intrapersonal, with all interaction contained within the client. The external environment is interpersonal or extrapersonal with all factors arising from outside the client. The created environment is unconsciously developed and is used by the client to support protective coping. The creative environment is dynamic in nature and mobilizes all system variables to create an insulating effect that helps the client cope with the threat of environmental stressors by changing the self or the situation (Freese & Lawson, 2007).

Nurses are challenged with the task of holistic care for the alcohol dependent patient (Norris & Jooste, 2001). The client will benefit from the holistic approach, which enhances the whole person (Freese & Lawson, 2007). The care that nursing provides meets the client's needs, while the client recuperates from the stressors of the environment.

Purpose

The purpose of this research study will be to explore the appropriate nursing care for the alcohol dependent patient, including assessment and delivery of holistic treatment options. An accurate nursing assessment is required on admission to assist providers in diagnosing and treating patients at risk for AWS. Figure 1 illustrates the conceptual-theoretical-empirical visualization of how the Neuman's Model guides this research, as nursing care is provided to the patient dealing with the stressors of the environment. The diagram includes the patient at risk for AWS, while undergoing alcohol detoxification and dealing with the stressors and reaction to these stressors, and also the nursing role in providing the appropriate assessment and interventions for outcomes directed at a return to system stability and integrity.
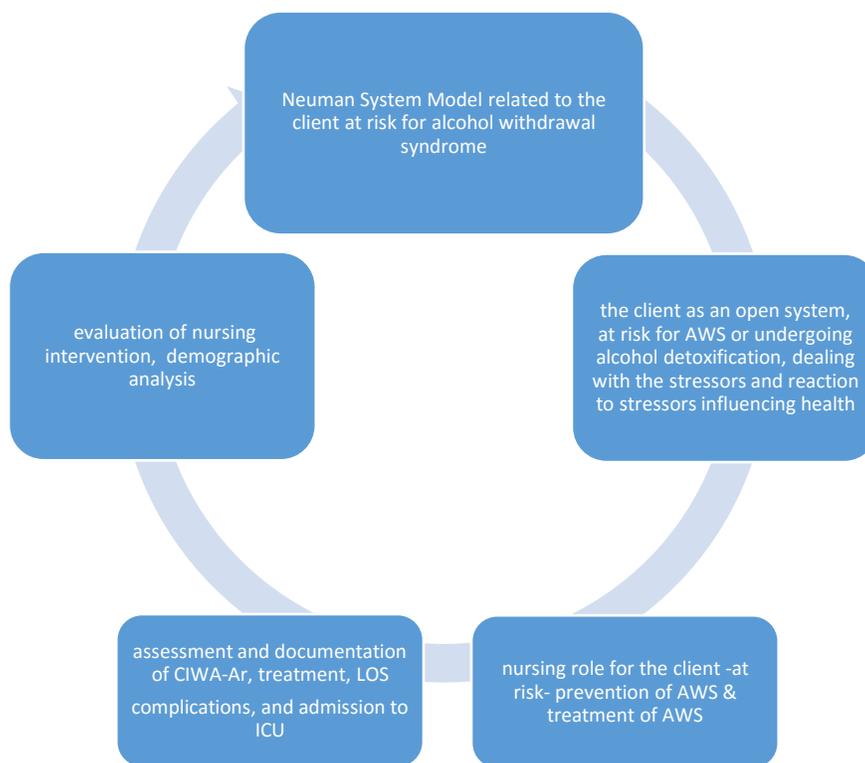
Figure 1. Conceptual/Theoretical Diagram Related to Neuman's Theory Research Project

CHAPTER II

Literature Review

A literature review was conducted by searching Cumulative Index to Nursing and

Allied Health Literature (CINAHL) and ProQuest Health and Medical Complete, and the

search engine Google. Key terms used for the search included alcohol use, alcohol

withdrawal, trauma, polysubstance abuse, poly trauma patient, and traumatic event with

onset of substance abuse.

Theoretical Literature

Incidence and Health Risks of Excessive Alcohol Use

Alcohol use is a prevalent health risk in North America, according to Awissi,

Lebrum, Coursin, Riker, and Skrobik, (2012). The authors state that half of adult

Americans age 18 years and over are regular drinkers. Reportedly, 10% of North

Americans are excessive alcohol consumers, while 3% self-report experiencing alcohol

withdrawal. Excess alcohol use contributes to 20% of admissions to the intensive care

unit (ICU) and chronic alcoholism may affect as many as 50-60% of trauma patients

(Awissi et al., 2012).

Awissi et al. (2012) report a standard alcohol drink is typically defined as 12

grams of alcohol, which is equivalent to 255 ml (12oz) of beer, 150 ml (5 oz) of wine or

45 ml (1.5 oz) of 80-proof liquor. Using these definitions, the National Survey on Drug

Use and Health 2010 (as cited in Awissi et al. 2012) reported that 52% of Americans

older than 12 years of age reported being current drinkers (at least one drink in the past

30 days), 23% binge drink (five or more drinks on the same occasion on at least one day

in the past 30 days) and 6.7 reported heavy drinking (>5 drinks on the same occasion on five or more days in the past 30 days).

Alcohol abuse is a common societal and economic problem in the United States with approximately 8.2 million persons dependent on alcohol, with 200 billion dollars spent annually (Perry, 2014). The variance in prevalence of alcohol use disorders among medical inpatients ranges from 2% to 60%, including as many as 50% of trauma patients (Perry, 2014). The National Institute of Health (NIH), (2013) estimated alcohol problems cost $225 billion annually in the U.S. (Skinner, 2014). The author further states that patients treated for AWS and other alcohol-related illnesses also may experience longer, more complicated hospital admissions and increased total hospitalization costs.

There are multiple health risks from excessive alcohol intake. Daly et al., (2009) state that the most common alcohol-related condition for hospitalization is alcohol dependence, which may ultimately lead to alcohol withdrawal syndrome (AWS). Many of these patients are at risk for developing early AWS (Awissi et al., 2012). Mild to moderate symptoms of AWS can occur within 24 hours from the last drink. Some of these symptoms include, tremors, sweating, nausea/vomiting, agitation, anxiety, headache, and insomnia. Severe symptoms of AWS include seizure, hypertension, confusion, delirium, disorientation, and severe agitation (Skinner, 2014), and if untreated may result in delirium tremens (DT) which is the most severe form of AWS.

O'Brien, Leonard, and Deering (2012) report that alcohol is a significant contributor to death and morbidity, and is linked to multiple conditions, including heart disease, breast cancer, motor vehicle, and other accidental injuries, depression and suicide. Some of the chronic diseases and conditions that are alcohol attributable defined

in this article are alcoholic liver disease, alcohol induced acute pancreatitis, cardiovascular and circulatory diseases, diabetes, hypertensive heart disease, and fetal alcohol syndrome (Shield, Parry, & Rehm, 2013).

There are three stages of alcohol related liver disease, which can occur simultaneously in an individual (Mendez-Sanchez, Meda-Valdes, & Uribe, 2005). Fat deposits occur when alcohol consumption exceeds the recommended limit. Fatty liver is the first and most common stage of alcohol related liver disease. However, if alcohol continues to be consumed in excess, alcoholic hepatitis and/or cirrhosis may result (O'Shea, Dasarathy, & McCullough, 2010).

Alcohol hepatitis is known as an acute-on-chronic disease, and is considered the stage of alcohol-related liver injury with the highest short-term mortality rates (Webb, 2009). Many patients are actively drinking on admission to the hospital and, therefore, treatment is focused on abstinence (Webb, 2009). A liver biopsy can identify the stage of alcohol-related liver disease present in a patient's liver, however, accurate history-taking, biochemistry, and ultrasound assessment can provide sufficient evidence for a reasonable level of suspicion of the diagnosis (European Association for the Study of Liver EASL, 2012).

Alcohol also affects cardiac health in relation to alcohol consumption levels. Alcohol levels can be measured in humans after digestion of two glasses of wine, beer or shots of liquor (Mochyl-Rosen & Zakhari, 2010). In the U.S. consumption of more than two drinks per day is considered moderate drinking. Substantially higher levels of consumption are considered excessive, and associated with many health risks including cardiac damage and heart failure. Mukamal and Rimm (2001) stated increased alcohol

consumption increases blood pressure, and triglycerides, which is a type of fat in the blood associated with coronary heart disease.

Alcohol consumption affects multiple aspects of the cardiovascular system, with both harmful and protective effects (Shield et al., 2013). Increased risk for hypertension, increased risk of disorders that are caused by abnormalities in the generation and disruption of the electrical signals that coordinate the heart, and increased risk of stroke caused by blockage of vessels in the brain. At lower levels of consumption, there may be protective effects of hypertension in women, and ischemic heart disease and ischemic stroke in both men and women (Shield et al., 2013).

Alcohol is the major cause of chronic inflammation of the pancreas (Vonlaufen, Wilson, Pirola, & Apte, 2007). The authors further stated that acute pancreatitis occurs when the pancreas suddenly becomes inflamed but then improves. Chronic pancreatitis (CP) is a progressive inflammatory disease leading to irreversible destruction of the pancreas. The major cause of CP is alcohol abuse.

Screening Tool

Stuppaeck et al. (1994) stated that the most widely used alcohol screening instrument is the Clinical Institute Withdrawal Assessment-Alcohol, (CIWA-A) and the succeeding CIWA-Ar (modified CIWA-A and translated into German). Validity and reliability of the modified and translated scale were analyzed by several psychological tests as well as different somatic measures in 31 patients. The author further states the German version is a valid and reliable instrument for the assessment of alcohol withdrawal syndrome useful for clinical routine as well as treatment trials (see Appendix

A). The scale is easy to use and has been employed in clinical trials as well as in the routine documentation of the severity of AWS (Stuppaeck et al., 1994).

Sutton and Jutel (2016) supports the CIWA-Ar scale, which is a 10-item scale that can be used to assess a patient every 30 to 60 minutes. A score less than eight indicates mild withdrawal, moderate withdrawal is indicated by scores of eight to 15 and scores greater than 20 indicates severe withdrawal (Sutton & Jutel, 2016). This assessment takes about two minutes to complete, is administered by the nurse, and requires patient participation. The maximum possible score is 67.

An appropriate screening score using the CIWA-Ar scale, may indicate the use of benzodiazepines as first-line therapy in the treatment of AWS (Sutton & Jutel, 2016). The result of two meta-analyses have shown that these drugs are better in the control of signs and symptoms and more effective than placebo in halting the progression of delirium tremens (Sutton & Jutel, 2016)

The authors' further state although no evidence indicates that one benzodiazepine is better than another, the choice of a particular drug should be tailored to the patient. For example, rapid acting benzodiazepines, such as lorazepam, diazepam and alprazolam, may be more appropriate when rapid symptom control is needed. Also, it is a more appropriate drug for patients with liver dysfunction. Administration of benzodiazepines according to symptom-triggered therapy in combination with an alcohol withdrawal assessment scale has been superior to fixed dosing scheduling in a variety of inpatient setting (Sutton & Jutel, 2016).

Empirical Literature

Nurse Education on Treatment

Nursing and related disciplines have investigated the assessment and appropriate treatment of persons with alcohol addiction. An Australian study of nurses' knowledge, attitudes, and beliefs about alcohol and drug use (Happell, Carta, & Pinikahana, 2002) recommended that specific educational programs to enhance nurses' skills, assessment and management of drug and alcohol problems may be beneficial. This study was initiated because the traditional form of in-service education was provided at change of shift for nurses, and the limitations were the nurses were too tired or busy to give the education their full attention.

Three hundred and eight nurses were provided with education on the management of alcohol withdrawal, 238 receiving in-service education and 70 receiving the self-directed training program. Nurses in three of the 11 sampled hospitals in Australia, participated in the self-directed learning program (open book exam and individual clinical competency assessment) and eight hospitals received in service education (over a 12 month period, four-six education sessions depending on the size of the hospital). The measure of improvement was compliance to nine clinical standards or core competencies for the assessment and treatment of the AWS derived from the Clinical Institute Withdrawal Assessment for Alcohol-Revised (CIWA-Ar), and the NSW drug and alcohol withdrawal clinical practice guidelines.

The self-directed competency training was found to be more effective, reflecting improvements from 5% to 57 % in compliance with documentation compared to minus 12 % to 30 % by the in-service program group. Three of the hospitals that had the in-

service training during the study period, later requested the self-directed competency training resulting in over 200 nurses completing the self-directed competency training. The competency training program had a high level of acceptance among nurses in rural hospital settings

Identifying critically ill patients with AWS in the ICU, who are in active withdrawal presents further challenges (Sutton & Jutel, 2016). When patients with an alcohol use disorder are admitted to the ICU, the abrupt cessation of alcohol places them at risk for AWS. Prolonged loss of consciousness, increased risk for infections and complications, delirium and the need for mechanical ventilation has been reported in several studies in patient with AWS (Sutton & Jutel, 2016). Conditions such as sepsis, intracranial hemorrhage, meningitis, stroke, traumatic brain injury, and metabolic derangements may have signs and symptoms similar to those of AWS. Differentiating between AWS and the result of disease is thus difficult. This review by Jutel & Sutton was focused on the challenges associated with the management of AWS in critically ill patients. They further stated that determining a patient's alcohol consumption is often omitted or poorly assessed. The difficulty of differentiating between critical illness and alcohol withdrawal can lead to the under recognition of patients in active withdrawal (Sutton & Jutel, 2016). The usefulness of alcohol withdrawal scales such as CIWA-Ar in some patients is questioned because of the inability of patients to communicate due to sedation, mechanical ventilation, and delirium.

Another study developed by Stanley, Worrall, Lunsford, Couillard, and Norcross (2007) implemented Alcohol Withdrawal Syndrome (AWS) practice guidelines to standardize care and improve patient outcomes. The practice guidelines were evaluated in

two separate IRB approved pilot studies. The first pilot was conducted from February 2001 - February 2002, and included trauma, orthopedic and general surgery patients. Internal medicine patients were the focus of the second pilot conducted from October 2002 – July 2003. The development and implementation of the Adult AWS practice guidelines and outcome data from each pilot study have been previously described (Stanley et al., 2003; Stanley et al., 2005). These publications identify the AWS Typology method of treatment (DePetrillo & McDonough, 1999) as the development and implementation of their practice guidelines. This Typology suggest AWS is a heterogeneous syndrome that have been erroneously viewed as a single condition, classified as mild to severe. The AWS Typology identifies three distinct symptoms clusters that may occur alone or simultaneously. It categorizes symptoms as; type A (central nervous excitation), type B (adrenergic hyperactivity), and type C (delirium). In this practice guideline type A symptoms were treated with benzodiazepine lorazepam. Type B symptoms often responded to the benzodiazepine therapy use to treat type A, but when not controlled alpha-adrenergic agonist clonidine was used. Type C symptom and severe agitation were treated with neuroleptic haloperidol. The same methodology was used for both pilot studies. A total of 106 pilot and 82 control group patient were included in combined data analysis. Patient managed using practice guideline receive significant less lorazepam and significantly more clonidine. Significantly more pilot (34%) than control (11%) required no drug therapy to manage or prevent AWS symptoms. Adverse related events (withdrawal, seizures, cardiovascular events and transfer to the ICU) were not significantly different between pilot or control groups. Sitters were required in significantly more control group patients (11%), than pilot

patients (1.9%). The development and implementation of the Adult AWS practice guideline has increased awareness of the risk of AWS in this hospital. Inclusion of the CAGE questionnaire on nursing admission assessment has facilitated early identification of patient at risk. Experienced and novice nurses throughout the hospital found the AWS type indicators "user friendly" and have adapted well to the frequent assessment required by the practice guidelines (Stanley et al., 2007).

Summary

The theoretical literature reveals that alcohol withdrawal syndrome is a very serious health problem and remains a challenge to healthcare professionals. Multiple experts are concerned about the high risk of alcohol withdrawal syndrome on patients admitted in hospital with a traumatic diagnosis or non-traumatic illness.

An accurate nursing assessment is required on admission to assist providers in diagnosing and treating patients at risk for AWS. Additionally, it is important for nurses to have education on the assessment and management of patients at risk for AWS.

The literature provides current assessment tools to assess patients at risk for AWS. Multiple monitoring tools are validated for use, but the Clinical Institute Withdrawal Assessment for Alcohol revised (CIWA-Ar) is the most widely used tool (Skinner, 2014) for admitted patients at risk for AWS. The correct assessment facilitates standards on management of AWS, including symptom based dosing and fixed schedule dosing of benzodiazepines (Riddle et al., 2010).

Empirical literature revealed that continuing education for nurses on alcohol withdrawal is needed. Studies in Australia revealed a positive response after nurses completed competency based education on nursing assessments for the patient at risk for

AWS. The literature also supports evidence of the effects of unhealthy alcohol use (McPeake, Bateson, O'Neill, & Kinsella, 2013) with alcohol dependency associated with increased risk for infections, complications, and the need for prolonged duration of mechanical ventilation for patients in the intensive care unit.

This researcher was unable to locate any current studies focused on nursing knowledge, awareness, or competency based education in the U.S. for assessment of patients at risk for AWS using screening instruments. Therefore, this research study will address the incidence of AWS-related symptoms and nursing assessments using the CIWA-Ar Scale on a trauma unit to bridge the gap in nursing knowledge and evaluate if continuing education is needed to improve care for patients with or at risk for AWS following a trauma admission.

CHAPTER III

METHODS

Purpose

This research study-evaluated the incidence of AWS-related symptoms associated with CIWA-Ar nursing assessments on a trauma unit to identify gaps in nursing knowledge and evaluate if continuing education is needed to improve care for patients with or at risk for AWS following a trauma admission

Research Questions

1. What percentage of time was assessments documented appropriately, using the CIWA-Ar, scale by RNs on a trauma unit?

2. How often were patients from the trauma unit admitted to the ICU with alcohol withdrawal?

3. What were the most common Alcohol Withdrawal Syndrome symptoms, treatments, and complications

Design

This was a retrospective, descriptive study. A chart audit was conducted to Identify the incidences of AWS on a trauma unit, RN assessment and documentation, and related patient symptoms and complications.

Sample

Patients 18 years of age and above admitted to the trauma unit during January and February 2016 that had elevated Blood Alcohol Level (BAL) (>10 mg/dl).

Procedure

Following IRB approval from the Hospital and the University, the researcher developed a spreadsheet and conducted a chart audit of patients admitted to the trauma unit during the months of January and February 2016. The audit included blood alcohol level, history of alcohol use, initiation of the CIWA-Ar scale, timeframe of assessment with reassessment, symptoms, treatment with benzodiazepine, and admission to ICU in active withdrawal, types of treatment initiated, health complications and disposition (see Appendix B).

The researcher completed the audit. Confidentiality was strictly maintained following HIPAA guidelines

Analysis

Analysis included descriptive statistics only, such as frequencies and percentages displayed in bar graphs and pie charts.

Ethical Considerations

This research study was a chart audit and did not harm or place anyone in danger. No names or identifiers was used to code data. All data will be stored in a locked office in a password protected computer. The original data will be stored at the University for three years.

CHAPTER IV

Results

Management of alcohol withdrawal in acutely ill hospitalized patients is

challenging for healthcare providers (Riddle et al., 2010). Alcohol Withdrawal Syndrome

(AWS) is often a diagnosis considered in patients admitted with trauma; however, it may

be confused with other differential diagnoses when patients are admitted with non-

traumatic illness, and are at greater risk for developing AWS (Riddle et al., 2010). A

retrospective, descriptive study was completed on patients admitted during the months of

January and February in 2016 to identify the incidence of AWS on a trauma unit and

nurse documentation practices.

Sample Characteristics

A total of 80 patients were admitted to the trauma floor with a blood alcohol

(BAL) level drawn. Twenty-five of these patients had an elevated BAL (> 10mg/dl) and

23 were admitted with an alcohol related diagnosis. Figure 2 illustrates that 92% of

patients with an elevated blood alcohol level were admitted to the trauma floor with an

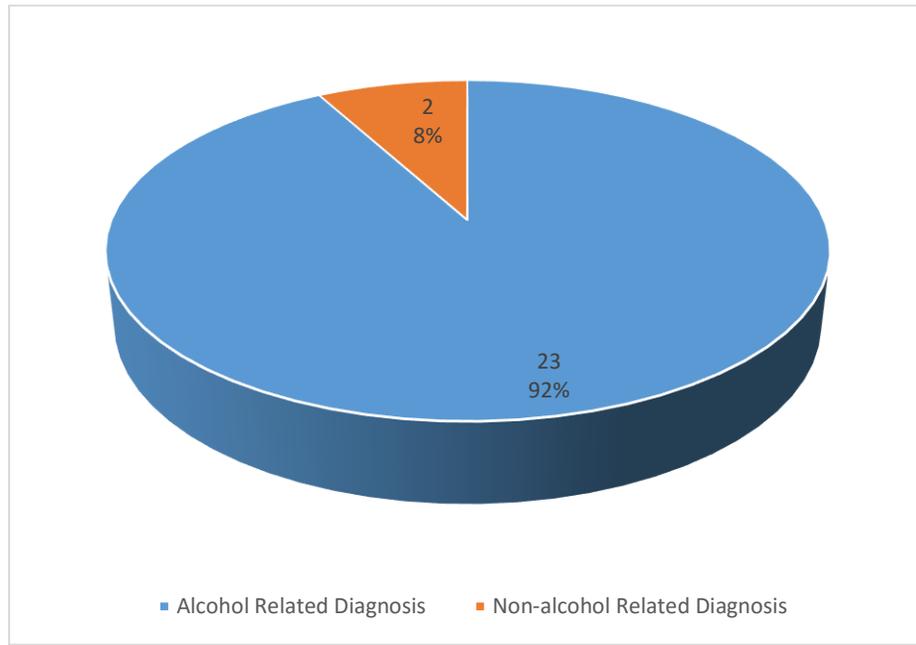alcohol related diagnosis.

Figure 2. Patients with Elevated Blood Alcohol Level

Findings

Research Question 1

The CIWA-Ar protocol was ordered for 73.9% of these patients (N=17) with an

alcohol related diagnosis. Elevated blood alcohol levels were identified in 68% (see

Figure 3).
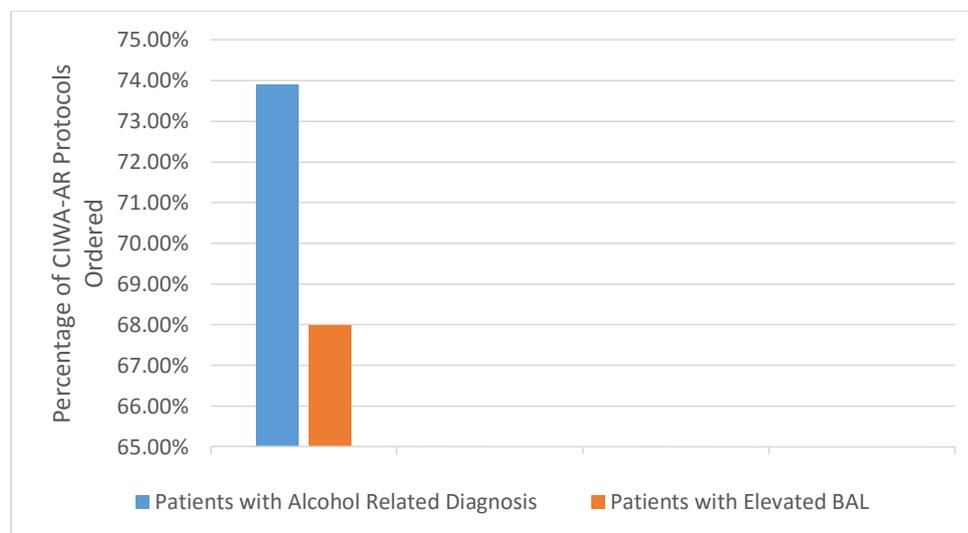
Figure 3. Percentages of CIWA-Ar Protocol Ordered for Patients with Elevated BAL or
Alcohol Related Diagnosis

The policy for CIWA-Ar assessment is within four hours of the order being issued. Fifty-three percent were completed within four hours of the order being issued (see Figure 4).

Figure 4. Timely Completion of CIWA-Ar Protocols Ordered

Figure 5 shows that only three assessments were completed per protocol, every four hours (18%).

Figure 5. Consistency of CIWA-Ar Protocol Administration

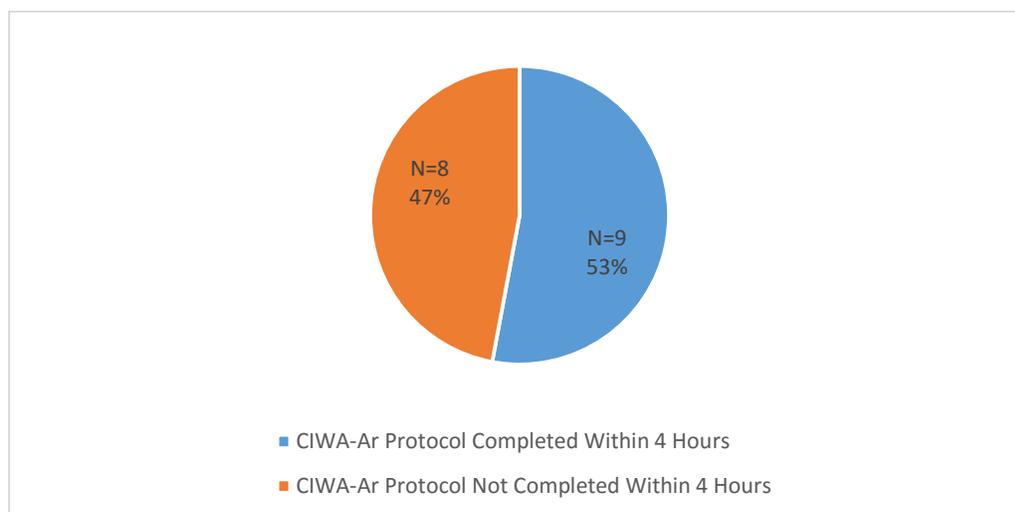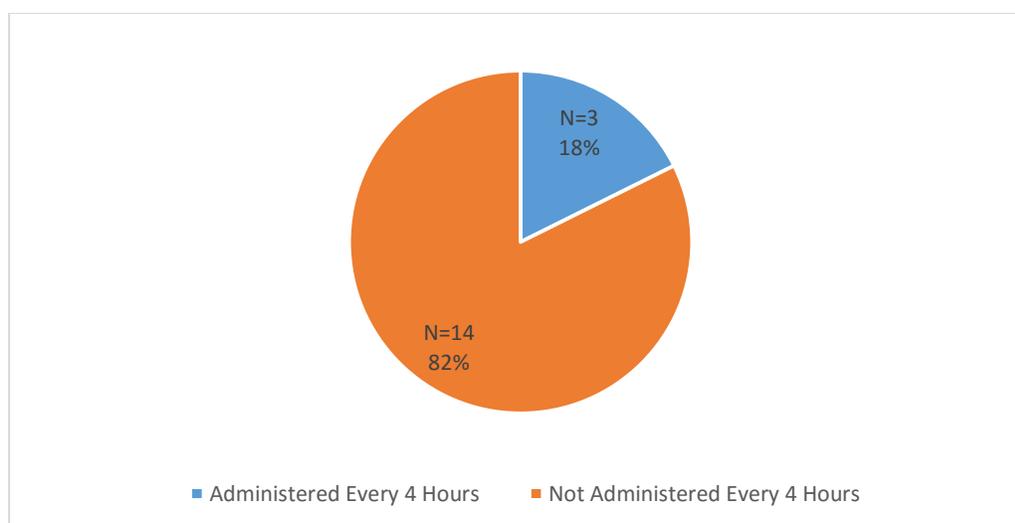Of the 17 patients for whom a CIWA-Ar protocol was ordered, eight patients were reassessed with a score lower than eight. Only two patients scored between eight and 14, and no patients scored higher than 14 (see Figure 6).
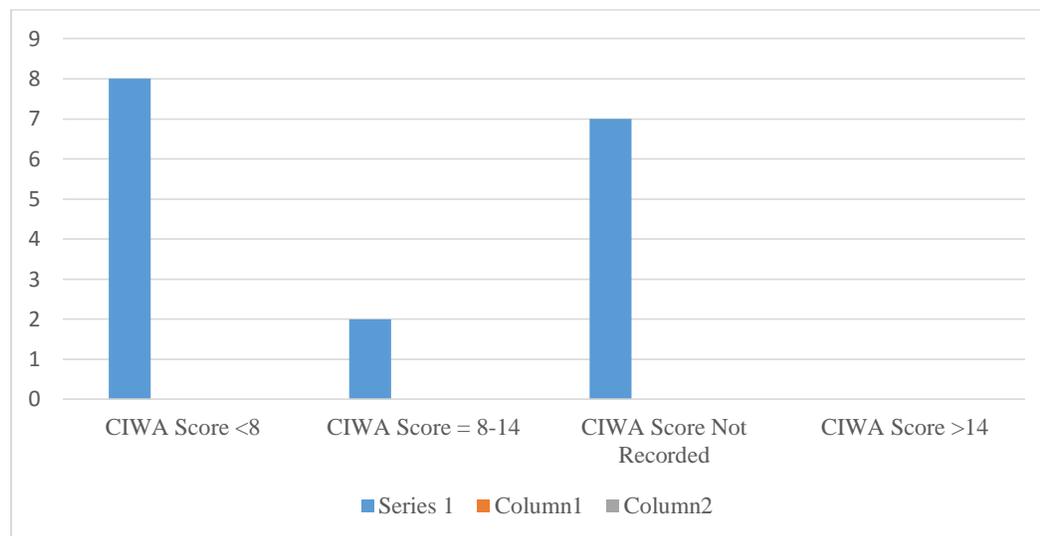
Figure 6. CIWA-Ar Protocol Score Distribution

Research Question 2

During the study timeframe, no patients were transferred to the ICU in alcohol withdrawal.

Research Question 3

Figure 7 demonstrates the 11 patients positively identified in the patient records as having exhibited several of the key symptoms associated with AWS. Symptoms of hallucination and sweating appeared on day one only and did not appear on day two, anxiety and extreme restlessness was demonstrated on days one, two, and three. Nausea/vomiting and tremors was demonstrated on days one and two, and disorientation was noted on days one, two and four.
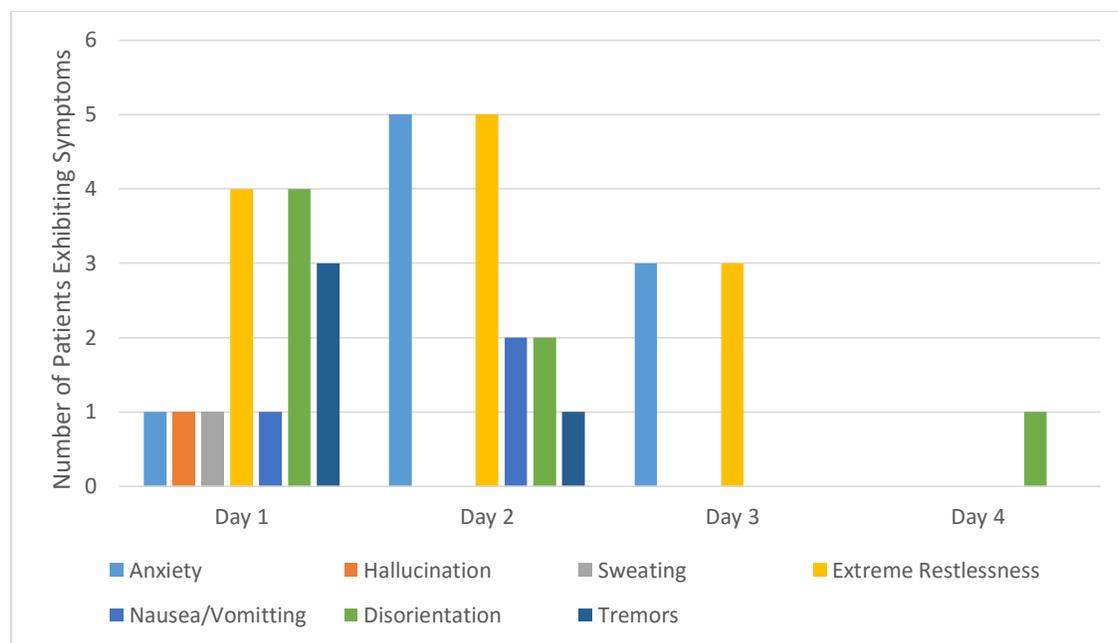
Figure 7. Range of Symptoms Documented on the Patient Records

Patients that had CIWA scores ranging between eight and 14 were treated with lorazepam 2-4 mg based on the treatment protocol in the patient's medical record.

Summary

Eighty patients were admitted to the trauma unit during the study timeframe with blood alcohol levels drawn, 25 patients were identified with elevated alcohol levels; 23 had an alcohol related diagnosis during the months of January and February 2016. The CIWA-Ar protocol was ordered for 17 patients, assessments were completed on nine patients within four hours of initiation; assessments were completed every four hours per protocol on only three patients. Eight patients had scores lower than eight, two patients had CIWA-Ar scores between eight and 14, no patients scored higher than 14. No patients were transferred to the ICU during this timeframe.

Eleven patients were positively identified in the patient medical records as having exhibited several of the key symptoms associated with alcohol withdrawal syndrome. Out of 25 people admitted with elevated BAL and 23 with alcohol related dx, 11 patients had symptoms related to alcohol withdrawal syndrome.

CHAPTER V

Discussion

The purpose of this research study was to evaluate the incidence of AWS, and related symptoms associated with CIWA-Ar nursing assessments on a trauma floor to identify gaps in nursing knowledge, and evaluate if continuing education is needed to improve care for patients with or at risk for AWS following a trauma admission.

Implications of Findings

After reviewing medical records related to nursing assessments using the CIWA-Ar protocol on patients at risk for AWS, the results indicate that nursing needs to be more consistent with documentation using the protocol. Eighty patients were admitted during the months of January and February 2016 with BAL drawn, 25 patients presented with elevated BAL (> 10mg/dl). Of the 25 patients admitted, 23 had an alcohol related diagnosis, which reflects 92% of patients with an elevated BAL were admitted to the trauma floor with an alcohol related diagnosis. The most common symptoms were extreme restlessness and anxiety. Less commonly occurring symptoms were hallucination, sweating, nausea and vomiting, disorientation, and tremors.

Based on these findings, the results show that there may be a need for additional nursing education related to the use of the CIWA-Ar scale when assessing patients at risk for AWS. Nursing documentation was not consistent in assessments, and reassessments with the use of the protocol. The CIWA-Ar protocol was not initiated consistently when patient was admitted with elevated blood alcohol levels or an alcohol related diagnosis.

Because abnormal alcohol consumption has significant impact on healthcare when not appropriately used, and the high risk involved for the patient when a traumatic

incident occur, an early assessment of the patient is critical related to their history of alcohol use.

It is important for nurses to be assessing for AWS early on admission to prevent the patient from going into alcohol withdrawal. Also, since abnormal alcohol use is an ongoing societal issue, the risks involved when patients are admitted for a trauma related event increases. Because of the high risk associated for patients admitted with history of alcohol related use, it is very important for nurses to provide appropriate care needed for patients at risk for AWS. Studies show that outcomes for patients in active withdrawal have better outcomes when nurses have sufficient knowledge and experience.

Of the 73.9% patients with CIWA-Ar protocol orders, 52.9% were initiated within the specified time frame of four hours. Only 17.6% had nursing assessments completed every four hours after initiation of the protocol. This indicates that nursing is not using the protocol as it should be implemented, and continuing education pertaining to the CIWA-Ar protocol should be initiated.

Of the 73.9% patients with CIWA-Ar protocol orders, 47% had CIWA-Ar scores <8, 12% scored "between" 8–14, and no patients scored > 14. Reassessments are important when patient scores range within 8-14 because the effects of medication administration requires consistent monitoring. When the patient has a CIWA-Ar score greater than 14, the physician is needed at the bedside. There were no scores greater than 14 during the time frame of this study.

The most common symptoms noted in this study were extreme restlessness and anxiety while less commonly occurring symptoms were hallucination, sweating, nausea

and vomiting, disorientation, and tremors. This information may help nurses to anticipate a specific range of symptoms for patients at risk.

Application to Theoretical/Conceptual

The theoretical framework was appropriate for this study because of the importance in identifying patients at risk for AWS and beginning treatment of symptoms as early as possible. Neuman Systems Model guides the nurse in providing the appropriate patient care to meet the needs and multiple stressors of alcohol-related diagnoses and persons at risk for AWS.

Limitations

During the months of data collection, there were no ICU admissions. Extending the data collection time period might have resulted in a broader variety of symptoms and outcomes.

Implications for Nursing

None of the data that was generated in this study showed any ICU transfers, but personal experience has shown high incidence of transfer from the trauma floor to the ICU for patients in active alcohol withdrawal with complications. This results in poorer outcomes for the patient and longer length of stay and increased hospital costs. Continuing education and adherence to the screening protocol as per policy, especially for new hires to the trauma unit, will alert caregivers to the needs of patients at risk for AWS. Also, if nurses notice that no protocol has been ordered for the patient with elevated BAL and related diagnosis, they should advocate for the patient and seek to obtain the appropriate orders.

Recommendations

The researcher would like to expand the study throughout the course of an entire year, to account for seasonal shifts in drinking patterns and determine if there is a difference in rate of admission throughout the year from alcohol intoxication and related diagnoses. Continuing education is recommended for providers related to ordering of the CIWA-Ar protocol consistently, when patients are admitted with elevated BAL or alcohol related diagnoses and history of chronic alcohol use. The researcher would like to see 100% compliance with initiation of the CIWA-Ar protocol order and assessment completed within the specified time frame.

Conclusion

Alcohol Withdrawal Syndrome is a very serious health problem and remains a challenge to healthcare professionals as they provide the appropriate care needed to prevent occurrences of delirium tremens, which is the most severe form of AWS. This study was completed to assess if additional education was needed for nursing related to the use of the CIWA-Ar scale on a trauma floor. The results obtained in this review demonstrated inconsistencies with initiation of the CIWA-Ar protocol by providers who order the protocol and generated for nursing to follow, as well as inconsistencies with documentation of nursing assessments related to using the CIWA-Ar protocol. An accurate nursing assessment is required to assist providers in diagnosing and treating patients at risk for AWS.

References

Awissi, D. K., Lebrun, G., Coursin, D. B., Riker, R. R., & Skrobik, Y. (2012). Alcohol

    withdrawal and delirium tremens in the critically ill: A systematic review and

    commentary [Entire issue]. *Intensive Care*. http://dx.doi.org/10.1007/s00134-012-

    2758-y

Black, J. M., & Hawks, J. H. (2009). *Medical surgical nursing: Clinical management for*

    positive outcomes (8th ed., Vols. 1-2). St: Louis MI: Elsevier.

Currie, E. J., & Carr-Hill, R. A. (2012). What are the reasons for high turnover in

    nursing? A discussion of presumed casual factors and remedies. *International*

    Journal of Nursing Studies, *49(9)*, 1180-1189.

    http://dx.doi.org/10.1016/j.injurstu.2012.01.001

Daly, M., Kermode, S., & Reilly, D. (2009). Evaluation of clinical practice improvement

    programs for nurses for the management of alcohol withdrawal in hospitals.

    Contemporary Nurse: A Journal for the Australian Nursing Progression, 98-107.

    http://dx.doi.org/10.5172/conu.673.31.2.98

DePetrillo, P. B., & McDonough, M. K. (1999). Alcohol withdrawal manual. *Focused*

    system treatment. http://dx.doi.org/10.1080/10884-600701699255

Donnelly, G., Kent-Wilkinson, A., & Rush, A. (2012). The alcohol-dependent patient in

    hospital: Challenges for nursing. *MEDSURG Nursing*, *21(1)*, 9-36. Retrieved

    from http://eds.b.ebscohost.com.ezproxy.gardner-

    webb.edu/ehost/pdfviewer/pdfviewer?sid=ad0a9c43-2d50-459e-85b6-

    c89ecfb94b89%40sessionmgr115&vid=66&hid=119

European association for the study of the liver (EASL) [Press release]. (2012, June 11, 2012). Retrieved from European Association: tinyurl.com/knlklgp

Freese, B. T., & Lawson, T. G. (2007). Systems Model. *Nursing theorists and their work* (7th ed., pp. 309-334). Maryland Heights, MI: MOSBY Elsevier.

Fullwood, D. (2014). Alcohol-related liver disease *Nursing Standard. 28946)*, 42-47. http://dx.doi.org/10.7748/ns.28.46.42.e8998

Happell, B., Carta, B., & Pinikkahana, J. (2002). Nurses' knowledge attitudes and beliefs regarding substance use: A questionaire survey. *Nursing and Health Sciences*, *4(4)*, 193-200.

McPeake, J. M., Bateson, M., Oneill, A., & Kinsella, J. (2013). Assessment and management of alcohol-related admissions to UK intensive care units. *Nursing in Critical Care*, *18(4)*, 187-192. http://dx.doi.org/10.1111/nicc.12006

Mendez-Sanchez, N., Meda-Valdes, P., & Uribe, M. (2005). Alcohol liver disease: An update. *Annals of Hepatology*, *4(1)*, 32-42. Retrieved from

Mochly-Rosen, D., & Zakhari, S. (2010). The cardiovascular system what did we learn from the French (paradox)? *Alcohol Research & Health*, *33 (1/2)*, 76-86. Retrieved from http://eds.b.ebscohost.com.ezproxy.gardner-webb.edu/ehost/resultsadvanced?sid=2ba73b80-af23-4046-8fef-ad8b0dc5e855%40sessionmgr198&vid=13&hid=119&bquery=the+cardiovascular+system+what+did+we+learn+form+the+french+paradox&bdata=JmRiPXJ6aCZ0eXBlPTEmc2l0ZT1laG9zdC1saXZl

Mukamal, K., & Rimm, E. (2001). Alcohol's effects on the risk for coronary heart
disease. *Alcohol Research & Health*, *25(4)*, 255-261. Retrieved from
http://eds.b.ebscohost.com.ezproxy.gardner-
webb.edu/ehost/detail/detail?vid=15&sid=2ba73b80-af23-4046-8fef-
ad8b0dc5e855%40sessionmgr198&hid=119&bdata=JnNpdGU9ZWhvc3QtbGl2Z
Q%3d%3d#AN=106969659&db=rzh

National Institute of Health. (2013). *Alcohol withdrawal*. Retrieved from NIH:
http://www.ncbi.nlm.govv/pubmedhealth/PMH0001769

Neuman, B. (1982*). The Neuman System Model*. *Application to nursing education and
practice*. Norwalk, CT: Appleton-Century-Croft.

Neuman, B. (1995). *The Neuman system model*. (3rd ed.). Norwalk, CT: Appleton &
Lange.

Neuman, B. (1998). *The Neuman system model*. (4th ed.). Norwalk, CT: Appleton &
Lange.

Norrish, M., & Jooste, K. (2001, August 24). Nursing care of the patient undergoing
alcohol detoxification. *Curationis*, *24*(3*)*, 36-48. Retrieved from
http://www.ncbi.nlm.nih.gov/pubmed/11971601

O'Brien, A., Leonard, L., & Deering, D. (2012). Could an advance practice nurse
improve detection of alcohol misuse in the emergency department? *International
Journal of Mental Health Nursing*, *21*(4), 340-348.
http://dx.doi.org/10.1111/j.1447-0349.2011.00797.x

O'Shea, R. S., Dasarathy, S., & McCollough, A. J. (2010). Practice guideline committee of the American Association of the study of Liver Disease: Practice parameters committee of the American College of Gastroenterology. *Alcholic Liver Disease Hepatology*, *51*(1), 307-328. . http://doi:10.1002hep.23258

Perry, E. (2014). Inpatient management of acute alcohol withdrawal syndrome. *CNS Drugs*, *28*(5), 401-410. http://dx.doi.org/10.1007/540263-014-0163-5.

Riddle, E., Bush, J., Tittle, M., & Dilkhush, D. (2010). Alcohol withdrawal: Development of a standing order set. *Critical Care Nurse*, *30*(3), 38-48. http://dx.doi.org/10.4037/ccn2010862

Sellgren, S., Kajermo, K., Elkvall, G., & Tomson, G. (2009). Nursing staff turnover at a Swedish university hospital: An exploratory study. *Journal of Clinical Nursing*, *18*(22), 3181-3189. http://dx.doi.org/10.1111/j.1365-2702.2008.02770.x

Shield, K. D., Parry, C., & Rehm, J. (2013). Chronic diseases and conditions related to alcohol use. *Alcohol research current reviews*, *35*(2), 155-173. Retrieved from http://eds.b.ebscohost.com.ezproxy.gardner-webb.edu/ehost/detail/detail?vid=11&sid=ad0a9c43-2d50-459e-85b6-c89ecfb94b89%40sessionmgr115&hid=119&bdata=JnNpdGU9ZWhvc3QtbGl2Z Q%3d%3d#AN=104045432&db=rzh

Skinner, R. T. (2014, September/October). Symptom-triggered vs. fixed-dosing management of alcohol withdrawal syndrome. *MEDDURG Nursing*, *23*(5), 307-329. Retrieved from http://eds.b.ebscohost.com.ezproxy.gardner-webb.edu/ehost/detail/detail?vid=14&sid=ad0a9c43-2d50-459e-85b6-c89ecfb94b89%40sessionmgr115&hid=119&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=103907440&db=rzh

Stanley, K. M., Amabile, C. M., Simpson, K, N., Couillard, D., Norcross, E. D., & Worrall C, L. (2003). Impact of an alcohol withdrawal syndrome practice guideline on surgical patient Outcomes, *pharmacotherapy,* 23(7), 843-854.

Stanley, K. M., Worrall, C. L., Lunsford, S. L., Simpson, K. N., Miller, J. G., & Spencer, A. P. (2005). Experience with an adult alcohol withdrawal practice guideline in internal Medicine patients. *Pharmacotherapy,* 25(8), 1073-1083.

Stanley, K., Worrall, C., Lunsford, S., Couillard, D., & Norcross, E. (2007). Efficacy of a symptom-triggered practice guideline for managing alcohol withdrawal syndrome in an academic medical center. *Journal of Addictions Nursing*, *18*(4), 207-216.

Stuppaeck, C. H., Barnas, C., Falk, M., Guenther, V., Hummer, M., Oberbauer, H., & Fleischhacker, W. W. (1994). Assessment of the alcohol withdrawal syndrome validity and reliability of the translated and modified Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-A). *Addiction*, *89*(10), 287-1292. http://dx.doi.org/10.1111/j.1360-0443.1994.tb03307.x

Sutton, L. J., & Jutel, A. (2016). Alcohol withdrawal syndrome in critically ill patients: Identification assessment and management. *Critical Care Nurse*, *36*(1), 28-39. http://dx.doi.org/10.4037/ccn2016420

Vonlaufen, A., Wilson, J., Pirola, R., & Apte, M. (2007). Role of alcohol metabolism in

    chronic pancreatitis. *Alcohol Research & Health*, *30*(1), 48-54. Retrieved from

    http://eds.b.ebscohost.com.ezproxy.gardner-

    webb.edu/ehost/command/detail?vid=31&sid=ad0a9c43-2d50-459e-85b6-

    c89ecfb94b89%40sessionmgr115&hid=119&bdata=JnNpdGU9ZWhvc3QtbGl2Z

    Q%3d%3d#AN=106150554&db=rzh

Webb, K. (2009). *Alcohol-related liver disease: An essential guide for nurses and

    healthcare professionals*. Oxford: Wiley-Blackwell.

Appendix A

The Clinical Institute Withdrawal for Alcohol (CIWA-Ar) Scale

Nausea and Vomiting	Visual Disturbances
0=no nausea and no vomiting	0=not present
1=mild nausea with no vomiting	1=very mild sensitivity
2	2=mild sensitivity
3	3=moderate sensitivity
4=intermittent nausea with dry heaves	4=moderately severe hallucinations
5	5=severe hallucinations
6	6=extremely severe hallucinations
7=constant nausea, frequent dry heaves and vomiting	7=continuous hallucinations
Tactile Disturbances	Anxiety
0=none	0=no anxiety, at ease
1=very mild itching, pins and needles, burning or numbness	1=mildly anxious
2=mild itching, pins and needles, burning or numbness	2
	3
3=moderate itching, pins and needles, burning or numbness	4=moderately anxious, or guarded, so anxiety is inferred
4=moderately severe hallucinations	5
5=severe hallucinations	6

6=extremely severe hallucinations 7=continuous hallucinations	7=equivalent to acute panic states as seen in severe delirium or schizophrenia
Tremor 0=no tremor 1=not visible, but can be felt fingertip to fingertip 2 3 4=moderate, with patient's arms extended 5 6 7=severe, even with arms not extended	Headache, Fullness in Head 0=none present 1=very mild 2=mild 3=moderate 4=moderately severe 5=severe 6=extremely severe
Auditory Disturbances 0=not present 1=very mild harshness or ability to frighten 2=mild harshness or ability to frighten 3=moderate harshness or ability to frighten 4=moderately severe hallucinations 5=severe hallucinations 6=extremely severe hallucinations 7=continuous hallucinations	Agitation 0=normal activity 1=somewhat more than normal activity 2 3 4=moderately fidgety and restless 5 6

	7=paces back and forth during most of the interview, or constantly thrashes about
Paroxysmal sweats Observe: 0=No sweat visible 1=barely perceptible sweating, palms moist 2 3 4=beads of sweat obvious on forehead 5 6 7=drenching sweats	Orientation and Clouding of Sensorium 0=oriented and can do serial additions 1=cannot do serial additions or is uncertain about date 2=disoriented for data by no more than 2 calendar days 3=disoriented for data by more than 2 calendar days 4=disoriented for place or person

Appendix B

Data Collection Spreadsheet

AWS Symptoms					
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Anxiety					
Elevated Systolic Blood Pressure					
Confusion					
Hallucination					
Seizures					
Sleep Disturbances					
Sweating					
Restlessness					
Nausea / Vomiting					
Insomnia / Nightmares					
Extreme Restlessness					
Rejection of All Foods/Fluids					
Disorientation					
Delusion					
Total Wakefulness					
Tremors					

Patient	Alcohol Related Diagnosis	BAL	CIWA-Ar Protocol Ordered	Assessment completed (within 4 hours of protocol order)	Signs & Symtoms	CIWA-Ar < 8	Assess CIWA Q4 hours	CIWA-Ar =8-14 DBP >110	Medication initated	# doses	assess CIWA Q2 hours and prior to each dose of protocol medication until <8	CIWA-Ar ≤ 15	Medications initated	# Doses	assess CIWA Q2 hours and prior to each dose of protocol medication until < 8	Transfer to ICU	Complications	Disposition
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					
									Chlordiazepoxide PO Lorazepam PO Lorazepam IV				Haloperidol IV Haloperidol IM					

Blood Alcohol Level (BAL) norm < 10 mg/dL

Code: Yes=X   No=blank

Signs & Symptom Codes:

1. Anxiety
2. Elevated systolic
3. Confusion
4. Hallucination
5. Seizures
6. Sleep disturbances
7. Sweating
8. Restlessness
9. Nausea/Vomiting
10. Insomnia / nightmares
11. Extreme restlessness
12. Rejection of food/fluid
13. Disorientation
14. Dilusion
15. Total wakefulness