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Effects of an Alcohol Education Program on Improving Knowledge, Attitudes and Satisfaction of Registered Nurses Caring for Patients Undergoing Alcohol Withdrawal

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DNP Scholarly Project Committee

Dr. Mary Ellen Roberts – Chair

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Dr. Melvyn L. Hecht

Submitted in partial fulfillment of the Requirements for the degree of

Doctor of Nursing Practice

Seton Hall University

2017
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By

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DEDICATION

Thank you to my family. My parents, Mirta and Angel, whose support, endless encouragement and unconditional love provided me with the strength and confidence to persevere and become the individual I am today. My sisters, Mirta Ivette and Marilyn, whose support and encouragement have been instrumental in my success. Thank you to my beautiful and amazing children, Brandon, Ryan and Madison who drive me to excel and become the best individual and father. Finally, thank you to my wife, Lauren, who unconditionally loves and supports me in all that I choose to do. Without your support, tireless effort and devotion to our family, none of this would be possible.
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Abstract

Managing and caring for patients who are undergoing alcohol withdrawal presents challenges for nurses in an inpatient setting. These challenges are influenced by factors such as negative attitudes, lack of knowledge and poor satisfaction. The purpose of this quality improvement initiative was to determine whether the effects of implementing an alcohol educational program would improve knowledge and satisfaction while reducing negative attitudes. This program implemented education on alcoholism, alcohol withdrawal and the Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar) monitoring tool which would be incorporated into the everyday practice of nurses caring for patients undergoing alcohol withdrawal. The education was implemented on a Medical-Surgical unit over a one month period. A 30 item questionnaire, which contained ten questions from the Short Alcohol and Alcohol Problems Perception Questionnaire (SAAPQ), was provided before and after the education to assess the degree of change incurred. The findings suggest that by incorporating an alcohol educational program, the nurses’ perception of the adequacy of their clinical skills and knowledge in caring for patients dealing with alcohol related problems was enhanced. Their ability to engage an alcoholic patient and feel satisfaction, both on a professional as well as a personal level, improved as well. In addition, providing education on alcoholism enhanced the development of a more positive attitude in participants working with alcoholic patients. Raising the nurses’ awareness of their own views, through the provision of knowledge, has facilitated a positive change in both satisfaction and attitudes.

Keywords: alcoholism, alcohol withdrawal, nursing, attitudes, satisfaction, knowledge, education
Effects of an Alcohol Education Program on Improving Knowledge, Attitudes and Satisfaction of Registered Nurses Caring for Patients Undergoing Alcohol Withdrawal.

Alcoholism is the fourth leading preventable cause of death in the United States with an estimated 88,000 people dying each year from alcohol related sequela ("Alcohol Facts," 2017). Managing and caring for individuals who are struggling with alcohol related problems, acutely ill and experiencing alcohol withdrawal syndrome (AWS) can prove challenging in an inpatient setting. AWS, a preventable condition, is worth targeting in order to ensure safe and reliable care while simultaneously improving the work environment for the registered nurses caring for these patients.

In an acute hospital setting, poor alcohol withdrawal management can adversely affect the health of patients and pose challenges for nurses caring for individuals afflicted with AWS. Those challenges include managing altered level of consciousness, tremulousness, autonomic hyperarousal, psychosis, seizures and delirium tremens. The most serious of these alcohol withdrawal complications is delirium tremens, which results in hallucinations, disorientation, hypotension, elevated heart rate, decreased temperature, agitation and diaphoresis. Additionally, there is an increased risk of aggression or violence towards the staff caring for patients suffering from AWS. To combat these challenges, a quality improvement initiative was developed that focused on improving nurse staff satisfaction, knowledge and attitudes through education. Implementation of an alcohol withdrawal educational program would seek to improve on the management of AWS in patients as well as the physical and psychological wellbeing of the nurses (Benson, McPherson, & Reid, 2012).

“Nursing care delivery to patients with alcohol-related problems has been documented in the literature as being difficult and is affected by the moral model of explanation of alcoholism”
ALCOHOL EDUCATION FOR REGISTERED NURSES

(Vargas, 2013, p. 122). The moral model of explanation of alcoholism claims the alcoholics’ addiction should be blamed on their deficient character and human weakness. However, opponents of this model suggest alcoholism is a disease that results from an impairment of normal neurochemical or behavioral processes (Niedermayer, 2017).

Regardless of the preferred model, the negative feelings towards alcohol use and misuse have played a major role in the lack of preparation by nursing personnel. It has also impeded the efficient approach and delivery of care required to treat individuals struggling with alcoholism (Vargas, 2013). Researchers have identified a link between negative attitudes and insufficient knowledge of alcohol, alcoholism and associated problems as the main reason for the underlying deficiency in the nurses’ competence in managing patients undergoing withdrawal (Vargas, 2013). Studies performed by researchers have shown nurses preferring to not work with individuals diagnosed with alcoholism or alcohol withdrawal. The reason for these preferences, when caring for patients with alcohol problems, have been attributed to “… many factors, such as nurses’ personal characteristics, their beliefs on the causes and symptoms of alcohol abuse problems, their beliefs on their role in the care of such a patient and their own pattern of alcohol use” (Vargas, 2013, p. 124). Nurses have reported feeling scared on initial interactions with an alcoholic patient, with tendencies in denying the individual care, because it would imply a greater workload for them (Bettancourt Ortega & Arena Ventura, 2013). Researchers have reported nurses feeling overwhelmed, needing to utilize increased nursing resources and having difficulty in managing patients undergoing withdrawal. There have been occasions where nurses have reported feeling uncomfortable in providing high dosages of medication to treat patients experiencing symptoms of alcohol withdrawal. Additionally, experiences with patients attempting to harm themselves or others while undergoing treatment for withdrawal have contributed to the nurses’ fear and anxiety for patient and staff safety (Berl et al., 2015).
The individual admitted to an inpatient unit of a hospital seeking treatment for alcohol abuse or withdrawal often generates a range of negative attitudes and inaccurate stereotypes in nurses. Numerous studies have indicated the main reasons for the negative attitudes and difficulties in providing care by nursing personnel can be attributed to the lack of knowledge in the approach and interventions provided to these patients (Vargas, 2013). Very little importance has been placed on education and training for nursing personnel caring for patients suffering from alcoholism or alcohol withdrawal. “This lack of preparation and knowledge has been observed even among nurses who work in specialized alcohol and drug services …” (Vargas, 2013, p. 124).

These views are encountered in various cultures and must be dealt with by nurses when caring for such patients. Nurses must also deal with complex “… attitudes and stigmas considered unique to the hospital environment, including those depicting patients with alcohol problems as unpleasant, difficult, and unworthy of care” (Crothers & Dorrian, 2011, p. 1). Researchers have described the “… association between negative attitudes and insufficient knowledge of … [alcoholism] … as the main cause underlying the deficit in nurses’ skill to identify … [and manage] … these patients” (Vargas, 2013, p. 124).

These beliefs can shape and influence the relationship that forms between a nurse and patient. In order to transform these views from negative to positive, nurses need to develop skills that would enable them to work with patients that have alcohol and alcohol-related issues. This could be accomplished through the implementation of a standardized, educational program for nurses on medical-surgical floors. The goals of this Quality Improvement Initiative were to:

- Enhance the awareness of the serious problems encountered by nurses on medical-surgical floors when caring for patients undergoing alcohol withdrawal.
- Develop and evaluate the training and education provided to nursing staff who treat patients undergoing alcohol withdrawal.
- Improve on the early identification and subsequent management of patients experiencing alcohol withdrawal.
- Assess for changes and improvement in knowledge, attitudes and satisfaction experienced by registered nurses.

Prior to the implementation of the educational program, a survey was distributed to nurses assessing their knowledge, views and satisfaction in caring for patients with alcohol and alcohol-related problems. Upon completion of the survey, the nurses were provided with a power-point presentation lecture and handouts to assist in the educational process. Concepts covered during the educational sessions included:

- Basic pathophysiology of alcoholism and abuse
- Physiology of alcohol withdrawal
- Medications utilized for management of alcohol withdrawal
- Treatment strategies used to treat alcohol withdrawal
- Proper use of the CIWA-Ar scale (Appendix A)

At the conclusion of the educational program, the staff were allotted a month’s time to implement what they learned into their nursing practice. Use of the CIWA-Ar scale during this time period enabled earlier identification and elicited appropriate pharmacotherapeutic interventions by the medical team for those individuals being treated for alcohol withdrawal. After the one month time frame, the nurses received a post-survey to evaluate the effectiveness of the educational intervention by assessing for improvement in knowledge, attitudes and satisfaction.
According to DSM-5, dependence and abuse of alcohol is classified as alcohol use disorder ("Alcohol Use Disorder," 2016). It consists of difficulty controlling the amount of consumption, preoccupation with alcohol, continued use despite causing financial or legal problems and having to drink more in order to attain the desired effect ("Alcohol Disorder," 2017). Alcohol use disorder is first recognized in individuals who develop withdrawal symptoms after stopping alcohol consumption. Stoppage most often can be attributed to family pressure, physical ill health or difficulty in attaining alcohol (Kattimani & Bharadwai, 2013). Since many individuals downplay their drinking behavior, symptoms of alcohol withdrawal syndrome (AWS) develop in patients who are admitted to hospitals for accidents, injuries and other primary medical conditions that can become potentially life-threatening (Bayard, McIntyre, Hill & Woodside, 2004).

Symptoms of AWS result from heightened neurotransmitter excitability of the central nervous system (CNS). The central nervous system is affected by the continual exposure to alcohol which causes the depression of neuronal excitability, impulse conduction and neurotransmitter release. With continued alcohol exposure, an increase in the number of available gamma-aminobutyric acid (GABA) inhibitory neurotransmitters occurs due to the antagonistic depression of glutamate neurotransmitter excitability on the N-methyl-D-aspartate (NMDA) receptors. Subsequently, an increase in NMDA receptors along with glutamate production occur to offset the effects of GABA and thus maintain homeostasis of the central nervous system (Kattimani & Bharadwai, 2013, p. 102).

Upon sudden cessation of alcohol action on the central nervous system, the alcohol mediated inhibition of GABA neurotransmitter-receptor activity is reduced. This enables the elevated number of glutamate neurotransmitters-NMDA receptor activity to be unopposed,
creating CNS excitation (Kattimani & Bharadwai, 2013). This central nervous system excitability causes autonomic over activity symptoms characteristic of alcohol withdrawal syndrome “... such as tachycardia, tremors, sweating and neuropsychiatric complications such as delirium and seizures” (Kattimani & Bharadwai, 2013, p. 102).

An additional neurotransmitter involved in the process of alcohol withdrawal syndrome is dopamine. Dopamine, which contributes to the experience of pleasure and memory, interacts with glutamate in the brain’s process of reward-related learning. “As someone drinks, levels of dopamine … [begin to increase] … resulting in a flood of pleasant feelings. Alcohol … [proceeds to] … elevate mood, increase self-confidence and lower inhibitions” ("Treatment, Symptoms and Timeline,” n.d., para. 2). Alcoholics equate these feelings and experiences, which result from their drinking behavior, to receiving a reward. Subsequently, these reward-seeking behaviors and increased levels of dopamine are able to counteract the effects of alcohol.

In the course of sudden alcohol cessation, the increased levels of unopposed dopamine contribute to the symptoms of autonomic hyperarousal and hallucinations seen in some individuals undergoing alcohol withdrawal (Kattimani & Bharadwai, 2013).

Alcohol withdrawal syndrome is classified by two severity categories. Minor withdrawal starts about six hours after alcohol cessation or decrease in consumption and lasts between twenty four to forty-eight hours. Clinical symptoms include tremors, sweating, tachycardia, gastrointestinal upset, headache, anxiety and intact orientation. The second category consists of moderate to severe withdrawal which lasts twenty four hours to six days. Symptoms of this type of withdrawal consists of unstable vital signs, hallucinations (visual/tactile/auditory), illusions and seizure activity in the patient that is well oriented. The seizure activity can begin six to forty eight hours after alcohol cessation and up to six seizures can occur within a span of six hours. This stage of alcohol withdrawal, with concurrent presentation or a past history of withdrawal seizures, predisposes an individual to the
development of delirium tremens (DT) (Kattimani & Bharadwai, 2013).

Delirium tremens is the most severe form of alcohol withdrawal and is considered a medical emergency. Severe alcohol withdrawal with withdrawal seizures, or DT, differs from normal alcohol withdrawal in that it can begin seven to ten days after an individual’s last drink. Delirium tremens is characterized by intense seizures with symptoms ranging from hallucinations to insomnia and is prevalent in those individuals who experience frequent occurrences of alcohol withdrawal syndrome or have a past history of withdrawal seizures (Kattimani & Bharadwai, 2013).

Treatment for alcohol withdrawal syndrome has focused on substituting various medications for alcohol, while slowly tapering the chosen dose. The main drug therapy of choice and most frequently used medication has been the benzodiazepines. They have been the only appropriate medications proven to prevent the progression of AWS complications (Jaeger, Lohr, & Pankratz, 2001).

Benzodiazepine medications are used to replace the alcohol depressant effects on the central nervous system and to counteract the autonomic hyperactivity encountered with alcohol withdrawal. The benzodiazepine medication chosen depends on the form (oral or IV) and half-life of the drug. It also depends on patient clinical factors such as their age and previous seizure activity. The patients’ liver function must also be considered when choosing the type of medication due to it being the site of alcohol metabolism. The benzodiazepine drugs of choice to treat alcohol withdrawal are Chlordiazepoxide (Librium), Clonazepam (Klonopin) and Diazepam (Valium). Long acting benzodiazepine drugs, such as Valium and Librium, have extended half-lives and demonstrate they are the best course of treatment without the chance of rebound symptoms. Short-acting benzodiazepines, such as lorazepam (Ativan), are another option and the preferred drug of choice for patients with impaired liver function due to the possibility of over sedation (McKay, Koranda, & Axen, 2004).
There are two commonly used treatment strategies for managing alcohol withdrawal. The first is fixed-schedule dosing which involves the administration of benzodiazepines at timed intervals and then slowly tapering the medication. Fixed-schedule dosing is a common treatment approach utilized in managing AWS and is the most convenient method for medication administration by nurses. However, fixed-schedule dosing with benzodiazepines may place the patient “… at greater risk for adverse medication reactions, drug interactions, over sedation, immobility, prolonged hospitalizations and possible unnecessary costs” (Skinner, 2014 p. 314).

Although fixed dose scheduling is convenient, it does not individualize patient treatment like the second treatment strategy of symptom-triggered dosing. Treatment recommendations for AWS suggest a symptom-triggered approach, centered around frequent objective assessments of the patient, versus a fixed dose scheduling. In this approach, benzodiazepines are only provided in response to the development of AWS symptoms experienced by patients, which are monitored through an assessment tool that guides treatment (Skinner, 2014). The symptom-triggered approach addresses the risk for under or over medicating through the matching of real-time symptom assessment severity level with benzodiazepine dosage. It also increases the nurses’ autonomy and general awareness of AWS symptoms in patients (Skinner, 2014). The amount of benzodiazepine administered is based on the assessment of patient symptoms using the Clinical Institute Withdrawal Assessment-Alcohol revised (CIWA-Ar) scoring tool (Jaeger, Lohr, & Pankratz, 2001).

The CIWA-Ar is a monitoring tool developed by expert clinicians (Sullivan et al., 1989) that is utilized to measure the severity of withdrawal and predict whether patients are at risk for delirium or seizures (Skinner, 2014). “The tool guides the nurses’ assessment, and patient treatment is determined by the patient’s numeric score based on the institution’s symptom-triggered treatment protocol” (Skinner, 2014 p. 308). The CIWA-Ar scale is a valid,
reliable and feasible scale to use on a medical-surgical unit for individuals undergoing AWS ("Addiction Medicine," 2001). This is in comparison to another widely used assessment tool, the Richmond Agitation – Sedation Scale (RASS), whose preferred use is in the Intensive Care Unit (ICU) setting. The “RASS is a 10 point scale, with four levels of agitation (1+ to +4), one level to denote a calm and alert state (0) and 5 levels of sedation (-1 to –5)” (Sessler et al., 2002, p. 1338). It has proven reliability, validity and is widely utilized in ICU settings. It provides a structured assessment of sedation and agitation that is useful in titrating sedative medications and assists in evaluating agitated behavior in that type of unit (Sessler et al., 2002). However, the RASS is not designed to detect the onset of AWS.

The CIWA-Ar assessment scale is the current recommended tool proven to increase consistency in identifying and managing alcohol withdrawal. “Focusing on key assessments for symptoms of alcohol withdrawal may alert the staff earlier to emergency symptoms and aid in earlier diagnosis and treatment” (McKay et al., 2004, p. 17-18). The CIWA-Ar scale involves scoring the patient on withdrawal signs and symptoms that include nausea/vomiting, tremors, paroxysmal sweats, anxiety, agitation, tactile disturbances, auditory disturbances, visual disturbances, headache/fullness in the head and altered level of consciousness. “The nurse’s role is to monitor and score the patient according to the protocol, assess vital signs at the same frequency as the scoring and administer medications as determined by the CIWA score and parameters listed on the protocol” (McKay et al., 2004, p. 18). The scoring totals are calculated by assigning a number score of zero to seven for the first nine symptoms listed above and zero to four on the last symptom of level of consciousness. If a score of ten or greater is achieved on a range of zero to sixty-seven the nurse would administer the selected benzodiazepine medication ordered by the treating physician. If a patient attains a score of less than 10, the benzodiazepine medication is not administered. The nurse would continue to perform hourly assessments and medication administration until the patient scores less than 10 for three
consecutive hours. At that point, the patient is evaluated every four hours or until the score is again above ten (McKay et al., 2004).

Intricate medical diagnoses with complicated factors, such as unrecognized alcohol withdrawal, are often encountered by medical-surgical staff nurses. “If the … [bedside nurse] … is provided with specialized education on managing acute alcohol withdrawal and standardized tools to monitor symptoms, this potential fatal … [condition could] … be managed effectively on general medical-surgical units in the acute care setting” (McKay et al., 2004, p. 31). “Knowledge, attitudes, confidence, …[staff engagement] … and skills are cited as the barriers to effective … [management] … and a call for more education and training is voiced in the literature as an immediate solution” (Cund, 2013, p. 36). It is essential that nurses possess the knowledge in screening, assessment and clinical management of patients undergoing AWS in order to ensure the provision of the highest standard of care and safety.

Providing care to patients undergoing withdrawal “… is a challenge that can lead to patient and family dissatisfaction, poor patient outcomes, and nurses’ discontent and frustrations when caring for patients experiencing withdrawal symptoms …” (Holt, Dearmon, Lawrence, Lewis, & Skotzko, 2017, p. 234). Having the ability to properly screen, prevent and treat alcohol problems are cited as the necessary elements to improve the quality of care delivered to patients dealing with alcoholism (Cund, 2013). Having the ability to properly treat and reduce the number of patients undergoing alcohol withdrawal syndrome, which could progress to delirium tremens, results in fewer complications leading to lower hospital costs and a decrease in length of stay. “When alcohol withdrawal syndrome is recognized early, mortality rates have been reduced to 1% to 5%. Nurses need to be proficient in early recognition and evidence based management to prevent poor patient outcomes” (Skinner, 2014 p. 310). “The management of a patient experiencing alcohol withdrawal is enhanced by nurses’ in-depth understanding of the neurobiology of alcohol dependence, the effects of alcohol abuse on the body systems and
current treatment of alcohol withdrawal syndromes” (Donnelly, Kent-Wilkinson, & Rush, 2006, p. 13). Nursing care should focus on providing a well-lit room with a calm, reassuring environment and minimal stimulation. Management of fluid and electrolyte imbalances, along with adequate nutrition, become a priority for the nurse providing care to a patient undergoing alcohol withdrawal syndrome.

The understanding of substance abuse is imperative as the tendency remains for nurses to fail in engaging with patients who undergo AWS. “Nurses may be uncertain whether this is within their scope of practice, or they may perceive a lack of knowledge and skill in identifying and responding to affected patients” (Donnelly, Kent-Wilkinson, & Rush, 2006, p. 13).

Providing nurses with education for managing AWS will allow for improvement of patient outcomes while enabling the patient to reach the next level on the health care continuum (McKay et al., 2004).

**Theoretical Framework**

The groundwork through which this initiative had been examined and supported was based on the theoretical frameworks provided by the interaction model of client health behavior (IMCHB), proposed by Cox (Mathews & Muirhead, 2008), and the transactional model of stress and coping, developed by Richard S. Lazarus and Susan Folkman (Mitrousi, Travlos, Koukia, & Zyga, 2013). The interaction model of client health behavior considers the individuals’ characteristics and its effects on behavior, as well as the influence the primary care provider has on health behavior. The IMCHB proposed by Cox has three elements:

… (a) recognize client individuality in obtaining positive health outcomes, (b) acknowledge the concepts that make up client–professional interaction in obtaining a health outcome, and (c) guide the development of nursing interventions that would be focused on the client and the necessary health care (Mathews & Muirhead, 2008, p. 416).
This IMCHB provided a unique perspective into the social, cognitive and behavioral structures that assist or inhibit a patient’s progress in handling his or her problem with alcoholism. Features of client singularity involve the patient’s intrinsic motivation, health literacy, demographic characteristics and background variables. These factors contribute to the inefficient self-management behaviors displayed by individuals struggling with alcoholism. Disparities in these variables, such as health literacy, “have been linked to educational level, racial minority status, and advanced age” (Hickman, Clochesy, & Alaamri, 2016, p. 876). As such, these characteristics may lead to patients experiencing poor health outcomes due to their inability to comprehend and utilize information provided to them to correct negative health behaviors.

These disparities, compounded by the issue with alcoholism and the approach of nurses providing care, predispose individuals to diminished quality of patient-nurse interactions as well as perceptions of ineffective communication skills. This contributes to the patient having less involvement in their medical care, along with, poor compliance with treatment regimens and sustainability with health-promotion behaviors that ultimately contribute to some individuals leaving against medical advice during hospitalizations. All of these factors influence the patient-nurse interaction, and research has ultimately shown quality interactions have been consistently linked to improved motivation to engage in health-promotion behaviors and positive health outcomes (Hickman, Clochesy, & Alaamri, 2016). The importance of nurses having a strong foundational base of knowledge on alcoholism, alcohol withdrawal and possessing a positive attitude towards individuals with this disorder are crucial to the successful achievement of positive outcomes.
A second theoretical framework, developed by Lazarus and Folkman (Gunawan, n.d.), focuses on the nurses’ stress encountered in the environment. The transactional model of stress and coping states individuals are confronted with various amounts of difficulties and possess various amounts of resources to handle those burdens. When individuals realize they have minimal control over circumstances they may begin to avoid particular situations, keep their distance from events, or seek emotional support from other people (Mitrousi, Travlos, Koukia, & Zyga, 2013). Instances of avoidance and distancing from patients undergoing AWS have been reported by nurses due to fears “… for their safety when caring for patients detoxifying from alcohol and concern for the patients’ well-being” (Holt et al., 2017, p. 239).

Nursing jobs are among the top occupations where individuals experience high levels of stress. Lazarus identified stress as being a condition or feeling an individual experienced when he or she perceived demands were exceeding the availability of one’s personal and social resources (Gunawan, n.d.). In a study conducted by Healy and McKay (Healy & McKay, 2000), using a sample of Australian nurses, it was discovered that 27% of hospital nurses experienced high levels of stress. The stress encountered were physical and psychological problems such as having the “responsibility for human health, being exposed to health hazards, performing clinical processes, dealing with critically ill patients, the lack of adequate equipment, dealing with emergencies and unexpected situations, a lot of noise in the workplace and shift work” (Loukzadeh & Bafrooi, 2013, p. 314). All of these factors can decrease the quality of care provided, create job dissatisfaction, antipathy, exhaustion from work, absenteeism and possibly endanger the lives of patients. An additional stressor surfaces when nurses “are not always prepared to manage patients with AWS, placing patients’ well-being at risk and contributing to nurses’ discontent and frustration” (Holt et al., 2017, p. 239). Thus, it is important to provide
nurses with the right education that would enable them to better handle stress encountered with this population while simultaneously improving their satisfaction, attitudes and the provision of quality nursing care.

The Interaction Model of Client Health Behavior speaks of the influence the primary care provider has on the health behavior of an individual and the nurse-patient relationship. When combined with the Transactional Model of Stress and Coping, which highlights the healthcare providers avoidance of difficult situations, both theories provide an explanation of the poor outcomes that may result from improper patient care management. By increasing the nurses’ knowledge of alcohol withdrawal, patients benefit from the provision of quality nursing care through improved outcomes. These better-quality outcomes are also influenced by an increase in nursing satisfaction and positive attitudes experienced by nurses as a result of the education. The Interaction Model of Client Health Behavior and the Transactional Model of Stress and Coping provides for a better understanding of this phenomenon of interest.

**Methodology**

This QI proceeded in a logical manner with a risk analysis completed prior to the planning, introduction and implementation of the education intervention. Phases of the intervention will follow.

**Risk Analysis**

A SWOT analysis technique was used to provide a clearer picture of the strengths, weaknesses, opportunities and threats of this initiative. It was utilized to evaluate the potential effectiveness of this initiative with respect to the internal and external factors that could have had an impact on the viability of this quality improvement initiative. Upon identification of these SWOT factors, it was ascertained what would be required to reduce or manage the risks,
pertaining to this initiative, in order to successfully achieve the desired outcomes. The strengths were the internal factors that prompted exceptional organizational performance and included a highly engaged nursing staff that worked collaboratively in an interdisciplinary format. A highly engaged staff generates higher productivity, improves work effectiveness in the provision of nursing care and improves the chances for the successful implementation of any initiative.

Awareness by the nursing staff of the financial impact this initiative would have on the reduced length of stay and on consumed resources, along with using evidence based practice to improve nursing care, were additional identified strengths. Patients with alcohol use disorders would also benefit from the patient-centered care focus provided by the nursing staff. “Patient-centered care and shared decision making are essential for delivery of high quality mental health and substance use disorder treatments” (Bradley & Kivlahan, 2014, p. 1).

The next aspect in the SWOT analysis was the weaknesses of the organization. These internal factors affect the quality and costs of healthcare that are provided. Some of the weaknesses encountered were gaps in knowledge and insufficient training in handling patients undergoing alcohol withdrawal. Additional weaknesses included staffing shortages, along with lack of support from off shift management personnel. The lack of evidence based clinical practice guidelines for treating patients undergoing alcohol withdrawal were also identified as a weakness.

The external factor, of opportunity, involved the provision of education. The lack of evidence based nursing practice guidelines for treating patients undergoing alcohol withdrawal were identified as an opportunity. Providing an educational program on alcoholism allowed for the opportunity to improve staff satisfaction, clinical assessment skills and the quality and efficiency of nursing care provided patients undergoing alcohol withdrawal.
The last factor was that of threat. The combination of the Center for Medicare and Medicaid Services 30-day readmission penalties and lack of funding for rehab or treatment by government agencies places increased pressure for organizations to reduce healthcare costs as a result of these adverse changes in reimbursement regulations. These hospital readmission rates have been found to be very high and preventable. For individuals with such chronic conditions, such as alcoholism, hospital readmission rates have been reported to be as high as 16% within 30 days and 53% over a 12-month period ("Substance Abuse," n.d.). There are various predictors for readmission such as race, ethnicity, age, gender, medical coverage, income and socioeconomic status ("Trendwatch," 2011). Regardless, the era of managed care has resulted in the need for shorter average stays and a need to discharge patients as quick as possible.

The problem of alcoholism is encountered in hospitals all over the country. A good percentage of patients affected by alcoholism are not habitual drinkers. These individuals may not be dependent on alcohol but consume liquor in a manner that creates a danger to their health and well-being. These individuals are seeking medical attention for alcohol-related illness and injury but not for their drinking. Consequently, alcoholism drives up the healthcare costs for both public and private sectors ("Sound Investment," n.d.). The importance of this initiative becomes evident in the cost reduction attained as a result of the proper management and follow up care provided to patients affected by this illness.

**Setting and Procedures**

The educational program on alcoholism and alcohol withdrawal was implemented on a medical-surgical unit in a hospital. The Institutional Review Board (IRB) approval was obtained through the IRB of this institution (Appendix B). Consensus on the appropriate site
implementation for this project was completed with the assistance of the project advisor and DNP program director.

Prior to the start of the educational sessions, participants were emailed an invitational letter containing a link to a survey (Appendix C). This pre-survey assessed the participating registered nurses’ current knowledge, attitudes and satisfaction in providing care to patients requiring treatment for alcohol withdrawal. Upon survey completion, the educational program on alcoholism and alcohol withdrawal was initiated. It included providing education on alcoholism and the management of patients undergoing alcohol withdrawal syndrome. Additionally, education on the use of the CIWA-Ar scale was provided as it has been proven to increase consistency, alert staff sooner to emergency symptoms and aid in the earlier identification of alcohol withdrawal. The CIWA-Ar scale was introduced and was to be included into the electronic medical record. This will allow for specific, nurse driven management decisions to be initiated when caring for patients undergoing alcohol withdrawal. The project concluded with the re-evaluation of participants through the dissemination of the same survey to determine how effective the educational program was on improving the knowledge, attitudes and satisfaction of nurses in caring for individuals undergoing alcohol withdrawal.

**Project Phases**

**Needs Assessment.**

The program budget (Appendix D) consisted of all the anticipated costs and financial resources needed to complete and support the project proposal. All of the costs were carefully considered for this initiative. Identification of all costs incurred were necessary and reasonable in order to accomplish the goals set forth in this project. Generating a program budget plan for
this initiative allowed for the effects of the consumed resources to be analyzed and alternate cost-effective approaches to be considered (Finkler, Jones, & Kovner, 2013).

The costs incurred on this initiative involved the time and labor required to initiate all phases of this project. It involved creating a nursing education plan, developing a power point presentation (Appendix E) and generating handouts for the group of participants. In addition, the personal time that was devoted in implementing and educating the staff, without compensation, would be reflected in this program budget.

Additional costs to successfully implement this project entailed the use of several resources. They included copying costs of educational materials for the nursing staff, marketing and promotional materials, refreshments and meals for those in attendance and travel expenses to the hospital during the process.

As for the cost-benefit analysis of this project, it has a positive benefit-cost ratio and will add value to the organization through increased education, improved outcomes, decreased length of stay and decreased costs. Although assigning monetary value to a health care outcome remains difficult, the desired outcome for this initiative would be cost-effective. When comparing to current outcomes and alternative approaches, the project appears to be worthwhile.

**Stakeholder Support.**

In order to accomplish this objective, acquiring the support of the participating nurses and executive team members was essential. The desire of nurses to improve their work environment, as well as patient care, were the motivation and incentive for their participation. The support from the executive team was accomplished through the use of a market analysis that addressed the product, place, pricing and promotion of this initiative (Finkler, Jones, & Kovner, 2013). The interest in the potential cost benefits and importance of this protocol for the institution
justified the investment in this project. The executive team was cognizant of the positive financial impact this initiative would have on the organization through a reduction in the length of stay and costs incurred through consumed resources.

The marketing plan was successful due to the following:

- Support of the executive team.
- Notifying the nursing unit where the project was to be implemented.
- Building rapport and strengthening working relationships with all organizational members involved in the project.
- Scheduling meetings to ensure the progress of this initiative.
- Developing and providing educational flyers that promoted the project.
- Communicating with the Vice President of Nursing to allow for additional staffing on days where education was to be provided to the nursing staff on the unit.
- Providing a comparative analysis of the current practice versus the proposed practice change. This would enable for an effective strategy in comparing the effectiveness of this proposed initiative to the assessment of current strengths and weaknesses of the current practice.
- Defined the vision and strategy of this initiative.
- Building support and enthusiasm of team members and nursing staff.

The clinical time and support provided by these individuals during the implementation of the proposed educational standard ultimately determined the success of this project.
Implementation Plan.

During the first three months of the scholarly project, the implementation plan involved reaching out to the Material Information Systems (MIS) department to discuss the creation of a CIWA-Ar flow sheet for the organization’s sunrise clinical management program (SCM). The SCM program allows workflow to be simplified and improves the coordination of care by enabling healthcare workers, who are participating in the patients’ care, to have access to the individuals’ medical information more readily. The CIWA-Ar flow sheet would eventually allow for specific management decisions elicited by nurses when providing care to patients undergoing alcohol withdrawal. The CIWA-Ar assessment, along with the pharmacological intervention chosen, would be based on “… clinical factors such as the patient’s age; occurrence of prior seizures; and the functional state of the liver” (Myrick & Anton, 1998, p. 41).

As the flowsheet underwent development, an educational module was created to provide information on the CIWA-Ar scale as well as assessing and managing individuals suffering from alcohol dependence. The need for the educational module was due to the institution not having any nursing practice guidelines or education developed to address the need for proper management of patients undergoing withdrawal on medical-surgical units. Additionally, a thirty question pre-survey and post-survey was developed to assess the nurses’ attitudes, satisfaction and knowledge on managing patients undergoing alcohol withdrawal. The nurses’ familiarity with the available pharmacological and non-pharmacological treatment options along with barriers encountered when delivering care were also examined. Creating the survey allowed for information to be collected in a short period of time and in a cost-effective manner. This allowed for results to be quickly analyzed and measure any change that incurred through implementation of the educational module.
During this time period, resources and funds were collected in order to ensure completion of this quality improvement initiative. Discussions with the Chief Nursing Officer and Nursing Vice President were arranged to discuss the allocation of funds. The funds were acquired from the medical-surgical units’ budget in order to assist with the implementation of this program.

Three months after beginning the project, the participants were administered an anonymous pre-survey that sought to evaluate their knowledge, attitudes and satisfaction experienced by the staff of nurses. Part of the survey consisted of 10 questions that assessed the nurses’ attitudes and satisfaction towards patients with alcohol related problems. These questions were from the Short Alcohol and Alcohol Problems Perception Questionnaire (SAAPQ), (Appendix F). This tool is a validated and reliable instrument that was based on factor analysis of the original 29 question Alcohol and Alcohol Problems Perception Questionnaire (Brumby et al., 2011). The SAAPQ asked the participants to express the extent of their agreement, on a seven-point Likert scale which was ranked from strongly disagree to strongly agree, with ten statements regarding hazardous or harmful drinkers. It should be noted the two self-esteem statements, along with the second motivation item, are the only statements not reversed scored due to the other questions being phrased in the semantically opposite direction (Santos & Rosario, 2015).

The therapeutic commitment score reflects the degree to which an individual seeks to engage a drinker in treatment or therapy and the extent to which they find such work rewarding both at a professional and personal level. The three subscales utilized to measure Therapeutic Commitment are motivation (to work with drinkers), satisfaction (expectations of work satisfaction with drinkers) and self-esteem (task-specific as well as self-esteem with drinkers). The remaining two subscales of role legitimacy and role adequacy are associated with Role
Security. Role security reflects the participants’ perception of the adequacy of their clinical skills and knowledge for handling problem drinkers as well as how competent they are to work with such patients. Both scales of therapeutic commitment and role security are highly correlated and can be combined into an overall attitude score. Therefore, a high score, attained through the selection of answers assigned a higher point value, measures a more positive attitude to working with alcoholics (Chung, Chan, Yeung, Wan, & Ho, 2003).

Upon collection of these preliminary surveys, implementation of the learning module commenced. The educational sessions were administered in a classroom setting. Instruction was provided with the use of a power point presentation and the distribution of handouts pertaining to the subject matter.

A total of 22 nurses participated in the AWS educational program by attending an individual or group session. The pre-survey was completed by all 22 of the participants prior to initiating the educational sessions to assess their baseline knowledge, attitudes and satisfaction in dealing with AWS. Individual educational sessions were completed with 11 nurses while the remaining participants were instructed in a group setting. The time of the alcohol educational sessions were done in the morning or night and at a time convenient for the participant during their work day.

Completing the training of the nurses on this medical-surgical unit required about four weeks of time in order to ensure instruction was provided to all of the nurses on both the day and night shifts. The effects of the educational program and the implementation of the newly gained knowledge, into everyday practice, was evaluated through identical post-surveys at six months. The participants’ responses were collected and maintained by "SurveyMonkey". SurveyMonkey is the world’s leading provider of web-based surveys. It is trusted by millions of companies and
organizations to provide HIPPA compliant features, as well as, protection for sensitive information ("Privacy," 2016). This group data did not contain any identifying information, pertaining to the participants, during and upon completion of the surveys.

At the end of this six month time frame, the collection of data comparing nursing knowledge, attitudes and satisfaction before and after the implementation of the educational sessions was evaluated. Analysis of the projects’ effectiveness and efficiency determined its future implementation into the organization’s policies and protocols for alcohol withdrawal treatment.

**Timeline**

Months 1 – 3

- The Management Information Systems department begins to program the order set into the organizations’ SCM data base.
- Develop and utilize a pre and post survey.
- Develop a learning module for the participating nurses.
- Assess the total cost of the project and acquire the necessary funds.

Months 3 – 6

- Evaluate the quality improvement data for the projects’ success.
- Collect data and feedback from the participating nurses.
- Assess metrics utilized.

Year 1 – 2 post program

- Continue the initiative and apprise as necessary.
- Evaluate the benefits of the long-term implementation of this initiative.
- Update the initiative, as needed, with new pertinent research.
**Evaluation Plan**

Evaluation of this scholarly project sought to determine if closure of any knowledge gap would follow the education provided. Additionally, an assessment of whether or not improvement in the attitudes and satisfaction of nurses in providing care to patients undergoing alcohol withdrawal would occur was made. Problems encountered were examined and the original objectives reviewed to determine if these goals were accomplished. Finally, the pre and post surveys were assessed to evaluate the success of the educational program and determine whether or not improvements were made in the three areas of inquiry.

**Project Results**

The participants in this QI were mostly women (95.5%), the majority between ages 25 and 44 (59.1%). They were racially/ethnically diverse (see Table 1).

Table I

*Demographics of Participants (N=22)*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>21</td>
<td>95.5</td>
</tr>
<tr>
<td>Men</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 24</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>25 – 34</td>
<td>9</td>
<td>40.9</td>
</tr>
<tr>
<td>35 – 44</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>45 – 54</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td>55 – 64</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>65-74</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>75 or older</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>6</td>
<td>27.3</td>
</tr>
<tr>
<td>Black or African American</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>9</td>
<td>40.9</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>
Table II

**Affirmative Answers to Role Security Survey Questions Pre and Post-Education Intervention (N=22).**

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-Education</th>
<th>Post-Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel I know enough about causes of drinking problems to carry out my role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>when working with drinkers</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>% affirm</td>
<td>72.7</td>
<td>86.4</td>
</tr>
<tr>
<td>I feel I can appropriately advise my patients about drinking and its effects</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>% affirm</td>
<td>81.8</td>
<td>100</td>
</tr>
<tr>
<td>I feel I have the right to ask patients questions about their drinking when necessary</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>% affirm</td>
<td>90.9</td>
<td>95.5</td>
</tr>
<tr>
<td>I feel that my patients believe I have the right to ask them questions about drinking when necessary</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>% affirm</td>
<td>68.1</td>
<td>68.1</td>
</tr>
<tr>
<td>Survey average total scores</td>
<td>17.3</td>
<td>19.3</td>
</tr>
<tr>
<td>% affirm</td>
<td>78.4</td>
<td>87.5</td>
</tr>
</tbody>
</table>

The scale of role security showed an improvement of 9.1 percent. It reflected the participants’ perception of the adequacy of their clinical skills and knowledge for handling problem drinkers as well as how competent they are in caring for such patients.
Table III

Affirmative Answers to Therapeutic Commitment Survey Questions Pre and Post-Education Intervention

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-Education</th>
<th>Post-Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n affirm</td>
<td>% affirm</td>
</tr>
<tr>
<td>I feel I do not have much to be proud of when working with drinkers</td>
<td>11</td>
<td>50</td>
</tr>
<tr>
<td>All in all I am inclined to feel I am a failure with drinkers</td>
<td>17</td>
<td>77.3</td>
</tr>
<tr>
<td>I want to work with drinkers</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td>Pessimism is the most realistic attitude to take towards drinkers</td>
<td>15</td>
<td>68.2</td>
</tr>
<tr>
<td>In general, it is rewarding to work with drinkers</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>In general I like drinkers</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>Survey average total scores</td>
<td>8.7</td>
<td>39.5</td>
</tr>
</tbody>
</table>

The scale of therapeutic commitment showed an improvement of 10.5 percent. It reflected the degree to which an individual seeks to engage a drinker in treatment or therapy and the extent to which they find such work rewarding both at a professional and personal level.
Table IV

*General Knowledge Questions Correctly Answered Pre- and Post-Education Intervention*

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-Education Intervention</th>
<th>Post-Education Intervention</th>
<th>% Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n Correct</td>
<td>% Correct</td>
<td>n Correct</td>
</tr>
<tr>
<td>14</td>
<td>19</td>
<td>86.36</td>
<td>21</td>
</tr>
<tr>
<td>15</td>
<td>8</td>
<td>36.36</td>
<td>17</td>
</tr>
<tr>
<td>16</td>
<td>11</td>
<td>50.00</td>
<td>9</td>
</tr>
<tr>
<td>17</td>
<td>11</td>
<td>50.00</td>
<td>21</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>18.18</td>
<td>20</td>
</tr>
<tr>
<td>19</td>
<td>22</td>
<td>100.00</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>4.54</td>
<td>8</td>
</tr>
<tr>
<td>21</td>
<td>9</td>
<td>40.90</td>
<td>14</td>
</tr>
<tr>
<td>22</td>
<td>3</td>
<td>13.63</td>
<td>6</td>
</tr>
<tr>
<td>23</td>
<td>21</td>
<td>95.45</td>
<td>19</td>
</tr>
<tr>
<td>24</td>
<td>14</td>
<td>63.63</td>
<td>19</td>
</tr>
<tr>
<td>25</td>
<td>6</td>
<td>27.27</td>
<td>16</td>
</tr>
<tr>
<td>26</td>
<td>11</td>
<td>50.00</td>
<td>11</td>
</tr>
<tr>
<td>27</td>
<td>12</td>
<td>54.54</td>
<td>19</td>
</tr>
<tr>
<td>28</td>
<td>22</td>
<td>100.00</td>
<td>22</td>
</tr>
<tr>
<td>29</td>
<td>7</td>
<td>31.81</td>
<td>10</td>
</tr>
<tr>
<td>30</td>
<td>4</td>
<td>18.18</td>
<td>10</td>
</tr>
<tr>
<td>Average</td>
<td>10.9</td>
<td>49.46</td>
<td>15.4</td>
</tr>
</tbody>
</table>

An improvement of 20.6 percent was seen in general knowledge.

**Discussion**

**Implementation and Sustainability**

The alcohol educational program was eagerly accepted and supported by the executive team members of the organization. It introduced evidenced based research into everyday nursing practice and promoted continuous quality improvement. The interest and importance of this initiative justified the investment in this project. The potential cost savings, through the widespread implementation on the additional Medical-Surgical units within the organization, has generated extreme interest from members of the executive team. The positive financial impact this initiative would have on the organization through a reduction in the length of stay and costs
incurred through consumed resources, ensures its sustainability. The educational program compliments the organizations current efforts to mitigate expenses in this ever changing health care environment. As such, the organization’s nursing education department is seeking to incorporate this information into their annual competency modules for their nursing employees; ensuring sustainability and enhancing its ability to expand. Furthermore, the nursing staff has recognized the importance of this quality improvement initiative which provides the added benefits of improved knowledge, satisfaction and patient outcomes. This further strengthens the notion of expansion and sustainability of this Quality Improvement Project.

Conclusion

This study confirmed that registered nurses’ knowledge, satisfaction and attitudes in caring for patients undergoing alcohol withdrawal improved with the implementation of an alcohol education program. The nurses’ perception of the adequacy of their clinical skills and knowledge in caring for patients dealing with alcohol related problems increased as a result of the education provided. Their ability to engage an alcoholic patient and feel satisfaction, on a professional as well as a personal level, improved as a result of the educational sessions.

The combined scores of Role Security and Therapeutic Commitment are linked to an inclusive attitude score. Upon reviewing the average cumulative percentage scores of Role Security and Therapeutic Commitment, the project has demonstrated a combined increase of about 20 percentage points after providing education to the participants. This analysis indicates a more positive attitude in working with alcoholics has developed.

This Quality Improvement initiative confirmed the notion of improved satisfaction and attitudes of nurses, caring for patients struggling with alcoholism, through the provision of specific education geared towards improving knowledge on alcoholism. The improvement seen
was not substantial but nevertheless it showed a positive outcome that provides a unique perspective and insight towards the value of an alcohol educational program. Possible solutions to further strengthen positive outcomes in the future could entail the use of actual case studies during educational sessions that involve managing and treating alcoholic patients or the attendance, by nurses, at educational conferences where resources of health professionals with experience in managing such patients may perhaps be encountered. An additional opportunity for improved outcomes could involve the use of an interdisciplinary Grand Rounds format, in which medical-surgical nurses would attend with expectations of acquiring additional knowledge on topics of alcoholism and alcohol withdrawal. Hospitals should consider the development of comprehensive education and training programs that include clinical experiences that focus on alcoholism (Tran, Stone, Fernandez, Griffiths, & Johnson, 2009).

This project was originally designed to be a pretest and posttest with the posttest administered a month after completion of the educational sessions. The number of the participants, although small, involved 100 percent of the nurses working on the unit. As such, regional differences in the nurses’ attitudes, satisfaction and knowledge of alcoholism and alcohol withdrawal were not studied and would need to be examined further (Tran, Stone, Fernandez, Griffiths, & Johnson, 2009).

In conclusion, providing an educational program for nurses working on medical-surgical floors demonstrated an improvement in the knowledge, satisfaction and attitudes of these health care professionals when caring for this particular patient population. Although the improvement was not considerably large, the results were promising. They indicated the need for consistent comprehensive training and educational intervention in order to provide the nurses with the skills and knowledge necessary to adequately manage and care for patients dealing with alcohol related
problems (Tran, Stone, Fernandez, Griffiths, & Johnson, 2009). Raising the nurses’ awareness of their own views, through empowerment with pertinent knowledge, would facilitate a positive change in satisfaction and attitudes.
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http://dx.doi.org/10.1111/j.1744-6163.2009.00213.x


Appendix A

Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)

<table>
<thead>
<tr>
<th>Patient:</th>
<th>Date:</th>
<th>Time: (24 hour clock, midnight = 00:00)</th>
</tr>
</thead>
</table>

| Pulse or heart rate, taken for one minute: | Blood pressure: |

<table>
<thead>
<tr>
<th>NAUSEA AND VOMITING</th>
<th>TACTILE DISTURBANCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask &quot;Do you feel sick to your stomach? Have you vomited?&quot; Observation.</td>
<td>Ask &quot;Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?&quot; Observation.</td>
</tr>
<tr>
<td>0 no nausea and no vomiting</td>
<td>0 none</td>
</tr>
<tr>
<td>1 mild nausea with no vomiting</td>
<td>1 very mild itching, pins and needles, burning or numbness</td>
</tr>
<tr>
<td>2</td>
<td>2 mild itching, pins and needles, burning or numbness</td>
</tr>
<tr>
<td>3</td>
<td>3 moderate itching, pins and needles, burning or numbness</td>
</tr>
<tr>
<td>4 intermittent nausea with dry heaves</td>
<td>4 moderately severe hallucinations</td>
</tr>
<tr>
<td>5</td>
<td>5 severe hallucinations</td>
</tr>
<tr>
<td>6</td>
<td>6 extremely severe hallucinations</td>
</tr>
<tr>
<td>7 constant nausea, frequent dry heaves and vomiting</td>
<td>7 continuous hallucinations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TREMOR</th>
<th>AUDITORY DISTURBANCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arms extended and fingers spread apart. Observation.</td>
<td>Ask &quot;Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?&quot; Observation.</td>
</tr>
<tr>
<td>0 no tremor</td>
<td>0 not present</td>
</tr>
<tr>
<td>1 not visible, but can be felt fingertip to fingertip</td>
<td>1 very mild harshness or ability to frighten</td>
</tr>
<tr>
<td>2</td>
<td>2 mild harshness or ability to frighten</td>
</tr>
<tr>
<td>3</td>
<td>3 moderate harshness or ability to frighten</td>
</tr>
<tr>
<td>4 moderate, with patient's arms extended</td>
<td>4 moderately severe hallucinations</td>
</tr>
<tr>
<td>5</td>
<td>5 severe hallucinations</td>
</tr>
<tr>
<td>6</td>
<td>6 extremely severe hallucinations</td>
</tr>
<tr>
<td>7 severe, even with arms not extended</td>
<td>7 continuous hallucinations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAROXYSMAL SWEATS</th>
<th>VISUAL DISTURBANCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation.</td>
<td>Ask &quot;Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?&quot; Observation.</td>
</tr>
<tr>
<td>0 no sweat visible</td>
<td>0 not present</td>
</tr>
<tr>
<td>1 barely perceptible sweating, palms moist</td>
<td>1 very mild sensitivity</td>
</tr>
<tr>
<td>2</td>
<td>2 mild sensitivity</td>
</tr>
<tr>
<td>3</td>
<td>3 moderate sensitivity</td>
</tr>
<tr>
<td>4 beads of sweat obvious on forehead</td>
<td>4 moderately severe hallucinations</td>
</tr>
<tr>
<td>5</td>
<td>5 severe hallucinations</td>
</tr>
<tr>
<td>6</td>
<td>6 extremely severe hallucinations</td>
</tr>
<tr>
<td>7 drenching sweats</td>
<td>7 continuous hallucinations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANXIETY</th>
<th>HEADACHE, FULLNESS IN HEAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask &quot;Do you feel nervous?&quot; Observation.</td>
<td>Ask &quot;Does your head feel different? Does it feel like there is a band around your head?&quot; Do not rate for dizziness or lightheadedness. Otherwise, rate severity.</td>
</tr>
<tr>
<td>0 no anxiety, at ease</td>
<td>0 not present</td>
</tr>
<tr>
<td>1 mild anxious</td>
<td>1 very mild</td>
</tr>
<tr>
<td>2</td>
<td>2 mild</td>
</tr>
<tr>
<td>3</td>
<td>3 moderate</td>
</tr>
<tr>
<td>4 moderately anxious, or guarded, so anxiety is inferred</td>
<td>4 moderately severe</td>
</tr>
<tr>
<td>5</td>
<td>5 severe</td>
</tr>
<tr>
<td>6</td>
<td>6 very severe</td>
</tr>
<tr>
<td>7 equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions</td>
<td>7 extremely severe</td>
</tr>
</tbody>
</table>
AGITATION – Observation.
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

ORIENTATION AND CLOUDING OFSENSORIUM – Ask
"What day is this? Where are you? Who am I?"
0 oriented and can do serial additions
1 cannot do serial additions or is uncertain about date
2 disoriented for date by no more than 2 calendar days
3 disoriented for date by more than 2 calendar days
4 disoriented for place or person

Total CIWA-Ar Score ______
Rater's Initials ______
Maximum Possible Score 67

The CIWA-Ar is not copyrighted and may be reproduced freely. This assessment for monitoring withdrawal symptoms requires approximately 5 minutes to administer. The maximum score is 67 (see instrument). Patients scoring less than 10 do not usually need additional medication for withdrawal.

Appendix B

IRB Letter

MEMORANDUM

DATE: June 9, 2017

TO: Luis D Medina, MSN, RN-BC, FNP

RE: IRB EXEMPTION for 2017-05-17 - "The Effects of an Alcohol Education Program on Improving the Knowledge, Attitudes and Satisfaction of Registered Nurses Caring for Patients Undergoing Alcohol Withdrawal."

On June 8, 2017, the Chair of the Maimonides Medical Center (MMC) IRB determined that the above-referenced project met the regulatory guidelines set forth in federal regulations 45 CFR 46.101:

- exemption category 1 [research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods]. This exemption does not apply to research involving prisoners.
- exemption category 2 [research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human research participants can be identified, directly or through identifiers linked to the participants; and (ii) any disclosure of the human research participants' responses outside the research could reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, or reputation]. When the research involves survey or interview procedures or observation of public behavior, the exemption does not apply to research with children, except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed. This exemption does not apply to research involving prisoners.

The following documents were reviewed:
- CIWA-Ar Scale.pdf (Miscellaneous)
- ETOH and ETOH Withdrawal SurveyMonkey .pdf (Questionnaires or Survey(s))
- Luis O. Medina CV 2017.docx (CV/Resume/BioSketch)
- Invitation Letter with Link - for Registered Nurses.docx (Appendices)
- IRB Application (xForm)

Amendments: If any of the investigators change or if there are any changes to your study’s research design that may result in the study requiring a higher level of review (e.g., Expedited or Full Board) the change must be reviewed and approved by the IRB before initiating any changes. If you have any questions about whether a modification would require IRB review and approval, please contact the IRB.

If at any time, after IRB approval of exempt research, one or more financial interests or leadership roles of any of the investigators (or their immediate family) on the study changes in any material way, the investigator must promptly notify the IRB.

Audits: If an external audit is conducted, the PI must promptly report the findings in writing to the IRB.

If you have any questions, please feel free to contact Leigh Travis at Letravis@maimonidesmed.org, or you may direct questions to the IRB e-mail box at IRB@maimonidesmed.org (*IRB* in global directory).
Dear Registered Nurse,

You are invited to participate in a performance improvement initiative that will examine the effects of implementing an alcohol education program on improving the knowledge, attitudes and satisfaction of Registered Nurses who provide care to patients undergoing alcohol withdrawal. The purpose of the study is to understand our hospital culture, the importance and influence of providing education on alcoholism and the perspectives of the nursing staff on caring for patients undergoing withdrawal.

You should understand that your participation in this study is completely voluntary. It will involve a survey of approximately 10 to 15 minutes in duration. Further, you may decide to withdraw or terminate your participation from this study at any time, for whatever reason and without any negative consequences. You have the right to have any questions answered before, during or after the study. All information you provide is considered completely confidential and anonymous. Neither your name, email nor the IP address of the computer you utilize to fill out the survey will be collected. All data collected during this study will be kept under lock and key accessible only by the primary investigator or on a computer network drive under an assigned number and password protected. There are no known or anticipated risks to you as a participant in this study.

I hope that the results of this performance improvement initiative will be of benefit to our organization and improve the quality of care provided to our patients. I look forward to speaking with you and thank you in advance for your assistance in this project.

Sincerely,

Luis Medina, MSN, RNBC, FNP
* 1. What is your age?
   - 18 to 24
   - 25 to 34
   - 35 to 44
   - 45 to 54
   - 55 to 64
   - 65 to 74
   - 75 or older

* 2. Are you male or female?
   - Female
   - Male

* 3. What is your ethnicity?
   - American Indian or Alaskan Native
   - Asian or Pacific Islander
   - Black or African American
   - Hispanic or Latino
   - White/Caucasian
   - Other

* 4. I feel I know enough about causes of drinking problems to carry out my role when working with drinkers
   - Strongly agree
   - Quite strongly agree
   - Agree
   - Neither agree or disagree
   - Disagree
   - Quite strongly disagree
   - Strongly disagree
5. I feel I can appropriately advise my patients about drinking and its effects

- Strongly agree
- Quite strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Quite strongly disagree
- Strongly disagree

6. I feel I do not have much to be proud of when working with drinkers

- Strongly agree
- Quite strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Quite strongly disagree
- Strongly disagree

7. All in all I am inclined to feel I am a failure with drinkers

- Strongly agree
- Quite strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Quite strongly disagree
- Strongly disagree
* 8. I want to work with drinkers
   ○ Strongly agree
   ○ Quite strongly agree
   ○ Agree
   ○ Neither agree or disagree
   ○ Disagree
   ○ Quite strongly disagree
   ○ Strongly disagree

* 9. Pessimism is the most realistic attitude to take towards drinkers
   ○ Strongly agree
   ○ Quite strongly agree
   ○ Agree
   ○ Neither agree or disagree
   ○ Disagree
   ○ Quite strongly disagree
   ○ Strongly disagree

* 10. I feel I have the right to ask patients questions about their drinking when necessary
   ○ Strongly agree
   ○ Quite strongly agree
   ○ Agree
   ○ Neither agree or disagree
   ○ Disagree
   ○ Quite strongly disagree
   ○ Strongly disagree
* 11. I feel that my patients believe I have the right to ask them questions about drinking when necessary

- Strongly agree
- Quite strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Quite strongly disagree
- Strongly disagree

* 12. In general, it is rewarding to work with drinkers

- Strongly agree
- Quite strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Quite strongly disagree
- Strongly disagree

* 13. In general I like drinkers

- Strongly agree
- Quite strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Quite strongly disagree
- Strongly disagree
* 14. Alcoholism is a disease whose sign and symptoms include:
   - craving for alcohol
   - difficulty or inability to stop drinking
   - physical dependence
   - alcohol intolerance
   - both physical dependence and alcohol intolerance
   - all of the above

* 15. Manifestations of alcohol withdrawal syndrome include:
   - improved concentration
   - bradycardia
   - muscle relaxation
   - diarrhea
   - both bradycardia and muscle relaxation
   - all of the above

* 16. In acutely ill medical patients, alcohol withdrawal symptoms may be diagnosed as another serious condition, such as:
   - pneumonia
   - sepsis
   - stroke
   - hypoglycemia
   - sepsis or hypoglycemia
   - all of the above
* 17. In the United States, the legal blood alcohol content (BAC) for adult drivers is:

- 0.02
- 0.04
- 0.06
- 0.08
- 0.10

* 18. If a patient has abruptly stopped drinking in the past few days after continuous, heavy alcohol use, clinicians should use the:

- CAGE
- AUDIT
- CIWA-Ar
- AUDIT-C
- FAST
- ACE

* 19. During the initial active phase of alcohol withdrawal syndrome, the main goal of nursing care is to provide the patient with:

- continued monitoring and maintenance of hydration status
- continued monitoring of patient safety and comfort
- continued monitoring of vital signs
- timely administration of ordered medications
- all of the above

* 20. Alcohol is considered a mood-altering stimulant

- True
- False
* 21. Barbituates are the mainstay of therapy and drugs of choice when treating patients undergoing alcohol withdrawal

   ○ True
   ○ False

* 22. Alcohol withdrawal results from the decreased neurotransmitter excitability of the central nervous system

   ○ True
   ○ False

* 23. Alcoholism can lead to a condition called Wernicke syndrome, which develops as a result of what type of deficiency:

   ○ folic acid
   ○ pyridoxine
   ○ cyanocobalamin
   ○ thiamine
   ○ riboflavin

* 24. Which are the early warning signs of alcohol withdrawal:

   ○ nausea, nervousness, tachycardia and elevated blood pressure
   ○ nervousness, elevated blood pressure, hallucinations and disorientation
   ○ severe nervousness, severe hallucinations, insomnia and severe seizures
   ○ nausea, nervousness, bradycardia and decreased blood pressure.

* 25. Manifestations of alcohol withdrawal syndrome may occur within how many hours of the last drink

   ○ 1 to 3 hours
   ○ 3 to 5 hours
   ○ 5 to 8 hours
   ○ 8 to 11 hours
* 26. Moderate to severe alcohol withdrawal may occur within how many hours of the last drink

- 24 hours
- 24 to 36 hours
- 24 to 48 hours
- 24 to 72 hours

* 27. Stage three of alcohol withdrawal, delirium tremens, involves all of the following except:

- drenching sweats
- delirium
- bradycardia
- fever
- tremors

* 28. Risk factors for alcoholism are:

- steady drinking over time
- age and family history
- mental health problems
- social factors
- age, family history and social factors
- all of the above

* 29. The patient with impaired liver function is at risk for over sedation. Those patients would benefit from Librium or Valium rather than Lorazepam when receiving treatment.

- True
- False

* 30. The treatment goal for patients undergoing alcohol withdrawal with delirium tremens is to achieve a calm and sedated state.

- True
- False
Appendix D

Program Budget

<table>
<thead>
<tr>
<th>Resources</th>
<th>Estimated Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated: 350 hours at $60/hr. (personal)</td>
<td>$21,000 – Actual cost $0</td>
</tr>
<tr>
<td>Estimated: 30 hours at $40/hr. (IT personnel)</td>
<td>$1,200 – Actual cost $0</td>
</tr>
<tr>
<td>Educational material: handouts</td>
<td>$50</td>
</tr>
<tr>
<td>Marketing: flyers</td>
<td>$75</td>
</tr>
<tr>
<td>Refreshments and meals for attendees</td>
<td>$250</td>
</tr>
<tr>
<td>Travel expense: gas, tolls and parking x 12</td>
<td>$650</td>
</tr>
<tr>
<td>weeks</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$1025</td>
</tr>
</tbody>
</table>
Appendix E

Sample of Power Point Slides

- Alcoholism
  - Estimated 88,000 individuals (62,000 men and 26,000 female) die each year from alcohol (ETOH) related sequela.
  - In 2015, about 15.1 million adults age 18 and older had alcohol use disorder.
  - Of those, 9.8 million were men and 5.3 million were women (www.niaaa.nih.gov).

- Alcoholism
  - Researchers identified a link between negative attitudes and insufficient knowledge of alcohol, alcoholism and associated problems as the main reason for the underlying deficiency in the nurses’ competence in identifying and treating patients afflicted with alcoholism.
  - The reason for these preferences, when caring for patients with ETOH problems, have been attributed to “… many factors, such as nurses’ personal characteristics, their beliefs on the causes and symptoms of alcohol abuse problems, their beliefs on their role in the care of such a patient and their own pattern of alcohol use” (Vargas, 2013, p. 124).
Alcoholism

• Patients seeking treatment for ETOH abuse or withdrawal often generates a range of negative attitudes and inaccurate stereotypes in nurses. This can be attributed to the lack of knowledge in the approach and interventions provided to these patients (Vargas, 2013).
• These views and labels are encountered in various cultures. Including cultures in the hospital environment where attitudes and stigmas are considered unique to this setting.

Belief Models

• The moral model – claims the alcoholics’ addiction should be blamed on their deficient character and human weakness.
  • Sin or crime
  • Personal Flaw/Weakness
  • Failure in personal responsibility (control)
• The disease model – opponents of the moral model suggest alcoholism is a disease that results from an impairment of normal neurochemical or behavioral processes (Niedermayer, 2017).
  • Genetic or Biological factors
Benzodiazepines

- The main drug therapy treatment of choice has been the benzodiazepines.
- Used to replace the ETOH depressant effects on the CNS and counteract the autonomic hyperactivity encountered with ETOH withdrawal.
- Benzodiazepine selection depends on the form and half-life of the drug. In addition, patient clinical factors such as their age and previous seizure activity play a role in drug selection.
- The patients’ liver function must also be considered when choosing the type of medication, due to it being the site of ETOH metabolism.
- Drugs of choice are Chlordiazepoxide (Librium), Clonazepam (Klonopin) and Diazepam (Valium). Long acting benzodiazepines such as Valium and Librium have extended half-lives and demonstrate they are the best course of treatment without the chance of rebound symptoms.
- Short-acting benzodiazepines, such as Lorazepam (Ativan) are another option and the preferred drug of choice for patients with impaired liver function due to the possibility of over sedation (McKay, Korana, & Axen, 2004).

Alcoholism

- Fixed dose scheduling is the common treatment method.
- Symptom-triggered approach is the recommended treatment option. Addresses the possibility for under or over medicating through the matching of real-time symptom assessments with benzodiazepine dosage to symptom severity.
- The amount of benzodiazepine administered is based on the Clinical Institute Withdrawal Assessment-Alcohol revised (CIWA-Ar) scoring tool (Jaeger, Lohr, & Pankratz 2001).
- The CIWA-Ar scale is the current recommended tool proven to increase consistency in ETOH withdrawal management. It alerts the staff earlier to emergency symptoms and aid in earlier diagnosis and treatment.
- The CIWA-Ar scale involves scoring the patient on withdrawal signs and symptoms that include nausea/vomiting, tremors, paroxysmal sweats, anxiety, agitation, tactile disturbances, visual disturbances, headache/fullness in the head and altered level of consciousness.

(L Medina, personal communication, June 2017)
Appendix F

Short Alcohol and Alcohol Problems Perception Questionnaire (SAAPQ)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>I feel I know enough about causes of drinking problems to carry out my role when working with drinkers</td>
<td></td>
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<td></td>
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<tr>
<td>2</td>
<td>I feel I can appropriately advise my patients about drinking and its effects</td>
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<td></td>
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<tr>
<td>3</td>
<td>I feel I do not have much to be proud of when working with drinkers</td>
<td></td>
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<tr>
<td>4</td>
<td>All in all I am inclined to feel I am a failure with drinkers</td>
<td></td>
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<tr>
<td>5</td>
<td>I want to work with drinkers</td>
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<tr>
<td>6</td>
<td>Pessimism is the most realistic attitude to take towards drinkers</td>
<td></td>
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<td>7</td>
<td>I feel I have the right to ask patients questions about their drinking when necessary</td>
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<tr>
<td>8</td>
<td>I feel that my patients believe I have the right to ask them questions about drinking when necessary</td>
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<tr>
<td>9</td>
<td>In general, it is rewarding to work with drinkers</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>10</td>
<td>In general I like drinkers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Items on the SAAPQ were summed in pairs with each one measuring a subscale:

Adequacy (statements 1 and 2)
Self – Esteem (statements 3 and 4)
Motivations (statements 5 and 6)
Legitimacy (statements 7 and 8)
Satisfaction (statements 9 and 10)