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Implementation of Clinical Institute Withdrawal Assessment: Alcohol Revised (CIWA-Ar)

Education Program in a Crisis Stabilization Unit

A Clinical Scholarly Project by

Amanda Lea Dehart

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April 2023

Acknowledgments

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my grandson, Kaleb Charles, you are the reason my heart beats, you have sacrificed the time that you were used to spend with Ama so that she could travel on this journey. Along the way, you have grown into such an amazing young man and made me so proud of you. I love you for loving and supporting me while I finished school. I cannot thank my family enough for everything they have given me while we have traveled this road together, but I am so grateful for each and every one of them!

ABSTRACT

Background: At this time the crisis stabilization Units do not currently utilize the Clinical Institute Withdrawal Assessment: Alcohol Revised tool with patients who may experience Alcohol Withdrawal Syndrome. Patients with alcohol use disorders have a high comorbidity rate with psychiatric disorders (Butterfield, et al, 2020). The Clinical Institute Withdrawal Assessment: Alcohol Revised or CIWA-Ar is currently the most widely used assessment tool in the psychiatric setting when assessing patients who may be experiencing Alcohol Withdrawal Syndrome (Pribék, et al, 2021) .

Purpose of Project: The purpose of this project is to measure pre and post -education knowledge of the registered and licensed vocational nurses in the crisis stabilization units prior to implementing the Clinical Institute Withdrawal Assessment: Alcohol Revised in the Crisis Stabilization Unit. According to an article written by Melkonian, et al, “Education about the use of the CIWA-Ar is an important part of implementation” (2019).

EBP Model/Frameworks: The evidence-based practice model that has been chosen for this project has been used to implement many front-line projects over the years within the Johns Hopkins Hospital organization, the Johns Hopkins nursing evidence-based practice model. This model has a long-standing history as it has been utilized with front-line nursing EBP projects in the hospital setting.

Evidenced Based Interventions: The interventions are the creation of a Clinical Institute Withdrawal Assessment: Alcohol Revised pre and post-knowledge test that will be implemented and based on the educational presentation that is given to the registered and licensed vocational nurses at the Crisis Stabilization Units.

Results: The results of the pre -knowledge test show that nursing staff had the basic knowledge of the CIWA-Ar but were not as confident to utilize the tool on a regular basis to assess alcohol withdrawal symptoms in the crisis stabilization unit. The scores on the post-knowledge test showed that the majority of the nurse has a slight improvement in their evidence-based knowledge of the CIWA-Ar as well as in their confidence to utilize the CIWA-Ar tool to assess alcohol withdrawal symptoms in the crisis stabilization unit.

Evaluation: By implementing pre and post-knowledge testing with an educational presentation to register and licensed vocational nurses at the Crisis Stabilization Units, allows for clear guidelines for said staff to assess patients and administer treatment based upon guidelines and orders given by providers based upon the Clinical Institute Withdrawal Assessment: Alcohol Revised score of a patient. This will also allow access to care for some who do not have access to a hospital for the management of [mild to moderate] AWS (Moore, TA, 2020).

Keywords: Alcohol Use Disorder, alcohol withdrawal, nursing, education,
Crisis stabilization unit

Introduction

Alcohol use disorder or AUD is the number one substance use disorder in the United States. During the year 2020, nearly 69.6 percent of individuals residing in the United States, aged 21 and above (equivalent to approximately 166.6 million people), acknowledged consuming alcohol within the previous year. Similarly, 29.7 percent indicated that individuals between the ages of 12 and 20, who were below the legal drinking age, also reported consuming alcohol during that period (SAMHSA, 2023). Alcohol Use Disorder is linked to various negative consequences encompassing a range of health issues such as elevated blood pressure, cancer, and various diseases. It also contributes to mental health disparities, instances of violence and crime, both fatal and non-fatal motor vehicle accidents and in extreme cases, even loss of life.

According to the World Health Organization (WHO) in 2018, alcohol was identified as a contributing factor in over 200 health conditions and diseases, including but not limited to liver diseases, road accidents, acts of violence, various forms of cancer, cardiovascular diseases, suicides, tuberculosis, and HIV/AIDS.

Financial Burden of AUD

In the year 2010, the United States incurred a cost of \$249 billion due to alcohol misuse (NIH, 2023). Binge drinking alone accounted for three-quarters of the overall expenses associated with alcohol misuse (NIH, 2023). The financial burden of AUD is not just on the health care system. It is on the criminal justice system, the car insurance companies, and the employers who provide employment to the people who have AUD. Alcohol Use Disorder also creates financial burden within the household. Approximately 10.5% (7.5 million) of U.S. children ages 17 and younger live with a parent who has alcohol use disorder, according to a 2017 report by the Substance Abuse and Mental Health Services Administration (SAMHSA).

The average cost of excessive drinking is \$940.00 per capita in California. This additional monthly expense can lead to instability within the home with finances due to unstable employment or income, which can lead to food, clothing, and shelter insecurity as well as all of the utilities not functioning on a regular basis.

Alcohol consumption has been demonstrated to significantly impact mortality rates worldwide. In 2016, according to the World Health Organization (WHO), Alcohol Use Disorder (AUD) ranked as the seventh leading risk factor for premature death and disability on a global scale (NIAAA - Global Burden, 2023). Furthermore, in the same year, AUD was responsible for 14 percent of deaths among individuals aged 20-39 (NIAAA - Global Burden, 2023). In 2019, alcohol use accounted for the loss of 2.07 million male lives and 374,000 female lives worldwide (NIAAA - Global Burden, 2023). The cost of caring for patients with AUD varies on where they are cared for. According to SAMSHA, in 2010 the total medical expenses related alcohol use in the United States was \$28 billion.

Assessment of Phenomena (Problem Statement)

Alcohol use disorders (AUDs) are prevalent issues on a global scale. Alcohol, being the most widely abused substance globally, has resulted in significant social and economic consequences. In 1996, 51% of individuals aged 12 or above in the United States consumed alcohol in the past month. Approximately two-thirds of American men and half of American women engage in drinking, although the gender disparity is gradually diminishing (Chang, P. H., & Steinberg, M. B., 2001). Roughly 50% of adults diagnosed with AUD are likely to encounter AWS, and a substantial number of these individuals will seek medical attention (Wolf, C., et al., 2020). AWS alone poses significant risks to health and life, and it can further complicate the management of concurrent medical conditions or injuries. Although benzodiazepines have

traditionally been the primary treatment for AWS, innovative methods have gained more evidence and acceptance. Given their responsibility as the initial point of contact for patients, emergency department healthcare providers should also possess knowledge about various levels of care and behavioral interventions accessible to individuals with AUD.

Alcohol-Related Disorders encompass multiple diagnoses with different severities of use and different stages of remission, according to the DSM 5-TR (APA, 2022). AUD is defined as a problematic pattern of alcohol use leading to clinically significant impairment or distress, manifested by at least two of the eleven criteria occurring in the past twelve months (APA, 2022). Alcohol withdrawal syndrome (AWS) is a prevalent and potentially life-threatening complication that arises from alcohol use disorder (AUD). AUD, a significant contributor to global mortality rates, often leads to the development of AWS in many affected patients (Wolf, et al. , 2020). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR), alcohol withdrawal is characterized by the presence of two or more distinct symptoms that arise within a few hours to several days after a significant reduction in alcohol consumption following a prolonged period of heavy drinking. These symptoms encompass nausea or vomiting, heightened autonomic activity, insomnia, increased anxiety and restlessness, tremors, changes in perception, and seizures. It is important to note that alcohol withdrawal occurs due to a relative decrease in the level of alcohol in the bloodstream rather than complete abstinence. Consequently, an individual may experience pronounced withdrawal symptoms even when their blood alcohol levels are still relatively high (Elliott, D. Y. 2019). Individuals diagnosed with AUD who are at risk for AWS are those with prolonged and heavy drinking and they tend to experience only minor, uncomplicated withdrawal symptoms. The uncomplicated symptoms begin as early as 6 hours after an acute reduction in alcohol use, roughly 24 – 48 hours, and

dissipate after a week of sobriety. A small portion of this group will develop a more severe syndrome that includes hallucinations, seizures, delirium, and /or more severe autonomic hyperactivity (Wolf, C., et al., 2020).

In the management of patients encountering withdrawal symptoms from alcohol, ambulatory detoxification plays a crucial role. It is an essential component aimed at ensuring the comfort and safety of each patient. By possessing knowledge of the potential indicators and symptoms of intoxication and withdrawal, healthcare providers can establish the most suitable treatment protocol and setting for the patient (Moore, T. A., et al., 2020). Ambulatory detoxification presents an attractive choice for numerous patients and aids in preserving the scarce inpatient resources available in many institutions, which are often allocated to individuals with more severe withdrawal manifestations (Moore, T.A., et al., 2020). In the setting of the crisis stabilization unit (CSU), the methods utilized are different due to the restrictions of the setting as it does not allow for the utilization of intravenous solutions or medications, thus limiting how medications can be delivered. The CSU is also limited by the types of medications it can utilize as it is not a licensed medical facility for detoxification.

After an AWS diagnosis is made, the administration of benzodiazepines based on symptom triggers remains the predominant treatment approach. However, this may not be suitable for patients with notable medical or psychiatric comorbidities, or those who are about to be discharged (Wolf, et al., 2020). The Clinical Institute Withdrawal Assessment-Alcohol Revised (CIWA-Ar) is a tool utilized to measure the severity of alcohol withdrawal syndrome (AWS) and guide the administration of benzodiazepine treatment for alcohol withdrawal while in the crisis stabilization unit. Benzodiazepines have traditionally been the primary choice for treating alcohol withdrawal symptoms. These medications work by acting as agonists at GABAA

receptors, making them cross-tolerant to alcohol (Wolf, C., et al, 2020). By increasing the frequency of GABAA receptor openings and enhancing the inhibitory effects of GABA, benzodiazepines play a crucial role in managing alcohol withdrawal (Wolf, C., et al, 2020). Benzodiazepines effectively reduce the severity of symptoms, minimize the risk of delirium, and decrease the frequency and duration of seizures commonly associated with AWS (Wolf, C., et al, 2020). The primary objectives of initiating treatment with benzodiazepines include managing alcohol withdrawal symptoms, alleviating autonomic hyperactivity (maintaining temperature, heart rate, and blood pressure within near-normal ranges), and preventing seizures (Elliott, D. Y. 2019). The desired level of sedation is for the patient to be comfortably drowsy but still responsive and arousable. After the administration of the initial loading dose, additional doses of benzodiazepines can be administered using either a symptom-triggered or fixed-schedule protocol (Wolf, C., et al, 2020). In symptom-triggered protocols, like that used in the crisis stabilization unit, the decision to administer further doses is typically guided by the patient's vital signs, level of agitation, or CIWA-Ar scores, which are reassessed every 1-2 hours (Wolf, C., et al, 2020). On the other hand, fixed-schedule protocols involve the gradual reduction of benzodiazepine doses over several days. While benzodiazepines continue to be considered the most effective treatment for Alcohol Withdrawal Syndrome (AWS), their use is not without potential risks. The adverse effects associated with benzodiazepines have been extensively documented and include the increased risk of mortality in cases of overdose, especially when combined with alcohol or opioids. Other documented risks include the potential for abuse and addiction, psychomotor slowing leading to an increased risk of falls, as well as cognitive impairment (Wolf, C., et al., 2020).

Historical and Scientific Perspective

The terms Alcoholism and Alcohol Abuse and Alcohol Dependence are no longer used, it has been replaced by more person-centered terms under the umbrella of Alcohol-Related Disorders - Alcohol Use Disorder. The term Alcohol Use Disorder is characterized by a pattern of problematic drinking. Problematic drinking can be described as a person who has had a few too many drinks and begins to talk very loudly or act extremely flirtatious. If a person in their friend group mentions their behavior they become defensive and angry, often walking away and continuing their behavior and even exaggerating it. What we thought in the past about how alcohol use disorder was a moral failing, although seen as more acceptable than drugs, has changed, and it is now known that it is a Brain Disorder that causes permanent changes in the brain and is genetic (SAMSHA, 2020). Lasting changes in the brain caused by alcohol misuse perpetuate AUD and make individuals vulnerable to relapse. The good news is that no matter how severe the problem may seem, evidence-based treatment with behavioral therapies, mutual-support groups, and medications can help people with AUD achieve and maintain recovery.

The statistics on alcohol use disorder are taken in a yearly survey, but due to COVID have not been taken since 2019. Alcohol misuse is defined as drinking in a manner, situation, amount, or frequency that could cause harm to the user or those around them. Alcohol use disorder (AUD) is characterized by an impaired ability to stop or control alcohol use despite adverse social, occupational, or health consequences. It is a spectrum disorder and can be mild, moderate, or severe. Considered a brain disorder, AUD can be mild, moderate, or severe. Lasting changes in the brain caused by alcohol misuse perpetuate AUD and make individuals vulnerable to relapse (SAMSHA, 2020). The good news is that no matter how intense the problem may

seem, evidence-based treatment with behavioral therapies, mutual-support groups, and medications can help people with AUD achieve and maintain recovery. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as a pattern that brings BAC levels to 0.08 g/dL or higher. This typically occurs after a woman consumes four or more drinks or a man consumes five or more drinks in about 2 hours. The Substance Abuse and Mental Health Services Administration (SAMHSA), which conducts the annual NSDUH, defines binge drinking as consuming five or more alcoholic drinks for males or four or more alcoholic drinks for females on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least one day in the past month. The Monitoring the Future (MTF) survey defines binge drinking as having five or more drinks in a row in the past two weeks.

A person's risk for developing AUD depends, in part, on how much, how often, and how quickly they consume alcohol. Alcohol misuse, which includes binge drinking and heavy alcohol use, over time increases the risk of AUD (NIH, NIAAA, 2022). Other factors also increase the risk of AUD, such as drinking at an early age. A recent national survey found that those aged 26 and older who began drinking before age 15 were more than five times as likely to report having AUD in the past year as those who waited until age 21 or later to begin drinking. The risk for females in this group is higher than that of males (NIH, NIAAA, 2022). Genetics and a family history of alcohol problems are other factors. Genetics play a role, with a heritability of approximately 60 percent; however, like other chronic health conditions, AUD risk is influenced by the interplay between a person's genes and environment. Parents' drinking patterns may also affect the likelihood of a child developing AUD someday. Other factors are mental health conditions and a history of trauma (NIH, NIAAA, 2022). A wide range of psychiatric conditions—including depression, post-traumatic stress disorder, and attention deficit

hyperactivity disorder—are comorbid with AUD and are associated with an increased risk of AUD. People with a history of childhood trauma are also vulnerable to AUD (NIH, NIAAA, 2022).

Incidence and Prevalence

According to the 2019 NSDUH, about 7.3 percent of adults ages 18 and older who had AUD in the past year received any treatment in the past year. This includes about 6.9 percent of males and 7.9 percent of females with past-year AUD in this age group. In addition, less than 4 percent of people with AUD were prescribed a medication approved by the U.S. Food and Drug Administration (FDA) to treat their disorder. This means that when a patient comes into the crisis stabilization unit, it may be the first source of treatment, diagnosis, and place to receive resources they have ever had. This could help raise awareness among other community members about AUD and the services offered at the crisis stabilization units in the San Diego County Region.

According to a survey conducted by SAMHSA, there are 7.2 million adults who have received Mental health services but have not received any treatment for substance use, the 17 million people with co-occurring diagnoses. This is significant for us because we are seeing many patients not diagnosed or receiving treatment come to the crisis stabilization units. Many patients have mental health and substance use disorders, and we may be the first place they receive care and treatment. As stated before around the 1980's, we were seeing a trend of worsening patient outcomes of patients who are coming to the units with alcohol withdrawal syndrome and there was not standard tool in place to use. Utilizing the CIWA-Ar from time of admission through their time in our CSU will increase positive outcomes for our patients.

Summary

Alcohol Use Disorder (AUD) is the predominant form of substance use disorder in the United States, affecting a significant number of individuals. In the year 2020, approximately 69.6 percent of individuals aged 21 and above (equivalent to around 166.6 million people) acknowledged consuming alcohol within the previous year. The impact of AUD extends beyond the healthcare system and includes financial burdens on the criminal justice system, car insurance companies, and employers who employ individuals with AUD. Additionally, AUD creates a financial strain within households.

Globally, alcohol consumption has been found to have a substantial impact on mortality rates. In 2016, the World Health Organization (WHO) reported that AUD ranked as the seventh leading risk factor for premature death and disability worldwide. AUD often leads to the development of Alcohol Withdrawal Syndrome (AWS) in affected patients, further contributing to the burden of global mortality rates.

Alcohol misuse is defined as consuming alcohol in a manner, amount, frequency, or situation that could potentially harm the individual or those around them. AUD is characterized by a diminished ability to control or stop alcohol use, despite experiencing negative social, occupational, or health consequences. It is considered a spectrum disorder, ranging from mild to severe. AUD is a brain disorder, with lasting changes in the brain resulting from alcohol misuse, perpetuating the disorder and making individuals susceptible to relapse.

The encouraging news is that evidence-based treatments, such as behavioral therapies, mutual-support groups, and medications, can assist individuals with AUD in achieving and sustaining recovery, regardless of the severity of the problem. However, the data from the 2019 National Survey on Drug Use and Health (NSDUH) reveals that only a small percentage of

individuals with AUD received treatment in the past year, and even fewer were prescribed FDA-approved medications specifically for their disorder.

This highlights the significance of crisis stabilization units, as they often become the first source of treatment, diagnosis, and resource provision for individuals seeking help. By raising awareness about AUD and the services offered at crisis stabilization units in the San Diego County Region, these units can play a crucial role in providing care and treatment to individuals who may not have previously been diagnosed or received treatment. According to a survey conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA), there are approximately 7.2 million adults who have received mental health services but have not received any treatment for substance use, as well as 17 million people with co-occurring diagnoses. This highlights the importance of crisis stabilization units in addressing the needs of patients with mental health and substance use disorders, potentially serving as their initial point of care and treatment.

Introduction to PICOT Question

The PICOT framework plays a crucial role in refining the focus of this DNP project and assisting in addressing clinical questions within a crisis stabilization unit. By utilizing the PICOT framework, this evidence-based practice project aims to enhance the education of the nursing staff and improve the outcomes of our patients by providing guidance and structure to the project's research question. This DNP project "Implementation of the CIWA:A(r) in a Crisis Stabilization Unit" is being implemented at a crisis stabilization unit in Oceanside, CA.

Project Problem Statement / PICOT:

P: In nursing staff who work in a Crisis Stabilization Unit

I: does providing pre and post-knowledge testing about the Clinical Institute Withdrawal Assessment: Alcohol Revised (CIWA:Ar)

C: with education on the Clinical Institute Withdrawal Assessment: Alcohol Revised (CIWA:Ar)

O: show an improved knowledge about the education on the Clinical Institute Withdrawal Assessment: Alcohol Revised (CIWA: Ar)

T: over the course of a month

Synthesis of Literature

The articles reviewed for this DNP project cover prevalence, economic burden, assessment, screening tools, diagnosis, treatment, management of alcohol use disorder, alcohol withdrawal syndrome, education of nursing and medical staff, and the use of the Clinical Institute Withdrawal Assessment-Alcohol Revised screening tool. Alcohol-Related Disorders are a significant mental and physical health condition that affects millions of people globally. The articles also review the costs between inpatient and outpatient treatment costs of treatment of alcohol withdrawal symptoms.

Alcohol use disorders are highly comorbid with other psychiatric disorders, with lifetime co-occurrence rates of 16.5% to 46.2%. Butterfield et al, discovered when treating patients with AWS that when they used symptom-triggered benzodiazepine dosing, they found a reduction from 30mg lorazepam for treatment as usual to 5mg lorazepam with the use of the CIWA-Ar. According to Mo et al., 74% of hospitals utilize a benzodiazepine-only treatment for mild AWS treatment and 54% for moderate AWS treatment utilize the CIWA: Ar protocol. In the article by Pribék et al. the usage of the full CIWA: Ar is the most reliable tool for managing AWS Along with reviewing the use of using adjudicate treatments to benzodiazepines to prevent benzodiazepine refractory. Moore states that ambulatory settings, such a crisis stabilization units,

allows access to care for some who do not have access to a hospital for the management of AWS. The article also gives a step-by-step layout for AWS management in an ambulatory setting. Melkonian et al (2019) state that education about the use of CIWA-Ar is an important part of the implementation process. Enhancing the competence of nurses can be achieved by implementing a structured educational program that includes training on reliably assessing withdrawal symptoms using the CIWA-Ar scale. This training focuses on improving nurses' knowledge and skills in managing alcohol withdrawal effectively.

Effectiveness of the Clinical Institute Withdrawal Assessment – Alcohol Revised (CIWA-Ar)

In an article by Dolores Elliot, “the CIWA-Ar is the gold standard withdrawal assessment rating scale in both hospital and outpatient settings. This evidence-based, validated, objective observer-rated assessment tool is designed to maintain patient assessment and treatment consistency. 30 Studies indicate that the CIWA-Ar is an effective tool for alerting patients having AWS. The CIWA-Ar provides a measure of withdrawal severity and helps to guide treatment, enabling clinicians to intervene early in withdrawal to prevent poor patient outcomes.” The CIWA-Ar was developed for use in 1989 from the original CIWA-A (Sullivan, J.T. et al., 1989). Per Sullivan, et al. the “advantage of this revised scale is [the] clinical utility” and that the changes made helped with the “increase[d]...acceptability to physicians and nurses” (1989). The assessment was cut down from 15 to 10 items; all sections have a seven-point scale, but the combined section for orientation and clouding of the sensorium with a maximum score of 67. This offers an increase in efficiency while at the same time retaining clinical usefulness (Sullivan, J.T. et al., 1989).

In the past, alcohol screening and treatment were primarily focused on patients exhibiting signs of alcohol use disorder. However, the Substance Abuse and Mental Health Services Administration implemented the Screening, Brief Intervention, and Referral to Treatment (SBIRT) initiative to promote early intervention and enhance withdrawal screening and intervention in all healthcare settings. This initiative aimed to expand the scope of alcohol screening and intervention beyond patients with apparent alcohol-related behaviors (Davis, et al, 2018).

1. The Clinical Institute Withdrawal Assessment for Alcohol–Revised (CIWA-Ar) is recognized as the gold standard and extensively utilized tool for assessing alcohol withdrawal. It serves as a benchmark for comparing existing and new assessment tools in this field. (Davis, et al., 2018).
2. Short Alcohol Withdrawal Scale (SAWS) is designed specifically to be used in clinical settings with patients experiencing acute alcohol withdrawal symptoms (Gossop, et al, 2002). The SAWS include five items that represent psychological symptoms anxiety, confusion, restlessness, misery, and memory problems (Gossop, et al, 2002).
3. The Glasgow Modified Alcohol Withdrawal Scale (GMAWS) was created with the aim of providing a simplified scoring system for assessing alcohol withdrawal and guiding treatment decisions. In addition to evaluating its effectiveness, the GMAWS also considered ease of use as a crucial factor. Although the implementation of the Glasgow Modified Alcohol Withdrawal Scale demonstrated improvements in the length of stay for alcohol-related diagnoses and a decrease in violent incidents,

psychometric testing to validate its reliability and validity was not conducted (Davis, et al, 2018).

When measuring alcohol withdrawal symptoms is important to remember that each of these tools has limitations and that they are subjective in nature and are based on the responses of the patients one is caring for. There are many factors that can affect the results, such as rater bias, and self-report measures such as mental health comorbidity, other substance use disorders, and overall functional impairment associated with alcohol use disorder.

Barriers

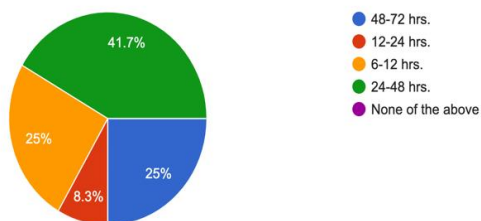
The barriers to a self-paced learning program are multi-faceted in a crisis stabilization unit. The unit is open for admissions and urgent care clients twenty-four hours a day seven days a week. The barrier of time is always at the forefront as this training will most likely be done while they are at work and not in the off hours, although they were told that the email could be forwarded to their home as their personal information is not traceable. In the crisis stabilization unit this affects the nursing staff's ability to complete self-paced training. The crisis stabilization unit has an ebb and flows to it as far as how the patients are admitted and discharged. Another factor is the acuity of the unit on a given day. Another barrier is a personal bias regarding participating in a training that is voluntary, this is something you factor in but do not know how many didn't participate due to this or other circumstances.

Accurately Measuring Educational Presentation Effectiveness

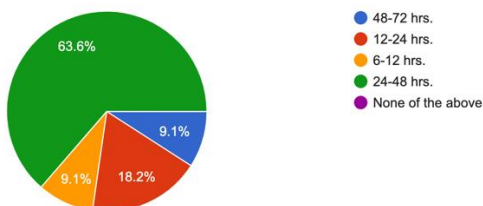
The effectiveness of the educational presentation is limited as the sample size is relatively small (n=12). The self-paced learning style of the educational presentation is conducive to the

crisis stabilization unit environment as it allows the nursing staff to start and stop the presentation when needed. The effectiveness of the education provided is shown in the difference in the scores between pre and post-knowledge quiz scores. The following are the pre-educational (n=12) vs. the post-educational scores (n=11):

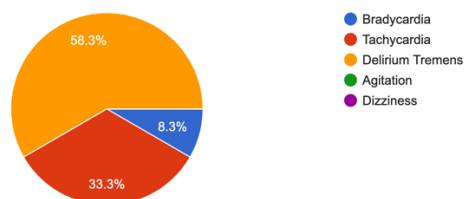
On average, how many hours after a person's last drink can visual or tactile hallucinations set in?
12 responses



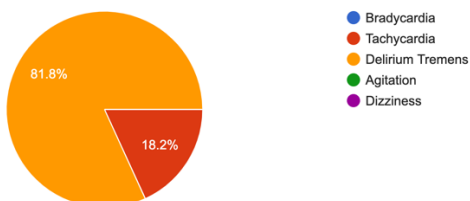
On average, how many hours after a person's last drink can visual or tactile hallucinations set in?
11 responses



Which of the following symptoms is most dangerous in a patient experiencing alcohol withdrawal syndrome?
12 responses

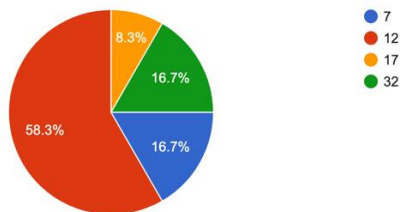


Which of the following symptoms is most dangerous in a patient experiencing alcohol withdrawal syndrome?
11 responses



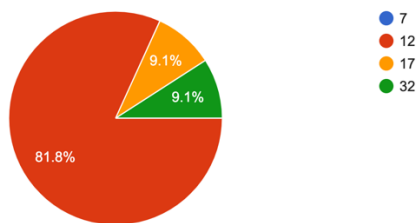
What score would indicate "moderate withdrawal" according to the CIWA-Ar?

12 responses



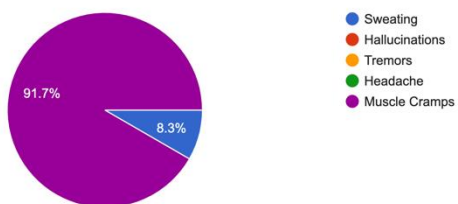
What score would indicate "moderate withdrawal" according to the CIWA-Ar?

11 responses



All of the following symptoms are assessed for on the CIWA-Ar, except?

12 responses



All of the following symptoms are assessed for on the CIWA-Ar, except?
11 responses



There is improvement in the results with more staff answering the questions with accuracy in their knowledge base by the information provided in the educational presentation. There are factors that lend to this type of presentation not being suitable as one stop9s the educational program it may be minutes to hours before restarting the presentation and knowledge or the understanding of what is being presented is not fully comprehended due to the disruption. There are also other factors that may lead to the outcomes on the scores such as staff could have not participated in the educational presentation and taken the pre and post-educational knowledge quizzes alone. As this included a voice recording of information not given on the slide nor was a transcript provided of the full training, there may have been information not translated thoroughly through this process.

Theoretical Framework

The Iowa Model is a widely utilized framework in healthcare quality improvement endeavors, providing a systematic approach for implementing evidence-based interventions in clinical practice. It comprises distinct stages: problem identification, evidence synthesis, implementation, evaluation, and dissemination. For example, when evaluating the effectiveness of utilizing a clinical tool, the Iowa Model was probably employed to guide the performance of the Clinical Institute Withdrawal Assessment-Alcohol Revised (CIWA-Ar) within a crisis stabilization setting or another emergent care setting. The identified problem may have revolved around the challenge of accurately measuring the effectiveness of alcohol withdrawal treatment.

As a solution, the Iowa Model would have been utilized to implement the CIWA-Ar as an evidence-based intervention.

During the evidence synthesis stage, a comprehensive literature review would have been conducted to identify the most effective methods for assessing the effectiveness of alcohol withdrawal assessment. This process would have ultimately led to selecting the CIWA-Ar as a suitable tool. Subsequently, the implementation stage would involve integrating the CIWA-Ar training for the nursing staff within the crisis stabilization unit, including training on administering the CIWA-Ar and utilizing its results to inform providers so treatment decisions can be made.

The evaluation stage would involve assessing the effectiveness of the CIWA-Ar training by measuring the differences in responses to the pre-and post-knowledge quizzes. This assessment could encompass data analysis collected from staff who completed the examinations before and after educational training.

Lastly, in the dissemination stage, the evaluation results would be shared with the stakeholders and other crisis stabilization units wanting to utilize the CIWA-Ar in their units. The Iowa Model offers a structured approach to healthcare quality improvement initiatives, ensuring the effective implementation and evaluation of evidence-based interventions.

Cost Benefit Analysis

There is no cost for the training materials for staff for the Crisis Stabilization Unit in San Diego County. This is due to the materials I created and then donated to the CSU for further usage. The cost avoidance reduction in potential harm to patients with early detection of AWS and cost avoidance in sending out patients that are manageable at our facility with a clear policy and treatment guidelines. The average cost to treat a patient in an inpatient unit for alcohol

withdrawal syndrome is around \$20,000.00 for a three-day stay, whereas the cost to treat mild to moderate alcohol withdrawal at the crisis stabilization unit for the same three days is about \$4,000.00. The cost-benefit analysis shows a cost avoidance of %5.00 for every dollar spent for treating a person with alcohol withdrawal symptoms in a crisis stabilization unit vs. an emergency room. This is also a 400% return on investment (ROI) for stakeholders in crisis stabilization.

Cost Benefit Analysis	$\text{CBA} = \frac{\text{program benefits}}{\text{program costs}} = \frac{\$20,000.00}{\$4,000.00} =$ <p>For every dollar spent there will be a “\$5.00” cost avoidance</p>
Return on Investment	$\text{ROI} = \frac{\text{program benefits} - \text{program costs}}{\text{program costs}} = \frac{\$20,000.00 - \$4,000.00}{\$4,000.00} = \frac{\$16,000.00}{\$4,000.00} \times 100 =$ <p>400% Return on Investment</p>

The non-financial & intangibles are but not limited to employee satisfaction (streamlined process) and improved patient satisfaction.

Methodology

Project Design

The Institutional Review Board (IRB) is an independent committee responsible for reviewing and approving research studies involving human subjects. Its role is to ensure that this DNP project is conducted ethically and in compliance with regulatory requirements, prioritizing the protection of the rights and welfare of the participants.

In the case of the project “ Implementation of Clinical Institute Withdrawal Assessment: Alcohol Revised (CIWA-Ar) Education Program in a Crisis Stabilization Unit,” the IRB approved this evidence-based DNP Project design and granted permission to perform the project at Exodus Recovery Crisis Stabilization Unit in Oceanside, CA.

Obtaining approval from the Institutional Review Board (IRB) is a critical step in ensuring the ethical conduct of the DNP project and compliance with regulatory requirements for research involving human subjects. This approval signifies that the project has been deemed righteous and adheres to the highest standards of research integrity. It provides assurance to participants that their rights and well-being will be safeguarded throughout the DNP project.

Population and Sample

The population was the twenty-four nursing staff employed at the crisis stabilization unit. The staff were educated that this was a voluntary educational opportunity and that there was no penalty for not doing this nor was anyone paid or rewarded for participating. The staff that participated did so with anonymity as no personal information was collected about them. The only identifier contained was the type of licensure that they held, but nothing can be dismantled from that information alone. Out of the twenty-four staff who were sent the training twelve staff participated. One of the twelve only completed the pre-knowledge quiz.

Instrumentation

After the literature review, review of current practice in the crisis stabilization unit, and what the policies and procedures of our facility regulate the treatment of alcohol withdrawal treatment, I designed a sixteen-slide PowerPoint presentation that could be presented as an in-person class or done as a self-paced learning course. The education that was disseminated was a self-paced PowerPoint presentation with a voice-over. The course was emailed to the twenty-four nursing staff. The nursing staff was given thirty days to complete the self-paced training and complete the pre and post-knowledge exams. The email that was sent included links to Google Forms for a seven-question pre- and post-educational quiz, in case the embedded links within the PowerPoint did not function.

Data Collection

Data collection for this DNP project was done automatically upon each of the staff's completion of the Google forms. The links to the forms were provided in the email sent to the staff as well as embedded into the educational PowerPoint. When each of the participants submitted the pre and or post-knowledge educational quiz the answers were automatically saved. The answers were then automatically tallied for each question and a percentage was given for each answer on the pre and post-knowledge exams.

Data Analysis

After data collection, the data was reviewed, and the results were analyzed. The staff that completed both the pre and post-educational knowledge tests showed improvement in their knowledge and confidence in utilizing the CIWA-AR to assess AWS in patients on the crisis stabilization unit. The questions were based on information provided in the training as well as how they would assess a patient utilizing the CIWA-Ar. The first question asked staff the interval of hours a patient would experience visual and tactile hallucinations after their last drink. A t-test was run to evaluate each of the responses, and it showed a mean improvement of 0.41 in the knowledge base of the Clinical Institute Withdrawal Assessment – Alcohol Revised screening tool. In Figure 1 you will see the distribution of staff by qualifications.

Figure 1

Qualification	Number of participating Staff
Registered Nurse	7
Licensed Vocational Nurse	3
Licensed Psychiatric Technician	2

When looking at the question - How confident are you completing a CIWA-Ar for a patient experiencing alcohol withdrawal symptoms? – which has a 5-point Likert scale rating, the pre-education quiz showed that 16.7% rated their confidence at a 3, 66.7% gave a rating of 4, and 16.7% gave a rating of 5. On the same question after the educational presentation when completing the post-educational quiz 54.5% gave a rating of 4 and 45.5% gave a rating of 5 on the Likert scale. On the following question, How would you rate your knowledge of the CIWA-Ar?, which is again based upon a 5-point Likert scale rating, 25% rated their knowledge as a 3, 58.3% rated their knowledge as a 4, and 16.7% rated their knowledge as a 5. On the same question on the post-educational quiz the same Likert scale was utilized, and the percentages were as follows 3 = 9.1%. 4 = 45.5% and 5 = 45.5%. As one can see there is improvement in the knowledge base and how the nursing staff viewed their knowledge prior to and after the educational presentation. The last question was a question of opinion about the usefulness of the CIWA-AR on the crisis stabilization unit, this question utilized a ten-point Likert scale. The results of the pre-educational quiz were as follows, 7= 16.7%, 8 = 8.3%, 9 = 16.7%, 10 = 58.3%. there are no responses for scores 1-6. Upon review of the post-educational quiz there was a slight shift in the opinion of the staff with no scores for 1-7 and 8 = 9.1%, 9 = 18.2% and 10 = 72.7% respectively. Overall the nursing staff who completed the course have a well-rounded understanding of Alcohol Use Disorder, Alcohol Withdrawal Symptoms and utilization of the CIWA-AR.

Summary

The findings of this evidence-based DNP project suggest that providing education to staff about Alcohol Use Disorder, Alcohol Withdrawal Symptoms and the CIWA-AR can lead to a more conducive care environment for the patients that come into the crisis stabilization units and

reduce the need to send patients to the emergency departments for treatment, unless medically necessary.

The findings of this evidence-based DNP project focused on quality improvement have significant implications for nursing staff working in crisis stabilization units, particularly in their treatment of patients with Alcohol Use Disorder (AUD) and Alcohol Withdrawal Syndrome (AWS). The utilization of the CIWA-AR scale emerges as a valuable tool for monitoring treatment progress and facilitating informed decisions regarding medication management early in the treatment process. Implementing the CIWA-AR scale in crisis stabilization units can enhance patient outcomes and enable healthcare providers to deliver more personalized care to individuals with AUD and AWS. Furthermore, the results of this DNP project underscore the importance of conducting further research to assess the long-term benefits of employing the CIWA-AR scale as a monitoring tool for treatment efficacy in patients with AWS.

The use of the CIWA-Ar has proven to be a gold standard for measuring AWS in psychiatric patients and aids in the early treatment of symptomology. Consideration should be made to expand this corporation-wide if it is not being utilized as this will reduce the need for sending patients to the emergency department. Assessment of policies, procedures, additional educational venues, and operational compliance on mandating usage of CIWA-Ar more.

Results

In addition, the study's findings indicate that incorporating the CIWA-AR scale as a regular assessment tool in crisis stabilization units has the potential to enhance the quality of care provided to patients with AUD and AWS. By utilizing the CIWA-AR scale, healthcare providers can identify patients who are at risk of developing Delirium Tremens or whose condition exceeds the capabilities of the crisis stabilization unit. This enables swift decision-making, allowing these

patients to be promptly referred to the nearest emergency room for appropriate treatment of their AWS.

Moreover, the utilization of the CIWA-AR scale can establish a standardized measure of treatment effectiveness, facilitating comparisons across patients and different crisis stabilization units. To determine the most effective and feasible assessment tool for alcohol withdrawal symptoms, a prospective study could be conducted, evaluating various tools and their evidence-based information. Additionally, the study emphasizes the significance of nursing education regarding the purpose and benefits of using the CIWA-AR scale for routine assessments. By educating nursing staff on the CIWA-AR scale and its role in monitoring symptom progression, patient outcomes in the treatment process can improve, reducing their reliance on emergency services.

The data collected for the twelve staff who participated in the evidence-based DNP project revealed that education and learning are ongoing in the field of nursing. Refreshing your knowledge on screening tools that will be utilized in your care setting is beneficial to staff and patients alike. The research suggests that the CIWA-AR screening tool is an effective tool to use within the mental health patient population and well as across many other clinical units in the health care system.

Furthermore, the findings of this evidence-based DNP project show that implementing a symptom-driven assessment tool in the crisis stabilization unit, such as the CIWA-AR, is conducive to improved patient outcomes, as it allows for a consistent assessment of the patient based upon a set 10-question Likert based scale assessment that contains objective and subjective information. This scale is easily accessed online for free and printed out or can be added into an electronic medical record for ease of access and auto-populated time-triggered setting based

upon the providers orders. This also allows for the medication to be administered based upon the score that the patient has instead of a set time with a maximum dose setting.

Discussion

The consumption of alcohol has been on a steady rise since the 1980s, which led to seeing a trend of worsening patient outcomes from patients who were being treated in inpatient units for alcohol withdrawal syndrome. Caring for and managing patients undergoing alcohol withdrawal presents challenges for the nursing staff in all settings. This became increased as crisis stabilization units have become more established here in California to care for patients with mental health and substance use disorders. These challenges are influenced by factors such as personal biases, lack of knowledge, and confidence.

The purpose of this quality improvement initiative was to determine whether the effects of implementing an educational program would improve understanding of the Clinical Institute Withdrawal Alcohol-Revised Scale. The crisis stabilization unit implemented education on alcohol use disorder (AUD), alcohol withdrawal symptoms (AWS), and the Clinical Institute Withdrawal Alcohol Scale-Revised (CIWA-Ar) assessment tool, which would be utilized in the everyday practice of nurses caring for patients undergoing alcohol withdrawal in the crisis stabilization unit. By utilizing the CIWA-AR, it prevents patients from going through AWS without receiving proper treatment. Ensures that the Crisis Stabilization Unit is operating within its legal bounds regarding the treatment of the patient population we serve. It also allows for clear guidelines for providers and nursing staff to follow when considering admitting patients under the influence of alcohol. Finally, it allows Nursing staff to assess patients who are admitted to the unit for AWS. Ensures that legal documentation is addressed, completed

appropriately, and prevents further issues related to possible provider malpractice with mishandled withdrawal policies, protocols, and documentation.

Limitations

It is important to recognize and acknowledge the limitations of this evidence-based DNP project. Firstly, the project's sample size is small, consisting of only twelve nursing staff. As a result, the findings may have limited generalizability to a larger population. Furthermore, the project was conducted in a single crisis stabilization unit within a specific geographic location, which may restrict the generalizability of the findings to other settings and regions. The company has crisis stabilization units located in Orange, LA, and Fresno counties which may show a different knowledge and confidence in the CIWA-AR.

Sustainability

This evidence-based DNP project is sustainable as the providers and nursing staff have buy-in to utilize the CIWA-AR when patients are admitted to the unit who could undergo alcohol withdrawal symptoms. The utilization of the CIWA-AR the criterion standard and widely accepted tool for assessing alcohol withdrawal is the gold standard. The CIWA-AR provides a standardized assessment tool that provides objective and subjective information that yields a score that guides the treatment of the patient. The training can continue to be used by crisis stabilization to train new hire nursing staff during their orientation days.

Dissemination

The dissemination of research findings plays a vital role in the research process, enabling the sharing of knowledge with the scientific community and other stakeholders. In this DNP evidence-based practice (EBP) project, a comprehensive dissemination plan has been developed to ensure the findings reach a wide audience, including healthcare professionals, researchers,

patients, and policymakers. This plan incorporates various strategies to effectively communicate the project's results and implications.

This DNP project poster was presented at the Hann School of Nursing, University of San Diego, on April 13th, 2023, during Poster Presentation Day. The abstract was sent to Health Professionals Education by Science Direct for the possibility of publication in May 2023. This will help to disseminate the findings to a broader audience and contribute to the knowledge base in the field of mental health.

This DNP project's results were shared with the participating crisis stabilization unit stakeholders on May 12th, 2023, where the project was implemented. This will provide feedback to the clinic and encourage the utilization of the CIWA-AR as a tool for the assessment of alcohol withdrawal symptoms.

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