

Assessment and Non-Pharmacological Treatment of Sleep in Adults in a Private Practice Mental  
Health Clinic  
Jazmyne Bosley  
Touro University, Nevada

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DNP Project Chair: Jessica Grimm DNP, RN

DNP Project Member(s): Maria D'Errico DNP, RN

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### Abstract

**Background:** The private practice mental health clinic participating in this Quality Improvement Initiative is lacking a process to identify and provide non-pharmacological methods to treat sleep problems. Early identification and treatment of sleep disturbances in adults seeking mental health treatment will aid in the management of certain psychiatric conditions (Krystal, 2012). This DNP project aims to provide mental health providers and patients with a healthcare outcome of early identification of sleep problems yielding non-pharmacological treatment options and increasing education regarding the important value of sleep. This project was designed to investigate statistical outcomes that are comparable to other studies that have explored whether early identification and treatment of sleep problems coupled with education enhance sleep problem outcomes. **Methods:** The clinic staff will be trained on how to administer, score, and document the Insomnia Severity Index (ISI) score. ISI is the tool utilized to screen for sleep problems (Appendix A). Providers will provide education to patients using the Non-Pharmacological Education for Sleep (NPES) educational guide created based on non-pharmacological treatment methods that will be distributed to patients for sleep problems by site staff during assessments based on a national guideline (Appendix B). The anticipated outcome will be measured as an improvement in the number of new patient or initial assessments screened utilizing the standardized Insomnia Severity Index tool as well as provided non-pharmacological treatment options for those that screen positive. **Results:** The screening for sleep problems (ISI screen) during the initial evaluation, ISI score  $\geq 8$ , and documentation of sleep disorder (ICD-10 code G47.9) was measured (Table 1). Approximately 20% of patients seen for the month were initial evaluations for pre and post-education. A total of 83 patients were seen for initial visits and 79 were screened for sleep problems. There is 95% confidence that the true proportion of

patients screened for sleep problems is between 88.25% and 98.11%. A total of 79 patients were screened for sleep problems and a total of 50 of those patients were diagnosed with G47.9, sleep problems, unspecified. There is 95% confidence that the true proportion of patients with sleep problems were given NPES is between 52.28% and 73.07%. Pre-intervention there were zero patients diagnosed with sleep problems, unspecified, whereas there were 50 patients diagnosed post-intervention. Thirty-three patients were not diagnosed with G47.9 despite meeting criteria of an initial visit with an ISI score  $\geq 8$ . The Fisher exact test of G47.9 is statistically significant at  $p < 0.05$ . **Conclusion:** As patients seek mental health services, it is critical to identify and treat sleep problems early to promote positive outcomes. Using the ISI as the screening tool coupled with NPES as an educational guide is an effective method to identify sleep problems early and provide non-pharmacological treatment options.

## **Assessment and Non-pharmacological Treatment of Sleep in Adults in a Private Practice Mental Health Clinic**

Sleep is a physiological state of mind and body, characterized by inhibited sensory activity, inhibited voluntary muscles, and an altered level consciousness (Cirelli et al., 2016). Sleep insufficiency occurs when sleep is deficient and unable to satisfactory alertness, health, and performance, as a result of either decreased quantity or quality sleep (Cirelli et al., 2016). Sleep problems in mental health conditions are growing public health concerns (Lallukka & Sivertsen, 2017). The quality of sleep encompasses several factors including daytime tiredness, feeling restored, difficulty falling and staying asleep, and the number of nighttime awakenings (Macleod et al., 2018). Evidence has shown that sleep problems are causally linked to the onset of mental health conditions (Kim et al., 2016). Identification and treatment of sleep problems would reduce the burden of inadequate sleep itself as well as reduce mental health disorders (Lallukka & Sivertsen, 2017). Research has shown that sleep problems are strongly associated with psychiatric disorders and can be primary or secondary to a mental health condition (Seow et al., 2018). The treatment modalities for sleep disorders are multifaceted, with pharmacological treatments being the routine approach among healthcare clinicians; however, there is strong evidence that supports non-pharmacological treatments having better long-term effects on individuals (Moraes de Almondes, 2018). There are multiple approaches available to treat sleep disturbances that do not involve pharmacology, such as playing relaxing music an hour before bed, increasing energy expenditure during the daytime, and reducing noise stimulation at night (Devlin et al., 2018; Grimm, 2020).

**Background**

The most prevalent diagnosed sleep problem is insomnia which affects about 30%-50% of adults (Moraes de Almondes, 2018). Sleep problems can cause notable functional impairments in an individual's personal and professional life (Smagula et al., 2016). Also, literature has linked sleep disturbances to problems with attention and memory, mood disturbances, impacts quality of life, and affects one's ability to carry out activities of daily living (Smagula et al., 2016). Sleep fragmentation can lead to depression, anxiety, fatigue, increase symptoms including pain, inflammation, delirium, and risk of falls and an increase in healthcare costs (Zadeh et al., 2018). Early identification and treatment of sleep disturbances in adults seeking mental health assistance will aide in the treatment of certain psychiatric conditions, which can have a beneficial effect on an individual's psychiatric treatment (Krystal, 2012).

**Problem Statement**

Long term sleep problems in the psychiatric population are common and contribute to poor quality of life (Moraes de Almondes, 2018). This quality improvement project will occur in a private practice mental health clinic in an urban California city that does not currently have a protocol in place to identify sleep problems and provide non-pharmacological treatment options. The leadership at this project site has identified an increase in sleep problems with patients. Assessment of sleep problems is not consistent within medical practices and can result in lack of standardized and systematic practice. Clinical practice guidelines published in Canada, the United States, and Europe unanimously suggest non-pharmacological methods as first-line treatment for sleep disorders (Rios et al., 2019).

**Purpose Statement**

The purpose of this project is to promote the identification of sleep problems through implementation of staff education and a non-pharmacological treatment protocol. Non-Pharmacological Education for Sleep (NPES) is the educational guide created based on non-pharmacological treatment methods that will be distributed to patients for sleep problems by site staff during assessments based on a national guideline. The Journal of Clinical Sleep Medicine recommends cognitive behavioral therapy, sleep restriction therapy, relaxation therapy, and sleep hygiene as a guide for the treatment of sleep problems in the adult population (Edinger et al., 2021). To ensure adequate screening, the Insomnia Severity Index (ISI) tool will be placed in all new patient packets (Morin et al., 2011a). The tool will be utilized to address the increasingly serious issue; education will be provided to staff members on the assessment tool and NPES, it will be tracked and documented during the establishment of care and annually unless otherwise determined by the psychiatric provider. The implementation of the ISI tool will identify sleep problems during the initial evaluation (Morin et al., 2011a). The overall goal of this project is early identification and non-pharmacological treatment of sleep problems in adults at a private practice mental health clinic.

**Project Question**

The project question is how to treat sleep disturbances in the mental health community without the use of medications? NPES is an educational tool for a private practice mental health clinic to utilize to empower patients to utilize non-pharmacological methods to address sleep problems, ultimately avoiding potential polypharmacy. It will standardize how providers assess patients for sleep problems. The tool that will be implemented will aid in the early identification of sleep problems while providing alternative treatment solutions within a 4-week

implementation period. The project question is well addressed below in PICOT form. The PICOT question for this study is as described below:

P: Sleep disturbances in mental health

I: The development of Non-Pharmacological Education for Sleep, NPES, an educational tool for sleep

C: No standard method to assess sleep problems in patients

O: Non-pharmacological management of sleep

T: 4 weeks

### **Review Coverage and Justification**

A literature search was conducted to identify pertinent themes related to non-pharmacological treatment of sleep and sleep protocols to contribute to the development of this project. The search engines utilized included Pub-Med, Cumulative Index to Nursing and Allied Health (CINAHL), and Jay-Sexter Library. The search terms initially used were 'sleep problems', 'adults', and in 'mental health population' which yielded 109,788 results. Due to the extremely large number, the search was revised and narrowed utilizing the advanced search features to streamline results. The new search terms were revised to 'sleep problems or sleep disorders', 'non-pharmacological interventions or treatments', and in 'mental health or mental disorders' which produced 138 results. The research was restricted to include only studies published within the last ten years, peer reviewed, full text articles, and written in the English language. Abstracts of the articles were appraised which assisted in the evaluation of articles based on relevance and evidence based. Articles were included if they addressed identifying and treating sleep disorders with non-pharmacological methods in adults. Articles concerning adolescents and children were excluded as the practice site serves less than a dozen individuals



between 6-17 years old at this time. After a thorough analysis of the above articles, only 30 were deemed relevant to the importance of identifying and treating individuals with sleep problems.

### **Review Synthesis**

Studies have shown that sleep problems, difficulty falling and staying asleep, are prevalent among adults (Schlarb et al., 2012). Sleep problems are an unmet public health problem that greatly impact an individual's mental health (Rodrigues et al., 2019). Sleep disturbances are associated with symptoms of depression, psychological distress, and poor mental health among adults (Rodrigues et al., 2019). According to the American Academy of Sleep Medicine (AASM) and Sleep Research Society (SRS), adults should consistently sleep at least seven hours each night to avoid adverse health related outcomes like depression, weight gain, and heart disease (Watson et al., 2015). The Institute of Medicine (IOM) reported about 20% of automobile accidents are related to the driver being drowsy (IOM, 2006). According to the National Sleep Foundation, the recommended amount of sleep hours for older adults is between 7-8 hours (Hirshkowitz et al., 2015). The extensive literature appraisal provided a few common themes related to combating sleep problems in the adult population. The themes include early identification of sleep problems, importance of sleep with respect to mental health, obesity, non-pharmacological treatment modalities for sleep, and barriers.

### **Early Identification**

Sleep disorders are a widespread problem in the community. Sleep problems are a risk factor for developing a mental disorder, increases the risk of relapse, and worsen treatment results (Ter Heege et al., 2020). For example, insomnia has shown to have validity in developing depression and posttraumatic stress disorder (PTSD) (Baglioni et al., 2011; Cheng et al., 2019). Poor sleep exacerbates suicidal behavior in individuals with mental health issues (Malik et al.,

2014). Early identification and treatment of sleep disorders in individuals with mental health disorders will lead to a better quality of life and improved outcomes (Ter Heege et al., 2020). Quantity and quality of sleep can be assessed utilizing an evidence-based practice screening tool by a licensed clinician. Clinicians may use Pittsburgh Sleep Quality Index, Insomnia Severity Index, or Epworth Sleepiness Scale to evaluate a patient's sleep quality (Ter Heege et al., 2020). Often times sleep is a co-occurring condition with mental health conditions; therefore, early detection is critical.

### **Importance of Sleep**

Sleep plays a critical role in day-to-day living. Sleep impacts an individual's mood, attitude, and outlook on life. Uninterrupted sleep of appropriate length is fundamental for daytime alertness, quality of life, and overall health (Basner & McGuire, 2018). There is increasing evidence that sleep problems are a contributing factor to many mental health conditions (Bradley et al., 2018). A randomized controlled trial with almost four thousand adults with sleep problems showed treating sleep disorders led to a reduction in paranoia and hallucinations (Freeman et al., 2017). Treating sleep problems in individuals who suffer with mental health conditions could prevent psychosis (Bradley et al., 2018). The treatment of sleep likely has secondary benefits for those with mental health disorders (Bradley et al., 2018).

### **Obesity**

In the last 40 years, 16-37% of adults living in the United States sleep less than seven hours each night (Cirelli et al., 2016). Inadequate sleep modifies appetite-regulating hormones and increases caloric intake, which leads to weight gain (Greer et al., 2013). Sleep insufficiency has negative consequences on an individual's metabolism which leads to obesity, type 2 diabetes, and other metabolic issues (Cirelli et al., 2016). Individuals with inadequate sleep

complain of low energy which causes lack of motivation to be and remain physically active contributing to weight gain (Greer et al., 2013). Sleep disturbances are associated with carbohydrate tolerance impairment which is comparable to observations in individuals with significant glucose intolerance (Ding et al., 2018).

### **Non-Pharmacological Modalities**

Non-pharmacological methods reduce the risk of polypharmacy and empowers patients to remain in control of the modalities they choose to incorporate in their treatment plan for sleep.

There are a number of non-pharmacological interventions such as cognitive behavioral therapy (CBT), mindfulness based stress reduction, mindfulness based interventions have shown efficacy in improving quality of sleep and health outcomes in adults (MacLeod et al., 2018).

CBT is the recognized first-line treatment of choice for improving sleep in adults (Mitchell et al., 2012). SleepWell is a treatment package that incorporates CBT techniques that address sleep hygiene, insomnia, stimulus control, and relaxation which are all necessary to combat to sleep problems (Bradley et al., 2018). Mindfulness interventions target sleep quality with the objective to help patients formulate positive outcomes to sleep while decreasing stress (Kim et al., 2016).

Light exposure therapy, exercise, resilience training and social support have shown to be helpful in the treatment of sleep disorders (Wennberg et al., 2013; Black et al., 2014). Sleep hygiene offers environmental and behavioral recommendations that promote healthy sleep (Irish et al., 2015). Patients are encouraged to adopt health sleep habits; in which, include avoiding caffeine in excess, maintain a steady sleep schedule, incorporate regular exercise regiments, avoid caffeine, exercise regularly, remove unnecessary noises from the sleep domain (MacLeod et al., 2018).

**Barriers**

Change is an essential part of an organization but can lead to resistance and barriers. Although non-pharmacological methods are the first-line treatment for sleep problems, they are often avoided as a result of the amount of time, level of involvement, and effort needed from patients and healthcare providers (MacLeod et al., 2018). Sleep disorders are often masked in other diagnosis and rarely identified early. Identifying maladaptive behaviors that contribute to sleep problems can be difficult to admit and leave an individual feeling vulnerable (MacLeod et al., 2018). Psychiatric mental health nurse practitioners, psychiatrists, and psychologists are all clinicians well versed in treating sleep problems, however, education levels and experience play a critical role in effectively diagnosing and treating sleep problems. In mental health, sleep disorders are poorly recognized and specific treatment occurs late if at all (Ter Heege et al., 2020). Early identification of sleep problems will require an interdisciplinary team approach that includes the participation of the office support staff, clinicians, and patients. The successful adoption of change will require the buy in from all individuals involved.

**National Guidelines**

Clinical guidelines are intended to ensure patients receive the appropriate treatment and care they deserve (Magnusdottir, 2019). Clinical guidelines summarize current medical knowledge, consider the benefits and risks of treatments, and provide specific recommendations based on this information (Magnusdottir, 2019). The Center for Disease Control and Prevention (CDC) is committed to raising global awareness about the significance of sleep health, sleep disorders and sleep insufficiency (CDC, 2021). The CDC has a dedicated team, The Sleep and Sleep Disorders Team, nestled within the Population Health, National Center for Chronic Disease Prevention and Health Promotion Division (CDC, 2021). The Sleep and Sleep Disorders

Team's objectives are to increase public awareness concerning sleep deprivation, promote evidence-based policies that improve sleep health, strengthen overall surveillance of sleep at state and national levels, promote access to care for individuals with sleep disorders, and develop strategies to reduce the impact sleep insufficiency has on public safety (CDC, 2021).

The American Academy of Sleep Medicine (AASM) guideline establishes clinical practice recommendations for the use of psychological and behavioral treatments for chronic insomnia disorder in adults (Edinger et al., 2021). A task force comprised of sleep medicine and sleep psychology experts from the American Academy of Sleep Medicine was commissioned to develop recommendations, assign strengths based on the review of literature, and assess evidence utilizing Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology (Edinger et al., 2021). The recommendations are intended to be a guide for providers in choosing a specific treatment for chronic insomnia disorder in adults (Edinger et al., 2021). Each recommendation was assigned a strength. A "strong" recommendation is one that a provider should follow under most situations (Edinger et al., 2021). A "conditional" recommendation is one that will require the provider to utilize their clinical expertise coupled with the patient's preferences in effort to determine the best strategy (Edinger et al., 2021). The AASM strongly recommends providers utilize multicomponent cognitive behavioral therapy for the treatment of chronic insomnia disorder in adults (Edinger et al., 2021). The AASM conditionally suggests that the provider use multicomponent brief therapies, use stimulus control as a monotherapy, use sleep restriction therapy as a monotherapy, use relaxation therapy as monotherapy, and not use sleep hygiene as a monotherapy for the treatment of chronic insomnia disorder in adults (Edinger et al., 2021). National guidelines are the gold standard for evidence-based practice.

### **Review of Study Methods**

The literature reviewed included mixed methods, cross-sectional analysis, randomized controlled trials, integrative reviews, and retrospective cohort studies. The study methods in the literature are applicable to the focus of this DNP project as the themes discussed the significance of diagnosing, treating, and education surrounding sleep disturbances. The study methods assisted in establishing what is known about sleep problems and non-pharmacological treatment modalities, how extensively the subject has been researched, and how smoothly this topic will translate to the private practice site for this DNP project.

### **Significance to the Profession**

Sleep plays a large role in an individual's life. Sleep can be managed either by pharmacological or non-pharmacological modalities. Approximately 50% of older adults reported difficulty initiating or maintaining sleep (Crowley, 2011). Compromised sleep has shown to have a consistent effect on cognitive function (Crowley, 2011). Early identification and treatment of sleep problems are critical as it not only impact's individual's quality of life, but creates a significant economic burden on the world (Morin et al., 2011b). Decreased productivity on the workforce due to chronic sleep problems in the United States is estimated to cost \$63.2 billion per year with consumers spending approximately \$32 billion each year on sleep masks, white noise, and hypnotics (Kim et al., 2016; Fottrell 2012). Therefore, it is evident that early identification, proper treatment and management of sleep disturbances is essential (Kim et al., 2016). Treating sleep problems is the responsibility of highly skilled and trained clinicians whom screen, assess, treat, and provide education to patients. Clinicians utilize evidence based screening tools to evaluate if patients suffer from inadequate sleep, then they provide treatment options based on a multitude of factors. The primary goals of a sleep education protocol is early

identification of sleep problems and to standardize the care delivery model so that every patient receives evidence based practice first line treatments and polypharmacy is avoided. Effective sleep education protocols drastically increase the rate in which sleep problems are identified and treated, reduce maladaptive theories surrounding sleep, and increase the community's knowledge on sleep and sleep hygiene the way in which sleep problems are identified and treated in healthcare as well as improve the care being delivered to patients in the mental health arena.

### **Project Aims**

Inadequate and insufficient sleep is a critical public health initiative. Individuals connected with mental health resources often seek resolution for sleep as a primary or secondary problem to mental illness. This quality improvement project aims to provide mental health providers and patients with a healthcare outcome of early identification of sleep problems yielding non-pharmacological treatment options and increasing education regarding the important value of sleep. The project is designed to standardize and streamline how sleep problems are screened and treated. I will provide mental health providers and clinic staff education and support as they provide initial assessments and interventions to patients seeking mental health services. The mental health providers will support patients who screen positive for sleep problems with education of the importance of sleep, how sleep effects an individual's quality of life, and non-pharmacological evidence-based treatment options for sleep. The anticipated outcome will be measured as an improvement in the number of new patient or initial assessments screened utilizing the standardized Insomnia Severity Index tool as well as provided non-pharmacological treatment options for those that screen positive.

### **Project Objectives**

In the timeframe of this DNP Project, the practice site will implement the following:

1. Early identification of sleep problems faced by patients in the private practice mental health clinic by utilizing the Insomnia Severity Index (ISI) tool of 100% of initial evaluations within a 4-week timeframe (Appendix A).
2. Mental health providers will provide education to patients on Non-Pharmacological Education for Sleep (NPES) for those that screen positive (score of 8 or more) on the Insomnia Severity Index (ISI) (Appendix B).
3. Train clinical staff on how to administer NPES and ISI tool.
4. Implement NPES, then evaluate it by completing a chart review pre and post implementation looking for documentation of non-pharmacological sleep education and ISI administration.

### **Theoretical Framework**

Kurt Lewin was born in 1890 and died at 56 years old in 1947 (Burnes & Bargal, 2017). Lewin received his doctoral degree in philosophy and psychology at Berlin University (Burnes & Bargal, 2017). He served in the first World War and then went on to serve as a researcher and professor at the Psychological Institute of Berlin University (Burnes & Bargal, 2017). Lewin migrated to the United States in 1933 and became a citizen seven years later (Petiprin, 2019). Lewin had already published extensively in German journals and American scientific journals before 1933 (Burnes & Bargal, 2017). Lewin created a research center at the University of Iowa where some of his first classical experiments in social psychology were conducted (Burnes & Bargal, 2017). While at MIT, Lewin established the Research Center for Group Dynamics, where his work focused to combat religious and racial injustices (Petiprin, 2019).

### **Historical Development of the Theory**

The Lewin's Model for Change is notably highlighted throughout nursing literature as a conceptual framework to transform care (Shirey, 2013). Lewin is coined as the subject matter



expert of social psychology (Petiprin, 2019). While at MIT, Lewin's work was rooted in change which laid the groundwork for sensitivity training (Burnes & Bargal, 2017). These contributions led to his most famous work known as The Change Theory (Burnes & Bargal, 2017). The Change Theory model identifies behavior of individuals as a balancing act among opposite forces that work together to produce a positive change (Petiprin, 2019). In 1946, Lewin described change in three stages: unfreezing, changing or moving, and refreezing (Shirey, 2013). The model is well known throughout the nursing profession and theory (Petiprin, 2019).

Lewin believed social habits play a large role in preventing change, known as inner resistance to change (Lewin, 1947a; Lewin, 1947b). Lewin's Change Theory proposes that individuals are influenced by restraining forces and driving forces that ultimately push in the direction that causes change to happen (Lewin, 1951). Lewin defined the change model with three stages known as unfreezing, moving, and refreezing (Lewin 1947a; Lewin, 1947b). The first stage, unfreezing, creates problem awareness making it possible for individuals to let go of old patterns and undoing the current equilibrium (Wojciechowski et al., 2016). According to Lewin, in order to change behavior and attitudes then the individual must be stirred up and experience catharsis (Burnes & Bargal, 2017). The second stage, moving, occurs when the change actually happens (Burnes & Bargal, 2017). The final stage, refreezing, integrates and stabilizes a new equilibrium into the system so the new habit is adopted and implemented (Wojciechowski et al., 2016). Lewin described the most effective means to change was through group encounters (Burnes & Bargal, 2017).

### **Application to DNP Project**

Lewin's change model applies to this DNP project in that the clinic staff will unlearn myths surrounding sleep disorders and insufficient sleep during the unfreezing stage. During the

changing stage, the clinic staff will begin to screen all new patients for sleep problems and providers will learn current evidence-based practice non-pharmacological treatment options in an effort to identify and treat sleep problems early. The DNP project will be an effort to work toward the refreezing stage of the change model which will be measured by the increase in patients screened and educated on non-pharmacological treatment modalities.

### **Unfreezing Stage of Lewin's Model**

The unfreezing stage in this DNP project consists of providing education to the staff on utilizing the Insomnia Severity Index (ISI) tool at the project site. The ISI is an evidence-based practice tool used to screen the severity of an individual's insufficiency of sleep. Incorporating this tool as a part of the forms patients complete before seeing a provider will aide in early detection of sleep problems therefore result in early treatment. Empowering the staff with this tool will instill confidence in diagnosing and treating patients with sleep problems. This intervention will replace any myths previously believed as facts regarding sleep. For example, there has been a common misconception that sleeping five hours or less is adequate sleep or that sleep is a luxury and not a necessity (Robbins et al., 2019). Providing education to the staff is the first step in the unfreezing stage of Lewin's model.

### **Changing Stage of Lewin's Model**

This DNP project will facilitate the changing stage of Lewin's model by providing the clinic staff and providers with support as they implement the Insomnia Severity Index (ISI) and provide patients with non-pharmacological treatment options for sleep insufficiency. Support of the staff will include ensuring they understand how to score the ISI tool, provide education to empower their patients in sleep hygiene education, education on non-pharmacological education for sleep (NPES), teach the staff to incorporate education of sleep during assessments, encourage

changing the mindset of needing to prescribe a pill for every complaint, and answering questions utilizing evidence-based practice sleep guideline from the Journal of Sleep Medicine. This support will increase the staff's confidence in identifying and treating patients with non-pharmacological modalities, which will manifest in more effective care to patients at the practice site. This new standard of operating practice characterizes the changing stage as it has the tendency to empower patients to make the decision to utilize non-pharmacological modalities to treat sleep insufficiency as well as aides the organization in standardizing the screening, assessment, and treatment of sleep problems among all providers. For example, providing education to staff on the sufficient number of hours of sleep, not that five hours or less is sufficient enough (Robbins et al., 2019).

### **Refreezing Stage of Lewin's Model**

The goal of this DNP project is to standardize the screening of sleep problems and provide patients non-pharmacological treatment options in accordance with evidence-based practice guidelines. Before the adoption of this standard operating procedure, the desired outcome of all initial evaluations being screened for sleep problems utilizing the Insomnia Severity Index tool and patients who screen positive with a score of eight or more will be provided non-pharmacological sleep education. Implementation of the non-pharmacological sleep education will promote the possibility of including this standardization as a meaningful and feasible long-term solution for the organization. The appropriate number of supportive staff and providers is essential for early screening and treatment of sleep insufficiency in this population. The education provided in the changing stage becomes the standard guideline, therefore, it is imperative the information is accurate, reliable, and disseminated to all staff members. It is with

great desire that this DNP project will produce continual refreezing stage and prevent the unfreezing stage from reoccurring.

### **Setting**

The setting where this DNP project will take place is a private practice outpatient clinic located in Colton, California. This clinic is co-owned by a psychiatrist and psychiatric mental health nurse practitioner (PMHNP) and is the largest of three total clinics. The main clinic has 22 employees comprised of one full time (FT) and one part time (PT) psychiatrist, two FT and four PT PMHNPs, one FT and four PT licensed clinical social workers (LCSWs), one office manager, one licensed vocational nurse (LVN), two schedulers, one FT and four PT psychologists. This clinic has managed more than 4000 patients since opening its doors in 2018. This clinic averages approximately 250 scheduled patients per week, of which some are for therapy only, medication management only, or a combination of both. There is a considerable number of cancellations which is common in mental health clinics. The clinic sees approximately 20-40 initial evaluations per month.

This private practice clinic accepts private, commercial, and federal/state funded insurance plans in an effort to provide access to mental health services to the community. The mental health clinic is committed to strengthening and promoting a mentally healthy community by providing access with individualized and innovative mental health care.

In an effort to continue to provide mental health services to the community during the pandemic, the clinic offers telehealth appointments and is transitioning to face to face appointments as restrictions are lifted. The telehealth appointments take place through a platform called Doxy that has audio and visual abilities. Face to face visits take place in the clinic. The psychologists and LCSW appointments are one hour in duration and they offer psychotherapy

such as Cognitive Behavioral Therapy (CBT), Eye Movement Desensitization and Reprocessing Therapy (EMDR), Exposure Response Prevention Therapy (ERP), and Interpersonal therapy (IPT) to patients. An intake appointment with the psychiatrist and PMHNP are thirty to 45 minutes in duration while follow up appointments are 15-20 minutes in nature and offer medication management to patients. The LVN administers all long acting injectables, fields clinical questions by patients, communicates with pharmacies, and obtains vital signs when applicable. The timeframes are standard regardless of a face to face or telehealth appointment. The office manager oversees the day to day operations of the clinic. The schedulers answer phone calls and schedule all appointments for the clinicians. The clinic utilizes Office Ally as the electronic medical record of choice. This platform is affordable, has the capability to send prescriptions electronically, interfaces with the telehealth platform and is sustainable for the size of the practice.

### **Population of Interest**

The clinic staff includes the office manager, nurses, licensed clinical social workers, psychologists, doctors, and nurse practitioners will be educated on importance of the Insomnia Severity Index (ISI) and the Non-pharmacological Education for Sleep (NPES). Only the providers (psychologists, nurse practitioners, licensed clinical social workers, and doctors) will interpret the scores of the ISI tool, discuss the meaning of the scores with the patients, and discuss treatment options on the NPES. The clinic staff are the direct population of interest for this DNP project. There are a total of 22 clinic staff members both full and part time. The years of experience varies between three years and more than 20 years. The clinic staff will directly interact with the patients that are establishing care for mental health services and have sleeping problems. This quality improvement project is aimed at identifying sleep problems early on,

providing education on the importance of sleep, and offering non-pharmacological treatment options.

The patients of the mental health clinic are the indirect population of interest. This indirect population includes males and females 18 years and older who are seeking mental health services at the clinic. Only those patients who are new to the practice and score eight or higher on the ISI are included in this DNP project. Individuals 17 years old and younger are excluded as well as established patients. Race, gender, ethnicity, socioeconomic status, and education are inconsequential for participating in this program.

### **Stakeholders**

Permission to conduct this DNP project will be granted via electronic mail (Appendix C). A letter was received via electronic mail from the co-owner/PMHNP of the clinic confirming that no affiliation agreement was necessary to conduct the DNP project with Touro University Nevada (Appendix C).

The clinic staff (administrative staff, clinical staff and nursing staff) and patients of the clinic are key stakeholders in this project. The clinic staff will be educated on the use of the Insomnia Severity Index scale to assist in the early identification, administration, and treatment of sleep problems within this population. This intervention is intended to positively impact sleep outcomes. The co-owner and office manager will assist with generating the necessary reports as well as strongly encouraging clinic staff to participate in this protocol. The office administrator is a key stakeholder that has the ability to generate statistical evidence based on the information already coded within Office Ally. This staff member has extensive knowledge and experience in the role comparable to a statistician and is therefore able to compile the necessary information needed for this project.

### **Intervention**

A training class will be offered in the morning during rounds with all clinic staff. Written handouts for the ISI tool and the NPES will be distributed to all individuals. The project lead will provide education on how to score the ISI tool, correlate the numbers, and document the numerical and descriptive value of the scores in the electronic medical record (EMR). Next, the project lead will provide detailed education on the NPES intervention and where to document this information in EMR. The office manager will place the ISI tool in the new patient packets, to be completed by the patient prior to the behavioral health initial visit. The behavioral health (BH) providers will review the ISI tool, discuss any sleep concerns verbalized by the patient, correlate the score of the ISI and discuss with patient. The BH provider will provide education to the patient on NPES. The BH provider will document education provided and ISI score in EMR. This support and education are provided to identify sleep problems early and provide a non-pharmacological intervention to minimize polypharmacy. Clinic staff will be provided additional support as needed after the training scheduled training sessions. This project lead will assess if BH providers followed through with non-pharmacological education for sleep (NPES) after the implementation of this project.

### **Tools**

The Insomnia Severity Index (ISI) tool is a brief instrument designed to assess the severity of nighttime and daytime components of insomnia developed by Charles Morin (see Appendix A) (Morin et al., 2011a). The ISI tool will be used to screen new patients for sleep problems in a private practice mental health clinic. The screening tool will assist behavioral health providers in early detection of sleep insufficiencies that could possibly cause or exacerbate some mental health conditions. This tool has been evaluated for its' validity and has

been used in multiple research studies. The ISI is a 7-item self-reported questionnaire assessing the nature, severity, and impact of insomnia on an individual (Morin et al., 2011a). There are three versions of the ISI tool, patient, clinician, and significant others (Bastien et al, 2001). The recall period are symptoms within the last month and the areas evaluated are severity of sleep onset, sleep maintenance, and early morning awakening problems, sleep dissatisfaction, interference of sleep difficulties with daytime functioning, noticeability of sleep problems by others, and distress caused by the sleep difficulties (Morin et al., 2011a). A 5-point Likert scale is utilized to rate each item (i.e., 0 = no problem; 4 = very severe problem), in which, yields a total score ranging from 0 to 28 (Morin et al., 2011b). The total score is interpreted as absence of insomnia (0-7); sub-threshold insomnia (8-14); moderate insomnia (15-21); and severe insomnia (22-28) (Morin et al., 2011b).

The internal consistency of the ISI was examined utilizing the Cronbach alpha coefficient and by the item-total correlations (Bastien et al, 2001). Concurrent validity was used by correlating severity ratings for initial, middle, and terminal insomnia and the total ISI score with the sleep efficiency variable of the sleep diary (Bastien et al, 2001). The internal consistency of the ISI was 0.74 and the correlation between the ISI score and sleep efficiency variable was 0.19 (Bastien et al, 2001). All correlation coefficients were significant at the 0.01 level (Bastien et al, 2001).

In another study comprised of a community sample of 959 individuals and a clinical sample made up of 183 individuals with an insomnia diagnosis and 62 controls without insomnia (Morin et al., 2011a). Data was analyzed utilizing SPSS version 11, with a 2-tailed  $\alpha$  level of 5% (morin et al., 2011a). The ISI reliability was evaluated utilizing the standard Cronbach  $\alpha$  coefficient and item-total correlations for internal consistency (Morin et al., 2011a). Reliability



High internal consistency coefficients were obtained for the community (Cronbach  $\alpha = 0.90$ ) and clinical samples (Cronbach  $\alpha = 0.91$ ) (Morin et al., 2011a). Correlations between individual items and total ISI scores ranged from 0.55 to 0.81 in the community sample and from 0.50 to 0.85 in the clinical sample, suggesting all items significantly contributed to the total score (Morin et al., 2011a). Health professionals can use the ISI as a clinical tool because it is brief, easy to administer and score, and provides pertinent information for diagnosing and treating individuals with sleep insufficiency. Findings suggest that the ISI is a reliable and valid method to quantify perceived insomnia severity in the young and older adult population (Bastien et al, 2001).

### **Chart Review Tool**

A chart review of the EMR, Office Ally, database will be performed to assess the following: 1). Identify the number of initial evaluations completed in a four-week timeframe, that have an ISI score in the chart 2). If ISI score of  $>8$  or ICD10 code of G47.9 then NPES documented in the chart. The diagnosis associated with the ICD10 code of G47.9 is sleep disorder, unspecified. Sleep disorder, unspecified includes conditions characterized by disturbances of usual sleep patterns or behaviors (APA, 2013). 3). Compliance with the NPES protocol by assessing if clinicians provided education to patients as evidence by documentation of non-pharmacological sleep education and ISI administration. Reports will be generated by creating an excel spreadsheet to collect the results of the above information (Appendix E). The project team has reviewed and approved the chart review tool.

### **Staff Education and Non-Pharmacological Education for Sleep Tool**

The project lead will create an agenda for the clinic staff education and training meeting (Appendix F). An overview of the ISI tool will be provided to provide thorough education on how to administer and score the tool. Education will be provided on Non-pharmacological

Education for Sleep (NPES), how to discuss education with patients, and where to document NPES and the ISI score. Paper copies of the ISI tool and NPES will be distributed to clinic staff members. After going over how to administer and score the ISI tool, then the project lead will go over the intervention, NPES. Multiple education sessions will take place to ensure the material is covered for those who are part time and/or who were on paid time off (PTO). There are a limited number of individuals who remain in a working from home or remote status. A zoom meeting will take place to provide clinic staff who are remote with the same education and training provided to the in-person clinic staff. After the meeting, the behavioral health providers will be taught how and where to document NPES education and ISI score in Office Ally. The staff will be afforded many opportunities to verbalize questions, concerns, and feedback. Continuous support will be offered as needed to increase the probability of adherence and charting documentation.

NPES (Appendix B) was created utilizing best practices and evidence-based practice guidelines from the Journal of Clinical Sleep Medicine (JCSM), the American Academy of Sleep Medicine (AASM) and Sleep Research Society (SRS). The Evidence shows negative outcomes and consequences associated with untreated sleep disorders (Magnusdottir, 2019). The United States Department of Health and Human Services created a Sleep Health Objective to “increase the proportion of adults who get sufficient sleep” in a federal initiative known as Healthy People 2020 (Healthy People 2020, 2021). It is critical that individuals and clinicians are educated on the importance of good sleep health and hygiene. NPES will serve as a tool to provide education to the clinician and the patient regarding non-pharmacological modalities that can be utilized to improve sleep. NPES is a document that provides the clinician with step-by-step instructions on how to screen for sleep problems and provide education to the patient on ways to target good

sleep health. Also, NPES provides several recommendations that a patient can trial in an effort to improve sleep, including addressing exercise, caffeine, and night routines. There are many medications available to treat sleep disturbances; however, one must consider allergies, cost, and potential for drug-to-drug interaction when taken in conjunction with other medications. NPES empowers the patient to adjust routines, habits, and consumption of food and beverages in an effort to improve sleep. NPES provides cost-effective and evidence-based modalities to aid the patient in improving their sleep. Improving sleep habits and sleep environments will help individuals stay healthy and safe (CDC, 2019). The project team has reviewed and approved the NPES tool.

### **Data Collection**

The private practice mental health clinic uses Office Ally, an electronic medical record (EMR), database to house patient records and document patient encounters. This EMR system maintains records of all interactions between the clinic staff and the patient, to include telephone calls, assessments, education, screening tools, and therapy notes. Each patient that seeks mental health services during the time of this project is assigned a number. This number protects the patient's identity and aide in maintaining confidentiality. The project lead nor clinic staff will collect any identifying information for the purpose of this project. Password protected files and documents will be used to ensure only individuals who require access to this information will have access as well as to maintain the integrity of this project. The medical assistant will document yes/no responses in the appropriate section of Office Ally regarding whether the ISI screening tool was completed. This section was exclusively created for data collection purposes to meet the objectives of this DNP project. The medical assistant will calculate the ISI score and write it on the ISI document that is hand delivered with the other intake forms to the behavioral

health provider. The behavioral health provider will document the ISI score in Office Ally in the 'objective' section of the chart. Only ISI scores of eight or greater will the behavioral health provider discuss the correlation of the score, develop a treatment plan to address sleep problems, and provide education on NPES. The behavioral health provider will also document NPES education provided in Office Ally in the section labeled 'medication discussion.' These responses will generate a report to measure the number of yes/no responses, ISI scores, NPES education, and diagnosis codes entered in the database. This will verify if the intervention of clinic staff screening for sleep problems utilizing ISI improved sleep outcomes.

### **Ethics/Human Subjects Protection**

This project will incorporate quality improvement and will protect all participants from harm. The project site does not require quality improvement committee oversight. The project lead will follow all ethical standards to protect the rights and integrity of all participants. All necessary approvals and permissions were granted prior to the implementation of this study to ensure human subject protection. The project lead completed the Collaborative Institutional Training Initiative (CITI) program which contained educational material on maintaining the privacy of participants, protection of personal data, and keeping the participants free from harm (Appendix G). The project lead will submit an Institutional Review Board (IRB) determination form in accordance with Touro University Nevada policy, although by the nature of this project it should be exempt from IRB review. The project lead will adhere to ethical practices to safeguard from harm and injustice, guarantee benevolence to all participants during the implementation of this project. Each patient is assured anonymity during the data collection process.

Optimal sleep has positive health, quality of life, and economic benefits (Kurina et al., 2013). Clinic staff education on screening for sleep problems using the ISI tool will increase awareness on the importance sleep has on overall health as well as early detection of sleep problems. Early detection of sleep problems will yield to early intervention, which will correlate to improved quality of life and positive outcomes. This will reduce the risk of negative consequences such as: obesity, type 2 diabetes, and other metabolic issues (Cirelli et al., 2016). The project did not receive any funding from any agency. There is no compensation of any kind for the clinic staff or patients involved. Also, there are no additional recruitment needs for this project. The patients that seek mental health services for the first time at this clinic will suffice for the project.

#### **Measures/Plan for Analysis**

Office Ally's, the electronic medical record, database will be utilized to capture data for analysis. The clinic staff's compliance of screening patients using the ISI tool, documenting the ISI score, and the behavioral health providers providing NPES education to patients will be extracted into an Excel spreadsheet.

Statistical analysis of the data collected will involve the confidence interval of a proportion. The project lead does not anticipate a robust number of ISI scores prior to providing education on how to administer the ISI tool. The confidence interval will be calculated to determine the statistical significance of the pre-education of NPES data, post-education of NPES data, and on ISI scores  $\geq 8$  utilizing this website, <http://vassarstats.net/prop1.html> (Newcombe, 1998). The ICD 10 code of G47.9 will be compared pre and post-education using the Fisher's exact test, <http://www.socscistatistics.com/tests/fisher/Default2.aspx> (Zar, 1999). Pre-implementation data (ISI screening, ISI scores, and ICD 10 G47.9) will be collected from

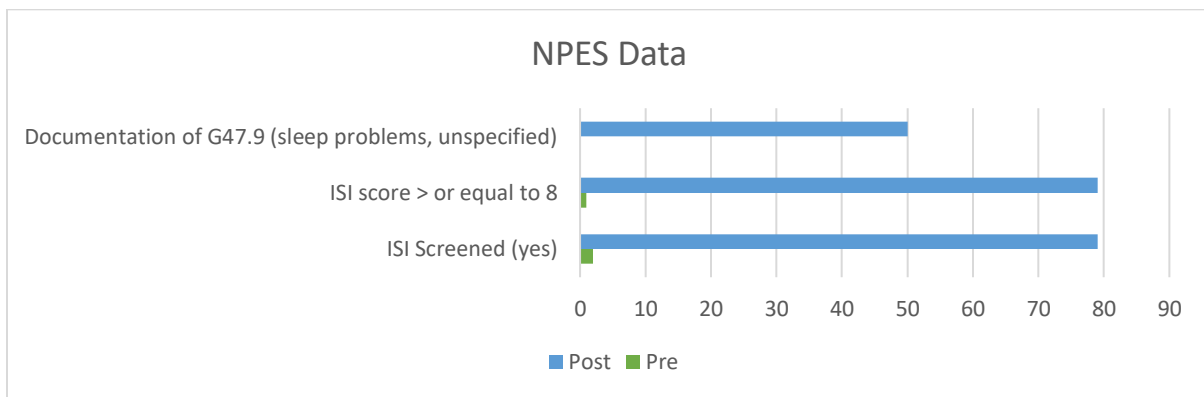
October 03, 2021 through October 30, 2021. This timeframe is four weeks prior to the implementation of the NPES education session with the clinic staff. Every new patient seeking mental health services is assessed for sleep problems upon intake. Completion of the ISI screening, the ISI score, and whether NPES education was provided to the patient is documented within Office Ally and is retrospectively extracted using specific dates. A report is generated that displays data in the form of an excel file. Post-data will be collected over a span of four weeks in which includes the clinic staff practicing the intervention with patients.

**Analysis**

The data analysis phase began with the extraction of data from the Office Ally database and compiling the data into an Excel spreadsheet. The office manager, co-owner, and lead PMHNP assisted in collecting data from the Office Ally database.

The screening for sleep problems (ISI screen) during the initial evaluation, ISI score  $\geq 8$ , and documentation of sleep disorder (ICD-10 code G47.9) was measured (Table 1).

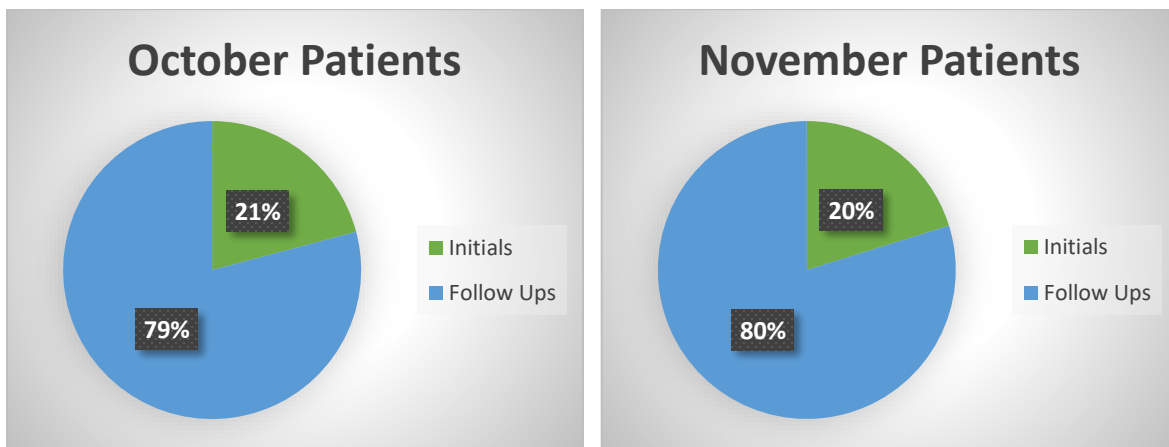
**Table 1: NPES Data**



Non-pharmacological education for sleep (NPES) and ISI score greater than eight was discussed with the patient by the provider in detail during the visit. Each patient whose ISI score was higher than eight received a hard copy of the NPES to reiterate the education provided by the clinician.

This project is intended to examine statistical outcomes that are like other projects that investigate awareness and early detection of sleep problems coupled with education of clinical staff on the enhancement of mental health outcomes. The Excel program version 12.2.4 was utilized to generate the appropriate visual graphics for analysis. Simple math was used to calculate the total percentage of patients seen pre- (October) and post-intervention (November) (Table 2).

**Table 2: Total Patients Seen**



Approximately 20% of patients seen for the month were initial evaluations for pre and post-education. The data collected and generated from Office Ally: pre-education of NPES data, post-education of NPES data, and ISI scores  $\geq 8$  was extrapolated into an Excel spreadsheet. The data extracted of initial evaluations screened (Table 3) and NPES education given was interpreted using the confidence interval to determine the statistical significance (Table 4).

**Table 3: Patients Screened for Sleep Problems**

k =	<input type="text" value="79"/>	Proportion =	<input type="text" value="0.9518"/>
n =	<input type="text" value="83"/>		
<input type="button" value="Reset"/>		<input type="button" value="Calculate"/>	

<i>95% confidence interval: no continuity correction</i>			
Lower limit =	<input type="text" value="0.8825"/>	Upper limit =	<input type="text" value="0.9811"/>
<i>95% confidence interval: including continuity correction</i>			
Lower limit =	<input type="text" value="0.8745"/>	Upper limit =	<input type="text" value="0.9844"/>

A total of 83 patients were seen for initial visits and 79 were screened for sleep problems. There is 95% confidence that the true proportion of patients screened for sleep problems is between 88.25% and 98.11%.

**Table 4: Patients with Sleep Problems Given NPES Education**

k =	<input type="text" value="50"/>	Proportion =	<input type="text" value="0.6329"/>
n =	<input type="text" value="79"/>		
<input type="button" value="Reset"/>		<input type="button" value="Calculate"/>	

<i>95% confidence interval: no continuity correction</i>			
Lower limit =	<input type="text" value="0.5228"/>	Upper limit =	<input type="text" value="0.7307"/>
<i>95% confidence interval: including continuity correction</i>			
Lower limit =	<input type="text" value="0.5164"/>	Upper limit =	<input type="text" value="0.7364"/>

A total of 79 patients were screened for sleep problems and a total of 50 of those patients were diagnosed with G47.9, sleep problems, unspecified. There is 95% confidence that the true proportion of patients with sleep problems were given NPES is between 52.28% and 73.07%.

The ICD 10 code of G47.9 pre- and post-education was compared using the Fisher's exact test (Table 5).



**Table 5: G47.9 Pre- and Post-intervention**

	Results		
	Pre-intervention	Post-intervention	<i>Marginal Row Totals</i>
G47.9	0	50	50
Not G47.9	76	33	109
<b><i>Marginal Column Totals</i></b>	76	83	159 (Grand Total)

The Fisher exact test statistic value is  $< 0.00001$ . The result is significant at  $p < .05$ .

Pre-intervention there were zero patients diagnosed with sleep problems, unspecified, whereas there were 50 patients diagnosed post-intervention. Thirty-three patients were not diagnosed with G47.9 despite meeting criteria of an initial visit with an ISI score  $\geq 8$ . The Fisher exact test of G47.9 is statistically significant at  $p < 0.05$ .

### Discussion

This quality improvement project promoted the identification of sleep problems through implementation of staff education and a non-pharmacological treatment protocol (NPES) based on national guidelines to identify and treat sleep problems early. This intervention met the first objective: early identification of sleep problems by utilizing the ISI tool. Evidence shows that the early identification and treatment of sleep problems helps to decrease the risk of individuals developing a mental health disorder, decreases the risk of relapse, and improves treatment results (Ter Heege et al., 2020). The national guidelines for sleep all share a common theme that early identification of sleep problems, education on the importance of sleep with respect to mental health, and non-pharmacological treatment modalities serve great benefits to individuals (Edinger et al., 2021).

The participants of the project consisted of a total of 83 adult patients seen in the mental health clinic for initial visits; however, only 79 were screened for sleep problems (N=79). Education and weekly support sessions on how to administer the NPES and ISI tool were conducted to satisfy the third objective of this project. Weekly sessions took place prior to and

during the intervention period to provide robust support, problem solving challenges, answering questions, and reminders to use the ISI tool and NPES.

The second objective was satisfied by the mental health providers providing education on NPES to the adult patients that scored an eight or more on the ISI tool (N=50). Although 79 patients scored eight or more on the ISI, only 63% were diagnosed with G47.9 sleep problems, unspecified and the clinician documented NPES education given to the patient (Table 4). Approximately 36% of the patients did not have either NPES education provided and/or G47.9 documented in the patient's chart.

The fourth and final object of the project was fulfilled: Implement NPES, then evaluate it by completing a chart review pre and post intervention looking for documentation of non-pharmacological sleep education and ISI administration in a four-week period. Pre-intervention there were zero patients diagnosed with sleep problems, unspecified, whereas there were 50 patients diagnosed post-intervention (Table 5). There were three patients not screened at all in the beginning of the project and additional 30 patients, for a total of thirty-three patients or 40%, were not diagnosed with G47.9 despite meeting criteria of an initial visit with an ISI score  $\geq 8$ .

### **Significance**

The above findings are in alignment with systematic reviews that show improved outcomes when there is early identification and treatment of sleep problems. Sleep plays a critical role in an individual's personal and professional well-being (Smagula et al., 2016). Despite the high prevalence of sleep disorders and their negative impact, it is estimated that less than 15% of patients receive treatment (Mellinger et al., 1995). Sleep fragmentation can lead to depression, anxiety, and an increase in healthcare costs (Zadeh et al., 2018). Sleep problems are considered a core symptom of depression (Montgomery & Dennis, 2004). A study examined the

association between sleep problems and depression and whether sleep problems with depression are associated with an increased risk for poorer health in 46 low- and middle-income countries (Stickley et al., 2019). The study was comprised of 237, 023 adults aged  $\geq 18$  years from the World Health Survey (WHS) 2002–2004 (Stickley et al., 2019). Sleep problems were conferred additional risk for anxiety, perceived stress and a decrease in self-care, cognition, and interpersonal activities ((Stickley et al., 2019). Early identification and treatment of sleep disturbances in adults seeking mental health assistance will aide in the treatment of certain psychiatric conditions (Krystal, 2012).

### **Implications for Nursing**

The early detection and treatment of sleep problems conducted for this DNP quality improvement project is thorough and utilizes the power of education and collaboration among clinical staff members. NPES was developed utilizing evidence-based guidelines and literature to empower clinicians and patients to explore non-pharmacological modalities. This evidence-based project integrated supportive and non-pharmacological approaches which has previously shown to improve sleep outcomes and overall patient outcomes (Edinger et al., 2021). The nursing profession has shown to be effective in this quality improvement project as it emphasized the CDC's commitment to raise awareness and provide education to enhance sleep health (CDC, 2021). This project incorporated the American Academy of Sleep Medicine's recommendation to utilize a provider's clinical judgment and multicomponent therapies paired with a patient's preference to determine the best plan of care (Edinger et al., 2021). The key stakeholders and clinic staff discovered that education and standardization of a protocol constructed on evidence-based standards increased sleep problem screenings and implemented early interventions.

### **Limitations**

This DNP project had multiple limitations related to the time constraints associated with an academic project. If the intervention lasted longer than four weeks, then the sample size would have been larger in which may have led to different results. In addition, if more time was allotted then more clinical sites could have participated in this quality improvement project. This project did not include follow up visits in an effort to strengthen the effectiveness of the intervention by creating a more uniform group at baseline. Pre-existing conditions can pose a threat to internal validity and can lead to another possible explanation for the effect of the intervention (Van Dellen et al., 2019). Also, additional time the providers could have had more of a positive impact leading to an increase in early identification and treatment of sleep problems.

The design of the study was limited to one clinical site therefore, limiting the number of providers. The method in which data was collected did not identify which provider documented G47.9 and NPES education provided to each patient. A specific identifier assigned to each provider would add to the data collection as well as provide a substantial argument for more providers yielding favorable sleep problem results. There were some providers that diagnosed patients with a sleep disorder but did not use the specific ICD-10 code, G47.9. Creating a post-test to distribute to each provider, after education provided on ISI and NPES, to ensure understanding would avoid incorrectly diagnosing patients or skewing results.

### **Dissemination**

The plan for dissemination of this DNP project will include an oral presentation via zoom with faculty of Touro University Nevada. Project team members, stakeholders, students and faculty of Touro University will be invited. A submission to the DNP repository will be made

upon approval. A final report and poster presentation will be submitted to the Inaugural Psychiatry Summit on March 24-26, 2022.

### **Project Sustainability**

This project can be used as a resource for mental health clinics in identifying sleep problems early and providing non-pharmacological treatment options for inadequate sleep in patients. Larger studies should be completed to evaluate the impact of provider education on the outcome of sleep problems. This includes better approaches to understand and encourage the value of early identification, education and non-pharmacological interventions. It is critical to have interventions with robust nursing and provider participation and excitement in order to achieve sustainable and long term benefits. The host site will continue to screen patients for sleep problems utilizing the Insomnia Severity Index screening tool during all new patient appointments and will continue to offer non-pharmacological treatment modalities to patients utilizing NPES from this DNP project.

### **Conclusion**

This project evaluated sleep problem outcomes in regards to early identification and non-pharmacological treatments using the ISI and NPES educational guide. Clinic staff were provided education on how to properly screen for sleep problems using the ISI tool, score and document during initial visits. The analysis of early identification and treatment of sleep problems was proven to improve sleep problem outcomes. Using the ISI tool as a method to identify sleep problems early is an effective way to provide additional assessment data for providers during the initial visit. This will enable providers to discuss non-pharmacological treatment options with patients leading to a decrease in polypharmacy and increase in the patients overall mental health wellness.

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## Appendix A

### Insomnia Severity Index

The Insomnia Severity Index has seven questions. The seven answers are added up to get a total score. When you have your total score, look at the 'Guidelines for Scoring/Interpretation' below to see where your sleep difficulty fits.

For each question, please CIRCLE the number that best describes your answer.

Please rate the CURRENT (i.e. LAST 2 WEEKS) SEVERITY of your insomnia problem(s).

<b>Insomnia problem</b>	<b>None</b>	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>	<b>Very severe</b>
1. Difficulty falling asleep	0	1	2	3	4
2. Difficulty staying asleep	0	1	2	3	4
3. Problem waking up too early	0	1	2	3	4

4. How SATISFIED/DISSATISFIED are you with your CURRENT sleep pattern?

<b>Very Satisfied</b>	<b>Satisfied</b>	<b>Moderately Satisfied</b>	<b>Dissatisfied</b>	<b>Very Dissatisfied</b>
0	1	2	3	4

5. How NOTICEABLE to others do you think your sleep problem is in terms of impairing the quality of your life?

<b>Not at all Noticeable</b>	<b>A Little</b>	<b>Somewhat</b>	<b>Much</b>	<b>Very Much Noticeable</b>
0	1	2	3	4

6. How WORRIED/DISTRESSED are you about your current sleep problem?

<b>Not at all Worried</b>	<b>A Little</b>	<b>Somewhat</b>	<b>Much</b>	<b>Very Much Worried</b>
0	1	2	3	4

7. To what extent do you consider your sleep problem to INTERFERE with your daily functioning (e.g. daytime fatigue, mood, ability to function at work/daily chores, concentration, memory, mood, etc.) CURRENTLY?

<b>Not at all Interfering</b>	<b>A Little</b>	<b>Somewhat</b>	<b>Much</b>	<b>Very Much Interfering</b>
0	1	2	3	4

Guidelines for Scoring/Interpretation:

Add the scores for all seven items (questions 1 + 2 + 3 + 4 + 5 +6 + 7) = \_\_\_\_\_ your total score

Total score categories:

0-7 = No clinically significant insomnia

8-14 = Subthreshold insomnia

15-21 = Clinical insomnia (moderate severity)

22-28 = Clinical insomnia (severe)

## Appendix B

### Non-Pharmacological Education for Sleep (NPES)

**Purpose:** Early identification and treatment of sleep insufficiency in the private practice mental health clinic

**Objectives:**

Provide non-pharmacological treatment options for sleep insufficiency in the private practice mental health clinic

Standardize treatment of sleep insufficiency in private practice mental health clinic

Provide sleep hygiene education to patients in private practice mental health clinic

Train clinic staff on NPES, and Insomnia Severity Index tool (ISI) to be added to patient packets

**Indications:** Adults seeking treatment at private practice mental health clinic

**Contraindications:** Not intended for the pediatric population; individuals who score less than 8 on the ISI tool

**Steps:**

1. Office manager will place ISI form in each patient packet
2. Medical assistant will ensure form is completed in its' entirety before escorting the patient back to the provider. If the appointment is virtual, then MA will ask pt to answer any of the questions that are not completed and provide completed form to the provider.
3. Provider will ask patient about the quality and quantity of nocturnal sleep as well as the number of nighttime awakenings (if any), and duration of sleep insufficiency. Provider will ask about any pharmacological and/or non-pharmacological treatments previously trialed and document information. Provider will help patient to create patient centered and realistic goals regarding sleep
4. Interventions:
  - Cognitive Behavioral Therapy for Insomnia (CBT-I) with Licensed Clinical Social Worker or Psychologist
  - Mindfulness Therapy with Licensed Clinical Social Worker or Psychologist
  - Try to keep a regular sleep schedule (i.e. go to bed at the same time every day and get up at the same time).
  - Avoid exercising close to bedtime
  - Avoid caffeine containing foods or drinks before bedtime (i.e chocolate, tea, soda, or energy drinks)
  - Avoid alcohol, nicotine, heavy meals and drinking a lot of liquids close to bedtime
  - Promote a sleep-friendly environment (i.e. minimize noise and light, and keep a cool yet comfortable temperature).
  - Relax before bedtime (i.e take a warm shower or soak in the tub, meditate, do yoga stretches, lavender oils or sprays).
  - Use the bed for sleep and intimacy only (remove electronics from the bedroom)
  - Go to bed only when you are sleepy. If you feel relaxed and at peace, stay in bed, sleep will come. If you are unable to fall asleep within 15-20 minutes, then go to another room. Keep the lights dim and do something relaxing (not too stimulating). Once you are sleepy again, then return to bed.
  - Get exposure to natural light during the day



- Talk to your healthcare provider before taking any over-the-counter sleep aides or supplements (i.e. Melatonin, Diphenhydramine, Ashwagandha)

### Appendix C

#### IRB determination Form

Student Name: **Jazmyne Bosley**

DNP Project Title: **Assessment and Non-Pharmacological Treatment of Sleep in Adults in a Private Practice Mental Health Clinic**

DNP Project Instructor: **Dr. Jessica Grimm**

Academic Mentor: **Dr. Maria D’Errico**

#### Quality Improvement or Research Worksheet

*Rachel Nosowsky, Esq.*

ITEM	Issue and Guidance	Rating
1	Are participants randomized into different intervention groups in order to enhance confidence in differences that might be obscured by nonrandom selection? Randomization done to achieve equitable allocation of a scarce resource need not be considered and would not result in a “yes” here.	___ YES _X_ NO
2	Does the project seek to test issues that are beyond current science and experience, such as new treatments (i.e., is there much controversy about whether the intervention will be beneficial to actual patients – or is it designed simply to move existing evidence into practice?). If the project is performed to implement existing knowledge to improve care – rather than to develop new knowledge – answer “no”.	___ YES _X_ NO
3	Are there any potential conflicts of interest (financial or otherwise) among any researchers involved in the project? If so, please attach a description of such in an attachment to this form.	___ YES _X_ NO
4	Is the protocol fixed with a fixed goal, methodology, population, and time period? If frequent adjustments are made in the intervention, the measurement, and even the goal over time as experience accumulates, the answer is more likely “no.”	___ YES _X_ NO
5	Will data collection occur in stages with an effort to remove potential bias? If so is there any potential for data skewing from this process?	___ YES _X_ NO
6	Is the project funded by an outside organization with a commercial interest in the use of the results? If the answer to this question is “Yes” please also answer question 6a and 6b. If the project is funded by third-party payors through clinical reimbursement incentives, or through internal clinical/operations funds vs. research funds, the answer to this question is more likely to be “no.”	___ YES _X_ NO
6a	Is the sponsor a manufacturer with an interest in the outcome of the project relevant to its products?	___ YES _X_ NO
6b	Is it a non-profit foundation that typically funds research, or internal research accounts?	___ YES _X_ NO

Adapted from Hastings Center, “The Ethics of Using Quality Improvement Methods to Improve Health Care Quality and Safety” (June 2006) If the weight of the answers tends toward “yes” overall, the project should be considered “research” and approved by an IRB prior to implementation. If the weight of the answers tends toward “no,” the project is not “research” and

is not subject to IRB oversight unless local institutional policies differ. Answering “yes” to sequence #1 or #2 – even if all other answers are “no” – typically will result in a finding that the project constitutes research. It is important to consult with your local IRB if you are unsure how they would handle a particular case, as the analysis of the above issues cannot always be entirely objective and IRB policies and approaches vary significantly.

Obtained from:

[https://irb.research.chop.edu/sites/default/files/documents/quality\\_improvement\\_or\\_research\\_worksheet.pdf](https://irb.research.chop.edu/sites/default/files/documents/quality_improvement_or_research_worksheet.pdf)

Additional resources:

[http://humansubjects.stanford.edu/research/documents/qa\\_qi\\_faqs\\_AID03H16.pdf](http://humansubjects.stanford.edu/research/documents/qa_qi_faqs_AID03H16.pdf)

<https://irb.research.chop.edu/quality-improvement-vs-research>

#### SECTION B:

##### Project Classification Decision:

The project team consisting of a minimum of two faculty members will select one of the three classifications listed below.

\_\_\_\_\_ This DNP Project is a quality improvement project. Do not submit to IRB for review.

\_\_\_\_\_ This DNP Project contains research methodology and an IRB application should be submitted to the TUN IRB committee for exemption determination and/or full IRB review.

\_\_\_\_\_ This DNP Project is not clearly delineated as quality improvement or research of discovery. Additional consultation will be obtained from the IRB committee by the project team. The advice of the IRB committee regarding the need for review will be noted in writing and the student will be informed of such (Please attach any pertinent documentation from IRB review as an Appendix to this document.)

By signing below, each member of the project team indicates that they agree with the above selection.

Printed Name of Project Team Member 1:

---

Signature of Project Team Member 1:

---

Printed Name of Project Team Member 2:

---

Signature of Project Team Member 2:

---

**Appendix D**

*Loma Linda Psychiatric Medical Group  
1001 E Cooley Dr, Ste 107  
Colton, CA 92324  
909-370-4700*

To Whom It May Concern:

Jazmyne Bosley has permission to complete her Doctoral project at Loma Linda Psychiatric Medical Group. No clinical affiliation and/or agreement is needed.

Thank you,

  
Dr. Liberty Macias

Appendix E

Excel Spreadsheet

Patient	ISI Screen	ISI score	G47.9	ISI screen	ISI score	G47.9
1	No		No	Yes	8	No
2	No		No	Yes	11	No
3	No		No	Yes	14	No
4	No		No	Yes	9	No
5	No		No	Yes	12	No
6	No		No	Yes	8	No
7	No		No	Yes	8	Yes
8	No		No	Yes	8	No
9	No		No	Yes	11	Yes
10	No		No	Yes	10	Yes
11	No		No	Yes	14	Yes
12	No		No	Yes	13	No
13	No		No	Yes	11	Yes
14	No		No	Yes	16	Yes
15	Yes	6	No	Yes	13	Yes
16	No		No	Yes	9	No
17	No		No	Yes	18	No
18	No		No	Yes	14	Yes
19	No		No	Yes	14	Yes
20	No		No	Yes	9	Yes
21	No		No	Yes	10	Yes
22	No		No	Yes	8	No
23	No		No	Yes	21	Yes
24	No		No	Yes	19	Yes
25	No		No	Yes	19	No
26	No		No	Yes	18	Yes
27	No		No	Yes	8	Yes
28	No		No	Yes	8	Yes
29	No		No	Yes	12	Yes
30	No		No	Yes	9	Yes
31	No		No	No		No
32	No		No	Yes	15	Yes
33	No		No	Yes	10	Yes
34	No		No	Yes	17	Yes
35	No		No	Yes	14	Yes
36	No		No	Yes	15	No
37	No		No	Yes	25	Yes
38	No		No	Yes	23	Yes
39	No		No	No		No
40	No		No	Yes	17	Yes
41	No		No	Yes	16	Yes
42	No		No	Yes	15	Yes
43	Yes	9	No	Yes	17	Yes
44	No		No	Yes	9	Yes
45	No		No	Yes	19	Yes
46	No		No	No		No
47	No		No	Yes	23	Yes
48	No		No	Yes	8	Yes
49	No		No	Yes	16	Yes
50	No		No	Yes	9	Yes
51	No		No	Yes	10	Yes
52	No		No	Yes	8	Yes
53	No		No	Yes	14	Yes
54	No		No	Yes	10	Yes
55	No		No	No		No
56	No		No	Yes	9	Yes
57	No		No	Yes	19	Yes
58	No		No	Yes	11	Yes
59	No		No	Yes	14	Yes
60	No		No	Yes	20	Yes
61	No		No	Yes	16	Yes
62	No		No	Yes	21	Yes
63	No		No	Yes	9	Yes
64	No		No	Yes	8	Yes
65	No		No	Yes	16	Yes
66	No		No	Yes	17	Yes
67	No		No	Yes	23	Yes
68	No		No	Yes	15	Yes
69	No		No	Yes	10	Yes
70	No		No	Yes	9	Yes
71	No		No	Yes	8	Yes
72	No		No	Yes	13	No
73	No		No	Yes	10	No
74	No		No	Yes	8	No
75	No		No	Yes	11	Yes
76	No		No	Yes	12	Yes
77	No		No	Yes	10	Yes
78				Yes	21	Yes
79				Yes	18	Yes
80				Yes	10	Yes
81				Yes	25	Yes
82				Yes	11	Yes
83				Yes	10	Yes

## Appendix F

### Education and Training Agenda

0745: Greeting and introduction of project lead.

- Inform clinic staff of the DNP project name.
- Explain the DNP project purpose an project

0750: Discuss duration of project (4 weeks).

- Role of each staff member for this DNP quality improvement project (office manager, LVN, psychologist/LCSW, psychiatrist/PMHNP, IT manager, and other clinic staff members)
- Hand out paper copies of ISI tool and NPES to all clinic staff
- Explain ISI in great detail (i.e. each of the 7 questions, how to score, and how to interpret score)
- Explain NPES in great detail
- Explain where behavioral health providers document NPES education and ISI score

0800: Questions

- Provide means of how to contact the project lead during the next 4 weeks

Documentation instructions:

Screenshot of login

1.360.975.7000 | INFO@OFFICEALLY.COM

OFFICE ALLY

HOME PRODUCTS SERVICES RESOURCE CENTER SUPPORT LOGIN

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Fast Implementation  
Increase your HEDIS Numbers  
Real Time Results Reporting  
FREE Training

Login to Office Ally

Username libertyolive

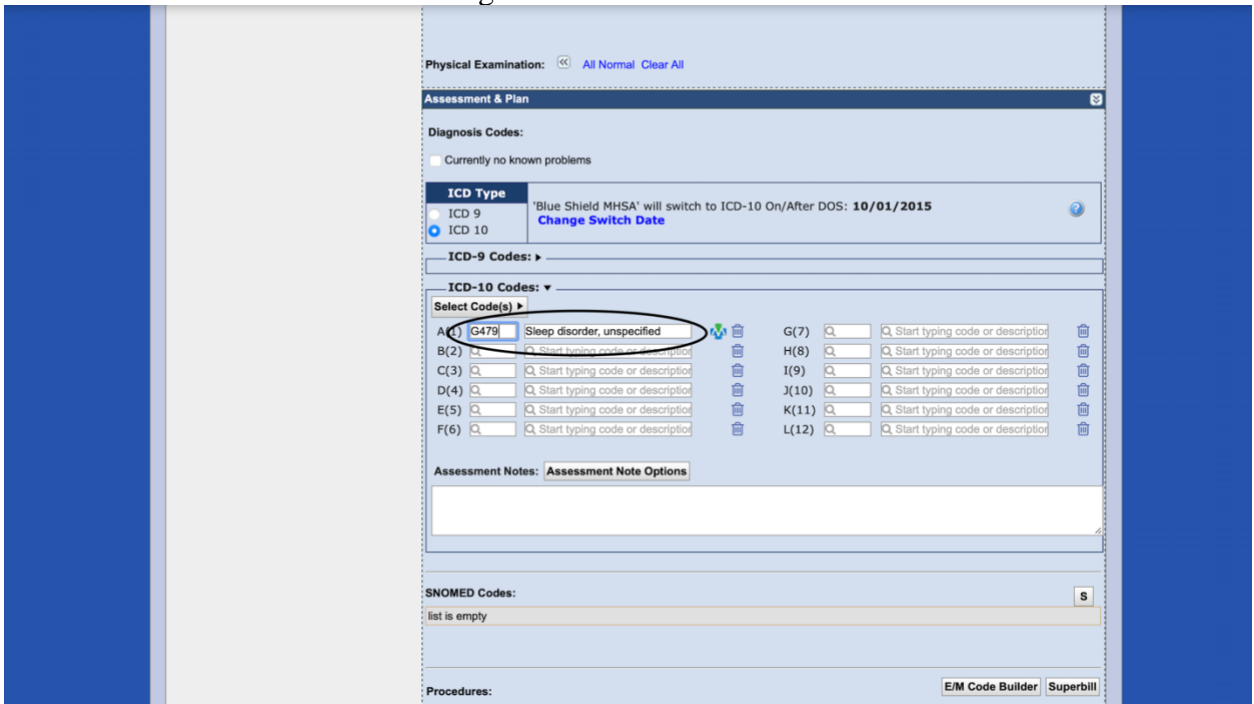
Password

Log In

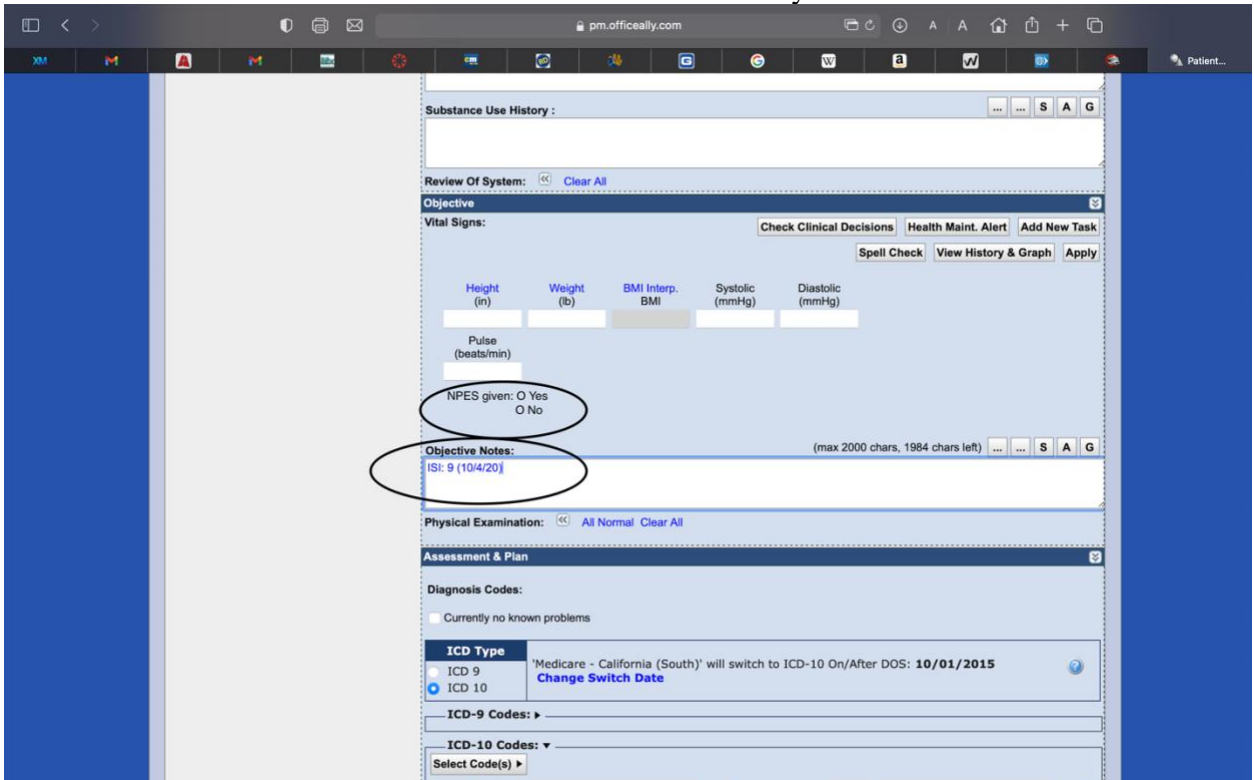
Forgot Username or Reset Password?

Home Page Login Contact Us Training  
Products FAQ About Us Forms & Manuals  
Support Suite Services Live Chat Certifications

Screenshot of where to document diagnosis



Screenshot of where to document ISI score/Document NPES yes or no



Screenshot of where to document NPES given

The screenshot displays a medical software interface with several sections for documenting a medication plan:

- Prescribed Medications:** Includes an "Online e-Prescription" link and a text area stating "eRx list is empty".
- Care Plan:** Contains a "Plan Notes" field with the text "Continue trazodone 50mg PO QHS".
- Medication Discussion:** This field is circled in red and contains the text: "Discussed SE/AR risks vs benefits of medications", "Educational handout on trazodone given", and "NPES provided".
- Consent for Treatment:** Contains the text "Obtained verbal consent for treatment".
- RTO:** Contains the text "4 weeks" and a character count "(max 2000 chars, 1993 chars left)".
- Referral:** An empty text area.

At the bottom of the form, there are buttons for "Update", "Cancel", and "Apply". Below the form, a navigation bar includes buttons for "Check Clinical Decisions", "MU Checklist", "Health Maint. Alert", "Add New Task", "Spell Check", and "Confidential Info".



## Appendix G

## CITI Completion Certificate

## COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2  
COURSEWORK REQUIREMENTS\*

\* NOTE: Scores on this [Requirements Report](#) reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Jazmyne Bosley (ID: 10234447)
- **Institution Affiliation:** Touro University Nevada (ID: 1927)
- **Institution Email:** jbosley@student.touro.edu
- **Institution Unit:** Nursing
  
- **Curriculum Group:** Students conducting no more than minimal risk research
- **Course Learner Group:** Students - Class projects
- **Stage:** Stage 1 - Basic Course
- **Description:** This course is appropriate for students doing class projects that qualify as "No More Than Minimal Risk" human subjects research.
  
- **Record ID:** 43276972
- **Completion Date:** 24-Jun-2021
- **Expiration Date:** 23-Jun-2024
- **Minimum Passing:** 80
- **Reported Score\*:** 97

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
History and Ethical Principles - SBE (ID: 490)	24-Jun-2021	4/5 (80%)
Defining Research with Human Subjects - SBE (ID: 491)	24-Jun-2021	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	24-Jun-2021	5/5 (100%)
Informed Consent - SBE (ID: 504)	24-Jun-2021	5/5 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	24-Jun-2021	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	24-Jun-2021	5/5 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: [www.citiprogram.org/verify/?ka37cfff3d48-425e-920c-665f73b7aa99-43276972](http://www.citiprogram.org/verify/?ka37cfff3d48-425e-920c-665f73b7aa99-43276972)

Collaborative Institutional Training Initiative (CITI Program)

Email: [support@citiprogram.org](mailto:support@citiprogram.org)

Phone: 888-529-5929

Web: <https://www.citiprogram.org>

**COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)****COMPLETION REPORT - PART 2 OF 2  
COURSEWORK TRANSCRIPT\*\***

\*\* NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Jazmyne Bosley (ID: 10234447)
- **Institution Affiliation:** Touro University Nevada (ID: 1927)
- **Institution Email:** jbosley@student.touro.edu
- **Institution Unit:** Nursing
  
- **Curriculum Group:** Students conducting no more than minimal risk research
- **Course Learner Group:** Students - Class projects
- **Stage:** Stage 1 - Basic Course
- **Description:** This course is appropriate for students doing class projects that qualify as "No More Than Minimal Risk" human subjects research.
  
- **Record ID:** 43276972
- **Report Date:** 24-Jun-2021
- **Current Score\*\*:** 94

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Consent Tools Used by Researchers (ID: 16944)	24-Jun-2021	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	24-Jun-2021	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	24-Jun-2021	5/5 (100%)
Assessing Risk - SBE (ID: 503)	24-Jun-2021	5/5 (100%)
Informed Consent - SBE (ID: 504)	24-Jun-2021	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	24-Jun-2021	5/5 (100%)
Research with Prisoners - SBE (ID: 506)	24-Jun-2021	5/5 (100%)
Research with Children - SBE (ID: 507)	24-Jun-2021	4/5 (80%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	24-Jun-2021	5/5 (100%)
International Research - SBE (ID: 509)	24-Jun-2021	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	24-Jun-2021	3/5 (60%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	24-Jun-2021	5/5 (100%)
History and Ethical Principles - SBE (ID: 490)	24-Jun-2021	4/5 (80%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	24-Jun-2021	4/4 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	24-Jun-2021	5/5 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	24-Jun-2021	4/5 (80%)

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Email: [support@citiprogram.org](mailto:support@citiprogram.org)  
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