Enhancing Assessment and Non-pharmacological Treatment of Insomnia in Adults in an Outpatient Mental Health Clinic

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Abstract

Insomnia, as a sleep disorder, affects the quality of life of individuals suffering from it. If left untreated, it could lead to cardiovascular and mental health issues. When sleeping habits are not disclosed to clinicians, insomnia can go undiagnosed. Insomnia should be treated as a distinct disorder and not as a symptom of a medical condition. The purpose of this DNP project is to enhance the assessment and non-pharmacological treatment of insomnia in adult patients to minimize the societal burden of insomnia. The aim is to improve provider compliance with the national standard of care for insomnia by empowering providers on the effective use of the insomnia severity index (ISI) and the importance of educating patients on evidence-based non-pharmacological treatment of insomnia, such as cognitive behavioral therapy (CBT-I).

Education was provided to the participants, and educational pamphlets were available for providers to educate patients. A protocol was developed to serve as a guide for the staff. Providers established a plan of care for patients who tested positive for insomnia, including a referral to a CBT-I therapist. A chart audit was carried out to assess providers' compliance. The data analysis showed weekly improvement in the provider's compliance with the screening protocol to meet national standards of care for insomnia in adults.

The results of this project demonstrated that with the educational seminar, providers better understood the importance of effectively utilizing the ISI tool to screen adults for insomnia and recommended evidence-based non-pharmacological treatment for patients diagnosed with insomnia to improve patient outcomes.

Keywords: cognitive behavioral therapy, education, insomnia, non-pharmacological treatments, protocol compliance

Background

Insomnia is a prevalent nocturnal sleep disorder that affects individuals of all ages and ethnicities. Although men and women suffer adversely from insomnia in terms of their health and quality of life, it significantly impacts functional capabilities, healthcare, and societal issues (Khaled et al., 2021). Approximately 10% of adults in the general population have insomnia (Rosenberg et al., 2023). The persistent problem of falling and staying asleep may cause several health issues, including cardiovascular, mental health issues, and other health conditions, which is perhaps why insomnia is often associated with another medical condition rather than a distinct disorder. For example, during the Coronavirus (COVID-19) pandemic, patients and healthcare workers suffered insomnia. Lack of nighttime sleep, severe sleep problems, and high levels of daily burnout may be risk factors for COVID-19 in healthcare workers (Czeisler et al., 2023). In addition, low immunity may have contributed to the susceptibility to getting sick.

Insomnia not only affects the quality of life and the risk of developing other health concerns, such as depression, but it also impacts healthcare costs. The cost of insomnia in the United States is estimated to be as high as $100 billion; after a year, managing patients with insomnia was 46% more expensive than managing patients without insomnia and if comorbidity was present, the cost increase was 80% (Rosenberg et al., 2023). Most of the costs stem from indirect sources such as accidents, and disproportionate use of medical resources. Even though many patients struggle with insomnia, and only a tiny proportion of this group discusses their sleep problems with their primary care doctors, and an even smaller proportion seeks treatment. Insomnia affects nearly 50% of primary care patients; 30% of them mentioned the issue to a doctor, and only 6% said they had sought medical advice for their sleep issues (Rosenberg et al.,

2023). In another survey involving adults, 70% of respondents reported that their clinicians never asked them about their sleep (Rosenberg et al., 2023).

Many studies around the globe have shown an association between insomnia and mental illness, such as anxiety and depression (Khaled et al., 2021). This situation calls for addressing insomnia symptoms early and reducing the stigma surrounding the association of insomnia with mental disorders. Furthermore, the relationship between insomnia and mental illness may have an effect on the health management of individuals with insomnia symptoms as it may cause them to shy away from seeking help. Therefore, incorporating insomnia-related questions in anxiety and depression screening questionnaires is clinically essential**.**

Problem Identification

Poor sleep may lead to accidents, poor social, occupational, and educational functioning, and poor work productivity (Fietze et al., 2022). Insomnia often goes undiagnosed and untreated despite an increased awareness to recognize it as a distinct disorder as classified in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), and not only as a symptom related to another medical, behavioral or psychiatric illness. According to DSM-5, insomnia as a sleep disorder is characterized by a predominance of unhappiness with either the quantity or quality of sleep, that is linked to significant distress and impairments of daytime functioning (Khaled et al., 2021). Difficulty falling asleep, staying asleep, and falling back to sleep in the early morning hours are common symptoms of insomnia.

According to the to the criteria of the 11th edition of the International Classification of Diseases (ICD-11), insomnia disorder is described as persistent trouble with initiating sleep, consolidation, duration, or quality that persists in spite of adequate opportunity and conditions for sleep and causes some daytime impairment (Rosenberg et al., 2023). Therefore, the questions

regarding insomnia should delve into the type of sleep disturbance such as- delayed onset of sleep, difficulty staying asleep, early morning awakening, nonrestorative sleep, impaired daytime functioning, sleep routines and potentially unhealthy habits, and the potential presence of contributing comorbidities.

People with sleep problems frequently do not talk to their clinicians about the problem, and clinicians seem negligent to inquire about sleep disturbances, which exacerbates the issue. At the project site, individuals are often diagnosed with insomnia based on subjective reports of symptoms with no further screening. When insomnia is suspected, further evaluation utilizing a screening tool is required to plan treatment appropriately. There are pharmacological and non-pharmacological treatments options for insomnia. Despite the availability of non-pharmacological treatments such as cognitive-behavioral therapy for insomnia (CBT-I), many individuals with insomnia do not receive proper assessment and treatment, resulting in the overuse of pharmacological treatments that can have adverse side effects and contribute to the increased risk of dependence or addiction.

Significance of the Study

Approximately one-third of the general adult population have complaints of insomnia symptoms worldwide (Ali et al., 2020). Several factors contribute to and lead to worsening symptoms of insomnia, and it tends to affect the daily functioning of individuals who suffer from it. Therefore, recognizing clinically insomnia and acting quickly, can lower morbidity. The main aim of proper screening is to improve the quality of sleep. The best practice is good sleep hygiene, which focuses on improving behaviors that enhance sleep quality and quantity while eliminating behaviors that cause sleep problems (Meadows, 2023). Providing education for patients about lifestyle habits and healthy sleep patterns is imperative and will help the patients understand why

they experience insomnia symptoms. Accurate and valid measures are required to help researchers and clinicians assess insomnia in diverse study and therapeutic contexts. The initial objective assessment of insomnia requires clinical screening tools, laboratory, and sleep studies to rule out other medical conditions that can disrupt sleep, such as restless leg syndrome, mood disorders, obstructive sleep apnea, or pain (Rosenberg et al., 2023).

Additionally, the lack of standardized insomnia assessment and treatment protocols leads to variability in the quality and effectiveness of care provided. Therefore, proper screening is required for appropriate non-pharmacological treatment to be recommended. With the new guidance from DSM-5, doctors caring for psychiatric patients should treat clinical insomnia as a fundamental problem and consider insomnia less as a symptom of their mental illnesses (Seow et al., 2018). Also, patients should be made aware of the significance of reporting and attending to their sleep difficulties; treating insomnia may improve outcomes for comorbidity.

Problem Statement

As a conspicuous sleep disorder, insomnia affects a significant portion of the population. It is frequently treated as a secondary symptom of a medical condition rather than a distinct disorder. As a result, it is often undiagnosed and sometimes untreated due to patients not reporting or providers not screening patients appropriately. While pharmacological treatments are available, they often come with side effects and the risk of dependency. Non-pharmacological treatments, such as CBT-I, are effective but are underutilized due to limited access and lack of awareness among healthcare providers and patients.

Furthermore, the current methods for assessing and diagnosing insomnia may need to be more standardized, accurate and comprehensive, leading to suboptimal treatment outcomes. Therefore, it is imperative to enhance the assessment and non-pharmacological treatment of

insomnia to improve patient outcomes and reduce the burden of the disorder on individuals and society. Providers will receive education on insomnia screening tools and utilizing non-pharmacological alternatives for insomnia patients.

Project Question

Insomnia has become a significant problem that is not only a symptom secondary to a disease but a disorder that requires proper screening and treatment. Certain medications utilized to treat insomnia, such as hypnotics and sedatives, often induce sedation as a side effect; however, most evidence supports treatment efficacy for cognitive-behavioral therapy for insomnia (Pagel et al., 2018). Due to increased cases of insomnia, there is a need to develop evidence-based interventions that will address insomnia cases. At completion, this project will answer the following question: Will educating providers on insomnia screening tools and non-pharmacological alternatives for insomnia patients, improve the use of insomnia screening tools and increase provider recommendations of non-pharmacological treatment for patients? The PICOT:

P: Providers caring for adults aged 18 and older presenting with signs of insomnia.

I: Educate providers on insomnia screening tools and utilizing non-pharmacological alternatives for insomnia patients.

C: Maintaining current practice at the clinic.

O: Improve the use of insomnia screening tools and increase recommendations of non-pharmacological treatment for patients.

T: In a 4-week timeframe.

Search Methodology

In searching for available literature to support the proposed project, the Cumulative Index of Nursing and Allied Health Literature (CINAHL) Complete, Embase, PubMed, and Cochrane Library search engines were utilized using the following keywords in various combinations: ‘insomnia’, ‘patients’, ‘pharmacological’, ‘non-pharmacological’, ‘screening tools’, ‘insomnia screening methods’, ‘treatments’, ‘sleep disorders’, ‘providers’, ‘education’, ‘adults’, ‘survey’, ‘checklist’, ‘insomnia severity’, ‘CBT-I’, ‘assessment’. An initial search of 'insomnia' using the search engines yielded a cumulation of 106, 110 articles. The search was narrowed down using advanced search features with terms such as 'insomnia screening tools,' 'insomnia screening methods,' 'insomnia assessment,' 'sleeping problems', and 'non-pharmacological treatment of insomnia,' and produced 282 articles.

The research was restricted to include only full-text articles published within the last five years, and peer-reviewed articles written in English, and Boolean phrases with articles that consist of clinical practice guidelines, meta-analyses, systematic reviews, and randomized control trials. The abstracts of the articles were appraised to evaluate the articles. Articles that addressed assessment, identification, diagnosis, and non-pharmacological treatment of insomnia in adults were included. Duplicate articles were excluded. Articles regarding children and adolescents were not included. Articles that do not include insomnia were excluded. The selection of articles was based on their relevance to the project. After a careful review of articles, 22 articles were selected for review and provided relevant answers to the PICOT question.

Review of Study Methods

The review of study methodologies included mixed comparative studies, meta-analyses, systematic reviews of peer-reviewed studies, randomized controlled trials, integrative reviews,

and retrospective cohort studies. The themes from the literature and study methods in the literature are relevant to this DNP project. These study methods are valid and reliable as they show how extensive research has been made on insomnia assessment and non-pharmacological treatment options. The themes explored in the literature are also relevant to this DNP project as it supports the importance of proper assessment, diagnosis, and non-pharmacological treatment of insomnia.

Review of Literature/Review Synthesis

A comprehensive and detailed review of the literature was performed regarding the project topic. Insomnia has become a public health issue, described as a problem with falling and staying asleep (Krystal et al., 2019). Insomnia is to be treated as a diagnosis rather than a disease symptom. Insomnia is one of the most prevalent sleep disorder complaints in medical settings, with 74% of people experiencing symptoms for at least a year; insomnia affects many people long-term (Krystal et al., 2019). The incidence rates vary depending on the criterion used. Women are more likely than men to report having insomnia symptoms; with age, sleeplessness becomes more common in both men and women, and a 35% prevalence of individuals also has a family history of sleeplessness (Krystal et al., 2019). Given the demographics of insomnia, proper assessment and treatment must be initiated to improve overall patient outcomes.

Importance of Sleep

Sleep is crucial in the wellbeing and daily living of individuals. Sleep timing depends on individual differences and preferences. The sleep patterns of individuals change over time with human development from infancy to old age (Mason et al., 2021). Sleep is vital and necessary to mental and physical health as it may affect human capabilities, including emotions, cognition, and behavior regulation (Wang et al., 2021). A meta-analysis review used to synthesize the effects of

72 interventions that enhanced the quality of sleep concerning a mental health condition revealed that improving the quality of sleep had a moderate effect on mental health, improving sleep reduced stress, anxiety, and depression (Scott et al., 2021). This study found that a more significant improvement in sleep quality led to improved overall mental health. Therefore, targeting the improvement of the quality of sleep may improve individuals' overall mental health. Unhealthy sleep habits are a significant public health issue that is closely linked to morbidity and mortality; more than 80% of senior citizens who report sleep issues mention at least one significant mental or physical condition, notably heart illness, depression, pain, and memory issues (Hale et al., 2020). Insufficient sleep can raise an individual's risk of chronic illness in the long run; adequate sleep is required to reduce morbidity and mortality rates.

Early Detection

A meta-analysis review found that improving the quality of sleep not only greatly benefits the future of mental health but also increases the possibility that early interventions to improve sleep quality might limit the risk of developing or worsening mental health issues (Scott et al., 2021). It is imperative that individuals with difficulty falling asleep and difficulty maintaining sleep reach out to their medical provider to get a proper assessment and treatment of insomnia. Early detection may improve quality of life. A comprehensive and well-detailed sleep history is critical to assessing and evaluating insomnia. Clinicians should be able to identify sleep disruptions and rule out other sleep-related conditions that may be causing fragmented sleep, such as obstructive sleep apnea (OSA), restless leg syndrome, nocturnal leg cramps, and periodic limb movements (Bollu & Kaur, 2019). It should be possible to assess any underlying medical issues causing insomnia with a thorough laboratory workup. In addition, actigraphy, sleep diaries, and questionnaires can all be beneficial tools for diagnosing insomnia (Bollu & Kaur, 2019). Early

identification of insomnia may improve overall individual well-being as sleep quality can impact daytime functioning.

Insomnia Screening Tools

Various questionnaires are available for assessing insomnia in the adult population. Different validated tools are available to assist clinicians in diagnosing, assessing the severity of insomnia disorder, gauging treatment effectiveness, and monitoring the response to treatment. The Insomnia Severity Index (ISI), the Pittsburgh Sleep Quality Index (PSQI), the Restorative Sleep Questionnaire, the Insomnia Symptom Questionnaire, and the Athens Insomnia Scale (AIS) are some of the most popular tools used for these reasons (Ali et al.,2020). Even if the number of questions, the structure of the answers, and the time limits vary amongst instruments, they are all generally designed to gauge the patient's impression and quantify the subjective aspects of insomnia.

A systematic study review by Ali et al. (2020) sought to identify, explain, and summarize the questionnaires' psychometric features and determined that the most valuable tools for evaluating insomnia in clinical practice continue to be self-reported sleep questionnaires. The study also pointed out the importance of diagnostic validity of screening tools which is vital for clinicians in choosing the appropriate tool. In choosing the right screening tool, it is crucial to consider the length of the instrument, language, and how long it takes to complete the questionnaire.

Another systematic review by Fabbri et al. (2021), aimed at comparing the measuring properties such as factorial structures, validity, and psychometrics of the various sleep questionnaires, reported that the PSQI revealed internal solid reliability and validity as the most widely used evaluation of sleep quality; nevertheless, distinct factorial structures were discovered

in a variety of samples, raising questions about the usefulness of the total score in differentiating between good and bad sleepers. The review also found out that AIS and ISI reported a various factorial model, whereas Leeds Sleep Evaluation Questionnaire (LSEQ) and SLEEP-50 appeared to be less beneficial for research and epidemiological settings due to their scoring and length of the questionnaires (Fabbri et al., 2021). Overall, AIS, ISI, Mini-Sleep Questionnaire (MSQ), Jenkins Sleep Scale (JSS), LSEQ and SLEEP-50 reported good psychometric properties (Fabbri et al., 2021).

Polysomnography is a sleep study that measures body function and collects physiologic parameters while the person is asleep or trying to sleep (Rundo & Downey, 2019). Sleep studies can be used to evaluate other types of sleep disorders, and sleep labs must follow the American Academy of Sleep Medicine (AASM) guidelines. However, polysomnography is labor intensive and requires specialized skills for setting; it is not frequently utilized even though it is regarded as the standard gold method for evaluating insomnia, leaving self-reported sleep tools as the main practical approaches for the assessment of insomnia in a clinical setting (Ali et al., 2020). While a clinical assessment and evaluation are still needed, the assessment of insomnia should ideally include self-reporting questionnaires and daily sleep diaries. Each of these tools has unique benefits and drawbacks.

ISI was developed to assess the severity of insomnia's daytime and nightly components and is offered in several languages and contains seven items that take approximately three minutes to complete (Rosenberg et al., 2023). ISI is a self-reporting questionnaire that evaluates insomnia type, severity, and effects while monitoring adult treatment response. It is increasingly used as a therapy response metric. The dimensions measured include the severity of sleep onset, sleep dissatisfaction, early morning awakening issues, sleep maintenance, impingement of sleep

difficulties with daytime functioning, the obviousness of the sleep problems by others, and problem brought on by the sleep difficulties; each question is evaluated on a 5-point Likert scale from (no problem to very severe problem), and results classify insomnia as not present, mild, moderate, or severe (Rosenberg et al., 2023). Therefore, it is essential to screen patients with screening tools such as ISI, diagnose based on DSM-5 or ICD-11 criteria, and utilize non-pharmacological treatment of insomnia as recommended by the AASM.

Non-pharmacological Alternatives to Treating Insomnia

There are non-pharmacological treatment recommendations for insomnia aside from treating insomnia with medications. However, according to the findings from a study by Rios et al. (2019), patients and healthcare providers consider CBT-I as the first primary intervention because of strong and consistent evidence of effectiveness across various outcomes and is likely associated with fewer or no potential harms. CBT-I is an evidence-based structured psychotherapy that utilizes cognitive strategies to address underlying ideas about sleep and behavioral strategies to regulate sleep cycles (Koffel et al., 2018). Utilizing non-pharmacological treatment options such as CBT-I promotes sleep outcomes and minimizes the risk of potential side and adverse effects of relying on medications such as hypnotics; however, referral to CBT-I is not very common (Koffel et al., 2018).

Results from a randomized control trial by Yang et al. (2023) revealed that an internet-delivered CBT-I intervention that lasts one week effectively stops the progression of insomnia. The same study discovered that the one-week internet-delivered CBT-I therapy helped patients with acute insomnia by improving insomnia, depressive symptoms, sleep-related symptoms, and overall quality of life. There are various ways of conducting CBT-I, and this study shows that

CBT-I delivered via the internet is effective. The commitment of the patient to therapy will promote its outcome.

Treatment of insomnia requires a strategy that incorporates lifestyle modifications to improve the quality of sleep. Some lifestyle modifications that can improve sleep include adequate exercising, drinking caffeine and alcohol in moderation, consuming a nutritious and healthy diet, maintaining a healthy weight, and avoiding the use of illicit drugs or tobacco (Rosenberg et al., 2023). To determine the best strategy, providers will consider treatment costs, risks, benefits, and patients' values, needs, and preferences. In addition, sleep behavior and hygiene must be addressed for patients with insomnia symptoms.

A meta-analysis and systematic review by Wang et al. (2021) point out that music as a non-pharmacological intervention might be suggested as an effective intervention to promote the quality of sleep in the elderly population. In this research by Wang et al. (2021), six of the nine available studies were included in meta-analyses after being systematically examined, three studies examined the effects of music treatments on several aspects of sleep, and meta-analyses revealed that these interventions might have a significant impact on sleep latency, length, efficiency, and dysfunctional daytime sleep. Additionally, six of the nine studies reported the effectiveness of music therapies on older individuals' overall sleep quality as measured by the PSQI (Wang et al., 2021). The results from the reviews show that music interventions might improve sleep quality. This depicts that non-pharmacological interventions are effective ways of addressing insomnia.

According to a systematic review on an update of the evidence review conducted for AASM guidelines on the behavioral and psychological interventions of chronic insomnia in adults, recent international guidelines recommend cognitive behavioral therapy for insomnia

(CBT-I) as first-line therapy for patients with insomnia (Edinger et al., 2021). Patients concerned about taking prescription medications for insomnia due to fear of addiction or discouraged by the side effects of these medications may benefit from CBT-I.

A randomized clinical trial reports that utilizing CBT-I to treat insomnia has an overall benefit in preventing incidents of recurring major depression in older adults (Irwin et al., 2022). CBT-I comprises a combination of nonpharmacologic interventions such as cognitive strategies and behavioral methods (sleep hygiene, relaxation, stimulus control, and restriction) targeted to address sleep disturbances (Arnold, 2022). These approaches may be in the form of shorter therapies tailored to the specific need of the patient. Utilizing CBT-I will cause chronic insomnia to be in remission over time and reduce the need for medications (Arnold, 2022). CBT-I alone produces greater long-term efficacy, often lasts 6 to 8 weeks, and is delivered via individual or group sessions, face-to-face, online, and/or patient self-education (Rosenberg et al.,2023). This therapy requires participants to keep a sleep diary to track progress; the overall goal is to improve not just nighttime sleep but also daytime functioning (fatigue, concentration, mood) and overall quality of life (Rosenberg et al.,2023). Overall, these studies show various non-pharmacological approaches to treating insomnia but more education and awareness are needed for both patients and healthcare providers so it can be utilized more.

Disadvantages of Pharmacological Treatments of Insomnia

While pharmacological treatments are recommended for insomnia, it comes with a downside. Sometimes medications are recommended to patients with insomnia who have failed therapy or are diagnosed with another accompanying diagnosis. However, CBT-I is the first line of insomnia treatment and is AASM recommended (Edinger et al., 2021). Counseling patients on the dangers of using over-the-counter (OTC) medications for insomnia is paramount. Some

medications that can impact sleep have some adverse effects, including OTC medications. A review by Rios et al. (2019) pointed out that a prospective study revealed that during a year follow-up, 70% of patients who had been taking a prescription sleeping pill continued to do so; however, they had not significantly improved their sleep quality compared to those who had not used it. Antidepressants, for example, serotonin-norepinephrine reuptake inhibitors (SNRIs), selective serotonin reuptake inhibitors (SSRIs), and monoamine oxidase inhibitors (MAOIs), can cause stimulation or sedation depending on the individual (Krystal et al., 2019).

Additionally, OTC diphenhydramine has anticholinergic properties that may cause cognitive impairment, particularly in older adults leading to dizziness and falls (Rosenberg et al., 2023). Although, according to Kim & Yang (2022), the U.S. Food and Drug Administration (FDA) approved melatonin as a dietary supplement used to promote sleep quality as it controls the sleep-wake cycle in patients with insomnia, it has no dosage restrictions because it does not produce a hangover or cause dependence. However, there are no dosage restrictions for melatonin, and its appropriateness for usage as a medication is constrained, primarily due to its poor oral bioavailability and brief half-life (Kim & Yang, 2022). With the side effects associated with pharmacological insomnia treatments, it will be ideal to explore non-pharmacological options.

Impacts of Undiagnosed Insomnia

A retrospective review of medical records reported an association of several co-morbid medical conditions in the patient group with insomnia compared to those without insomnia (Mookerjee et al., 2023). In addition, numerous diseases, neurological conditions, and unchangeable elements, including genetics and personality traits, have linked insomnia to several populations (Mookerjee et al., 2023). For example, the population includes members of the armed

forces and veterans, people who have had traumatic brain injuries (TBI), cardiovascular illness, mental illnesses such as anxiety and depression, and have been connected to chronic sleeplessness (Mookerjee et al., 2023).

According to Bollu & Kaur (2019), insomnia is a risk factor for heart disease morbidity and mortality, and in the adult population, it increases the risk of diabetes mellitus type 2 by 16%. Unfortunately, individuals who experience insomnia symptoms often do not discuss it with their medical providers and therefore are not diagnosed. Therefore, seeking help when these symptoms are noticed is imperative to get a proper assessment and appropriate treatment.

National Guidelines for Insomnia

The Centers for Disease Control and Prevention (CDC) raises awareness of proper sleep hygiene to reduce the incidence of developing sleep disorders (CDC, 2021). In addition, CDC and its partners strive to raise awareness at the national level on the impact of sleep on the public's health and safety by assessing the relationships between chronic medical and behavioral diseases and insufficient sleep (CDC, 2021).

The AASM, on the other hand, has a set of guidelines for clinical practice on utilizing psychological and behavioral treatments for chronic insomnia in adult individuals (Edinger et al., 2021). National guidelines often serve as the gold standard for treatments. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) process was utilized to determine the evidence for making specific treatment recommendations (Edinger et al., 2021). The suggestions are meant to serve as a reference for healthcare professionals in selecting a particular course of treatment for people with persistent insomnia. Each suggestion received a strength rating, ranging from a 'strong' recommendation to 'conditional' (Edinger et al., 2021). For treating individuals with persistent insomnia, the AASM strongly advises using multicomponent

CBT-I, for the treatment of chronic insomnia disorder in adults; the AASM conditionally advises using multicomponent brief therapies for insomnia (BTIs), stimulus control, sleep restriction therapy, and relaxation therapy as a monotherapy, and not using sleep hygiene as a monotherapy (Edinger et al., 2021). Following these guidelines will enable clinicians to make appropriate treatment recommendations, different options may be appropriate for different individuals.

Project Aims

The following are the specific aims of the DNP project:

- To educate and support healthcare providers on effectively utilizing ISI tool to screen adults aged 18 and older for insomnia within four weeks.
- To educate healthcare providers on the importance of educating patients who screened positive for insomnia on evidence-based non-pharmacological treatment alternatives for insomnia.
- To improve provider compliance with national standards for care on enhancing assessment and non-pharmacological treatment of insomnia in adults within four weeks.
- Within four weeks, 50% of providers will be compliant with screening patients with ISI and educate them on the evidence-based non-pharmacological treatment of insomnia, as evidenced by chart audits.

Project Objectives

In 4-weeks of this DNP Project, the host site will:

- Develop a protocol for providers to effectively utilize the ISI tool to screen for insomnia and improve mental health outpatient clinic compliance.
- Create an educational pamphlet on evidence-based non-pharmacological treatment of insomnia (CBT-I) for providers to educate patients that are positive for insomnia.

- Provide educational training/seminar on insomnia, utilizing ISI to increase staff knowledge, including providers, regarding early identification, appropriate screening, and non-pharmacological treatment of insomnia.
- Providers will educate patients who screened positive for insomnia on the use of evidence-based non-pharmacological treatment options (CBT-I) for insomnia.
- To evaluate the implementation by completing a chart audit to determine provider utilization, ISI administration, and non-pharmacological treatment education for insomnia.

Theoretical Framework

The Plan-Do-Study-Act (PDSA) cycle (Appendix A) will be applied to this project. The Plan, Do, Check, Act (PDCA) cycle was the precursor of the PDSA paradigm and was initiated by Walter Shewhart (Katowa-Mukwato, 2021). PDSA is a framework that utilizes a scientific approach and is one of the standard quality improvements (QI) tools utilized in healthcare (Christoff, 2018). QI is utilized in healthcare to minimize error and outcome variations. The PDSA model is an iterative four-step approach for improving a process (Christoff, 2018). Change is essential in measuring the efficacy of an improvement project. The PDSA cycle is a quick way to test a change by creating a strategy to test the change (Plan), executing the test (Do), analyzing the results, learning from them (Study), and deciding what improvements to the test should be made (Act) (Christoff, 2018). PDSA is utilized to implement QI ideas into practice quickly, implement changes that lead to improvement, and offer feedback on what works and what does not; it has been used by a broad spectrum of businesses and organizations on several projects.

One of the primary and methodical quality improvements is PDSA; it establishes procedures to make the project operate more smoothly and separates an improvement project into deployment stages (Wani et al., 2019). This approach is generally acknowledged for improving

the quality of healthcare systems because it provides a structure for iterative testing of improvements. The PDSA cycle is commonly used in the industrial sector and other areas, including healthcare, agriculture, and services (Wani et al., 2019). A practitioner can carry out improvement methodically using the PDSA cycle by creating norms and maintaining uniformity; it moves improvement toward reducing mistake recurrence.

The PDSA model is essential for continuous improvements without stopping; it is flexible, future-focused, logical, and significant in describing all project elements (Taufik, 2020). This model will be helpful in this quality improvement project (enhancing assessment and non-pharmacological treatments of insomnia in a mental health outpatient clinic) because it is based on continuous quality improvement. The PDSA cycles aim to determine whether and how an intervention works in a specific environment as rapidly as is feasible. Based on this information, adjustments are made to boost the likelihood of achieving and maintaining the planned improvement, or the intervention is stopped, and a different approach is tried.

Historical Development of the Framework

The Shewhart cycle was first introduced in 1939 by American statistician Walter Andrew Shewhart as "specification, production, inspection" (SPI) (Huan & Nasri, 2022). At the Japanese Union of Scientists and Engineers (JUSE) seminar in 1950, Edward Deming updated the Shewhart cycle and; in 1951, Deming's Shewhart cycle underwent a slight modification which was referred to as the Deming wheel or Deming Circle by the Japanese (Alauddin & Yamada, 2019). Edwards Deming was born in 1900, was an engineer and mathematician, and his work can be traced back to the scientific approach of Galileo in 1610, the Shewart Cycle of 1939, and the Japanese Plan-Do-Check-Act (PDCA) cycle of 1951 and 1980 (Lengetti, 2020). The Japanese executives created the PDCA cycle using the Deming wheel from the 1950 JUSE lecture.

Edwards Deming modified the cycle from 1986 through 1993 (Lengetti, 2020). In 1986, Deming reintroduced the Shewhart cycle and claimed that the original 1950 version was an inspiration (Alauddin & Yamada, 2019). In 1993, Deming changed the Shewhart cycle again, calling it the PDSA or the Shewhart Cycle for Learning and Improvement (Alauddin & Yamada, 2019). Testing and implementation are done using PDSA which was invented by Walter Shewhart (Shewhart Cycle), and Edward Deming (Deming Wheel) subsequently made it famous. Deming's teachings started with business sectors and were later adopted by the quality improvement teams of the healthcare sectors when he was hospitalized and realized that although nurses were well trained and educated and performing well at their job, the quality of the healthcare system needed to improve (Lengetti, 2020)

Application of Major Tenets of Implementation Framework to DNP Project

The PDSA cycle as a four-step process improvement paradigm involves first creating a plan/strategy with clearly defined forecasts of outcomes and work assignments (Christoff, 2018). The plans who, what, when, and where are determined at this phase. Next, implementing the plan is done in the "do" phase; then, the "study" step involves the analysis of the data and outcomes gathered (Christoff, 2018). Finally, based on the data analysis in the previous phase, the plan is either adopted, modified, or abandoned in the "act" phase (Christoff, 2018). The lessons from the previous cycle then guide the cycles that follow.

Plan: This involves developing a plan on what needs to be achieved, when, how, and where it will be implemented (Christoff, 2018). It is about planning a change or test based on test objectives or what is to be accomplished based on the testing. The project aims to enhance assessment and non-pharmacological treatments of insomnia in a mental health clinic based on the objectives mentioned above. The plan is to conduct an educational seminar for the staff on

insomnia, screening, and non-pharmacological treatment, create an educational pamphlet for patients and develop an insomnia screening protocol.

Do: The "do" phase involves implementing the plan for quality improvement (Christoff, 2018). This is about executing the tests in the test plan, which can be done by documenting pertinent data identifying successes, problems, and unexpected outcomes. (Christoff, 2018). This happens in the implementation phase. In this phase, education about insomnia, insomnia screening, and non-pharmacological treatment will be provided to staff and, providers. The developed protocol for screening insomnia will be utilized. Providers will start educating patients on non-pharmacological treatment of insomnia and educational pamphlet will be made available in this phase.

Study: This phase is vital to the overall process; it involves evaluating the recorded data to determine the plan's effectiveness (Christoff, 2018). The results and success of the change implemented will be examined. For this DNP project, chart audits will be reviewed to determine compliance by the providers.

Act: This phase denotes the adoption, adaptation, or abandonment of the intervention under test depending on the data analysis from the previous phase (Christoff, 2018). Based on the results of the testing period, changes may be incorporated, and quality improvement plans will be established. This stage will help determine if the project site needs to increase the rate of insomnia screening. The synthesis of the data collected would indicate whether the project site needs to adopt the protocol for screening insomnia and continue to provide education on the non-pharmacological treatment of insomnia. The project site will determine whether to abandon or implement the process to help identify the elements that need to be modified to help achieve better screening results. If it is determined that the educational training, information, and

screening protocol are practical for insomnia screening at the project site. In that case, the team will decide whether to implement it in other related clinics.

Population of Interest

The quality improvement project involves an educational seminar on the importance of utilizing ISI to increase staff knowledge, particularly healthcare professionals, regarding early identification, appropriate screening, and evidence-based non-pharmacological treatment of insomnia. The direct population of interest for this QI project will include the psychiatrist, Psychiatric Mental Health Nurse Practitioners (PMHNP) with Master's degrees or Doctorate degrees, registered nurses/psychiatric mental health nurses, a therapist (licensed clinical social worker). Approximately 10 participants, both full-time and part-time with different years of experience will participate in the educational seminar and assist in implementing project interventions.

The indirect population of interest for the quality improvement project will include male and female adult patients 18 years of age and older, both established and new patients, who score an eight or higher on the ISI. The indirect population will be educated on important information about insomnia, including assessment, appropriate screening, and evidence-based non-pharmacological treatment.

Considering the inclusion and exclusion criteria for this QI project, the project will include psychiatrists, PMHNPs, registered nurses/psychiatric mental health nurses who are licensed in California, work directly with adult patients, and are fluent in English. The QI project will exclude clinic staff who are not licensed in California or not fluent in English. Additionally, patients 17 years old and younger are excluded. Patients will be chosen regardless of gender, ethnicity, race, education, or socioeconomic status. Including patients in this QI project opens

doors for developing, designing, and implementing patient-centered research (Harrison et al., 2019). Patients are the main subject of the project, and without them, it will not be necessary to conduct a QI project in this case.

Setting

The QI project will be completed in a community clinic serving the underserved in southern California. The clinic offers specialized services, including mental health, family practice, women's health, dental, and an eye care. The clinic operates Monday through Friday and intermittently on Saturdays between 9 am and 6 pm. This organization has three clinics serving over 1,000 patients per week. The clinic has various staff from diverse backgrounds, which includes clinicians, therapists, mental health nurses, billing experts, assistant clinic administrator, clinic administrator, schedulers, and information technologists. The clinic staff is made up of part-time and full-time employees with different years of service. The clinic accepts cash payments, commercial insurance, federal/state-funded insurance plans, and Medicare to make healthcare delivery accessible to the community. This QI project will occur in the mental health clinic. The mental health clinic sees patients both in-person and via telehealth. The clinic utilizes behavioral health electronic health record (EHR) ICANotes for charting and also incorporates Office Ally EHR.

Stakeholders

Stakeholders are a considerable part of this QI project. QI projects involve bringing together a group of individuals with expertise in that particular problem and are interested in the QI project to determine avenues to improve patient health outcomes (Boaz et al., 2018). The key stakeholders for this project are the psychiatrist, PMHNP, psychiatric mental health nurses, therapists, clinical administrators, and patients. As a clinician, the psychiatrist and PMHNP will

participate in the educational seminar for insomnia, participate in assessing patients for insomnia and promote evidence-based non-pharmacological insomnia treatments. Psychiatrists and PMHNPs are vital to this QI project because they can assess, diagnose, and offer medical treatment and emotional support to patients and their families. Participating in QI is an avenue for clinicians to tackle longstanding healthcare delivery issues and hone their leadership skills (Jones et al., 2019). The clinician's participation in the QI will create an opportunity to improve skills and patient care and ensure that any changes and improvement made can be sustained.

The mental health nurses will also participate in the educational seminar, enabling them to learn ways to support patients during and after the QI project. In healthcare settings, nurses are essential in providing support, assistance and care to patients and their families. Mental health nurses provide patient care, can identify risk factors, create, and manage patient records, administer medication, and track patients' progress. In this project, nurses will participate in implementation by educating patients regarding insomnia and screening patients with the ISI tool.

Additionally, the therapist will participate in the educational seminar to learn more about enhancing the assessment of insomnia and evidence-based non-pharmacological treatment to provide better patient support. The therapist in this clinic is a licensed clinical social worker who supports patients by providing therapy and counseling sessions.

According to Mannion & Davies (2018), the clinic administrator oversees the entire staff, handles finances and budgets, allocates resources, and ensures the organization's compliance with regulatory requirements. The clinic administrator in this project is essential since the individual can ensure adequate resources needed and seeks ways to improve patient care outcomes within the organization. As healthcare users, patients and their families/caregivers who experience medical care can contribute to projects that seek ways to understand and promote patient

healthcare management, healthcare delivery, and treatment (Harrison et al., 2019). Patients' participation in QI projects can enhance patient-centered research and its results.

The assistant administrator of the community clinic granted permission to conduct this QI project. Conducting the QI project in this clinic does not require an affiliation agreement with Touro University Nevada, as demonstrated in the signed agreement (Appendix B) and the letter (Appendix C).

Interventions

The psychiatrist, mental health nurses, PMHNP, therapist (LCSW), and clinical administrators will participate in the implementation of the project. These project team members will participate in the educational seminar to improve their knowledge about insomnia and its non-pharmacological treatment alternatives; this will help the team provide appropriate patient support. Before implementing, the project lead will recruit appropriate team members for the QI project, send out reminder emails to all participating clinic staff regarding the project start date, and outline the project timeline. The project lead will re-evaluate the site to gather baseline information on insomnia screening, education, and documentation.

In carrying out this QI project, an insomnia screening protocol will be developed to guide the office staff. Educational training/seminar for clinic staff utilizing PowerPoint presentation will be conducted and is required to meet the project aims. Training is vital in a workplace to improve employee attitude, skills, capabilities, and knowledge and upgrade skills to achieve better employee performance (Mahadevan & Yap, 2019). The educational training/seminar aims to train the staff and providers on the importance of proper insomnia screening and promote evidence-based non-pharmacological treatment. The project lead will ensure that the vital project team members participate in the educational seminar to gain more knowledge about insomnia, its

screening, and promoting evidence-based non-pharmacological treatment. The participants will receive educational pamphlets on relevant information on insomnia to distribute to patients. The aim of creating an educational pamphlet is to create awareness of insomnia; its content will be educational information for patients' knowledge. The ISI screening tool will be made available during training, and the project lead will educate on how it can be utilized, scoring, and documentation in EHR.

The assistant clinical administrator approved this QI project to be conducted, will ensure required resources are available, and will oversee this project to ensure team members perform as expected based on the insomnia screening protocol. The assistant clinical administrator and mental health nurses will ensure the ISI screening tool is placed in each patient's intake packet to be completed prior to a visit with the mental health provider. The mental health clinician will review the ISI screening tool. The clinician will address any sleep issues indicated by the patient. Based on the ISI score, the clinician will discuss treatment options and follow-up visits with patients who test positive for insomnia. Patients will be provided education regarding evidence-based non-pharmacological treatment of insomnia (CBT-I). The patient will be referred to consult a CBT-I therapist/provider. Screening patients will help with the early identification of insomnia and provide appropriate non-pharmacological treatment. The clinician will document the ISI score and educational information provided in EHR.

Once implementation kicks off, a weekly chart audit will be performed to determine compliance. A final chart audit will be performed at the end of project implementation to ensure provider compliance.

The training will be during regular business hours to encourage participation, and participation will be voluntary. The clinic will make a conference room available for training. The

project lead will provide refreshments to incentivize participants during the educational training. The project lead will also pay out-of-pocket for printing materials (pamphlets and ISI screening tool) and distribution during the implementation phase. The assistant clinical administrator will ensure adequate staffing for training and implementation.

To ensure compliance, the project lead will continuously support the participants in the before and after implementation phases. The QI project will typically follow the timeline (see Appendix D) as outlined for five weeks. Week one will kick off with an educational seminar, and the actual implementation begins immediately in the following week. The project implementation will be from week two through week five. Within the implementation weeks, the staff, including providers, will ensure the use of the ISI tool; providers discuss results with patients who are positive upon screening for insomnia and provide education on evidence-based non-pharmacological treatment options for insomnia. Also, data collection will continue, and the project lead will continue to support project participants. Additionally, a weekly chart audit will be performed to monitor compliance and end with the final chart audit in week five.

After implementation, the project lead will analyze project outcomes using the Statistical Package for the Social Sciences (SPSS) and complete a report based on evaluation and findings from Chi-square and descriptive analysis. The project lead will communicate improvements with the stakeholders and address any weaknesses.

Tools

Educational Seminar/Training

The project lead will organize an educational seminar for the participants utilizing a PowerPoint presentation (See Appendix E). The educational seminar will include information on insomnia, screening for insomnia, and discussion on evidence-based non-pharmacological

treatment options. During the seminar, the project lead will utilize the ISI screening tool and pamphlets for educational purposes. Additionally, a thorough education on utilizing and scoring ISI will be given during the seminar. The project lead will review documentation of the patient's ISI score and education in EHR by providers. After the seminar, there will be time for a question and answer (Q&A) session.

Educational Pamphlet

The project lead developed an educational pamphlet (See Appendix F) for providers and clinic staff to distribute to patients. The clinician can utilize the pamphlet to educate patients briefly on insomnia and evidence-based non-pharmacological treatment alternatives. The goal of providing the pamphlet is to create awareness of the importance of getting insomnia screening, early detection, and early treatment to promote quality of life. The pamphlet will contain pertinent information on insomnia, increasing a patient's knowledge and promoting patient outcomes. The project lead will seek validation from the team for the developed pamphlet and make any adjustments before using it in the QI project.

ISI Screening Tool

ISI (See Appendix G) was developed in 1985 by Charles Morin to determine a patient's perception of his/her sleep issue/severity and its effect on daytime functioning (Morin et al., 2011). The ISI is available in patient, clinician, and significant other versions (Morin et al, 2011). The ISI can measure the severity of insomnia symptoms present at night and during the day. The ISI is a 7-item self-report survey that evaluates the characteristics, effects, and severity of insomnia; the total scores for the seven questions, which range from 0 (showing little to no insomnia) to 4 (indicating insomnia issues), can be anywhere between 0 to 28 (Chalet et al., 2023). Severe (22-28), moderate (15-21), mild (8-14), and 'no clinically meaningful'(0-7)

insomnia are the four categories of insomnia severity determined by this summary score (Chalet et al., 2023). The ISI tool will be used for educational purposes during training, for patients to fill out during office visits, and for providers to assess further based on patient's responses.

Permission (See Appendix H) to use the tool for this QI project was granted by Mapi Research Trust (MRT). For this project, this tool will be used in a paper format. The ISI has been validated via different studies. A finding from a study of the population of poor sleepers in India indicates that the Insomnia Severity Index (ISI) has outstanding validity, reliability, and internal consistency; thus, it proves to be an excellent tool for screening insomnia (Veqar & Hussain, 2020). In another study, according to Dieperink et al. (2020), the early psychometric evaluation of patients in a Danish outpatient yielded encouraging findings, confirming, and supporting the validity and reliability of the ISI-DK as a tool for screening, assessing, and measuring the severity of insomnia.

Insomnia Screening Protocol

The project lead will design and develop an insomnia screening protocol (See Appendix I) for the clinic staff to utilize as a guide. The protocol will serve as a guide for the clinic staff, outlining steps to follow when accessing the ISI tool for screening for insomnia, ISI scoring, providing appropriate treatment options, and patient education on non-pharmacological treatment approaches to insomnia. The project lead will seek validation of the developed protocol from faculty at Touro University before using the developed questionnaire for the QI project.

Chart Audit Tool

In evaluating this QI project, a chart audit will be performed to measure the providers' compliance in assessing patients with the ISI screening tool and providing education on evidence-based non-pharmacological treatment options for insomnia. During the implementation phase, the

project lead will utilize the chart audit tool (See Appendix J) to record information gathered during a chart audit. The project lead will conduct a weekly chart audit, with the final audit to be done in the last week of implementation for analysis to be performed. The project lead will gather information through a chart audit to measure the project's outcome.

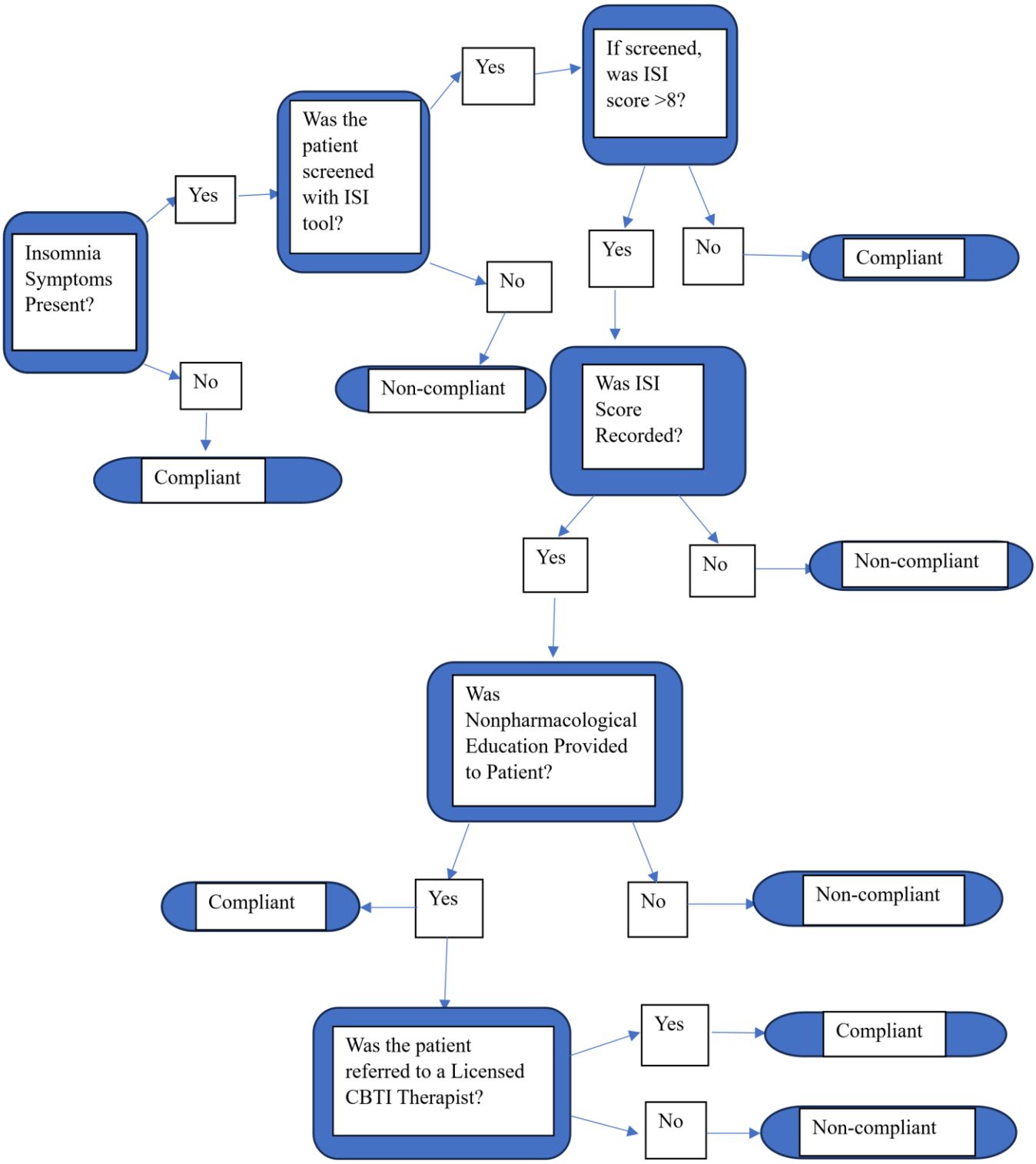
Data Collection Plan

The clinic uses an EHR database to document patient encounters with the clinic staff, whether in-person or via telephone. The EHR contains patient medical records, education, and assessments. Although the ISI screening tool will be paper-based and administered to all patients upon intake, the clinic staff and provider will document this encounter in the EHR.

The data will be collected and placed on an Excel sheet. Twenty charts will be reviewed randomly every week for four weeks during implementation. Patients identifiers will not be collected. Patients will be assigned a number in order to protect their privacy. The project lead will provide continuous support to participants. A secured file cabinet and flash drive, which will be destroyed after implementation, will be utilized. Only the project lead will have access to it. A solid and unique password will be created to restrict unauthorized access to computer information. A chart audit will be performed to assess providers compliance to protocol. Data will be gathered based on a set of criteria of what will be considered compliant to the protocol. Figure 1 depicts criteria for determining compliance to protocol.

Figure 1

Flowchart Showing Criteria for Determining Compliance to Protocol



Data Analysis Plan

The QI project aims to improve provider compliance with national standards for care on enhancing insomnia assessment by effectively utilizing the ISI tool and providing evidence-based nonpharmacological treatment of insomnia in adults. Provider compliance will be evaluated over four weeks using a chart audit. Data will be collected weekly and inputted into an Excel database. A chart audit will be performed, and the data to be collected is often in Yes/No format and will be analyzed using descriptive statistics analysis.

Descriptive statistics will be performed to analyze the number of charts reviewed and the number of compliant/non-compliant charts based on a set of criteria according to the protocol. Descriptive statistics are utilized to summarize and organize data by describing the relationship between variables in a population sample (Kaur et al., 2018). This type of statistics often occur before making inferential statistical comparisons; it includes various variables and measures of frequency, providing the mean, and median standard deviation (Kaur et al., 2018). Descriptive statistics gives information regarding the distribution of scores on continuous variables and features of a sample (Pallant, 2020).

The QI project outcomes will be analyzed utilizing the Statistical Package for the Social Sciences (IBM SPSS) version 28.0 software statistics. The data analysis will be based on a complete report and findings from the descriptive analysis. The project lead does not intend to use a statistician in the data analysis process; however, a statistician will be consulted if needed to ensure appropriate statistical testing is utilized for the analysis.

Ethics/Human Subjects Protection

To safeguard participant's rights and integrity, the project lead will adhere to all necessary ethical precepts. The project lead completed all required Collaborative Institutional Training

Initiative (CITI) modules to ensure human subject protection and ethical conduct. Completing these modules involves information on protecting participants from harm, protecting personal information, and maintaining the participants' privacy. This proposed DNP project is a QI initiative and will not directly involve human subjects or patient care activities. The project lead submitted an Institutional Review Board (IRB) determination form to the Touro University Nevada research team, and approval for a QI project has been given and, therefore, is exempted from IRB review. Permissions and approval for this QI project have been granted to ensure human subject protection.

During the data collection, each participant will be assured confidentiality of their information. No identifying data will be asked for or collected to maintain the confidentiality of both staff and patients. The project lead will ensure the compliance of the Health Insurance Portability and Accountability Act (HIPPA) to secure patient data and privacy (Mbonihankuye et al., 2019). As this project is being implemented, the lead will uphold ethical standards to protect participants from harm and injustice. There will be no monetary gift or compensation provided to participants, but a refreshment will be offered as an incentive for participating. Participation in this project will be voluntary. All providers will screen patients for insomnia, but charts will be reviewed randomly by the DNP Lead. Participants will benefit from this QI project as appropriate screening for insomnia utilizing the ISI screening tool will lead to early detection and treatment of insomnia to improve patient outcomes. There are no risks associated with this project. Finally, the project site does not require QI committee oversight.

Analysis of Results

Patient encounters in this clinic are documented in the EHR, the data was collected and placed on an Excel spreadsheet. The data analysis started with utilizing the complied data on the Excel spreadsheet and analyzing it using the SPSS software. This QI project implementation lasted for five weeks as indicated on the project status update timeline (See Appendix K). It started with an educational seminar in the first week and the actual implementation of the recommended plan lasted for four weeks. A total of seventy-six charts were randomly reviewed instead of the proposed eighty charts for the four weeks of implementation. In week four, sixteen charts instead of twenty charts were reviewed due to Thanksgiving Holiday week, and there were only three days out of the week to work on implementation. Descriptive statistics analysis was performed to provide information about the variables in the set of data. This was used to determine the compliance rates of providers for the four weeks following the educational seminar and utilizing the insomnia screening protocol.

As illustrated in Table 1, providers' compliance rates increased from the beginning of the project 55% in week 1 to 90% at the conclusion of the project in week 4.

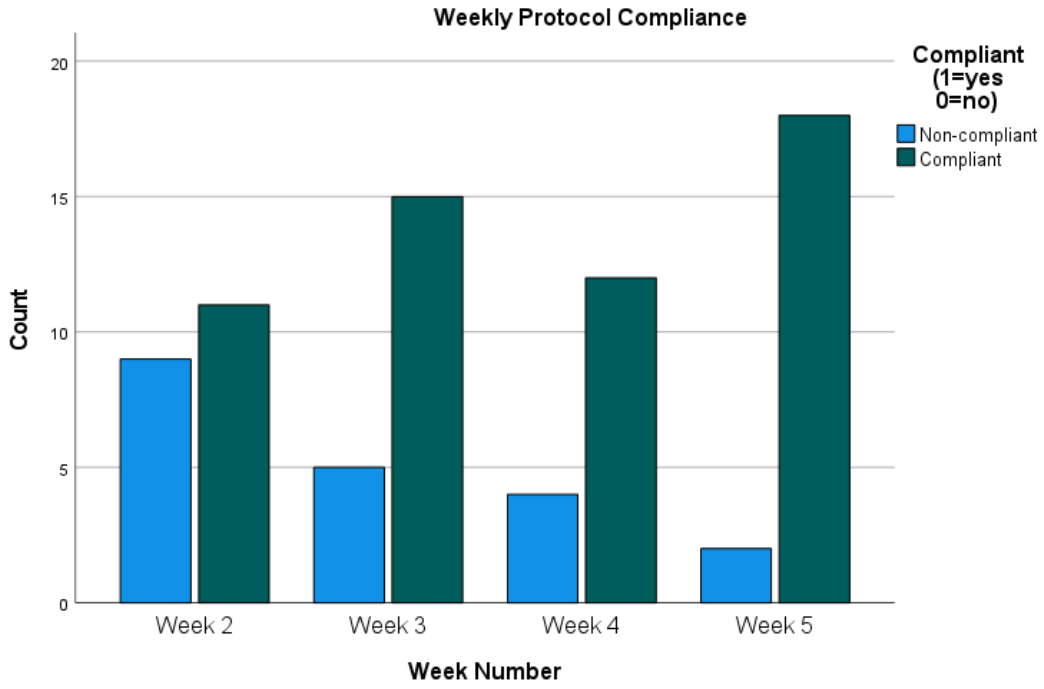
Table 1

Provider Compliance

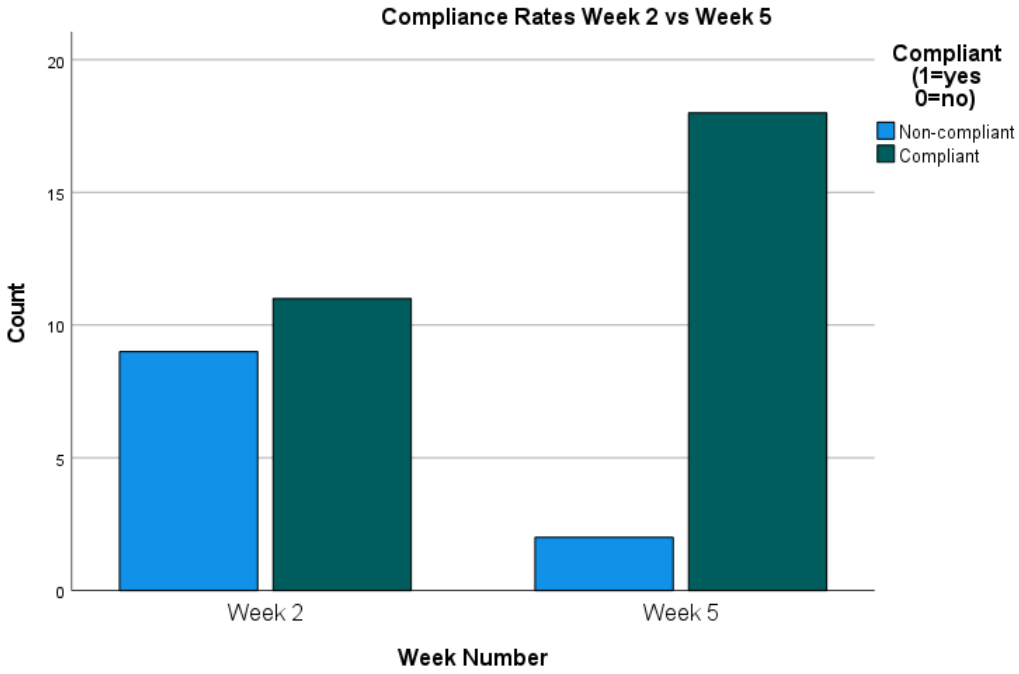
Compliance		
Week Number	**Count**	**Percentage**
Week 2	11	55%
Week 3	15	75%
Week 4	12	75%
Week 5	18	90%

Bar Graph 1 depicts the providers weekly compliance rates and the comparison between week two and week 5 compliance rates are displayed in graphic form in Bar Graph 2. This demonstrates the effectiveness of the educational seminar and utilizing the insomnia screening protocol in improving providers' compliance rates.

Bar Graph 1



Bar Graph 2



In addition to the proposed descriptive analysis, a cross-tabs analysis as illustrated in Table 2 was performed to determine if the observed difference in provider compliance was statistically significant. The difference in provider compliance from week 2 to week 5 was a statistically significant increase, $\chi^2(1)= 6.144$, $p=.013$. The variables are categorical and each of the cells in the crosstabs table had expected values of five or greater. Since the assumptions of the chi-square test were met, we can regard the analysis as valid and reliable. This hypothesis test is supplementary to the proposed descriptive analysis for the project. Descriptive analysis for this project was performed by describing the data.

Table 2

Crosstabs Table

Week Number * Compliant (1=yes 0=no) Crosstabulation

			Compliant (1=yes 0=no)		
			Non-compliant	Compliant	Total
Week Number	Week 2	Count	9	11	20
		% within Week Number	45.0%	55.0%	100.0%
	Week 5	Count	2	18	20
		% within Week Number	10.0%	90.0%	100.0%
Total		Count	11	29	40
		% within Week Number	27.5%	72.5%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.144[a]	1	.013		
Continuity Correction[b]	4.514	1	.034		
Likelihood Ratio	6.525	1	.011		
Fisher's Exact Test				.031	.015
Linear-by-Linear Association	5.991	1	.014		
N of Valid Cases	40				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.50.

b. Computed only for a 2x2 table

Summary

The educational seminar was conducted using tools such as PowerPoint presentations, pamphlets, insomnia screening protocol, and ISI, which included information on how to screen for insomnia appropriately and discussion on evidence-based non-pharmacological treatment modalities. The seminar increased staff knowledge of insomnia, and its purpose was to identify and treat insomnia early. The insomnia screening protocol was developed to serve as a guide to the workflow for the clinic staff on screening patients with ISI and educating them on the

evidence-based non-pharmacological treatment of insomnia. Additionally, providers educated patients on insomnia using the prepared pamphlets. Providers were urged to utilize their clinical judgment in addition to the AASM recommendations to determine the best treatment plan for patients.

From the gathered information, the QI project improved the participant's knowledge about insomnia screening and evidence-based non-pharmacological treatment of insomnia in an outpatient mental health clinic. Data collected indicates providers' compliance rates improved, documentation improved, and from the provider's perspective, there was improvement in patient outcomes. According to some of the providers who educated patients on insomnia, some patients reported a better understanding and knowledge of sleep hygiene principles to improve sleep habits. The providers explained that those patients reported improved sleep quality, thereby reducing daytime insomnia symptoms.

Since the project's goal was to document improvements in the provider compliance rates, the analysis compared compliance rates from week two of the project (the beginning of data collection) to week five (the end of the project) to determine if statistically significant improvement occurred. As noted in the results section, a statistically significant increase in provider compliance was observed. Additionally, there was a lower number of chart observations in the fourth week, resulting from the occurrence of a national holiday and a shortened workweek. This would have impacted the expected cell values in the crosstabs analysis, leading to a non-significant result and thereby obscuring the effect of the intervention.

This QI project proposed to answer the following clinical questions: Will educating providers on insomnia screening tools and non-pharmacological alternatives for insomnia patients improve the use of insomnia screening tools and increase provider recommendations of non-

pharmacological treatment for patients? The project findings showed a significant increase in provider compliance rate in utilizing protocol, improved insomnia screening, and recommendation of evidence-based non-pharmacological treatment.

The ISI screening was the strength of the project. The participants understood the importance of appropriate screening to help enhance treatment. The participants who agreed to participate in this project became more enthusiastic about it due to its positive impact on patients, as indicated by the providers. Also, the clinic staff, including providers, demonstrated improved teamwork, collaboration, and communication. The development of the protocol changed the facility's workflow positively as it improved insomnia screening within the facility and emphasized the importance of insomnia screening for early intervention.

One of the areas for improvement in this project is implementation time. The project's implementation time was for four weeks, which was short. If there was more time, more data would have been collected. For instance, there needed to be more time to fully evaluate the effectiveness of CBT-I since it takes a couple of weeks for the therapy sessions. Also, the sample size would determine the amount of information collected or gathered. A large but not excessive sample size would be a good representative sample since it could yield accurate results. In contrast, a small sample that is too small would have insufficient statistical power to address the research question and statistically insignificant results and may affect future research (Andrade, 2020). Given the setting, the sample size was small but adequate for this type of project. The provider's participation in this project was voluntary. However, since participation was voluntary, some providers were reluctant to participate because there was no financial reward for participation.

Interpretation of Results

The project outcome aligns with some previously published literature. According to study findings, ISI has strong internal consistency, test-retest reliability, and validity for a university sample of poor sleepers in India, and as a result, it may be a valuable technique for screening insomnia in today's population (Veqar & Hussain, 2020). The ISI was utilized in screening patients to enhance the assessment of insomnia. According to Nguyen et al. (2019), screening for insomnia is crucial because it allows for early intervention, minimizes the need for pharmacological treatment, and allows for further testing and early detection of related effects.

The implementation of this QI project was successful in meeting its aims and objectives. The providers gained more knowledge and understanding on effectively utilizing the ISI tool to screen adults for insomnia within four weeks. This project created an opportunity for providers to educate patients who screened positive for insomnia on evidence-based, non-pharmacological treatment alternatives. There were available educational pamphlets on evidence-based non-pharmacological treatment of insomnia (CBT-I) for providers to educate patients who are positive for insomnia. Additionally, as evidenced by chart reviews, the project improved provider compliance with the insomnia screening protocol to meet national standards for care on enhancing assessment and non-pharmacological treatment of insomnia in adults within four weeks. The organization's key stakeholders discovered that the implementation of this project enhanced the proper assessment of insomnia and education on non-pharmacological treatment options because providers became more compliant with the developed screening protocol. The project lead developed this QI project to improve insomnia screening, educate the staff and participants about insomnia, develop, and implement an insomnia screening protocol. There was a weekly improvement in the clinic staff's compliance with the developed protocol, and this increased

awareness of the importance of insomnia screening. After screening, proper education and referral for non-pharmacological treatment options followed. The project lead offered refreshments for the participants and provided the cost of the printing materials for the project. There was no funding or grant available for this project.

Limitations

The short implementation time was one of the limitations of this project. Since the project lasted for only four weeks, there was a short time to collect data which led to a small sample size. Although, the sample size for this project was small it was adequate, given the size and setting of the project site. However, since sample size determines the amount of information collected, a small sample size may affect the generalizability of the project and future research developments (Andrade, 2020). More time would have meant screening more patients to increase the probability of a considerable impact. A larger size of the sample could have led to different results. The short implementation time did not allow for follow-up visits to evaluate the effectiveness of the project. If there had been enough time, other related clinical sites would have participated in the project, and this could have improved practice and promoted compliance. Participants participated voluntarily in this QI project, and some providers were reluctant to participate since there was no financial or monetary reward for participation.

During the data collection phase, the project may have experienced response bias since the ISI tool is a self-assessment tool. According to Pekruna (2020), depending on response options, self-reports can be subject to response bias, particularly social desirability, where the individual may respond in a way that is considered desirable rather than their actual experiences. The project lead minimized this limitation by encouraging participants to continue educating patients on the importance of insomnia screening and early identification for proper treatment. Participants

encouraged patients to be truthful with their responses to the self-assessment questionnaire.

Although the ISI screening tool was the strength of this project, at the beginning of the implementation phase, there were a few times where patients who reported insomnia symptoms were not screened. Since it is a paper-based document, it may have led to the omission. However, the project lead encouraged the participants to adhere to the protocol, and over time, screening improved, as evidenced by the chart audit. Although the ISI paper-based document was utilized by the providers, results from ISI were documented in the EHR and data was collected randomly for the chart audit. This data collection was not limited to any specific provider's documentation to ensure a good population representation to minimize bias and improve the accuracy of results. Lastly, the project lead determined that the design of the project was appropriate for this clinic.

Conclusion

This QI project was done to enhance the assessment and non-pharmacological treatment of insomnia in adults, as early identification of insomnia will improve patient outcomes. Insomnia should be viewed as a distinct disorder rather than as a symptom of a disorder. It is essential to improve the quality of sleep for those who suffer from insomnia. If insomnia is undiagnosed and untreated, it may affect the individual's well-being. The project participants were educated on the importance of proper insomnia screening using the ISI tool. This project improved the use of insomnia screening tools and provider recommendations of evidence-based non-pharmacological treatment for patients by participants' adherence to the protocol. The project indicated that the provider compliance rate with screening improved at the completion of the project.

This QI project may serve as a resource for outpatient mental health clinics in screening and identifying insomnia and providing education on non-pharmacological treatment options. Although implementation ended, there is a possibility that the project site will continue adhering

to the screening protocol for insomnia based on the positive project results. Strong participation of the clinic staff, including providers is vital for a change and sustainability to occur. The QI project is sustainable because the clinic administrator approved the use and distribution of the educational pamphlet and ensures strict adherence to the screening protocol beyond the project. The project demonstrated the importance of patient education and staff education to increase knowledge about insomnia and the importance of early screening and identification. The project involved an interdisciplinary team, which demonstrated the importance of collaboration, which is vital in nursing practice to ensure continuity of care.

In the future, the knowledge gained from this project can provide insight into approaches for insomnia screening and developing insomnia protocols. A more extensive project may be conducted to evaluate provider compliance in screening patients appropriately for insomnia and providing education on non-pharmacological treatment options. The project site administrator may also consider implementing this protocol in other related clinics. Also, since the ISI tool is also available in the clinician and electronic versions, the project site administrator may consider having the ISI tool embedded in EHR for better access. Finally, the project lead plans to design a poster to summarize the project's critical information and outcomes and present this QI project at conferences to raise awareness and spark discussions around this topic. Touro University Nevada requires this paper to be uploaded to the repository database to share the knowledge gained with others.

References

Alauddin, N., & Yamada, S. (2019). Overview of Deming criteria for total quality management conceptual framework design in education services. *Journal of Engineering and Science Research*, *3*(5), 12-20. https://doi.org/10.26666/rmp.jesr.2019.5.3

Ali, R. M., Zolezzi, M., & Awaisu, A. (2020). A systematic review of instruments for the assessment of insomnia in adults. *Nature and Science of Sleep*, 377-409. https://doi.org/10.2147/NSS.S250918

Andrade, C. (2020). Sample size and its importance in research. *Indian Journal of Psychological Medicine*, *42*(1), 102-103. https://doi.org/10.4103/IJPSYM.IJPSYM_504_19

Arnold, M. J. (2022). Behavioral and psychological treatments for chronic insomnia disorder: Updated guidelines from the American Academy of Sleep Medicine. *American Family Physician*, 105(1), 97-98. https://pubmed.ncbi.nlm.nih.gov/35029927/

Azzolini, E., Furia, G., Cambieri, A., Ricciardi, W., Volpe, M., & Poscia, A. (2019). Quality improvement of medical records through internal auditing: A comparative analysis. *Journal of Preventive Medicine and Hygiene*, *60*(3), E250.https://doi.org/10.15167/2421-4248/jpmh2019.60.3.1203

Boaz, A., Hanney, S., Borst, R., O'Shea, A., & Kok, M. (2018). How to engage stakeholders in research: Design principles to support improvement. *Health Research Policy and Systems*, *16*(1), 1-9. https://doi.org/10.1186/s12961-018-0337-6

Bollu, P. C., & Kaur, H. (2019). Sleep medicine: Insomnia and sleep. *Missouri Medicine*, *116*(1), 68. https://www.researchgate.net/profile/Harleen-Kaur-31/publication/328228834_Insomnia_Chronic/links/5cebd70e92851c4eabc183c8/Insomnia-Chronic.pdf

Breckner, G., Walker, J., Hanley, K., & Butki, N. (2018). Utilizing PDSA cycle in implementing a chest pain accelerated diagnostic protocol. *Spartan Medical Research Journal*, *2*(2). https://doi.org/10.51894/001c.6436

Center for Disease Control and Prevention (2021). *Sleep and sleep disorders*. https://www.cdc.gov/sleep/about_us.html

Chalet, F. X., Saskin, P., Ahuja, A., Thompson, J., Olopoenia, A., Modi, K., Morin, C. M., & Wickwire, E. M. (2023). The Associations between Insomnia Severity and Health Outcomes in the United States. *Journal of Clinical Medicine*, *12*(6), 2438. https://doi.org/10.3390/jcm12062438

Christoff, P. (2018). Running PDSA cycles. *Current Problems in Pediatric and Adolescent Health Care*, *48*(8), 198-201. https://doi.org/10.1016/j.cppeds.2018.08.006

Czeisler, M. É., Wolkow, A. P., Czeisler, C. A., Howard, M. E., Rajaratnam, S. M., & Lane, R. I. (2023). Association between burnout and adherence with mask usage and additional COVID-19 prevention behaviours: Findings from a large-scale, demographically representative survey of US adults. *BMJ Open*, *13(*3), e066226. https://doi.org/10.1136/bmjopen-2022-066226

Dieperink, K. B., Elnegaard, C. M., Winther, B., Lohman, A., Zerlang, I., Möller, S., & Zangger, G. (2020). Preliminary validation of the insomnia severity index in Danish outpatients with a medical condition. *Journal of Patient-Reported Outcomes*, *4*(1), 1-10. https://doi.org/10.1186/s41687-020-0182-6

Edinger, J. D., Arnedt, J. T., Bertisch, S. M., Carney, C. E., Harrington, J. J., Lichstein, K. L., Sateia, M., Troxel, w. M., Zhou, E. S., Kazmi, U., Heald, J. L., & Martin, J. L. (2021). Behavioral and psychological treatments for chronic insomnia disorder in adults: An

American Academy of Sleep Medicine systematic review, meta-analysis, and GRADE assessment. *Journal of Clinical Sleep Medicine*, *17*(2), 263-298. https://doi.org/10.5664/jcsm.8988

Edinger, J. D., Arnedt, J. T., Bertisch, S. M., Carney, C. E., Harrington, J. J., Lichstein, K. L., Sateia, M., Troxel, w. M., Zhou, E. S., Kazmi, U., Heald, J. L., & Martin, J. L. (2021). Behavioral and psychological treatments for chronic insomnia disorder in adults: An American Academy of Sleep Medicine clinical practice guideline. *Journal of Clinical Sleep Medicine, 17*(2), 255-262. https://doi.org/10.5664/jcsm.8986

Fabbri, M., Beracci, A., Martoni, M., Meneo, D., Tonetti, L., & Natale, V. (2021). Measuring subjective sleep quality: a review. *International Journal of Environmental Research and Public Health*, *18*(3). https://doi.org/10.3390/ijerph18031082

Fietze, I., Rosenblum, L., Salanitro, M., Ibatov, A. D., Eliseeva, M. V., Penzel, T., Brand, D., & Westermayer, G. (2022). The interplay between poor sleep and work-related health. *Frontiers in Public Health, 10,* 866750. https://doi.org/10.3389/fpubh.2022.866750

Hale, L., Troxel, W., & Buysse, D. J. (2020). Sleep health: An opportunity for public health to address health equity. *Annual Review of Public Health, 41*, 81-99. https://doi.org/10.1146/annurev-publhealth-040119-094412

Harrison, J. D., Auerbach, A. D., Anderson, W., Fagan, M., Carnie, M., Hanson, C.,Banta, C., Symczak, G., Robinson, E., Schnipper, J., Wong, C., & Weiss, R. (2019). Patient stakeholder engagement in research: a narrative review to describe foundational principles and best practice activities. *Health Expectations*, *22*(3), 307-316. https://doi.org/10.1111/hex.12873

Huan, C. W., & Nasri, N. B. M. (2022). Teacher teaching practices based on the PDCA Model:

A systematic literature review. *Development, 11*(3), 542-553. https://knowledgewords.com/images/teacher-teaching-practices-based-on-the-pdca-model-a-systematic-literature-review.pdf1663069087.pdf

Irwin, M. R., Carrillo, C., Sadeghi, N., Bjurstrom, M. F., Breen, E. C., & Olmstead, R. (2022). Prevention of incident and recurrent major depression in older adults with insomnia: A randomized clinical trial. *JAMA Psychiatry, 79*(1), 33-41. https://doi.org/10.1001/jamapsychiatry.2021.3422

Jones, B., Vaux, E., & Olsson-Brown, A. (2019). How to get started in quality improvement. *BMJ, 364*. https://doi.org/10.1136/bmj.k5437

Katowa-Mukwato, P., Mwiinga-Kalusopa, V., Chitundu, K., Kanyanta, M., Chanda, D., Mwelwa, M. M., Wahila, R., Petronella, M., & Carrier, J. (2021). Implementing evidence based practice nursing using the PDSA model: Process, lessons and implications. *International Journal of Africa Nursing Sciences, 14.* https://doi.org/10.1016/j.ijans.2020.100261

Kaur, P., Stoltzfus, J., & Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine, 4*(1), 60-63. https://doi.org/10.4103/IJAM.IJAM_7_18

Khaled, S. M., Petcu, C., Al-Thani, M. A., Al-Hamadi, A. M. H., Daher-Nashif, S., Zolezzi, M., & Woodruff, P. (2021). Prevalence and associated factors of DSM-5 insomnia disorder in the general population of Qatar. *BMC Psychiatry, 21*(1), 1-10. https://doi.org/10.1186/s12888-020-03035-8

Kim, H. K., & Yang, K. I. (2022). Melatonin and melatonergic drugs in sleep disorders. *Translational and Clinical Pharmacology, 30*(4), 163-171. https://doi.org/10.12793/tcp.2022.30.e21

Koffel, E., Bramoweth, A. D., & Ulmer, C. S. (2018). Increasing access to and utilization of

cognitive behavioral therapy for insomnia (CBT-I): A narrative review. *Journal of General Internal Medicine*, *33*, 955-962. https://doi.org/10.1007/s11606-018-4390-1

Krystal, A. D., Prather, A. A., & Ashbrook, L. H. (2019). The assessment and management of insomnia: An update. *World Psychiatry*, *18*(3), 337-352. https://doi.org/10.1002/wps.20674

Lengetti, E. E. (2020). Educational process improvement. *Fast facts about competency-based education in nursing: How to teach competency mastery*, 81.

Mahadevan, A., & Yap, M. H. (2019). Impact of training methods on employee performance in a direct selling organization, Malaysia. *IOSR Journal of Business and Management*, *21*(10), 7-14. https://doi.org/10.9790/487X-2110010714

Mannion, R., & Davies, H. (2018). Understanding organizational culture for healthcare quality improvement. *BMJ*, *363*. https://doi.org/10.1136/bmj.k4907

Mason, G. M., Lokhandwala, S., Riggins, T., & Spencer, R. M. (2021). Sleep and human cognitive development. *Sleep Medicine Reviews, 57.* https://doi.org/10.1016/j.smrv.2021.101472

Mbonihankuye, S., Nkunzimana, A., & Ndagijimana, A. (2019). Healthcare data security technology: HIPAA compliance. *Wireless Communications and Mobile Computing*, *2019*, 1-7. https://doi.org/10.1155/2019/1927495

Mookerjee, N., Schmalbach, N., Antinori, G., Thampi. S., Windle-Puente, D., Gilligan, A., Huy, H., Andrews, M., Sun, A., Gandhi, R., Benedict, W., Chang, A., Sanders, B., Nguyen, J., Keesara, M.R., Aliev, J., Patel, A., Hughes, I., Millstein, I., Hunter, K., & Roy, S. (2023). Comorbidities and risk factors associated with insomnia in the elderly population. *Journal of Primary Care & Community Health, 14.* https://doi.org/10.1177/21501319231168721

Morin, C. M., Belleville, G., Bélanger, L., & Ivers, H. (2011). The Insomnia Severity Index: Psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep, 34*, 601-608.

Nguyen, V., George, T., & Brewster, G. S. (2019). Insomnia in older adults. *Current Geriatrics Reports, 8*, 271-290.https://doi.org/10.1007/s13670-019-00300-x

Pagel, J. F., Pandi-Perumal, S. R., & Monti, J. M. (2018). Treating insomnia with medications. *Sleep Science and Practice, 2*(1), 5. https://doi.org/10.1186/s41606-018-0025-z

Pallant, J. (2020). SPSS survival manual: A step by step guide to data analysis using IBM SPSS (7th ed.). McGraw Hill.

Pekruna, R. (2020). Commentary: Self-Report Is Indispensable to Assess Students' Learning. *Frontline Learning Research*, *8*(3), 185-193.

Rosenberg, R. P., Benca, R., Doghramji, P., & Roth, T. (2023). A 2023 update on managing insomnia in primary care: Insights from an expert consensus group. *The Primary Care Companion for CNS Disorders*, *25*(1), 45169. https://doi.org/10.4088/PCC.22nr03385

Rios, P., Cardoso, R., Morra, D., Nincic, V., Goodarzi, Z., Farah, B., Harricharan, S., Morin, C. M., Leech, J., Straus, S. E. & Tricco, A. C. (2019). Comparative effectiveness and safety of pharmacological and non-pharmacological interventions for insomnia: An overview of reviews. *Systematic Reviews*, *8*(1), 1-16. https://doi.org/10.1186/s13643-019-1163-9

Rundo, J. V., & Downey III, R. (2019). Polysomnography. *Handbook of Clinical Neurology*, *160*, 381-392. https://doi.org/10.1016/B978-0-444-64032-1.00025-4

Scott, A. J., Webb, T. L., Martyn-St James, M., Rowse, G., & Weich, S. (2021). Improving sleep quality leads to better mental health: A meta-analysis of randomized controlled trials. *Sleep Medicine Reviews*, *60*. https://doi.org/10.1016/j.smrv.2021.101556

Seow, L. S. E., Verma, S. K., Mok, Y. M., Kumar, S., Chang, S., Satghare, P., Hombali, A., Vaingankar, J., Chong, S.A., & Subramaniam, M. (2018). Evaluating DSM-5 insomnia disorder and the treatment of sleep problems in a psychiatric population. *Journal of Clinical Sleep Medicine, 14*(2), 237-244. https://doi.org/10.5664/jcsm.6942

Taufik, D. (2020). PDCA Cycle Method implementation in industries: A systematic. *IJIEM (Indonesian Journal of Industrial Engineering & Management) Vol*, *1*, 157-166. https://pdfs.semanticscholar.org/fa9e/aa629904858cccb9bdb4c5b0be5b57aa84c5.pdf

Veqar, Z., & Hussain, M. E. (2020). Validity and reliability of insomnia severity index and its correlation with Pittsburgh sleep quality index in poor sleepers among Indian university students. *International Journal of Adolescent Medicine and Health*, *32*(1). https://doi.org/10.1515/ijamh-2016-0090

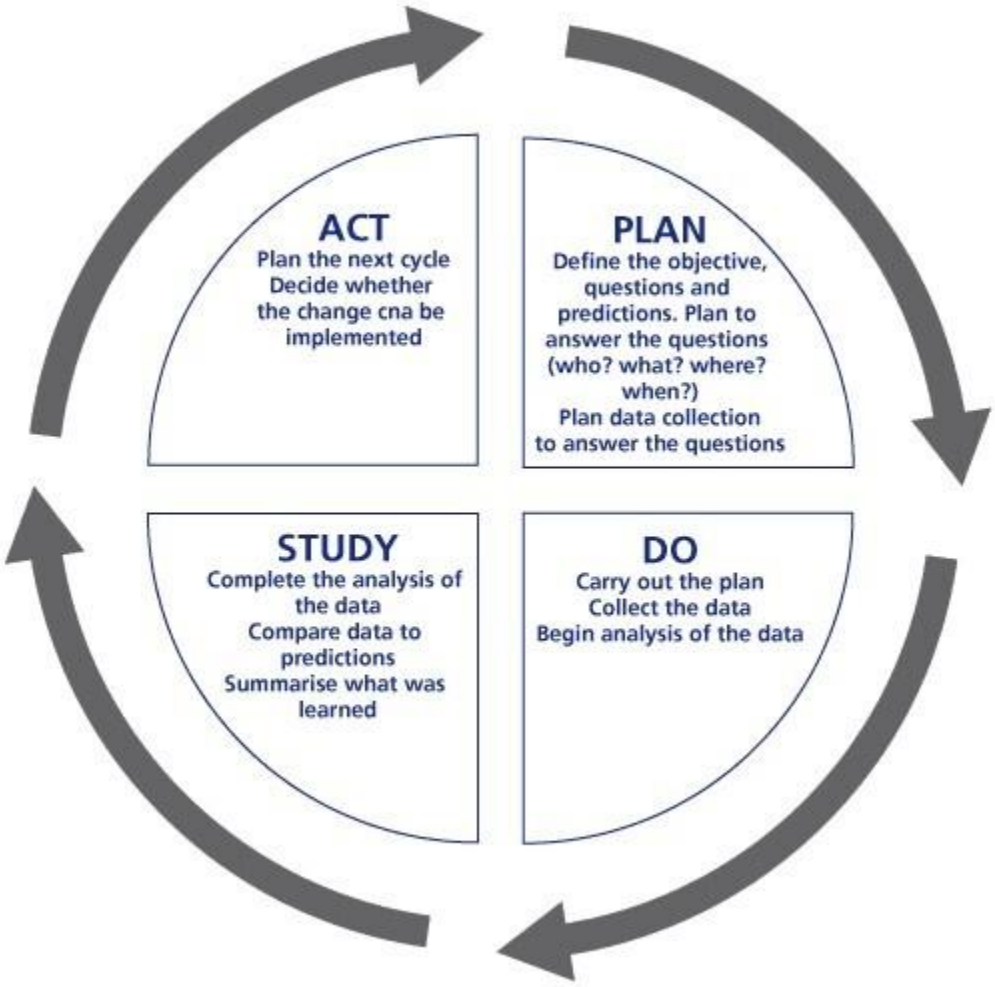
Wang, C., Li, G., Zheng, L., Meng, X., Meng, Q., Wang, S., Huiru, Y., Chu, J., & Chen, L. (2021). Effects of music intervention on sleep quality of older adults: A systematic review and meta-analysis. *Complementary Therapies in Medicine, 59.* https://doi.org/10.1016/j.ctim.2021.102719

Wani, Z. K., Chin, J. F., & Muhammad, N. A. (2019, June). Common mistakes in running PDCA: A survey on university student PDCA projects. In *IOP Conference Series: Materials Science and Engineering* (Vol. 530, No. 1, p. 012042). IOP Publishing. https://doi.org/10.1088/1757-899X/530/1/012042

Yang, L., Zhang, J., Luo, X., Yang, Y., Zhao, Y., Feng, F.,Liu, S., Zhang, C., Li, Z., Wang, C., Wang, W. Jiang, F., Zhang, Y., Hu, Y., Su, C., Wu, H., Yu, H., Li, A. X., Wing, Y. K., Luo, Y., & Zhang, B. (2023). Effectiveness of one-week internet-delivered cognitive behavioral therapy for insomnia to prevent progression from acute to chronic insomnia: A

two-arm, multi-center, randomized controlled trial. *Psychiatry Research*, *321*. https://doi.org/10.1016/j.psychres.2023.115066

Appendix A



Plan-Do-Study-Act (PDSA) Model: Breckner, G., Walker, J., Hanley, K., & Butki, N. (2018). Utilizing PDSA cycle in implementing a chest pain accelerated diagnostic protocol. *Spartan Medical Research Journal*, *2*(2). https://doi.org/10.51894/001c.6436

Appendix B

Affiliation Agreement Statement:

Touro University Nevada does not require affiliation agreements for DNP Practicum Experiences. However, the project/practicum site may require an affiliation agreement with Touro. Please delegate this form to an appropriate project/practice site representative for completion.
Please fill in the blanks below and check the appropriate box:

The TUN DNP student: NWAMAKA NWOSU is authorized to complete practicum hours at the above listed project site.

_____ An affiliation agreement is required for completion of this practicum experience.

__x__ An affiliation agreement is not required for completion of this practicum experience.

*If an affiliation agreement is required, please insert the name and contact information of the person who will coordinate the agreement:

Name of representative: ~~N/A~~ Carmen Brown

Contact information and preferred contact method: N/A

Authorized Project Site Representative Signature: Carmen Brown

Student Signature: [signature]

Appendix C

TOTAL CARE MEDICAL CLINIC INC

1110 West Anaheim Street, Suite 6
Wilmington CA, 90744
Phone #: 310-872-3560
FAX #: 866-398-5898

1024 South Vermont Avenue
Los Angeles CA 90044
Phone #: 323-756-1412
FAX #: 866-398-5898

Date: 03/27/2023

Touro University Nevada

This is to note, there is no affiliation agreement needed.

Sincerely,

Carmen Brown (Assistant Administrator)

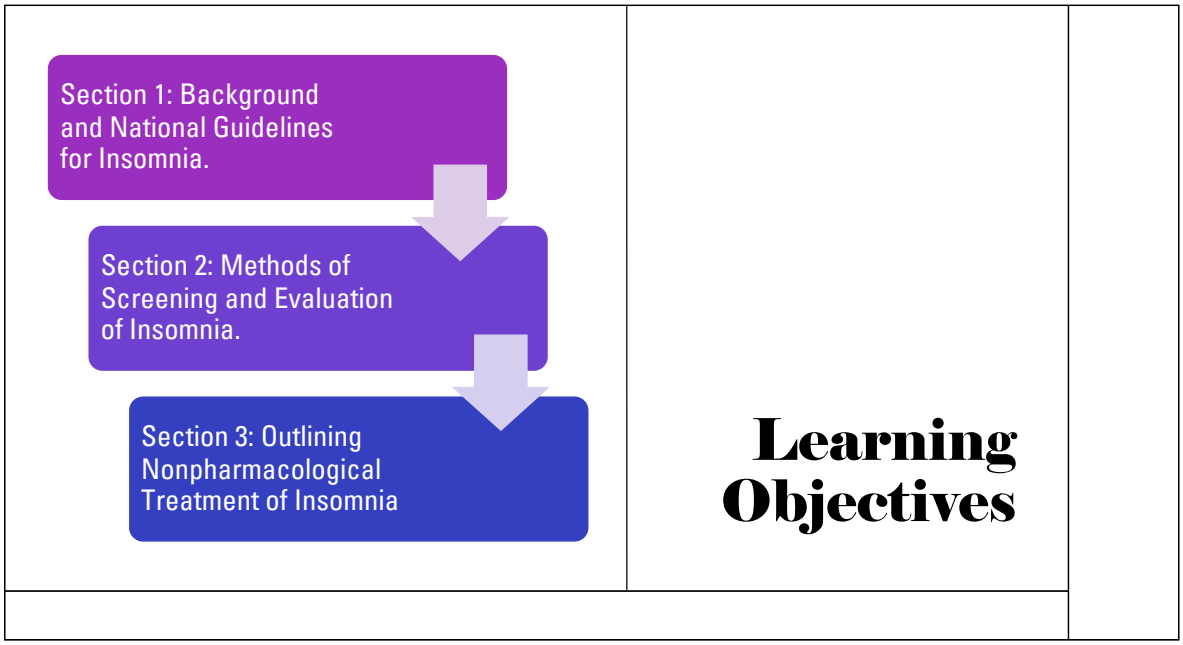
Appendix D

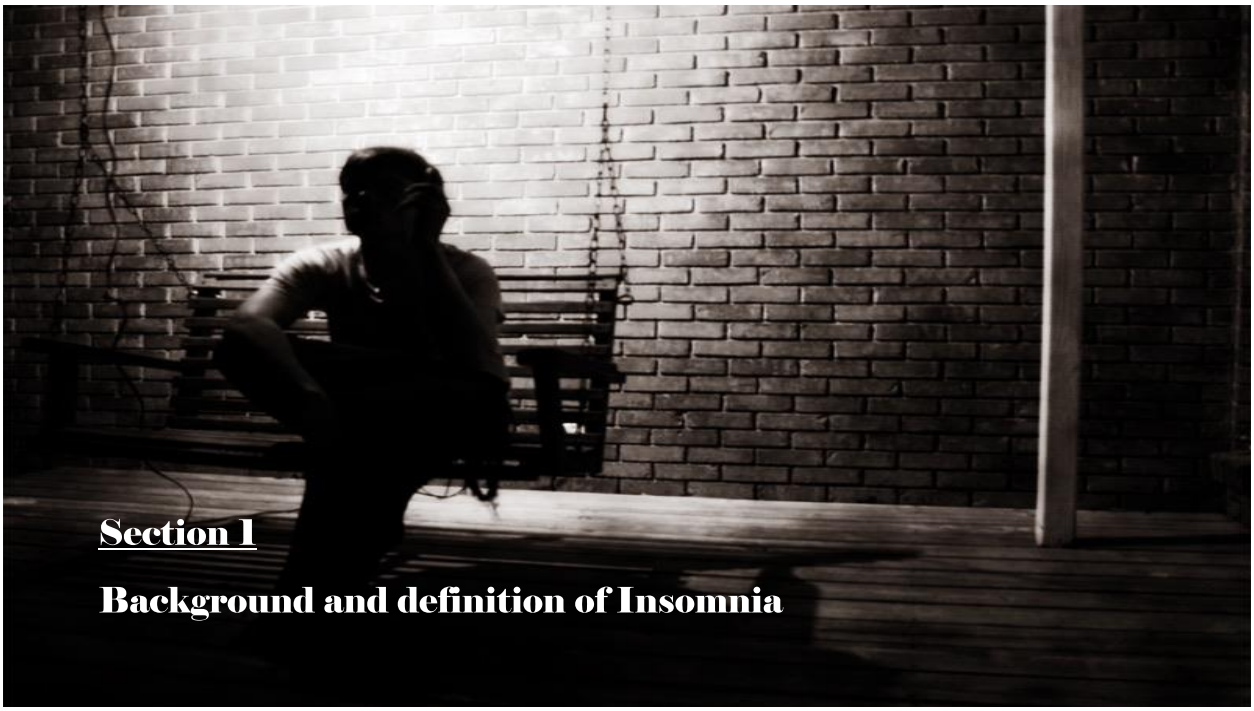
Project Implementation Timeline	
Week 1 **Nov 1–7**	• Interactive educational seminars will be conducted using educational tools (PowerPoint presentation and educational pamphlet on insomnia). • Introduce the insomnia screening protocol to the staff, practice using ISI tool and ensure ISI screening tool is incorporated into patient's intake forms.
Week 2 **Nov 8–14**	• Implementation of the recommended plan will start after the educational seminar. Staff including providers will ensure use of ISI tool, providers discuss results with patients who are positive upon screening for insomnia and provide education on evidence-based non-pharmacological treatment options of insomnia. • Gather information, continue collecting data. • Continue to support project participants. • Determine compliance by utilizing the weekly chart audit.
Week 3 **Nov 15–21**	• Continue to monitor the implementation process and communicate progress to stakeholders. • Continue to gather information and collecting data. • Continue to support project participants. • Determine compliance by utilizing the weekly chart audit. • Monitor participants' adherence to protocol and documentation
Week 4 **Nov 22–28**	• Continue to monitor the implementation process and communicate progress to stakeholders. • Continue to gather information and collecting data. • Continue to support project participants. • Determine compliance by utilizing the weekly chart audit.

	• Monitor participants' adherence to protocol and documentation
Week 5 **Nov 29–Dec 5**	• Continue to monitor the implementation process and communicate progress to stakeholders. • Continue to gather information and collecting data. • Continue to support project participants. • Monitor participants' adherence to protocol and documentation • Conduct the final chart audits using chart audit tool.

Appendix E

Educational Seminar

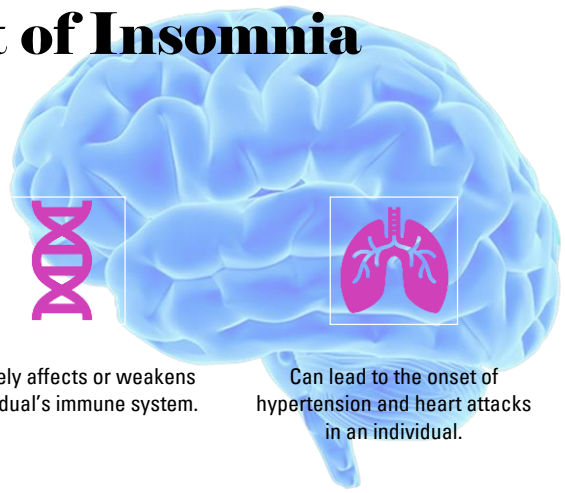




What is Insomnia?

- Insomnia is a prevalent nocturnal sleep disorder that affects individuals of all ages and ethnicities.
- It has adverse effects on health, quality of life, and functional capabilities
- Links to healthcare costs and societal issues (Khaled et al., 2021)

Health Impact of Insomnia



Impacts cardiovascular and mental health, linked to other conditions.

Negatively affects or weakens an individual's immune system.

Can lead to the onset of hypertension and heart attacks in an individual.

Insomnia's Prevalence

Approximately 10% of adults experience insomnia (Rosenberg et al., 2023).

One of the most prevalent sleep disorder complaints in medical settings.

74% of patients experience its effects at least one year (Krystal et al., 2019) .

COVID-19 pandemic highlighted insomnia's effects on healthcare workers (Czeisler et al., 2023).

Healthcare Costs and Insomnia

- Insomnia's cost estimated at $100 billion in the U.S. (Rosenberg et al., 2023)
- Management costs significantly higher for patients with insomnia.
- Indirect costs from accidents and excessive medical resource use.

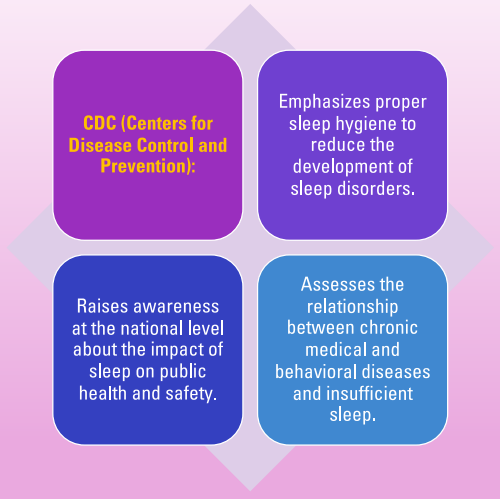
Healthcare Costs and Insomnia Cont'd

- Human productivity costs is also negatively impacted by insomnia
- Lost productivity costs were consistently found to be greater in moderate and severe insomniacs compared with non-insomniacs. (Sarsour et al., 2011)

Barriers to Seeking Help

- Insomnia affects nearly 50% of primary care patients (Rosenberg et al., 2023).
- Only a small percentage discuss sleep problems with doctors
- Stigma around insomnia's association with mental disorders hinders seeking help

National Guidelines for Insomnia: CDC & AASM

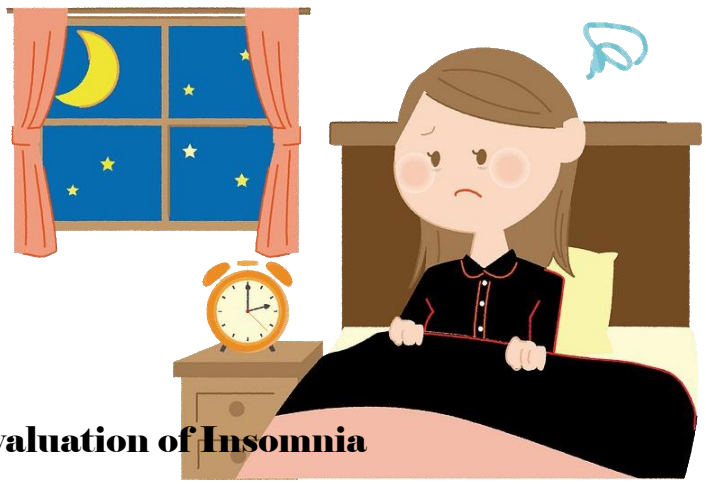


National Guidelines for Insomnia: CDC & AASM Cont'd

AASM (American Academy of Sleep Medicine):

- Provides clinical practice guidelines for utilizing psychological and behavioral treatments for chronic insomnia in adults.
- Utilizes the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) process to determine evidence-based treatment recommendations.
- Recommendations range from 'strong' to 'conditional' based on strength of evidence.
- Strongly advises the use of multicomponent Cognitive Behavioral Therapy for Insomnia (CBT-I) as a first-line treatment for chronic insomnia disorder in adults.

Section 2



Screening and Evaluation of Insomnia

Screening for Insomnia

- The main aim of proper screening for insomnia is to improve the quality of sleep.
- Initial objective assessment of insomnia requires clinical screening tools, laboratory, and sleep studies to rule out other medical conditions that can disrupt sleep (Rosenberg et al., 2023).

Insomnia Screening Tools

There are numerous tools and questionnaires that are available for assessing insomnia in patients.

These tools are:

- **Insomnia Severity Index (ISI)** – The Main for this Seminar.
- Other Tools are Pittsburgh Sleep Quality Index (PSQI), Restorative Sleep Questionnaire, Insomnia Symptom Questionnaire, and Athens Insomnia Scale (AIS)

Insomnia Screening Tools

Insomnia Severity Index (ISI):

- Insomnia Severity Index (ISI) is a self-reporting questionnaire for assessing the severity of insomnia in adults.
- Developed to gauge the daytime and nighttime components of insomnia.
- Available in multiple languages and consists of seven items, taking about three minutes to complete.
- Assesses insomnia type, severity, and its effects on daily functioning

Insomnia Evaluation

- Dimensions measured include sleep onset, sleep dissatisfaction, early morning awakening, sleep maintenance, daytime functioning, sleep problem awareness by others, and problem attribution to sleep difficulties.
- Responses are recorded on a 5-point Likert scale from "no problem" to "very severe problem."
- ISI categorizes insomnia as not present, mild, moderate, or severe based on responses.

Insomnia Screening Protocol

Guidelines:

- During routine medical visits, engage patients on issues surrounding their quality of sleep patterns.
- Conduct an initial assessment to evaluate the severity and nature of the patient's insomnia symptoms.
- Clinic Staff will ensure ISI tool is placed in patient's intake packet.
- Ensure patients complete the ISI self-assessment questionnaire.
- Clinician to assess patient's ISI score and discuss any concerns. Address sleep behavior and hygiene issues with patients who exhibit insomnia symptoms.
- ISI score > 8 will require further evaluation.
- Clinician to discuss non-pharmacological treatment options with the patient and will provide the patient with an educational pamphlet.

If a patient agrees to CBT-I, refer the patient to a CBT-I licensed therapist or provider based on the clinic's referral process.

Insomnia Severity Index (ISI)

Subject ID: _____ **Date:** _____

For each question below, please circle the number corresponding most accurately to your sleep patterns in the **LAST 2 WEEKS.**

For the first three questions, please rate the **SEVERITY** of your sleep difficulties.

1. Difficulty falling asleep:

None	Mild	Moderate	Severe	Very Severe
0	1	2	3	4

2. Difficulty staying asleep:

None	Mild	Moderate	Severe	Very Severe
0	1	2	3	4

3. Problem waking up too early in the morning:

None	Mild	Moderate	Severe	Very Severe
0	1	2	3	4

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

Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
0	1	2	3	4

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

Not at all Interfering	**A Little Interfering**	**Somewhat Interfering**	**Much Interfering**	**Very Much Interfering**
0	1	2	3	4

6. How **NOTICEABLE** to others do you think your sleeping problem is in terms of impairing the quality of your life?

Not at all Noticeable	**A little Noticeable**	**Somewhat Noticeable**	**Much Noticeable**	**Very Much Noticeable**
0	1	2	3	4

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

Not at all **A Little** **Somewhat** **Much** **Very Much**

Scoring

There are seven items. Each item is rated on a scale from 0 to 4 from less to more severe. The total score is the sum of each individual item and can range from 0 to 28 (28 = most severe insomnia).

If a subject checks more than one item or checks a response falling between any two of the four standard response choices (e.g., between 2 and 3), it is recommended to retain the highest of the scores (3) for computing the total score. If there is one or two missing items, their value can be replaced with the average score of the remaining items. If there are more than two items with no response, it is preferable to consider the total score missing.

Interpretation:

Guidelines for Interpretation of ISI Score (Total score ranges from 0-28):

Score between 0-7: no clinically significant insomnia

Score between 8-14: mild to moderate severity

Score between 15-21: moderate severity

Score between 22-28: severe insomnia

Note: score of 8 and above requires further evaluation

(Morin et al., 2011).

Cognitive Behavioral Therapy for Insomnia (CBT-I)

- Cognitive Behavioral Therapy for Insomnia (CBT-I) is considered the primary intervention for insomnia due to its strong and consistent evidence of effectiveness.
- It is favored because it's associated with fewer potential harms compared to medications.
- Combines cognitive and behavioral strategies to address underlying sleep-related thoughts and regulate sleep cycles.
- CBT-I typically involves 6 to 8 weeks of therapy, delivered through various formats, including individual or group sessions, face-to-face, online, or self-education.

Q & A Session

?

References

- Czeisler, M. É., Wolkow, A. P., Czeisler, C. A., Howard, M. E., Rajaratnam, S. M., & Lane, R. I. (2023). Association between burnout and adherence with mask usage and additional COVID-19 prevention behaviours: Findings from a large-scale, demographically representative survey of US adults. *BMJ Open*, *13*(3), e066226. https://doi.org/10.1136/bmjopen-2022-066226
- Khaled, S. M., Petcu, C., Al-Thani, M. A., Al-Hamadi, A. M. H., Daher-Nashif, S., Zolezzi, M., & Woodruff, P. (2021). Prevalence and associated factors of DSM-5 insomnia disorder in the general population of Qatar. *BMC Psychiatry*, *21*(1), 1-10. https://doi.org/10.1186/s12888-020-03035-8

References Cont'd

- Krystal, A. D., Prather, A. A., & Ashbrook, L. H. (2019). The assessment and management of insomnia: An update. *World Psychiatry*, *18*(3), 337-352. https://doi.org/10.1002/wps.20674
- Rosenberg, R. P., Benca, R., Doghramji, P., & Roth, T. (2023). A 2023 update on managing insomnia in primary care: Insights from an expert consensus group. *The Primary Care Companion for CNS Disorders*, *25*(1), 45169. https://doi.org/10.4088/PCC.22nr03385

References Cont'd

- Khaled Sarsour, MPH, PhD and others, The Association between Insomnia Severity and Healthcare and Productivity Costs in a Health Plan Sample, Sleep, Volume 34, Issue 4, April 2011, Pages 443–450, https://doi.org/10.1093/sleep/34.4.443
- Morin, C. M., Belleville, G., Bélanger, L., & Ivers, H. (2011). The Insomnia Severity Index: Psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep, 34*, 601-608.

Appendix F

Educational Pamphlet

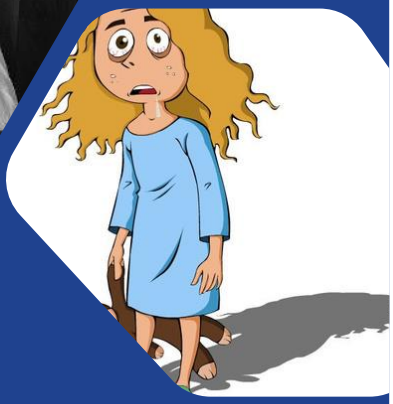
Insomnia: National Guidelines

Both the Centers for Disease Control and Prevention (CDC) and the American Academy of Sleep Medicine (AASM) provide guidelines for managing insomnia:

- CDC: The CDC emphasizes the importance of proper sleep hygiene and awareness of the impact of sleep on public health.
- AASM: The AASM recommends using multicomponent CBT-I as the first-line treatment for chronic insomnia in adults. It also provides guidelines for various therapeutic approaches.

Why Proper Screening and Treatment Are Essential

Recognizing and treating insomnia early can significantly improve your quality of life. Proper screening allows for appropriate non-pharmacological treatments, reducing the risk of dependence on medications and their associated side effects.



What is Insomnia?

Insomnia is a prevalent nocturnal sleep disorder that affects individuals of all ages and ethnicities. Although men and women suffer adversely from insomnia in terms of their health and quality of life, it significantly impacts functional capabilities, healthcare, and societal issues.

Understanding & Managing Insomnia

More Than Just a Sleepless Night

Facts About Insomnia:

- **Prevalence:** Approximately 10% of adults in the general population have insomnia. It affects men and women equally and can occur at any age.
- **Health Impact:** Insomnia is not just about missing out on sleep; it can lead to a range of health issues, including cardiovascular problems, mental health disorders like depression, and more.
- **Cost:** Insomnia has a significant economic impact. In the United States alone, the cost of managing insomnia is estimated to be as high as $100 billion per year.
- **Under-diagnosed:** Surprisingly, many people with insomnia never seek medical help. Only a small percentage of individuals with insomnia discuss their sleep problems with healthcare providers.
- **Association with Mental Health:** Insomnia is closely linked to mental health conditions such as anxiety and depression. Recognizing and addressing insomnia symptoms early can be essential.

American Academy of Sleep Medicine (AASM)

guidelines on the behavioral and psychological interventions of chronic insomnia in adults recommend cognitive behavioral therapy for insomnia (CBT-I) as first-line therapy for patients with insomnia

Identifying the Problem

Insomnia can manifest in various ways:

- **Difficulty Falling Asleep:** You might struggle to fall asleep, lying awake for hours before drifting off.
- **Staying Asleep:** You may wake up frequently during the night and find it hard to get back to sleep.
- **Early Morning Awakening:** You wake up very early in the morning and can't go back to sleep.
- **Nonrestorative Sleep:** Even if you sleep, you wake up feeling tired and unrefreshed.
- **Impaired Daytime Functioning:** Insomnia affects your ability to concentrate, work, and enjoy daily activities.

Why Proper Screening Matters:

Undiagnosed and untreated insomnia can lead to accidents, poor social functioning, and reduced work productivity. However, despite its significant impact, insomnia often goes unrecognized and untreated.

Non-Pharmacological Alternatives

While medications are available to treat insomnia, non-pharmacological options are highly recommended. These include:

- **Cognitive Behavioral Therapy for Insomnia (CBT-I):** CBT-I is an evidence-based psychotherapy that addresses both cognitive and behavioral aspects of insomnia. It is highly effective and has fewer potential side effects than medications.
- **Lifestyle Modifications:** Simple lifestyle changes, such as regular exercise, a balanced diet, maintaining a healthy weight, and limiting caffeine and alcohol, can improve sleep quality.

Components of CBT-I

Sleep Hygiene
Stimulus Control
Sleep Restriction
Relaxation
Cognitive

Appendix G

Insomnia Severity Index (ISI)

Subject ID: _____ Date: _____

For each question below, please circle the number corresponding most accurately to your sleep patterns in the **LAST 2 WEEKS.**

For the first three questions, please rate the **SEVERITY** of your sleep difficulties.

1. Difficulty falling asleep:

None	Mild	Moderate	Severe	Very Severe
0	1	2	3	4

2. Difficulty staying asleep:

None	Mild	Moderate	Severe	Very Severe
0	1	2	3	4

3. Problem waking up too early in the morning:

None	Mild	Moderate	Severe	Very Severe
0	1	2	3	4

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

Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
0	1	2	3	4

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

Not at all Interfering	**A Little** Interfering	**Somewhat** Interfering	**Much** Interfering	**Very Much** Interfering
0	1	2	3	4

6. How **NOTICEABLE** to others do you think your sleeping problem is in terms of impairing the quality of your life?

Not at all Noticeable	**A little** Noticeable	**Somewhat** Noticeable	**Much** Noticeable	**Very Much** Noticeable
0	1	2	3	4

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

Not at all	**A Little**	**Somewhat**	**Much**	**Very Much**
0	1	2	3	4

Scoring

There are seven items. Each item is rated on a scale from 0 to 4 from less to more severe. The total score is the sum of each individual item and can range from 0 to 28 (28 = most severe insomnia).

If a subject checks more than one item or checks a response falling between any two of the four standard response choices (e.g., between 2 and 3), it is recommended to retain the highest of the scores (3) for computing the total score. If there is one or two missing items, their value can be replaced with the average score of the remaining items. If there are more than two items with no response, it is preferable to consider the total score missing.

Interpretation:

Guidelines for Interpretation of ISI Score (Total score ranges from 0-28):

Score between 0-7: This result suggests that there is no clinically significant insomnia at this time; if you are still concerned about your sleep, you may want to repeat this test in a few days or talk to a health-care professional about it.

Score between 8-14: This result suggests the presence of insomnia symptoms of mild to moderate severity. Although this degree of insomnia severity may not require immediate treatment, you may still want to talk to a health-care professional about your sleep (for further evaluation) or continue monitoring these symptoms to check if they worsen over time.

Score between 15-21: This result suggests that you experience insomnia symptoms of moderate severity; such symptoms are usually significant enough to warrant further evaluation and treatment. You should talk to a health-care professional about it.

Score between 22-28: This result suggests that you experience severe insomnia associated with significant impairments of daytime functioning. You should talk to a health-care professional about additional evaluation and treatment.

(Morin et al., 2011).

Appendix H

Permission to use ISI

4. Context of use of the COA

The User undertakes to use the COA solely in the context of the Stated Purpose as defined hereafter.

4.1 Stated Purpose

Other project

Title	Quality Improvement Project
Disease or condition	
Planned Term*	Start: 11/2023 End: 12/2023
Description (including format or media)	

4.2 Country and languages

MRT grants the License to use the COA on the following countries and in the languages indicated in the table below:

Version/Module	**Language**	**For use in the following country**
ISI-Last 2 weeks	English	the USA

The User understands that the countries indicated above are provided for information purposes. The User may use the COA in other countries than the ones indicated above.

Appendix I

Insomnia Screening Protocol

Definition: Insomnia is a prevalent nocturnal sleep disorder that affects individuals of all ages and ethnicities. Although men and women suffer adversely from insomnia in terms of their health and quality of life, it significantly impacts functional capabilities, healthcare, and societal issues (Khaled et al., 2021).

Screening for insomnia in patients is a vital step not only towards reducing the cost of healthcare, but also in ensuring improvement in the patients' quality of life. Through adherence to this guideline, clinic staff can deliver holistic support to patients battling with insomnia. Doing so enhances the overall quality of life for the patients.

Guidelines to Proceed:

- During routine medical visits, engage patients on issues surrounding their quality of sleep patterns.
- Conduct an initial assessment to evaluate the severity and nature of the patient's insomnia symptoms.
- Clinic Staff will ensure ISI tool is placed in patient's intake packet.
- Ensure patients complete the ISI self-assessment questionnaire.
- Clinician to assess patient's ISI score and discuss any concerns. Address sleep behavior and hygiene issues with patients who exhibit insomnia symptoms.
- ISI score > 8 will require further evaluation.
- Clinician to discuss non-pharmacological treatment options with the patient and will provide the patient with an educational pamphlet.

- If a patient agrees to CBT-I, refer the patient to a CBT-I licensed therapist or provider based on the clinic's referral process.

Appendix J

Chart Audit Tool

Patient ID	Insomnia Symptoms Present? Yes/No	Was the patient screened with ISI? Yes/No	Score > 8? Yes/No	Was ISI Score Recorded? Yes/No	Nonpharmacological Education Provided to Patient? Yes/No	Was the patient referred to a Licensed CBTI Therapist? Yes/No	Compliant (C) Or Non-compliant (NC)

Appendix K

Project Status Update Timeline

Week 1 **Nov. 1-7**	• Conducted an interactive educational seminar using educational tools (PowerPoint presentation, educational pamphlet on insomnia, the ISI screening tool, and the insomnia screening protocol). • Introduced the insomnia screening protocol to the staff, practice using and scoring the ISI tool. • Reviewed how to document patients' ISI scores with the providers and offered education in the electronic health record (EHR). • The clinic staff ensured that the paper-based ISI screening tool was readily available to be incorporated as part of the patient's intake process.
Week 2 **Nov. 8-14**	• The actual implementation of the recommended plan started after the educational seminar. The project lead ensured the staff, including providers, adhered to guidelines outlined in the insomnia screening protocol, ensured that the providers encouraged patients to complete the ISI self-assessment questionnaires, assessed patients' ISI scores, and discussed any concerns with patients.

	• The project lead continued providing support by reminding providers of the importance of further evaluation for patients with ISI scores greater than eight, to discuss results with patients who are positive upon screening for insomnia, provide education on evidence-based non-pharmacological treatment options for insomnia with the patient, provide the patient with an educational pamphlet and ensured referrals were initiated for CBT-I therapy for patients who are positive for insomnia and desire to try therapy. • The project lead continued to gather information and collect data about the implemented plan. • The project lead performed a chart audit and reviewed twenty charts to gather more information and to determine provider compliance with the insomnia screening protocol.
Week 3 **Nov. 15-21**	• The project lead continued to monitor the implementation process, gathering information, collecting data, and getting feedback on the implementation plan. • The project lead continued to provide support to the project participants, and this allowed participants to share their experiences so far with the implementation plan. • The project lead also made time to communicate the progress of the implementation process with the stakeholders.

	• Determined compliance by utilizing the weekly chart audit and monitored participants' adherence to protocol and documentation. Twenty charts were reviewed.
Week 4 **Nov. 22-28**	• The project lead continued monitoring the implementation process, gathering information, collecting data, and getting participant feedback regarding their experiences with the implementation plan. • The lead continued to support project participants and communicate progress to stakeholders. • Determined compliance by utilizing the weekly chart audit and reviewed sixteen charts this week. • The participants' adherence to protocol and documentation was monitored.
Week 5 **Nov. 29-Dec. 5**	• The project lead continued monitoring the implementation process, gathering information, and collecting data. • The project lead continued to support the project participants and get their feedback regarding their experiences and participation in this QI project. • The project lead reviewed and compiled data from a final weekly chart audit and reviewed twenty charts at the end of the week to determine participants' compliance and adherence to the screening protocol and documentation.

	• The implementation progress results were communicated to the stakeholders.