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Expanding Clinical Knowledge and Awareness to Non-Benzodiazepine Treatments by Providing an Educational Intervention: A Quantitative Study

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EXPANDING CLINICAL KNOWLEDGE AND AWARENESS TO NON-BENZODIAZEPINE TREATMENTS BY PROVIDING AN EDUCATIONAL INTERVENTION: A QUANTITATIVE STUDY

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An Abstract of the Scholarly Project by
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This study examined the effectiveness of an educational intervention for healthcare clinicians to decrease the use of benzodiazepines by expanding their clinical knowledge and awareness of non-benzodiazepine treatments for the treatment of anxiety and panic disorders. The target population is healthcare clinicians in the metropolitan area of Memphis, Tennessee that commonly treat anxiety and panic disorders. Clinicians from different specialties will be recruited to participate. The healthcare clinicians will evaluate their confidence and experience of prescribing benzodiazepines on a pretest, 3-question survey using a Likert scale. The clinician is then given a 30-minute educational intervention that will cover the risks and dangers of benzodiazepines and a review of alternative, non-benzodiazepine treatment options. The clinicians will then self-evaluate themselves using a similar posttest 3-question survey and return these tests for review. The results will be examined to determine the effectiveness of the educational intervention in changing clinical practice.

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Chapter I

Introduction

Prolonged treatment with benzodiazepines is common in clinical practice despite repeated recommendations for short-term use (Barnhill, 2020). The use of benzodiazepines has increased prevalence among the adults and geriatric populations.

Inadvertently, this increase has caused psychological and physical dependence among these patient populations and becoming a clinical problem. Weaning down or discontinuing benzodiazepines can be complex as withdrawal symptoms, worsening of symptoms, and risk of seizure are possible (Baandrup et al., 2018).

The first benzodiazepine discovered was Librium (chlordiazepoxide) in 1955 by chemist Leo Sternbach. The 1960s was marked by discoveries of now, commonly prescribed benzodiazepines such as diazepam (Valium), alprazolam (Xanax), Klonopin (clonazepam), and others. By the mid-1970s, benzodiazepines were one of the most commonly prescribed medications in the United States and were recommended as the standard of treatment for anxiety or insomnia (Wick, 2013).

The issue of benzodiazepine abuse and dependence did not evolve until the 1980s as evidence of misuse accumulated and medical leaders and legislators were forced to take action (Wick, 2013). Despite warnings, benzodiazepine use exponentially increased in the 1990s and 2000s. According to the Centers for Disease Control and Prevention

(CDC), the number of benzodiazepine prescriptions filled increased by 67%, from 8.1 million to 13.5 million from 1996 to 2013 (Bachhuber et al., 2016). During this time period, overdoses of opioids used in combination with benzodiazepines soared to a crisis. In 2016, the FDA issued its first boxed warning against concurrent use of benzodiazepines with opiates. Finally in 2020, 65-years since their inception, the FDA updated their benzodiazepine warnings to include the risks of abuse, addiction, physical dependence, and withdrawal reactions (FDA, 2020).

Data from the 2015-2016 National Survey on Drug Use and Health concluded that 12.5% of the general population, approximately 30.5 million people within the U.S. are prescribed benzodiazepines. The DSM-5 diagnostic criteria that includes benzodiazepines abuse is "Sedative, hypnotic, and anxiolytic abuse disorders." This diagnosis describes misuse of the drug by taking benzodiazepines over a longer period of time than was intended, numerous unsuccessful efforts to cut down or control use, social impairment due to continued use, cravings or strong desire to use, building tolerance, continued use despite knowledge of having a physical or psychological problem, and withdrawal symptoms that manifest after discontinuation (American Psychiatric Association, 2013). According to data from the National Institute on Drug Abuse (NIDA), in 2018 benzodiazepines were heavily associated with emergency room visits, suicide attempts, drug overdoses, mental health disorders, and substance abuse across the United States (NIDA, 2018). Additionally, approximately 1 in 5 persons diagnosed with alcohol abuse also abuse benzodiazepines (Schmitz, 2016).

Description of the Problem

The prescribing of benzodiazepines has increased exponentially with primary care

physicians (PCPs) accounting for approximately half of all prescribed. Furthermore, there is an increase in the prescribing of benzodiazepines with other sedating medications. This disturbing trend suggests a laissez-faire attitude towards the risks of physical dependence and overdose (Agarwal & Landon, 2019). Currently, there is no consensus in the U.S. or abroad that establishes the minimum or maximum therapeutic doses for benzodiazepines. Additionally, the general prescribing habits of healthcare clinicians with benzodiazepines is inconsistent (Cloos et al., 2021). With the majority of benzodiazepines being prescribed outside of psychiatry, the other medical specialties are in need of a greater understanding with the appropriate use, management, and the addictive dangers associated with them.

Significance to Nursing

Nurses have a responsibility to educate patients of the risks, side effects, and long-term consequences of medications prescribed. Healthcare clinicians, including advanced practice nurses, that prescribe benzodiazepines must decide if the benefits outweigh the long-term risks to the patient in their plan of care. From a nursing viewpoint, the issue of benzodiazepines being overprescribed should be emphasized.

Significance to Patients

From a patient perspective, the issue of addiction and risk of overdose is significant as the patients prescribed benzodiazepine medications may be unaware of its potential for danger. Benzodiazepines are commonly used in conjunction with other primary drugs of abuse such as opioids and alcohol (Schmitz, 2016).

Significance to Society

The overprescribing of benzodiazepines is important from a societal standpoint as

they contribute to the growth of drug abuse in the United States. Past attempts of implementing regulations to try and slow the pace of prescribing benzodiazepines have been used but it did not alter the upward trajectory. In 2006, Medicare Part D excluded benzodiazepines from its formulary and in 2012, the American Geriatrics Society added benzodiazepines to the Beers Criteria, a clinical guide of potentially harmful medications that increase the risk of falls or death in the elderly. It is recommended that this medication is to be avoided in geriatric patients if possible (Lai et al., 2015). Despite these restrictions, the prescribing of benzodiazepines still continues to trend upward.

Specific Aims and Purpose

The purpose of this scholarly project is to educate healthcare clinicians on non-benzodiazepine alternatives for treatment of anxiety and panic disorders. The following are goals of this scholarly project:

- To increase clinical knowledge and awareness to the risks and dangers of long-term benzodiazepine use
- To increase clinical knowledge to alternate, non-benzodiazepine treatment options If the scholars project is successful, it may lay the foundation for future prescribing habits or clinical protocols that could be used nationwide.

Theoretical Framework

The theoretical framework applied to this scholarly project is Dr. Patricia Benner's "Novice to Expert" theory. This theory describes the experiences of fear and failure for new nurses in their first year of nursing. It is a struggle to comprehend the complexities of nursing such as managing time, prioritizing critical tasks, and application

of critical thinking skills. These abilities become commonplace and routine once new nurses master the skills needed to be successful at their job.

This concept known as “From Novice to Expert,” was developed by Dr. Patricia Benner to explain how nurses develop skills and an understanding of patient care over time from a combination of a strong educational foundation and personal experiences.

The theory identifies 5 levels of nursing experience: Novice, Advanced beginner, Competent, Proficient, and Expert. The assumption is that after time and repetition, the new nurse advances through each level of nursing experience until they become experts. Dr. Benner even proposed that a nurse could gain knowledge and skills without actually learning the theory. She cites wisdom gained from experience will advance a novice naturally through each stage to attain expertise (Petiprin, 2020).

Dr. Benner’s theory fits this scholarly project’s theoretical framework in educating healthcare clinicians to utilize non-benzodiazepine medications for the treatment of anxiety and panic disorders. The more they utilize non-benzodiazepine treatments, their confidence and experience with these psychotropic medications will grow. Like any skill learned by a new nurse, there are nuances to each situation that will be difficult for a novice. However, each healthcare clinician will gain experience after each encounter to advance. As the healthcare clinician becomes competent, their use of benzodiazepines will decrease. Healthcare clinicians that become experts will be able to identify benzodiazepine-dependent patients as well as initiate difficult conversations with them about tapering off their benzodiazepines. Experts would also have a firm understanding to the long-term pitfalls of liberal benzodiazepine use.

Project Questions

The research questions for this scholarly project include:

1) Will an education intervention change the healthcare clinician's attitude towards benzodiazepines?
2) Will an education intervention change the healthcare clinician's beliefs about benzodiazepines?
3) Will an education intervention change the healthcare clinician's self-perception and understanding of benzodiazepines?

Definition of Key Terms/Variables

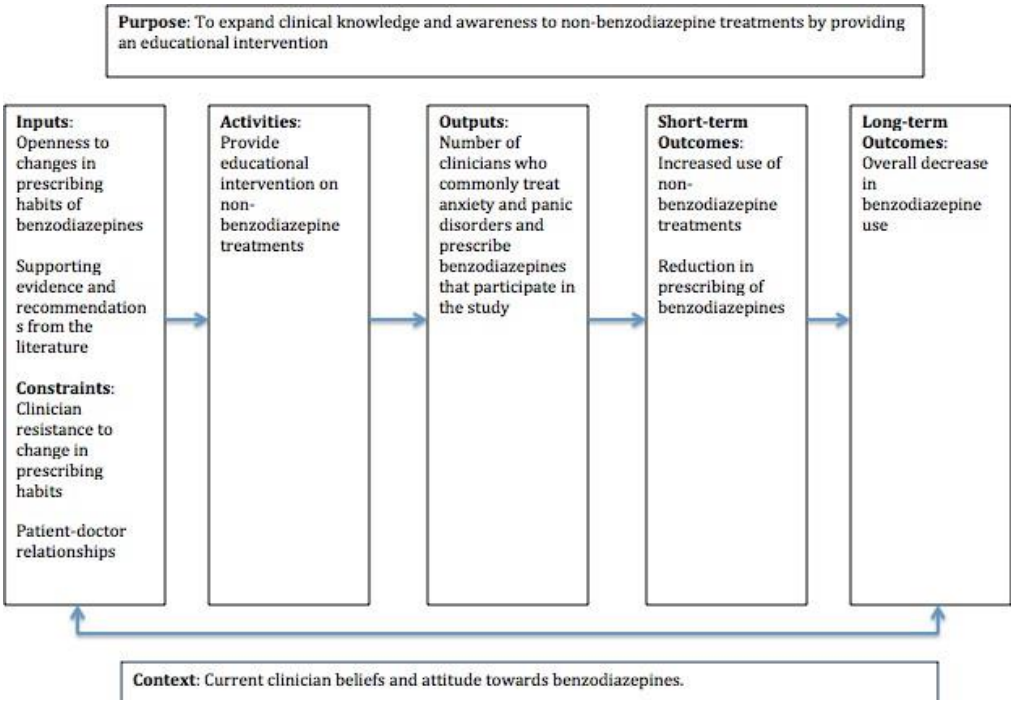
The following is a list of key terms used throughout this paper:

- Benzodiazepine - Benzodiazepines are a classified as central nervous system (CNS) depressants that can cause sedation and suppress arousal. These psychotropic medications inhibit the neurotransmitter, gammaaminobutyric acid, causing sedation or euphoria (Drug and Chemical Evaluation Section, 2019).
- The Diagnostic and Statistical Manual of Mental Disorders – 5th ed., (DSM-V), of the American Psychiatric Association, is the most widely accepted classification of mental disorders used by clinicians and researchers (American Psychiatric Association, 2013).
- Generalized anxiety disorder is defined by the DSM-V as uncontrollable excessive tension and worry occurring more days than not for at least 6-months. These symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

that is not attributable to physiological effects of a substance or not better explained by another medical disorder (American Psychiatric Association, 2013).

- Panic disorder is defined by the DSM-V as an abrupt surge of intense fear or intense discomfort that reaches a peak within minutes and which 4 or more symptoms are present: palpitations, trembling, shortness of breath, feeling of choking, intense nausea, vertigo, derealization, paresthesias, and fear of dying (American Psychiatric Association, 2013).
- Short-term use – For treatment with any psychotropic medication, 3-4 months is considered a short-term duration (NAMI, n.d.).
- Long-term use - Longer than 4 months to indefinite use is considered long-term use of any psychotropic medication (NAMI, n.d.).

Logic Model of Proposed DNP Project



The purpose of this logic model is the illustrate the planning, implementation, and expected outcomes of the scholarly project. The long-term goal of this project is an overall reduction in the use of benzodiazepines. The hope is that the educational intervention will increase clinical knowledge to the risks and abuse of benzodiazepines and increase awareness to non-benzodiazepine treatment alternatives. By treating anxiety and panic disorders with non-benzodiazepine medications, the use of benzodiazepines can be avoided. Constraints identified include resistance to practice change, current attitudes towards benzodiazepines, and the volatility of the patient-doctor relationship.

Summary

The upward trend in prescribing benzodiazepines across multiple healthcare disciplines and specialties suggests a gap in knowledge towards the risks and dangers of long-term benzodiazepine use. The issue of addiction and risk of unintentional overdose has significant implications to nursing, patients, and society. The purpose of this research is to increase the knowledge towards benzodiazepines in order to bring practice change. Educating clinicians on non-benzodiazepine treatments will increase their use of alternatives and help avoid potential dangers associated with long-term use of benzodiazepines.

Chapter II

Review of the Literature

Benzodiazepines are psychotropic medications that induce immediate sedation by increasing the levels of Gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter in the brain. General side effects of benzodiazepines include psychomotor retardation, memory impairment, disinhibition, drowsiness, and sedation.

For these reasons, benzodiazepines are widely prescribed for the treatment of generalized anxiety disorder (GAD), panic, and insomnia disorders. The efficacy of benzodiazepines is well established for providing an anxiolytic and hypnotic effect that immediately reduces anxiety seen in numerous placebo-controlled studies however the long-term effects are often minimized (Longo & Johnson, 2000). Due to their relative safety profile compared to barbiturates and opioids, benzodiazepines in small doses are used by numerous disciplines in medicine as short-term, intermittent, or "as-needed" use treatment. However when used over time, their continued use develops a gradual loss of efficacy due to physical tolerance and requiring higher doses or stronger versions of benzodiazepines. This increases the person's risk for physical dependence. Although benzodiazepines are associated with GABA neurotransmitters, they indirectly trigger a positive response in the mesolimbic dopamine pathway commonly referred to as the "reward pathway" for all drugs of abuse. This positive response can cause a state of

physiologic dependence that is commonly associated with benzodiazepines (Longo et al., 2000).

A comprehensive literature search for randomized clinical trials, longitudinal studies, and meta-analyses was conducted using online databases such as PubMed, Summon, and APAPsychArticles online databases. Article titles and abstracts were searched using the following terms: “benzodiazepines,” “panic disorder,” and “anxiety disorder.” Additionally, lists of relevant journal articles were added to assist as supporting evidence to the literature. The literature review is organized into five sections covering common themes seen throughout multiple research studies. Clinical guidelines and treatment options first were reviewed and then research articles were examined on the potential for abuse, general characteristics of benzodiazepine users, benzodiazepines impact on healthcare utilization, and benzodiazepine use in clinical practice. This review will discuss controversial issues surrounding chronic benzodiazepine use and inconsistencies among healthcare clinicians that utilize them for treatment.

Clinical Guidelines and Treatment

According to the American Psychiatric Association (2009), the first line treatment of panic disorder and GAD are antidepressants, specifically those in the selective serotonin reuptake inhibitor class (SSRIs). Other alternatives include antidepressants in the serotonin and norepinephrine reuptake inhibitor class (SNRIs), tricyclic antidepressants (TCAs), anticonvulsants, Buspirone, antihistamines, and antihypertensive agents. The APA suggests that SSRIs are more favorable due to their well-established safety profile. SSRIs have less side effects compared to SNRIs and TCAs and can be used as monotherapy with patients as they can address possible underlying depression.

(APA, 2009).

A meta-analysis of 56 clinical trials by Gomez, Barthel, and Hofmann (2018) reviewed the various types of treatments for GAD and compared their efficacy. The first-line treatment SSRIs demonstrated the lowest effect size of 33% while those clinical trials that evaluated treatment with benzodiazepines yielded the largest effect size, 50%. Comparing the two, there was a significant difference that was seen among clinical trials published over two decades. Despite clear prescribing guidelines set by the APA, psychiatrists and non-psychiatrists frequently prescribe benzodiazepines as frequently as they prescribe SSRIs. The study found that most forms of psychotropic medications were only moderately effective. The most effective treatment among participants remained benzodiazepines due to the rapid pharmalogical onset of action. Trial participants reported an immediate relief of symptoms and return to their baseline functionality with benzodiazepines. They were the drug of choice among participants in this clinical trial.

The delayed onset of action with antidepressants and other alternatives were noted as to why benzodiazepines were preferred.

Potential for Abuse

Despite the relative effectiveness of benzodiazepines in the treatment of anxiety and panic disorders, there are serious concerns about the abuse or dependence when prescribed on a long-term basis. Benzodiazepine abuse or dependence, referred to as sedative abuse and/or dependence in the DSM-5, is infrequent as a standalone diagnosis compared to other substance abuse diagnoses such as those associated with alcohol, opioids, and nicotine. The reason for this is an estimated 80-percent of misuse with benzodiazepines occurs as a poly-substance abuse. Studies have shown an estimated 41%

of alcoholics report using benzodiazepines while drinking. It is reported that benzodiazepines enhance euphoria, alleviate withdrawal symptoms, and extend the effects of the primary drug (Longo et al., 2000). A disturbing trend found throughout the literature is that medical prescriptions account for the primary source of supply for benzodiazepine abuse and dependence. For these reasons, the evidence supports prescribing clinicians abstain from over-using benzodiazepines and take caution with those patients having a past history of substance abuse as it increases the risk of overdose. It is recommended that basic screening questions regarding a familial or past history of addiction should be included in every examination.

In a cross-sectional analysis study by Maust, Lin, and Blow (2019) comparing data from the 2015 and 2016 National Survey on Drug Use and Health (NSDUH) found that adults aged 50-64 years were the highest consumers of benzodiazepines. Those in the 18-25 years had the highest incidence of benzodiazepine abuse and dependence. In the study, common reasons from participants for abusing benzodiazepines were “to relax,” “to experiment,” and “to get high.” This age category cited family and friends as their primary source to obtaining benzodiazepines, approximately 70%. This study also found a strong association between benzodiazepine abuse and concurrent misuse with opioids.

A meta-analytic review of randomized placebo-controlled trials by Gomez, Barthel, and Hofmann (2018) evaluated the efficacy of benzodiazepines for treatment of GAD. The study found that the risk for developing physical dependence with continued use varied widely among individuals. The authors suggested benzodiazepines were not recommended for individuals with past history of substance abuse and they should not be prescribed indefinitely as monotherapy.

From 2003-2015, the co-prescribing rate of benzodiazepines with opioids more than doubled in ambulatory visits among adults in the United States (Agarwal & Landon, 2019). This disturbing trend continues to grow each year. In a recent article published by the National Institute of Drug Abuse (NIDA) cited data from a 2021 study found that nearly 14% of all overdose fatalities involved opioids taken with benzodiazepines (NIDA 2021).

General Characteristics of Benzodiazepine Users

An estimated 12.6% of the population, 30.6 million adults per year in the U.S., consumes benzodiazepines each year (Maust, Lin, & Blow, 2019). A review of the literature found some common characteristics of participants and patients that took part in the research studies. General characteristics of 10,290 participants that were prescribed benzodiazepines from a study by Maust, Lin, and Blow (2019) found those with white, non-Hispanic ethnicity, older age, higher education, the presence of mental illness, and female gender reported the highest rates of use. The same characteristics were also seen in a longitudinal study by Kroll et al. (2016). That study followed 65,912 adults for a one-year span from 2011 to 2012 and the most common characteristics of participants were also female gender, older age, divorced or widowed marital status, had multiple medical comorbidities, and held either Medicare or Medicaid insurance.

A meta-analysis by Lai et al. (2015) of data collected by ambulatory physician office visits from 2005-2009 saw general characteristics of patients receiving benzodiazepines was white, non-Hispanic ethnicity and location in the Southern states. In another case, a case-cohort study by McGuire et al. (2019) followed retired U.S. military veterans in the Veterans Administration (VA) system from 2004-2009 to study the

association between benzodiazepine prescribing patterns and risk of drug overdose with opioids. General characteristics of that population also reflected those that seen in the literature. Those receiving benzodiazepines were more likely to be of female gender, middle-aged adult, white ethnicity, and were in the higher income brackets.

An article by Longo et al. (2000) stated that common "drug-seeking behaviors" characteristic of benzodiazepine users seen in clinical practice are patients that imply the only solution for treatment to their condition is with a prescription of a controlled substance. The article also spotlight a disturbing trend called "doctor shopping" where patients will go from one clinician to another in an attempt to obtain multiple controlled substances and fill them at multiple pharmacies. Other manipulative behaviors seen are patients resistant to non-benzodiazepine treatments, using their supply of benzodiazepines early, or losing their prescription. Another attempt at misdirecting seen is providing a false description of symptoms that do not coincide with objective evidence in an attempt to manipulate the clinician into prescribing a benzodiazepine. The article also uncovered documented cases of patients using family members or friends to obtain benzodiazepines or using bribes or threats of harm and retaliation towards the clinician unless a benzodiazepine is prescribed (Longo et al., 2000).

Impact on Healthcare Utilization

A study by Lai et al. (2015) found notable increases in office visits for anxiety and panic disorder coincided with a rise in the prescribing of benzodiazepines from 2006 to 2009. This increase occurred despite the exclusion of benzodiazepines from the Medicare Part D prescription benefits in an attempt to decrease them. The study examined data from that time period, extracted from the National Ambulatory Medical

Care Survey, and found that cost was not a determining factor in benzodiazepine use.

A longitudinal study by Kroll et al. (2016) saw patients receiving high doses of benzodiazepines, on average, had a greater number of emergency room visits and hospitalizations compared to those with lower dose prescriptions. This correlation associates higher healthcare consumption with higher doses of benzodiazepines prescribed.

Benzodiazepines in Clinical Practice

The article by Longo et al. (2000) state that pain and anxiety are two common reasons people seek healthcare and clinicians are pressed to provide relief of symptoms. This desire to treat the symptoms and to provide quality of care are the two common reasons clinicians prescribe controlled substances like benzodiazepines. This creates an unfortunate paradox of relieving the symptoms against the fear of future addiction. This also leaves patients feeling under treated or stigmatized in the process. A cross-sectional study from Agarwal and Landon (2019) found that from 2003 through 2015, the use of benzodiazepines in ambulatory care doubled including co-prescribing with opioids. In this study examining 386,457 ambulatory care visits and data pulled from the National Ambulatory Medical Care Survey (NAMCS) discovered the vast majority of benzodiazepine prescriptions came from primary care physicians (PCPs). During this 12-year span, there were notable increases of benzodiazepine prescribing across all medical specialties, specifically PCPs. However there was no notable increase from psychiatry. The study suggested a possible lack of understanding to the risks associated with benzodiazepines as well as an over-valuing of their benefits. Exploring reasons as to why non-mental health specializations were the majority prescribing benzodiazepines would

help to address the growing use of them in practice.

Gomez, Barthel, and Hofmann (2018) examined a survey from randomized placebo-controlled trials to note that PCPs prescribed more benzodiazepines compared to psychiatrists. It suggested that PCPs should have a firm and accurate understanding of the treatment options available and to follow first-line treatment options described in prescribing guidelines set by the APA before trialing benzodiazepines which are considered a second-line treatment or adjunctive options used concurrently with SSRIs.

The literature review of 54 articles by Cloos et al. (2021) revealed several disturbing items. One was the absence of an internationally recognized standard or consensus on the maximum usual therapeutic doses for benzodiazepines. Also absent was an accepted period of time regarding short-term versus long-term treatment. Most benzodiazepine manufacturing instructions provide a 4-week period as being safe for the treatment of GAD however this guideline was not strictly followed. Often, the literature provided dosage ranges given for each specific benzodiazepine but no universally accepted dosage of what is considered a "high-dose." They did find that tolerance and symptoms of withdrawal from benzodiazepines were used to inaccurately diagnose addiction rather than normal withdrawal from the medication. In addition, Cloos et al. (2021) found several reasons for progressive increases in benzodiazepine dosages in clinical practice. Some are due to a decrease or loss of therapeutic effects, increased tolerance, resistance to treatment, or the development of physical dependence. The authors defined a "high-dose" user as a person taking higher than the maximum usual therapeutic dose over an undefined period of time. Many journals mentioned the term "high-dose" but lacked sufficient information to clearly define it.

The longitudinal study by Kroll et al. (2016) defined a high-dose of benzodiazepine prescribing to be the equivalent of ≥ 30 mg per day of diazepam which equated to 3 mg/day of alprazolam, 3 mg/day of clonazepam, and 5 mg/day of lorazepam. The study also noted that PCPs rather than specialists such as psychiatrists wrote most benzodiazepine prescriptions. Additionally, this study found that clinicians prescribed benzodiazepines at a higher rate to Caucasian, non-Hispanic patients than those from other races. The study did note a need to explore why patients with multiple medical comorbidities receive benzodiazepines and why primary care patients receive them disproportionately. There was a relationship seen between benzodiazepines and increased mortality that appeared to be dose-dependent on higher dosages given those with multiple medical comorbidities. Prior studies in Brazil, the Netherlands, and Australia a reported poorer health status that appeared to have a relationship associated with benzodiazepine use.

The study from Agarwal and Landon (2019) found little evidence supporting the treatment of long-term use of benzodiazepines past 8-10 weeks suggested by the U.S. Food and Drug Administration (FDA) labeling. This is also suggested in the clinical guidelines published by the APA (2009). In a qualitative study conducted by Cook et al. (2007), 33 physicians who worked in primary care offices around the Philadelphia, Pennsylvania area were surveyed. The researchers found that their attitudes towards the chronic use benzodiazepines and the risks of addiction were often minimized. The physicians did not see adults taking benzodiazepines as problematic because many did not display typical, drug seeking behaviors they expect from other, more addictive substances. Despite all 33-physicians acknowledging the clinical guidelines set by the

APA, potential for physical dependence was largely ignored. Additionally, the physicians held management of chronic illnesses at a higher priority than their continued benzodiazepine use. A general lack of concern for addiction or abuse was seen towards the elderly. Most physicians in the study felt the need for benzodiazepines provided the elderly with compassion and end-of-life support.

A systematic review conducted by Baandrup et al. (2018) pulled data from 35 randomized control trials to examine the risks and benefits of facilitating discontinuation from benzodiazepine use. Numerous other psychotropic medications were used in order to replace the benzodiazepine or assist in the tapering process. The findings of this study found some suggestions, but no clear clinical protocol in the tapering down and discontinuation of benzodiazepines. This places a spotlight on a disturbing gap in clinical knowledge that may exist among clinicians who initiate benzodiazepines that they are unable to discontinue the treatment.

A 10-year longitudinal study by Gier et al. (2011) followed 194 patients receiving benzodiazepines in the Dutch Health Care System from 1998-2008. A trend was seen in patients that stopped taking benzodiazepines after 2 years from initiation were more likely to discontinue and maintain abstinence. The majority of patients that were able to taper down or completely discontinue did not use benzodiazepines at the 10-year follow up. It was noted there was a dose-dependent relationship. Those patients taking low doses or using them intermittently were more successful at discontinuation compared to those taking high doses and taking them on a daily basis.

Longo et al. (2000) writes that increased dosage and chronic use of benzodiazepines creates a cycle of tolerance and physiological dependence on patients.

The article also points to the discontinuation from benzodiazepines can be difficult both mentally and physically. Risks of withdrawal or sudden stoppage from long-term benzodiazepine use can cause increased anxiety, autonomic instability, delirium tremens, and life-threatening seizures (Longo et al., 2000). Due to their effectiveness on anxiety and insomnia relief, patients receiving benzodiazepines will often visit healthcare clinicians routinely in order to maintain their supply and continued use. This creates pressure on the prescribing clinician to continue prescribing benzodiazepines in order to control symptoms. Also, patients are often resistant to stopping benzodiazepines due to their efficacy at controlling symptoms and are reluctant to trial other psychotropic medications that are not pharmacologically similar or the same (Longo et al., 2000).

A 2007 study by Cook et al. evaluated the prescribing habits of physicians for benzodiazepines and found that many did not have a systematic plan for tapering or withdrawing from the medication. The top three opinions on the matter were that benzodiazepine tapering was a low priority, appointment time constraints should focus on more important medical conditions, and that stopping the benzodiazepine would threaten their clinician-patient therapeutic relationship.

The study by Lai et al. (2015) analyzed data extracted from the National Ambulatory Medical Care Survey from 2005-2009 and found similar results. Physician prescribing behaviors were examined to find that many were unwilling to discontinue prescribing benzodiazepines simply because they did not have a systematic protocol or strategy of weaning down or discontinuation when addressing opposition from patients. Other factors cited include time constraints prevented clinicians from providing proper education and clinicians did not want to disrupt their therapeutic relationship with the

patient. The article by Longo et al. (2000) states that medical schools teach clinical interviewing but rarely coach future clinicians in how to handle uncomfortable, awkward situations of confronting patients that seem they are pressuring the clinician to prescribe a controlled substance.

Conclusion

The review of literature provided a plethora of controversial topics associated with benzodiazepines. Despite the American Psychiatric Association listing benzodiazepines as a second-line treatment option for anxiety and panic disorders, they are prescribed as commonly as the first-line treatment option: SSRI antidepressants (Gomez, Barthel, & Hofmann, 2018). There is a clear consensus among studies that treatment with benzodiazepines are perceived superior due to their immediate pharmacological efficacy to reduce anxiety symptoms compared to antidepressants, however the risks of physiological dependence, physical addiction, and unintentional overdose are largely minimized. Additionally, there is no solidarity among clinicians within the United States or abroad regarding the appropriate, therapeutic dose for benzodiazepines, no clear consensus what is considered an appropriate length of treatment, and no established protocol for tapering and discontinuing treatment after long-term use (Cloos et al., 2021).

The literature review covered the potential of benzodiazepine abuse and its impact on rising healthcare costs (Kroll et al., 2016). The review of literature also points out the need for clinicians to recognize their role as the primary source for access to benzodiazepines as well as their role in prescribing them concurrently with opioids (Longo et al., 2000). General characteristics of high benzodiazepine users were explored

as well as methods of manipulation by abusers. More education and training is needed to help clinicians recognize patterns of abuse within patients.

The review of the literature highlights a gap in knowledge among clinicians that commonly treat anxiety and panic disorders. This emphasizes the importance of this study as well as the need for an educational intervention to address these issues found in the literature. By increasing awareness to the efficacy of non-benzodiazepines medications among clinicians, the expectation is that the initiation of treatment with benzodiazepines will be greatly reduced.

Chapter III

Methodology

The focus of this scholarly project is to educate healthcare clinicians on non-benzodiazepine treatment options. This chapter will discuss the project design, target population of interest, instruments utilized, and the procedure for conducting the study. An evaluation plan will be used to describe the statistical methods used for analysis.

Lastly, a sustainability plan will be explored to describe strategies and long-term goals following the project.

Project Design

The project is a quantitative study using a pretest-posttest design that analyzed the effectiveness of an educational intervention by collecting data from Likert scale pre-post tests administered before and after. The pretest-posttest is a modified questionnaire adapted from a previously studied instrument tool. The educational intervention is a 30-minute Power point slide presentation that educated clinicians on the following topics:

- The morbidity and mortality associated with chronic benzodiazepine use.
- The first-line treatment recommended by the American Psychiatric Association for anxiety and panic disorders as well as other, non-benzodiazepine alternatives.

After the educational intervention, the clinicians were required to complete a

posttest questionnaire that is similar to the pretest questionnaire. All questions in the pretest and posttest questionnaires are arranged on a 5-point Likert scale that assessed the clinician's knowledge, experience, and confidence with benzodiazepines and alternative therapies.

Target Population

The target population is healthcare clinicians that practice in the metropolitan area of Memphis, Tennessee. These clinicians commonly treat patients that suffer from anxiety and panic disorders and prescribe benzodiazepines. These clinicians include physicians, nurse practitioners, and physician associates that work in various ambulatory, outpatient clinical settings or assisted living facilities. Purposive sampling technique was used to target clinicians from various disciplines and specialties including: family practice, psychiatry, internal medicine, and geriatrics. Purposive sampling is a research technique to study a specific sub-group within a population by selecting a sample of individuals that have a certain characteristics or meet specific criteria. Purposive sampling is used when the sub-group cannot be easily identified using random sampling.

Compassion Mental Health is an ambulatory, outpatient clinic that provides psychiatric and therapy/counseling services. This company has a network of relationships with other specialty clinics, hospitals, assisted living facilities, and skilled nursing facilities through a referral system. Among these healthcare facilities are an abundance of physicians, nurse practitioners, and physician associates that provide healthcare services and meet the specific criteria for the target population. These clinicians will provide a statistically significant result that is representative of healthcare clinicians in this metropolitan area. During the recruitment phase, a total of 50 healthcare clinicians were

contacted, however only 21 clinicians responded. Out of the 21 clinicians that responded, only 16 participated in the scholarly project.

Recruitment

The participants were recruited by word-of-mouth, text messaging, and emails to healthcare clinicians from multiple specialties. Outpatient clinics, assisted living facilities, skilled nursing establishments, and individual providers affiliated with mental health either through a contractual basis or are a referral source were targeted. Clinicians intrigued in the project were contacted in person or by email, phone call, and text to receive a basic synopsis of the project. Incentives, such as free snacks, were used to recruit and encourage participation in the project. Common interest in the subject of benzodiazepines was vital to recruitment.

Inclusion and Exclusion Criteria

The inclusion criteria for healthcare clinicians included having a current, unrestricted national and state licensure, a valid DEA license, and experience working in an outpatient or long-term care setting that commonly treats patients suffering from anxiety or panic disorder. These settings include patient populations that seek mental health treatment from non-psychiatric specialties.

The exclusion criterion included omitting graduate students working under preceptor supervision or clinicians that do not diagnose, prescribe, or possess a valid DEA license. Clinicians working inpatient hospitalization will be excluded because they do not treat the same patients suffering from anxiety or panic disorders on a recurring, monthly basis that would foster a long-term patient-doctor relationship.

IRB Approval

This scholarly project was advised and evaluated by the project advisor and committee, then sent to the Institutional Review Board (IRB) for assessment and approval. Once the project was approved, the data collection process began. A copy of the IRB is located in Appendix 5.

Protection of Human Subjects

This project is an educational intervention that did not involve patient contact. The project targets healthcare clinicians that are over the age of 18 and are able to give legal consent to participate by competing the pretest and posttest for the study. No vulnerable subjects such as children, prisoners, or at-risk populations were included. A Statement of Informed Consent, listed in Appendix 4, was administered that provides a brief synopsis of the project and reviews the participant's risks and legal rights in participating in the project. Although demographic information was collected, confidentiality was maintained by keeping the identities of the healthcare clinicians anonymous. All information gathered was kept secure in a locked filing cabinet assessable only by the researcher and will be destroyed upon completion of the project. No more than minimal risk of injury, discomfort, loss, or harassment is associated with the instrument administered.

Instrument

The instrument used was derived from the Perception about Use of Benzodiazepine Scale (PUBS) that was developed, validated, and previously used in a related study by Neves et al. (2019). The PUBS's validity and reliability was established by the Neves et al. (2019) research team and two external specialists with expertise on the

content. The PUBS has been published in a well-known, peer-reviewed scholarly journal and has been cited on multiple occasions. The instrument was distributed under the terms of the Creative Commons Attribution 4.0 International License that waives the authors' rights and permits its unrestricted use to copy, modify, and use without asking permission (Creative Commons, u.d.). The PUBS instrument is a 30-item survey however it was modified to a 3-item questionnaire for the use in this project. The 3-items selected were specific to this project and the three dimensions of the PUBS utilized mirrored the project questions:

1. The clinician's attitudes about benzodiazepine prescriptions.
2. The clinician's beliefs about benzodiazepines.
3. The clinician's self-perception of literacy about benzodiazepines.

The 3-item questionnaire is scored using a 5-point Likert scale. Respondents will have the opportunity to record their level of agreement with each statement. The pre and post- test questionnaires are identical. The pretest questions selected are listed in Appendix 1 and the posttest questions are listed in Appendix 2.

Generalized information about the clinicians was collected in this project using the demographic form. All data was answered anonymously and have no identifiers that would link back to the respondent. The demographic form will provide details to be measured statistically and describe the general characteristics of the clinicians. The demographic form will also ask the clinician's length of experience to be measured alongside the Benner's Novice to Expert theory. The demographic form is listed in Appendix 3.

Project Timeline

The following timeline is provided to project milestones for completion under the guidance of the project advisor:

- Project proposal to Committee Advisor: 11/2022
- Project proposal to Full Committee: 11/2022
- Project Proposal Defense Deadline: 11/2022
- Project proposal Activity Deadline: 3/2023
- Chapter 4 to Committee Advisor: 5/2023
- Chapter 5 to Committee Advisor: 5/2023
- Project Dissemination Deadline (Written and Oral): 7/2023
- Project planned completion date: 7/2023

Procedure

Through purposive sampling, the healthcare clinicians were conveniently selected from agencies affiliated with mental health. Either the agency contracts mental health clinicians to provide services or are a referral source for mental health services. The potential participant was respectfully asked if they have interest in the subject and would be willing to volunteer their time to participate. Snacks were provided as incentive for participation. Those clinicians willing to participate were then scheduled based on their availability. Participants had the option to meet face-to-face or meeting virtually using an online virtual platform. The procedure expectations were explained to the participant prior to their scheduled date.

In the first part of the session, the participating clinician was given the Statement of Informed Consent with a verbal explanation of the project as well as a review of the

participant's risks and participation. Next the Demographic form was given consisting of 7-questions describing the participant's general background and clinical experience.

Afterwards, the pretest questionnaire is administered that consists of 3-questions on a Likert scale that will evaluate the clinician's experience towards benzodiazepines.

Once the initial forms were completed, the clinician then received the educational intervention in the form of a Power point slide presentation lasting approximately 30 minutes. The educational intervention was developed by compiling information on the subject from various sources: the American Psychiatric Association (APA), peer-reviewed articles found within the literature review, and statistics provided by the National Institute on Drug Abuse (NIDA). The educational intervention reviewed the recommended first-line treatment options as well as covered other, non-benzodiazepine psychotropic medications for addressing anxiety and panic disorders. The presentation also examined the current upward trend in benzodiazepine use and increased risks for overdose and addiction. The educational intervention encouraged open conversation and dialog between presenter and participant. The clinician had ample opportunities to share their experiences and opinions on the subject. Any questions during or after presentation were answered and addressed. After completion of the educational intervention, the clinician was encouraged to utilize the knowledge gained and to apply towards their clinical practice.

Lastly, the posttest questionnaire was administered. Once the pretest, demographic form, and posttest questionnaires were completed, the forms were gathered for evaluation and then placed in a secure, locked cabinet only accessible to the researcher.

Resources needed for the project include the following costs:

Resource/Equipment	Estimated cost
Snacks	$100
Xerox copies of the pretest/posttest and demographic form	$35.10
Total estimated costs:	$135.10

Statistical Methods

Posttest responses were compared to pretest responses to examine the effect the educational intervention had on clinician knowledge. The Likert scale from "Strongly disagree" to "Strongly agree," will be changed to a scale of 1 (Strongly disagree) to 5 (Strongly agree) in order to change to ordinal data. The statistical method used to compare the pre and posttest responses is the Wilcoxon signed-rank test. This method is used to evaluate related samples under two different times (pretest and posttest) to determine statistical differences. The computer program used to generate statistical data is Jamovi, an open virtual software that is public and free to download and use.

Demographic data was evaluated using descriptive statistics to assess if any meaningful characteristics are observed.

Outcomes

The objective of the project is to encourage the clinician to make a practice-change by using non-benzodiazepine treatment options. A positive outcome of the educational intervention would be indicated by a statistical difference in the pre and posttest answers aimed at acknowledging the current issues with prescribing

benzodiazepines and the clinician having more awareness of other options. A negative outcome would be indicated by a minimal difference in the pre and posttest answers indicating the opposite – that there is no acknowledgement of current issues related to prescribing benzodiazepines and the clinician not feeling confident in using non-benzodiazepine treatments. The following table (Table 1) represents the three dimensions of the PUBS that were the foundation for each question in the pre and posttest and their intended outcomes.

Table 1

Objectives, Measurements, and Outcomes

Objective	Measurement	Outcome	Analysis
The clinician's attitude about benzodiazepines.	To assess the clinician's attitude regarding the dangers of benzodiazepines	Clinicians will take into regard and emphasize to the patient the addictive nature of benzodiazepines	t-test pretest/posttest format
The clinician's beliefs about benzodiazepine prescriptions.	To assess the clinician's beliefs towards prescribing benzodiazepines as a solo treatment or long-term alternative	Clinicians will take caution in liberally prescribing benzodiazepines	t-test pretest/posttest format
The clinician's self perception of literacy about benzodiazepines.	To assess the clinician's knowledge and understanding of benzodiazepines and non-benzodiazepine treatments	Clinicians will report an increase in the clinical knowledge and understanding of non-benzodiazepine treatments	t-test pretest/posttest format

Plan for sustainability

The plan for sustainability is practice change. This occurs once clinicians are educated and confident in utilizing non-benzodiazepine medications when treating anxiety and panic disorders with minimal benzodiazepine use. Sustainability is a continuous process and clinicians should pursue further education, training, and experience in this subject matter. The U.S. Drug Enforcement Administration (DEA) requires each state to enforce continuing education units (CEU) that focuses on the safe prescribing of controlled substances by clinicians to keep their DEA licensure unencumbered (ASAM, n.d.). These training courses emphasize the risks, legality, and potential long-term addiction towards controlled substances, including benzodiazepines. Healthcare facilities should encourage or mandate these courses to mitigate liability as well as foster a culture of utilizing non-benzodiazepine medications as a first-line treatment option to reduce the risk of addiction.

Chapter IV

Project Results

The purpose of this scholarly project was to educate healthcare clinicians on non-benzodiazepine treatments to address anxiety and panic disorders. Once the project was approved by the IRB, the data collection process began by making appointments with healthcare clinicians that showed interest in participating. The total data collection time was six-weeks. Out of 50 clinicians contacted for the scholarly project, 21 responded with interest but 16 agreed to participate. All clinicians were administered a pretest and demographic form prior to receiving the educational intervention. Once completed, they were given a 30-minute presentation on the risks and dangers of benzodiazepines and a summary of non-benzodiazepine treatments. Afterwards, the clinicians were instructed to complete a similar posttest. Both the pre and post tests consisted of three questions that examined the clinician's attitudes, beliefs, and self perception about benzodiazepines.

These three questions mirror the project questions and hypotheses. The demographic form collected generalized information regarding gender, profession, discipline, geographic location, clinic setting, estimated number of patients treated with benzodiazepines, and clinical experience. Upon completion, all forms were collected for statistical analysis.

Demographic Data

General characteristics of the participating healthcare clinicians that were anonymously collected provided unique differences and similarities among each discipline. Of the total participants, 18.75% (n = 3) were male and 81.25% (n = 13) were female. The vast majority of healthcare clinicians that participated were advanced practice nurses. They accounted for 75% (n = 12) of the data collected. Physician associates (PA) accounted for 18.75%, (n = 3). Only one physician participated in the project, 6.25% (n = 1).

All healthcare clinicians, 100% (n = 16), that participated currently practice in an urban location around the metropolitan area of Memphis, Tennessee. Almost all clinicians worked in an outpatient setting, 93.75% (n = 15), with 1 clinician working in an assisted living/skilled nursing facility, 6.25% (n = 1). Half of the clinicians were certified in Psychiatry or Psychiatric-Mental Health, 50% (n = 8). Clinicians certified in Family Practice accounted for the other half, 50% (n = 8). However, 1 of the 8 clinicians was an advanced practice nurse certified in Family Practice but was trained and identified themselves as Internal Medicine.

Most healthcare clinicians had greater than two years of experience, they accounted for 81.25% (n = 13). The other clinicians, 8.75% (n = 3), had less than two years experience. All clinicians that participated actively diagnose and treat patients with anxiety and panic disorders and 87.5 % (n = 14) stated they prescribed benzodiazepines to an estimated 10 or more patients every month. Only 12.5% (n = 2) stated they prescribed benzodiazepines to less than 10 patients every month.

Further analysis of the demographics revealed characteristics specific among each

discipline. There were seven advanced practice nurses with Psychiatric-Mental Health certification (PMHNP) and they accounted for 43.75% of responses. Gender within this group included one male and six females. Experience varied as four PMHNPs had greater than two years of experience, 57.1% while the other three PMHNPs had less than two years of experience, 42.8%. Other differences among the PMHNPs included six clinicians stating they treated 10 or more patients with benzodiazepines a month and one stating they treated less than 10 patients a month using benzodiazepines.

Among there were five advanced practice nurses with Family Practice certification (FNP). All were of female gender. Most worked in an outpatient clinic 80% (n = 4) while one FNP worked in Assisted Living/Skilled Nursing Facilities. Most treated 10 or more patients with benzodiazepines a month 80% (n = 4) with one stating she treated less than 10 patients a month with benzodiazepines. Only one FNP, 20% (n = 1), had less than two years experience while the other four had greater than two years experience, 80% (n = 4).

There were three physician associates (PA). One was a male while two were female gender. All worked in an outpatient clinic. All PAs identified themselves as Family Practice, had greater than two years of experience, and treated more than 10 patients with benzodiazepines a month. (n =3). The sole physician (MD) that participated was a board-certified psychiatrist with greater than two years experience and treats greater than 10 patients with benzodiazepines a month.

Results

Table 2 below shows the frequencies of responses to each question with each test:

Table 2

Frequency of Responses to Each Question (N = 16)

Question	Test	Response				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Pre	10	4	1	0	1
	Post	13	3	0	0	0
2	Pre	9	5	1	0	1
	Post	12	3	1	0	0
3	Pre	1	2	1	6	6
	Post	0	0	0	3	13

Analysis of the Pretest Questions

This scholarly project's three research questions examined if an educational intervention would have an impact on the healthcare clinician's attitude, beliefs, and self perception and understanding of benzodiazepines. Each question of the pre and post tests were specific to these three project questions. All three project questions were answered using a five-point Likert rating scale. These five-points consisted of "Strongly disagree, Disagree, Neither disagree/agree, Agree, and Strongly agree." The participant's answers were later translated into ordinal data in order to measure either positive or negative responses to each question.

The first pretest question: "The easiest way to deal with a patient's anxiety is to prescribe a benzodiazepine." Most of the 16 clinicians strongly disagreed, 62.5% (n = 10) or disagreed, 25% (n = 4). Further analyzing by discipline, 57.1% of the PMHNPs strongly disagreed while 100% of the FNPs answered the same. The second pretest question: "Chronic use of benzodiazepines does not represent a health risk to the patient."

All five FNPs strongly disagreed with this question while answers for the PMHNPs varied. Of the PMHNPs, two strongly disagreed, two disagreed, one neither disagree/agree, and one strongly agreed. The third pretest question: "I consider myself well informed about the benefits and risks of benzodiazepines." Most of the 16 clinicians agreed with this statement, 75.0% (n = 6 Strongly agreed and n = 6 Agreed).

Analysis of the Posttest Questions

The first posttest question: "After an educational intervention, the easiest way to deal with a patient's anxiety is to prescribe a benzodiazepine." Most of the 16 clinicians strongly disagreed, 81.25% (n = 13) while 3 disagreed, 18.75%. The second posttest question: "After an educational intervention, chronic use of benzodiazepines does not present a health risk to the patient." Most of the 16 clinicians strongly disagreed, 75% (n = 12), 3 disagreed 18.75% (n = 5), and one neither disagreed nor agreed. The third posttest question: "After an educational intervention, I consider myself well informed about the benefits and risks of benzodiazepines." Most of the 16 clinicians strongly agreed, 81.25% (n = 13), and the remaining three agreed, 18.75%.

Analysis of the Project Questions

This scholarly project aimed to answer the hypothesis that if an education intervention were given, healthcare clinicians would decrease their use of benzodiazepines after gaining more insights into the risks and dangers as well as increased knowledge of alternate, non-benzodiazepine treatments. The first project question: "Prior to an education offering, what percent of healthcare providers feel benzodiazepines are the easiest treatment for anxiety and panic disorders?" Prior to the educational intervention, only 62.5% (n = 10) strongly disagreed. After the educational

intervention, the consensus increased as 81.25% (n = 13) strongly disagreed.

The second project question: “Prior to an education offering, what percentage of healthcare providers feel the use of benzodiazepines do not represent a health risk to the patient?” Prior to the education intervention, 56.25% (n = 9) strongly disagreed while 75.0% (n = 12) strongly disagreed after the educational intervention. Lastly the third project question: “Prior to an education offering, what percentage of healthcare providers consider themselves well informed about the benefits and risks of benzodiazepines?” Only 37.5% (n = 6) strongly agreed at first but this increased to 81.25% (n = 13).

Wilcoxon signed-rank tests were conducted to determine whether responses to the three questions significantly changed from pre- to post-intervention. Responses to the first two questions did not significantly change (question 1 W = 10.00, p = .098; question 2 W = 10.00, p = .095), but participants did agree more strongly with question three post-intervention, W = 0.00, p = .013.

When examining groups separately, PMHNPs did not significantly differ from pre- to post-intervention (question 1 W = 6.00, p = .181; question 2 W = 10.00, p = .095; question 3 W = 0.00, p = .174). FNPs also did not significantly change (question 1 W = 0.00, p = 1.000; question 2 W = 0.00, p = 1.000; question 3 W = 0.00, p = .371), and PAs did not change either (question 1 W = 1.00, p = 1.000; question 2 W = 0.00, p = 1.000; question 3 W = 0.00, p = .250).

A table summarizing the results of all the Wilcoxon signed rank tests is presented below:

Table 3

Summary of Wilcoxon signed rank results

Question number	All participants *W* (*p*)	PMHNPs *W* (*p*)	FNPs *W* (*p*)	PAs *W* (*p*)
Question 1	10.00 (.098)	6.00 (.181)	0.00 (1.000)	1.00 (1.000)
Question 2	10.00 (.095)	10.00 (.095)	0.00 (1.000)	0.00 (1.000)
Question 3	0.00 (.013)*	0.00 (.174)	0.00 (.371)	0.00 (.250)

Note: * indicates $p < .05$.

Summary

Overall, the project questions showed a positive response to the educational intervention with some statistical gains in the pre and post tests. For the Wilcoxon signed-rank tests, participants responded more with "Strongly agree," showing notable gains with answering question three compared to the other two questions. Non-significant differences were seen among the PMHNPs compared to the FNPs and PAs. Overall there were non-significant differences among questions 1 and 2.

Chapter V

Project Conclusion

The widespread use of benzodiazepines has increased every year within the adults and geriatric populations and has caused increased psychological and physical dependence, falls, and unintentional injuries (Baandrup et al., 2018). By educating healthcare clinicians on non-benzodiazepine alternatives for the treatment of anxiety or panic disorders, the hope is to decrease their use. This scholarly project's purpose was to examine if providing an educational intervention about non-benzodiazepine medications would increase awareness to this issue and provide insights to alternative treatments. This scholarly project demonstrated that a 30-min educational intervention was associated with statistically significant, positive results among healthcare clinicians. The results from the pre and post test questionnaires showed that the attitudes, beliefs, understanding, and self-perception with benzodiazepines can change.

General Observations

Notable observations during the administration of the scholarly project indicated that there was a significant knowledge gap with non-benzodiazepine medications. It was evident that the initial reaction of clinicians was to be guarded about their prescribing habits and knowledge of alternative, non-benzodiazepine treatments. However, all clinicians that participated felt they acquired new knowledge and understanding about the

subject after receiving the educational intervention. Some clinicians stated they acquired patients already established on benzodiazepine treatment and simply continued their prescriptions as long as there were no adverse side effects. Few admitted to lack of guidance or specific training regarding appropriate initiation as well as discontinuation of benzodiazepines. Some clinicians used various online clinical applications, reference books, literature, and other continued practices they learned during their clinical training.

Unexpected observations included the two physicians declining to participate after initially showing interest. There is a speculation that the hierarchy that exists between physicians and non-physicians within healthcare could have been a factor. Other unexpected observations in the project results included the widespread answers among PMHNPs compared to FNPs. The FNPs appeared consistent throughout all three pre and post test questions.

Project Evaluation

The results of the scholarly project did support Dr. Patricia Brenner's "Novice to Expert" theoretical framework. As the healthcare clinician gained more knowledge from the educational intervention, a positive difference can be seen with more clinicians stating they "Strongly agreed" considering themselves well informed about the benefits and risks of benzodiazepines. Likewise, the statistical results support the project's logic model given the inputs and constraints. The hope that the healthcare clinician will make practice change in their prescribing methodology will satisfy the short-term and long-term outcomes.

Limitations

There were notable limitations in this scholarly project. Purposive sampling was

used to target specific healthcare clinicians within a geographical area that has the potential to introduce bias error into the results. However the project instruments were appropriate given the constraints and small sample size. Time was a factor with scheduling availability during working hours with healthcare clinicians trying to find time in-between seeing patients. In the six weeks that data collection occurred, 21 clinicians responded but only 16 participated. Of the five clinicians that did not participate, two were physicians and politely declined after initially showing interest in the project. The other three clinicians were PMHNPs and were unable to find time in their schedule to participate. Given more time to this project, a larger sample size would be recruited.

Implications for Future Projects

As discussed earlier, there is evidence to suggest that an educational intervention could invoke practice change. Given the magnitude of the problem, future projects involving a wider audience could yield positive patient outcomes in the short-term as well as long-term. Improvements for future project design would be to offer both the pre and post test questionnaires and the educational intervention virtually. Advanced practice nurses have an opportunity as they fill critical gaps in the healthcare shortage to initiate practice change by limiting their usage of controlled substances such as benzodiazepines. By doing so, they could encourage a new methodology among prescribers that is consistent and follows current clinical guidelines.

Conclusion

There is a notable gap in knowledge that spans across multiple healthcare disciplines towards the risks and dangers with the short-term and long-term use of

benzodiazepines. Addiction and risk of unintentional overdose is an issue that is increasing within the U.S. More training and education specific to benzodiazepines should be required for any prescribing healthcare clinician.

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APPENDICES

Appendix 1

The Pretest Questionnaire

Please rate how much you personally agree or disagree with these statements
1. The easiest way to deal with a patients' anxiety is to prescribe a benzodiazepine. a. Strongly disagree b. Disagree c. Neither Disagree or Agree d. Agree e. Strongly Agree
2. Chronic use of benzodiazepines does not represent a health risk to the patient. a. Strongly disagree b. Disagree c. Neither Disagree or Agree d. Agree e. Strongly Agree
3. I consider myself well informed about the benefits and risks of benzodiazepines. a. Strongly disagree b. Disagree c. Neither Disagree or Agree d. Agree e. Strongly Agree

Appendix 2

The Posttest Questionnaire

Please rate how much you personally agree or disagree with these statements
1. After an educational intervention, I feel the easiest way to deal with a patients' anxiety is toprescribe a benzodiazepine. a. Strongly disagree b. Disagree c. Neither Disagree or Agree d. Agree e. Strongly Agree
2. After an educational intervention, I feel that chronic use of benzodiazepines does not represent ahealth risk to the patient. a. Strongly disagree b. Disagree c. Neither Disagree or Agree d. Agree e. Strongly Agree
3. After an educational intervention, I consider myself well informed about the benefits and risks ofbenzodiazepines. a. Strongly disagree b. Disagree c. Neither Disagree or Agree d. Agree e. Strongly Agree

Appendix 3

Demographic Form

Please circle all that apply to you
1. Gender: a. Male b. Female c. Prefer not to respond
2. Discipline: a. Physician b. Nurse practitioner c. Physician associate
3. Specialty: a. Family practice b. Internal medicine c. Cardiology d. Geriatrics e. Pediatrics f. Psychiatry
4. Clinical setting: a. Outpatient b. Skilled nursing facility
5. Geographic location: a. Urban b. Rural
6. Estimated number of patients prescribed benzodiazepines in the last month a. Between 1 and 5 patients b. Between 6 and 10 patients c. More than 10 patients
7. Number of years in profession: a. 0-6 months b. 6 months to 1 year c. 1-2 years d. Greater than 2 years

Appendix 4

Statement of Informed Consent

Hello! My name is Alex Labrador and I am a Doctor of Nursing Practice student at Pittsburg State University. This pretest/posttest survey, demographic form, and educational intervention are part of my Doctor of Nursing Scholarly Project, "Expanding Clinical Knowledge and Awareness to Non-Benzodiazepine Treatments by Providing an Educational Intervention: A Quantitative Study." This study is intended for participants to be an active healthcare clinician, English speaking, and older than 18 years of age. All participation in this study is voluntary and every submission will remain anonymous. Confidentiality will be maintained throughout the project as no personal identifying information will be collected from participants.

There is minimum risk associated with participation in this project. All participation submissions will be used solely for this project and will not be used against participants in any way. You may stop participation in this project at any time throughout its course. By completing the surveys, you are consenting to participate in this project.

Thank you for participating in this project. You will first be asked to complete a demographic questionnaire that will collect generalized information regarding your gender, discipline, specialty, clinical setting, geographical location, number of patients treated, and experience. Next you will be given a pretest survey about your current knowledge, experience, and beliefs of prescribing benzodiazepines. Once the survey is completed, you will be given an educational intervention and time will be allotted for questions and discussion. After a 30-day period, you will be asked to complete a posttest survey that is nearly identical to the pretest and submit for evaluation.

Appendix 5

Pittsburg State University

Application for Approval of Investigations Involving the Use of Human Subjects

For IRB Use Only
Date Received: _____
Application #: _____

The application must be typed (not hand-written) and all attachments included as a single PDF document. Submit documents based on the schedule posted on the IRB page on the PSU website. When submitting theforms, allow sufficient time for the appropriate level of review before the planned start date. Attach additional sheets as necessary.

For questions about the review process contact Cindy Johnson at 620-235-4175 or at irb@pittstate.edu. Consult HHS.gov for guidance on Human Subjects Research.

Contact information is required to ensure that research subjects can contact the investigator(s)

Investigator(s) Name(s): Alexander Labrador

☐ Check this box to indicate that all investigators have completed approved ethics training. Attach valid completion certificates to the completed application. Student projects: include all committee members.

Department: Department of Nursing, Pittsburg State University

Local Address: 4357 Monteleone Way, Lakeland, TN 38002

Phone: 901-619-0061 E-mail Address: alabrador@gus.pittstate.edu

Project Title: Expanding Clinical Knowledge and Awareness to Non-Benzodiazepine Treatments

Expected Starting Date: 01/15/2023 E xpected Completion Date: 05/15/2023

Application review type. Use Review Criteria Form to determine appropriate category. When multiple categories apply, applications will be evaluated on the ***most restrictive*** of categories.

☐ Full Review. Category: _____

☐ Expedited Review. Category: _____

☐ Exempt Review. Category: 2

☐ This research is also being submitted to an external IRB. A full copy of that application or letter of support is attached, along with a completed External IRB Collaboration Form.

If notification of human subject approval is required give date required: NA

Name of NA

agency: _____

If the PI is a student, complete the following:

Faculty Sponsor: Dr. Trina Larery

Department: Nursing

Phone: (620) 235-4431 E-mail Address: tlarery@pittstate.edu

Committee Members: Dr. Julie Dainty, Dr. Mandi Alonzo, & Dr. Trina Larery

I. Description of the Subjects

A. How many subjects will be involved? 5-50

The purpose of this DNP project is to examine the effectiveness of an educational intervention for clinicians to decrease the use of benzodiazepines by expanding the clinical knowledge and awareness to non-benzodiazepine medications for the treatment of anxiety and panic disorders.

The questions this study will address are:

1) Prior to an educational intervention, what is the healthcare clinician's self-perceived level of knowledge about the benefits and risks of prescribing benzodiazepines?

2) After an educational intervention, what is the healthcare clinician's self-perceived level of knowledge about the benefits and risks of prescribing benzodiazepines?

3) Does an educational intervention make a difference?

Participants in this study are active healthcare clinicians that commonly treat anxiety and panic disorders and prescribe benzodiazepines. Participants will be provided a pretest survey, a generalized demographic questionnaire, an educational Powerpoint intervention, and an identical posttest survey. All participants will be voluntary and over the age of 18 years. All study measurement tools will be completed voluntarily and anonymously. There is minimal risk associated with participation in this study. Participant responses will be used solely for the study and not used against them in any way. To ensure confidential, the collected data will not contain any participant identifiers. At completion the project, all data will be stored and maintained for two years in a locked cabinet accessible only to the researcher. After two years, all collected data during the study will be destroyed.

students in? NA Students? NA

How many classes involved? NA What subject: (secondary)? NA

D. Does this research require participation from an organization other than PSU? If Yes, please attach a letter of support/understanding or documentation from that organization demonstrating approval or willingness to participate. Yes

E. What criteria will be used to select subjects AND/OR what criteria will be used to exclude individuals? (e.g., age, sex, race, ethnic origin, religion, or any social or economic qualifications)? State why the selection will be made on the basis or bases given.

II. Abstract: Summarize the strategies used to collect data and protect participants. Discuss what will be the purpose of collecting the data (e.g. is the data for an improvement project, is the data solely for a peer- reviewed publication, is it a pilot for a larger study, etc.). Attach additional sheets as necessary.

II. Abstract: Summarize the strategies used to collect data and protect participants. Discuss what will be the purpose of collecting the data (e.g. is the data for an improvement project, is the data solely for a peer- reviewed publication, is it a pilot for a larger study, etc.). Attach additional sheets as necessary.

III. Procedure: Activities Involving Human Subjects. Attach additional sheets as needed.

A. Give a brief description or outline of your research procedures as they relate to the use of human subjects.

1. Who will be the subjects? How will you recruit participants into the study? If advertising for subjects, include a copy of the proposed advertisement.

The subjects are adults 18 years or older, English speaking, and currently practicing healthcare providers - physicians, physician associates, or advanced nurse practitioners. Subjects will voluntarily participate. The subjects will be recruited using purposive sampling. Subjects are conveniently selected through association with mental health as affiliates or referral sources.

2. What precisely will be done to the subjects? State instructions given to the subjects and activities in which they will engage. If you are using questionnaires or handouts, please include a copy as an attachment to this application.

Participants will be asked to complete a pretest survey regarding their current knowledge and beliefs towards prescribing benzodiazepines and a generalized demographic questionnaire that collects data on age, gender, profession/discipline, clinical setting, geographic location, estimated number of patients treated in the last 30 days, and number of years in profession. Following the pretest and demographic questionnaire, participants will receive an educational intervention via Powerpoint presentation discussing the dangers associated with benzodiazepines and a review of multiple, non-benzodiazepine treatments for anxiety and panic disorders. After the educational intervention, the participant will be given a posttest questionnaire to complete after 30-days to allow changes to their clinical practice. The survey will take no longer than ten-minutes to complete in one setting. Attached are copies of the surveys and demographic questionnaire.

3. If any of the subjects are minors or "vulnerable" (e.g. children, prisoners, mentally or physically disabled, pregnant women) discuss how their special condition will be handled.

No subjects are minors or "vulnerable" in this project.

4. How will subjects be informed of research findings?

The project participants will be informed that if they wish to receive individual notification of the results of this project, they may contact Alex Labrador at alabrador@gus.pittstate.edu

IV.\Confidentiality and Anonymity: How will the data be collected? Check all that apply.

☐ Questionnaires (Submit a copy)

☐ Observations (describe how they will be conducted below in Section IV.A)

☐ Interviews (Submit sample questions)

☐ Standardized tests (list names; attach a copy if possible)

☐ Test (Submit a copy)

☐ Task(s) (briefly explain below in Section IV.A)

☐ Video or Audio Recordings, Still Images

☐ Computer Entries (explain below in Section IV.A)

☐ Other: _____

A. Explain the procedures for collecting, recording, and storing that data during the study. Attach additional sheets as necessary. If using an online survey tool (e.g. SurveyMonkey, Qualtrics, etc.), include a screen shot of the survey's settings.

Data will be collected using paper surveys and questionnaire. Data will then be compiled on a password protected computer and paper surveys and questionnaire stored in a locked cabinet accessible only to the researcher throughout the duration of the project.

B. Who will have access to the data during the study? Access should be limited to protect anonymity of subjects and confidentiality of subject responses. Students should include faculty advisors/committee members.

The researcher and the project committee members will have access to the data during the project. The project committee members consist of Drs. Trina Larery, Mandi Alonzo, and Julie Dainty.

C. Explain what will happen to the data once the study is completed. Federal regulations require that data be kept for at least three years after completion of the research (45 CFR 46.115(b)). How will the data be protected during this time? Is there a need to keep the data beyond that or will it be destroyed? If kept, how long and where will it be stored, how will confidentiality be ensured, who will have access to it?

All data, surveys, and questionnaires will be stored and maintained for two years in a locked cabinet. During this time, the researcher and project committee will have access to the data. After two years, all data collected during the project will be destroyed.

D. Explain the level of confidentiality you are guaranteeing the participants. Include data privacy policies for all external tools being used.

Confidentiality steps will be taken throughout this project. Every participant submission will remain anonymous. No personal identifying information will be collected. Participants will be assured complete confidentiality prior to participating in the project. Participants will also be assured that they may stop participation in the project at any time throughout the course.

V. Benefits, Risks, and Costs of this Study

A. What are the potential benefits to the subjects, to the field or discipline, or to the University?

The potential benefits to the subjects include an increase in clinical knowledge to non-benzodiazepine medications to treat patients suffering from anxiety or panic disorders.

B. Will compensation (money, extra credit, etc.) be offered to the subjects? If so, what specifically will be offered, and how will it be dispersed?

Lunch will be provided in the form of a Subway sandwich meal to each subject for participation.

Please consider carefully.

- ☐ Employability
- ☐ Financial or personal reputation
- ☐ Emotional stress or discomfort
- ☐ Loss of confidentiality
- ☐ Physical stress or discomfort
- ☐ Other (explain): _____
- ☐ Deception (benevolent misdirection)
- ☐ Embarrassment
- ☐ Psychological stress or discomfort
- ☐ Criminal or civil liability

D. What safeguards will you use to eliminate or minimize these risks? If there is the possibility of adverse reactions by the subjects, explain where the subjects can receive help.

Safeguards to minimize risks include modifying each question to not collect any personal identifying information and assuring participants that participation is voluntary and they may stop at any time.

E. In your opinion, does the research involve **more than minimal risk** to subjects? "Minimal risk" means "*the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine or psychological examinations or tests*." (45 CFR 46.102(j)) Please explain.

No. In my opinion, the project does not involve more than minimal risk.

VI. Informed Consent

Unless authorized by the IRB, no investigator may involve a human being as a subject in research under the auspices of the University unless the investigator has obtained the informed consent of the subject or the subject's legally authorized representative. For studies involving minors or others incapable of providing their own legal consent, in addition to consent of the subject's representative, informed ASSENT should be obtained from study participants in a manner appropriate to the study population unless otherwise waived by the IRB.

For further information about informed consent processes review the information provided by the Department of Health and Human Services.

<u>Exemption, Waiver, Alteration of Informed Consent or Documentation of Consent</u>

If applying for research that will not include Informed Consent, check any that apply and attach appropriate documentation to this application. All other research must contain appropriate Informed Consent/Assent.

☐ This study is ***Eligible for Exemption***, so Informed Consent is not required; however, investigators should include in the instructions to participants that participation is voluntary, may be discontinued at any time, and that withdrawing or not participating will not result in negative consequences.

☐ ***Passive Parental Consent*** (a.k.a. Opt-Out consent) is requested because the research meets the minimum elements of Passive Parental Consent as described in the *PSU Policy Assurance Handbook*, **AND** parents will have no less than 14 calendar days to opt their student out of the study, **AND** the notification document will be sent directly to the parents.

☐ ***Waiver or Alteration*** of Informed consent is requested because the research involves public benefit/service programs **AND** that the research could not otherwise be carried out without waiver or alteration of Informed Consent (45 CFR 46.116(e)). Include *Informed Consent Waiver or Alteration Form*.

☐ ***Waiver or Alteration*** of Informed consent is requested because the research involves no more than minimal risk to the subjects **AND** could not otherwise be carried out without the requested waiver or alteration **AND** could not otherwise be carried out without using private information or biospecimens (if required) in an identifiable format **AND** the waiver or alteration will not adversely affect the rights and welfare of the subjects **AND** whenever appropriate, the subjects or legally authorized representatives will be provided

with additional pertinent information after participation. (45 CFR 46.116(f)). Include *Informed Consent Waiver or Alteration Form*.

☐ ***Waiver or Documentation*** of informed consent is requested because the only record linking the subject to the research would be the Informed Consent form **AND** the principal risk would be loss of confidentiality (*45 CFR 46.117(c)(i)*).

☐ ***Waiver of documentation*** of informed consent is requested because the research presents no more than minimal risk **AND** does not involve procedures requiring written consent outside a research setting (*45 CFR 46.117(c)(ii)*).

☐ ***Waiver of documentation*** of informed consent is requested because the subject is a member of a cultural group or community that does not normally sign forms **AND** there is no more than minimal risk **AND** there is an alternative method for documentation of consent (*45 CFR 46.117(c)(iii)*)

Informed Consent Contents and Process

A. Explain the procedures that will be used to obtain consent/assent. Attach additional sheets as necessary.

Consent for participation in this project will be indicated through completion of the surveys and questionnaire.

B. Federal regulations (45 CFR 46.116) state that the following elements of information should be provided to each subject. Place a check mark before each component included in your consent document. Attach a copy of the document to this application.

☐ A statement that the study involves research

☐ An explanation of the purposes of the research

☐ The expected duration of the subject's participation

☐ A description of the procedures to be followed

☐ Identification of any procedures which are experimental

☐ A description of any reasonably foreseeable risks or discomforts to the subject

☐ A description of any benefits to the subject or to others which may reasonably be expected from the research

☐ A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject

☐ A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained

☐ One of the following statements about any research that involves the collection of identifiable private information or identifiable biospecimens:

- A statement that identifiers might be removed from the identifiable private information or identifiable biospecimens and that, after such removal, the information or biospecimens could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from the subject or the legally authorized representative, if this might be a possibility; or
- A statement that the subject's information or biospecimens collected as part of the research,even if identifiers are removed, will not be used or distributed for future research studies.

☐ For research involving more than minimal risk, an explanation as to whether any compensation, and an explanation as to whether any medical treatments are available, if injury occurs and, if so, what they consist of, or where further information may be obtained

☐ Research, Rights or Injury: An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research- related injury to the subject

☐ A statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits, to which the subject is otherwise entitled

Additional Elements as Appropriate

☐ A statement that the particular treatment or procedure may involve risks to the subject (or to the embryo or fetus, if the subject is or may become pregnant), which are currently unforeseeable

☐ Anticipated circumstances under which the subject's participation may be terminated by the investigator without regard to the subject's consent

☐ Any additional costs to the subject that may result from participation in the research

☐ The consequences of a subject's decision to withdraw from the research and procedures for orderly termination of participation by the subject

☐ A statement that significant new findings developed during the course of the research, which may relate to the subject's willingness to continue participation, will be provided to the subject

☐ The approximate number of subjects involved in the study

Documentation of Assent

☐ When studying minors or others incapable of giving legal consent, assent forms must also be provided (unless waived by the IRB). Assent forms should contain the same information as above, but the language and delivery method should be appropriate for the subject population. Attach a copy of all assent documents that will be used to this application (including Informed Consent Waiver or Alteration form if applicable).

VII. Certification and Approval

Verification of Assurance

PRINCIPAL INVESTIGATOR ASSURANCE

I understand that as Principal Investigator, I have ultimate responsibility for the protection of the rights and welfare of human subjects and the ethical conduct of this research for which this application has been submitted.

I agree to comply with all PSU policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects in research, including, but not limited to, the following:

- Title 45, Part 46 of the Code of Federal Regulations.
- The Belmont Report, Ethical Principles and Guidelines for the Protection of Human Subjects and Research.

I also agree that the following criteria will be met:

- The project will be performed by qualified personnel according to the research protocol.
- Copies of all questionnaires, survey instruments, interview questions, data collection instruments, and information sheets for human subjects will be maintained in the respective department.
- Necessary review by the PSU Institutional Review Board will be sought if a) changes are made in the research protocol which may result in the research no longer meeting the original approved criteria, or b) Continued Review at the appropriate time.
- All study investigators have completed the approved ethics training, and a copy of the valid completion certificate is attached to this application.
- The Principal Investigator and all research personnel have read and understand the PSU Assurance Handbook concerning human subjects research protocols.

Principal Investigator Signature	Alexander Labrador Name (please print)	01/05/2023 Date

Faculty Sponsor: If the Investigator is a student, the Faculty Sponsor (e.g. thesis director, research supervisor, etc.) must approve this application.

I certify that this project is under my direct supervision and that I accept the responsibility for ensuring that all provisions of approval are met by the investigator.

Faculty Sponsor Signature	Trina Larery Name (please print)	01/11/2023 Date

Department Reviewer: I acknowledge that this research is in keeping with the standards set by our department, university, state and federal agencies. I assure that the principal investigator has met all departmental requirements for review and approval of this research, and that this application is complete and correct.

Amanda Alonzo	Amanda Alonzo	01/13/2023
Department Reviewer Signature	Name (please print)	Date

IRB USE

Signature of IRB Chair (not required for Exempt Review)	Name (please print)	Date
_____	_____	_____

Meeting Date of Full Board Review: _____

Review Date of Expedited Review: _____

Attach correspondence to this application.

Continuing Review Date:

☐ 1 year from last business day of month of initial approval: _____

Expanding Clinical Knowledge and Awareness to Non-Benzodiazepine Treatments

Educational Intervention

By Alex Labrador, MSN, PMHNP

Chronic benzodiazepine use is a public health problem

- Greater than 12% of the U.S. population is consumingbenzodiazepines
- Approximately 1 in 5 persons diagnosed with alcoholabuse also abuse benzodiazepines

Chronic benzodiazepine use increases risk of:

- Abuse
- Addiction
- Unintentional drug overdose
- FDA boxed warning against the concurrent use

ofbenzodiazepines and opiates

Hard Clinical Facts

- The majority of benzodiazepines are prescribed outside of psychiatry with familypractice clinicians prescribing the most compared to all other specialties
- Prescriptions from healthcare clinicians are the primary source for benzodiazepine supply
- The general prescribing habits of healthcareclinicians is inconsistent

Common characteristics of Benzodiazepine abusers

- Caucasian, non-Hispanic race
- Female gender
- Older adult age
- Comorbidity with other medical and mentalhealth disorders

Treatment of Anxiety and Panic Disorder

- Benzodiazepines work fast and have a relative shorthalf life that temporarily increase levels of Gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter, thereby causing sedation
- Benzodiazepines do not build to therapeutic levels thatsustain a constant state of relief from anxiety symptoms
- Benzodiazepines do not address other possibleunderlying depressive or anxiety disorders
- For these reasons, benzodiazepines are considered asecond-line treatment option as short-term,

intermittent, or “as-needed”

Selective Serotonin Reuptake Inhibitors (SSRI) Antidepressants

- The first-line treatment for anxiety and panicdisorders
- Increase serotonin 5-hydroxytryptamine (5-HT) neurotransmitters in the brain that have been shown to regulate mood, memory, sleep, hunger,and sexual behavior
- SSRIs take an estimated 2-4 weeks before benefitis felt
- SSRIs have a high safety profile, low risk ofoverdose death

SSRIs FDA Approved for Generalized Anxiety Disorder

- Zoloft (sertraline)
- Lexapro (escitalopam)
- Prozac (fluoxetine)
- Paxil (paroxetine)

SSRIs approved for Panic Disorder

- Zoloft (sertraline)
- Paxil (paroxetine)
- Prozac (fluoxetine)

SSRIs used off-label for treatment of anxiety and panic disorder

- Luvox (fluvoxamine)
- Celexa (citalopram)

Serotonin-Norepinephrine Reuptake Inhibitor (SNRI) Antidepressants

- Effexor XR (venlafaxine extended-release) isthe only FDA-approved SNRI for both generalized anxiety and panic disorder
- Cymbalta (duloxetine) FDA-approved forgeneralized anxiety
- Increased side effects and lower safety profilecompared to SSRIs

SNRIs used off-label for treatment of anxiety and panic disorder

- Cymbalta (duloxetine)
- Pristiq (desvenlafaxine)

A Review of other Non-Benzodiazepine Options

- Antihypertensives
- Antihistamines
- Anxiolytics
- Anti-seizure/mood stabilizers
- Tricyclic antidepressants
- Counseling and therapy

Antihypertensives

- Anxiety can cause spikes in blood pressure andheart rate
- Propranolol, a beta blocker, has been showneffective as an off-label use
- 10 mg to 80 mg, 30 minutes prior to anxiousevent or may be taken as needed

Antihistamines

- Drowsiness and sedation are common side effects of antihistamines. These side effects make them an effective, non-addictive optionwith anxiety and panic.
- Atarax (hydroxyzine HCL) 25 mg-100 mg
- Vistaril (hydroxyzine pamoate) 25 mg-100 mg

Anxiolytics

- Buspar (buspirone), 15 mg-60 mg/daily
- Increase serotonin neurotransmitters in thebrain causing a decrease in generalized anxiety
- Non-habit forming

Antiseizure/Mood Stabilizers

- Increase GABA neurotransmitters

✧ Off-label use

- Neurotin (gabapentin)
- Lyrica (pregabalin)
- Depakote Dr (divalproex sodium)
- Lamictal (lamotrigine)

Tricyclic (TCA) Antidepressants

- FDA approved for treatment of depressionand OCD
- Tofranil (imipramine)
- Anafranil (clomipramine)

✧ Off-label use in anxiety and panic disorders

- Elavil (amitriptyline)
- Pamelor (nortriptyline)

Counseling & Therapy

- Cognitive-behavioral therapy (CBT) – helpsindividuals focus on their behaviors
- Dialectical behavioral therapy (DBT) – helpsindividuals focus on their emotions
- Eye Movement Desensitization and Reprocessing (EDMR) – helps individuals healfrom life altering traumas

References

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Compassion Mental Health
7556 US Hwy 70
Bartlett, TN 38133
Ph. 901-552-3497
Fax 574-635-9228
Email: *Info@CompassionMentalHealth.com*

Re: Authorization to Conduct DNP Scholarly Project

November 26, 2022

To Whom It May Concern:

Alex Labrador, a graduate student of Pittsburg State University, has been granted authorization to conduct DNP Scholarly Project at all clinical facilities affiliated with Compassion Mental Health. An abstract of the project, copies of ethics training, and all surveys and questionnaires has been provided for review.
If there are any questions or more information is required, please do not hesitateto contact me at my office via telephone, 901-552-3497 or email listed above.
Thank you.

Sincerely,

Sara Williams

CEO, Compassion Mental Health

CITI PROGRAM

Completion Date 24-Sep-2022
Expiration Date 23-Sep-2025
Record ID 51713292

This is to certify that

Alexander Labrador

Not valid for renewal of certification through CME.

Has completed the following CITI Program

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical PI/RA
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Pittsburg State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wfdacac00-d13a-4b5b-9f1c-a441b3788346-51713292

CITI PROGRAM

Completion Date	24-Feb-2022
Expiration Date	24-Feb-2024
Record ID	41161455

This is to certify that

Trina Larery

Not valid for renewal of certification through CME.

Has completed the following CITI Program

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical PI/RA
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Pittsburg State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?we7f39b9b-acf2-4072-8f91-be80b1706747-41161455

CITI PROGRAM

Completion Date	24-Feb-2021
Expiration Date	24-Feb-2024
Record ID	41162194

This is to certify that

Trina Larery

Not valid for renewal of certification through CME.

Has completed the following CITI Program

Revised Common Rule
(Curriculum Group)
Revised Common Rule
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Pittsburg State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w394f12e0-40dc-49df-8585-b08e4e4b6782-41162194

CERTIFICATE

OF COMPLETION

PHRP Online Training, Inc. certifies that

Julie Dainty

has successfully completed the web-based course "Protecting Human Research Participants Online Training."

Date Completed: **2020-02-20** Certification Number: **2848773**

PHRP
Protecting Human
Research Participants
Online Training

CITI PROGRAM

Completion Date	15-Feb-2021
Expiration Date	15-Feb-2024
Record ID	41000408

This is to certify that

Amanda Alonzo

Not valid for renewal of certification through CME.

Has completed the following CITI Program

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical PI/RA
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Pittsburg State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w7ae51743-51de-4771-9474-5b37aff97917-41000408