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Guideline Utilization to Promote De-escalation of Benzodiazepine Use in Adults with Generalized Anxiety Disorder

Magdalena A. Malloy
Eastern Kentucky University, magdalena_malloy2@mymail.eku.edu

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Magdalena Malloy

School of Nursing, Eastern Kentucky University

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Dr. Molly Bradshaw

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Abstract

Benzodiazepines are commonly used as the first line treatment for adults diagnosed with Generalized Anxiety Disorder (GAD) despite clinical guidelines that recommend otherwise. This can lead to misuse, abuse, addiction, and dependence. To de-escalate use of benzodiazepines as first-line treatment, this DNP Project seeks to reinforce use of evidence-based practice via a reminder card. The guideline compliance program was assessed by chart review to determine impact on GAD-7 scores and benzodiazepine prescriptions. Total of 69 patients' charts were audited by six prescribers, over the period of eight weeks, to determine if outcomes were met. When analyzed pre and post intervention on GAD-7 scores, a paired sample t-test demonstrated a p -value of <0.001 which indicated that statistical significance was met. Reinforcement of clinical guidelines via a reminder card resulted in reduction scored on GAD-7 and number of the benzodiazepine prescriptions. All patients (N=69) were offered the opportunity to de-escalate benzodiazepine use by decreasing doses, alternative medications, psychotherapy or were prescribed medications according to guidelines that promoted decrease in benzodiazepine use.

Keywords: GAD, benzodiazepines, de-escalation, abuse, misuse

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Introduction

Benzodiazepines are beneficial class of drugs in treating anxiety. However, there are trends indicating a significant public health problem related to benzodiazepines misuse. For instance, Maust et al. (2020) noted that 30.6 million adults, which accounts for 12.6% of the entire population used benzodiazepine. It is estimated that 25.3 million (10.4%) adults were taking it as prescribed, while 5.3 million (2.2%) adults were misusing the medication. Further, the highest misuse (5.2%) was among persons aged 18 to 25 years old. This public health challenge is heightened by the fact that abuse, misuse and dependent on stimulants and opioids is significantly associated with benzodiazepine misuse. Benzodiazepines are most accessed without a prescription from a friend or family member. This issue is further exacerbated by the absence of a collective consensus among medical experts on the diagnostic criterion which should be satisfied to warrant a benzodiazepine prescription (Silberman et al., 2021).

The federal government has taken several measures to address drug abuse. For instance, according to the Drug Enforcement Agency (2020), the federal government enacted the Controlled Substances Act (CSA) which regulates production and distribution of the substances' accepted medical use, potential for abuse, and safety or dependence liability. However, implementing this act and other measures by the Department of Health and Human Services (HHS) has not been effective. This can partly be attributed to insufficient data on drug utilization behaviors and problems associated with recommending relatively high doses of benzodiazepines has also impeded efforts to appropriately conduct comparative drug consumption within the United States (Lembke et al., 2018).

According to Samardzic and Svob Strac (2016), benzodiazepine abuse is associated with physical effects such as poor coordination, loss of visuo-spatial ability, irritability, sleep disturbances, and continual drowsiness. Extreme cases of benzodiazepine abuse may also result

in an emergency room (ER) visit and even death. Prolonged use of benzodiazepine among persons with anxiety and related disorder may exacerbate health conditions by leading to increased anxiety (Hayhoe & Lee-Davey, 2018). This reinforces the need to de-escalate benzodiazepine use.

De-escalating the use of benzodiazepines for adults is crucial in concerted health promotion initiatives to promote the appropriate use of the medication, prevent harm from abuse, and improve patient outcomes (Suss & Oldani 2020). Healthcare providers particularly pharmacist, nurses and physicians play a significant role in promoting proper use of and in de-escalation among patients with anxiety who have misused the drug (Platt et al., 2021). This is achieved by implementing evidenced based practice guidelines that will reduce potential for benzodiazepine misuse and abuse. In this regard, this project aims to remind providers to offer de-escalation where appropriate and reduce escalation by following treatment recommendations.

Background

According to the DSM-V (2013) guidelines, Generalized Anxiety Disorder (GAD) is classified as excessive anxiety and worrying that has occurred for a minimum of six months relating to activities of daily living. The anxiety presents with symptoms equivalent to restless leg, fatigue, trouble concentrating, irritability, disturbed sleeping, and muscle tension (Simon et al., 2021). Health providers are likely to find it challenging to diagnose GAD accurately. Undoubtedly, this created the need for reliable, efficient, and exhaustive screening tools. One such screening tool is the Generalized Anxiety Disorder scale-7 (GAD-7); a 7-item diagnostic tool validated in the general population and primary care settings (Sapra et al., 2020). There are also other multiple scales for screening GAD, including Hamiliton Anxiety Scale (HAM-A), Covi Anxiety Scale, Hospital Anxiety and Depression Scale (HADS), and State-Trait Anxiety

Inventory (STAI), among others (Sapra et al., 2020). After patients are identified to have GAD using some of these screening tools, health providers usually go for thyroid function tests before prescribing any antidepressant. Assessment of thyroid function might is an ideal predictor in the treatment of GAD (Bathla, Singh, & Relan, 2016).

There are various non-pharmacological and pharmacologic recommendations for patients diagnosed with GAD. The treatment recommendations involve psychological therapy or pharmacotherapy, or a combination of the two. A non-pharmacologic treatment, such as cognitive-behavioral therapy (CBT), is among the preferred first-line treatments (Bandelow, Michaelis, & Wedekind, 2017). Other non-pharmacologic therapies include behavioral techniques, supportive psychotherapy, and insight-oriented psychotherapy (Gautam et al., 2017). The recommended first-line drugs include selective reuptake inhibitors and serotonin-norepinephrine reuptake inhibitors, while benzodiazepines are not recommended for routine use. Additional pharmacologic treatments alternatives include buspirone, tricyclic antidepressants, moclobemide, and pregabalin. When developing a treatment plan for patients with GAD, it is vital to consider efficacy, costs, interactions, and adverse effects (Bandelow et al., 2017).

Pharmacologic intervention should be considered in patients whose anxiety disorder impairs activities of daily living and functioning (Lader, 2019). One of the second-line prescribed groups of medicines for patients with anxiety is benzodiazepines. The behavioral impact of benzodiazepines has been compared to the impact of high doses of barbiturates on the body (Lader, 2019). Benzodiazepines are a class of prescription medication that binds to the GABAA receptor, resulting in hypnotic, muscle-relaxing, anticonvulsant, and anxiolytic effects. As such benzodiazepines are classified as central nervous system depressant drugs that are used to treat acute alcohol withdrawal, depression, insomnia, excitation, aggressiveness, panic,

phobias, anxiety and seizure among others (Lader, 2019). Traditionally, benzodiazepines are illustrious for their sedative-hypnotic effect, inducing muscle relaxation, and causing an overall reduction in levels of anxiety. However, it's worth noting that patients taking benzodiazepines are highly likely to experience the "withdrawal rebound phenomenon" related to the drug (Peppin et al., 2020). A pattern of physical dependence among patients is emerging because of prolonged and uninhibited use of the drug. The overall inability among patients with anxiety to successfully address the withdrawal effects is one of the first reasons why attention is turning to the long-term effects of prescribing.

Lab experiments involving rats and dogs receiving doses of benzodiazepines have conjointly recorded similar results, further raising their side effect profile (Balon & Starcevic, 2020). It has been tested beyond any reasonable doubt that benzodiazepines produce physical dependencies and have a major impact on living organisms. Their reinforcing efficaciousness is higher in individuals who ultimately develop a physical dependence to the drug. Benzodiazepine abuse often starts with patient's prescribed drugs that later progress to taking more than the recommended doses before developing tolerance. Common withdrawal effects after minor tranquillizer cessation embody perceptual distortion, insomnia, coordination problems, and restlessness (Tyrer, 2019). These effects are particularly common among individuals blatantly abusing the drug or those on a restively high dose of the medication. Tolerance additionally fosters the need for higher doses for the drug to elicit an initial therapeutic effect.

Practice Gap

A consensus exists amongst professionals within the mental health care community that there is a comprehensible need for reprioritization of psychotherapeutic treatment interventions for addressing patient's pathologies (Tyrer, 2019). Forward-thinking and evolving practice

pointers would likely experience clinically exceptional benefit(s) by transitioning to a care model that places emphasis on alternative evidence-based treatment interventions (i.e. use of pharmacological agents with a less habit-forming profile, properly encouraging patients regarding the perpetual need for implementing effective psychotherapeutic relaxation techniques and devotion to sleep hygiene as well as healthy balanced life style maintenance, etc.). Clinical literature also reiterates that benzodiazepines prescriptions, including Xanax, Ativan, Klonopin, and Valium, should seldom supersede a month length of treatment. Therefore, the use of BZDs in quantities and durations of time that surpass DSM-V standards should be restricted to situations whereby patients have severe refractory anxiety-based disorders. Aggregation of data and extrapolation of results shall transpire at psychiatric clinics or practices where patients for this research project will be evaluated. Through utilizing anxiety treatment tool, patients with will be able to choose a benzodiazepine-free treatment.

Benzodiazepines should be prescribed in line with the Community Behavioral Health (2018) clinical guidelines for the prescribing and monitoring of benzodiazepines and related medications. However, this is not always the case and there is misuse which has significant negative effects. For instance, Lader (2019) mentioned that benzodiazepine abuse is likely to slow the processing of thoughts and verbal abilities, which are particularly common in persons recovering from these drugs. Benzodiazepine misuse presents two main health effects namely withdrawal and overdose (Hirschtritt et al., 2021). In most cases, benzodiazepines are combined with other drugs and alcohol which increases risk of overdose mainly through cardiac arrhythmia or respiratory suppression. Further, prolonged misuse benzodiazepines increase tolerance where patients need more doses to obtain the same effect, withdrawal symptoms and use disorder (Lembke et al., 2018). Benzodiazepine dependence and withdrawal can start after only 4 to 6

weeks of use and affects 20% to 30% of persons with regular use. In adults, Benzodiazepine dependence increases chances of hip fractures falls, cognitive impairment, and drug-associated hospital admissions (Hirschtritt et al., 2021).

The misuse of benzodiazepine has adverse effects on the patient's family, health facility and generally society. For instance, increased admission raises healthcare costs for the patient and society as well (Samardzic & Svob Strac, 2016). Further, there is lost productivity which has adverse effects on the economy (Lembke et al., 2018). The patient's family may be forced to take care of their kin, which has negative effects. This shows that this project which explores de-escalation of benzodiazepine misuse will help in reduction of adverse health and financial effects on the patient, their family and wider society.

The prevention of drug dependence goes a long way in managing substance abuse which impacts a considerable cross-section of individuals on prescription medication. Dependence on benzodiazepines is often associated with polysubstance abuse and likely to be fatal in the event if it is not effectively managed within an appropriate timeline (Jones, 2016). Research posits the notion that continued use of benzodiazepines is likely to serve as a gateway drug to heroin, methadone, and alcohol use among high-dose benzodiazepine abuse (Lader, 2019). These effects are particularly common among those individuals who are blatantly abusing the drug or those on a restively high dose of the medication. Tolerance also fosters the need for continued higher dose to elicit an initial therapeutic effect (loading dose). Individuals with anxiety disorder represent an at-risk population due to their propensity to misuse prescribed benzodiazepines. The drug's rapid onset of action and mind-altering properties further increase the chances of inducing addiction.

At the clinic, which will serve as the project site, prescribing of benzodiazepines often deviates from standards of care. For patients who have been taking the medications in the long term, opportunities to de-escalate use are not routinely offered. Even though there is a significant number of patients prescribed benzodiazepines, providers at the project site fail to follow or deviate from guidelines for dose de-escalation, exposing patients to possible addiction. Health providers at the project site deviate from de-escalation guidelines due to limited time, patients' pressure for benzodiazepines, and providers not being updated on some recent evidence-based practice treatment (Psychiatric nurse practitioner, personal communication, June 2021). This DNP project seeks to address this practice gap by promoting guideline utilization to promote de-escalation of benzodiazepine use in adults with generalized anxiety disorder. For patients who are naive to the medications, providers must ensure that guidelines are followed to prevent the use or dose-escalation.

Review of Major Clinical Guidelines

There are two major clinical guidelines used in the treatment of GAD. The first guideline is NICE. The other guidelines are APA.

NICE

The National Institute for Clinical Excellence, NICE (Clinical Guidelines for the Management of Anxiety, 2004) published guidelines on the management of panic disorder and GAD in Adults in Primary, Secondary and Community Care. The guideline suggests that before any medical prescriptions are made, psychological interventions such as Cognitive Behavioral Therapy (CBT) acts as the most effective intervention. For most patients, CBT sessions are suggested to be conducted weekly for one to two hours. These sessions ought to be completed within a thorough going of four months since the time of initiation. The guideline further suggests that the medical professional considers the age, previous treatment response, if any,

preference of the patient and the tolerability along with the risk of deliberate self-harm, observed in patient history before making a pharmacological intervention.

Selective serotonin reuptake inhibitors (SSRIs) work with serotonin transporter and work by increasing the levels of serotonin in the brain by blocking its reabsorption in the neurons. They work by enhancing the functioning of the nerve cells in the brain that control emotion. Hence, these are prescribed as first line medications and are considered relatively safer and typically they cause lesser side effects than other medications, specifically BZD does. Serotonin–norepinephrine reuptake inhibitors (SNRIs) are similar in function to SSRIs but they block or delay the reuptake of serotonin and norepinephrine in the brain. Stabilization of these neurotransmitters helps improve a person's mood, relieve panic attacks and reduces the feeling of anxiety.

The guideline recommends using SSRIs instead of BDZs as the preeminent choice of medication. An SSRI should be prescribed for a period of 12 weeks and if no visible improvement is observed, another SSRI should be prescribed. The guideline also recommends that BZDs should only be prescribed if SSRIs are not available or unsuitable and only if there is no improvement noticed from its use. This shows the level of caution which medical professionals should practice before prescribing BZD. Pharmacological therapy in the form of SSRI and self-help are long term interventions which the clinical guideline suggests having evidence of long-term duration effects.

NICE suggests that before starting any antidepressant, the healthcare professional ought to always contemplate the side effects of starting the medication and hence prescribe lower dosages and slowly increase the dosage until satisfactory response from intervention is observed. When looking at comorbid levels of anxiety, SSRIs and/or SNRIs are the first-line medicated

interventions (Strawn, et al., 2018). The authors encourage considering age and co-morbidity in selection of psychopharmacologic treatments. He suggests that benzodiazepine may be prescribed as the second-line pharmacotherapies, however, SSRI, GAD, and SNRIs should be used as first-line psychopharmacologic treatment. Concerning pediatric patients with symptoms of GAD, SSRIs ought to be considered as the first line pharmacotherapy. The coupling if psychotherapy with pharmacotherapy augments the antidepressant response (Strawn, et al., 2018).

APA

The American Psychiatric Association APA (APA, 2008) practice guideline for the treatment of patients with panic disorder suggests the use of tricyclic antidepressants (TCAs) in case SSRIs and SNRIs fail as first-line medications. Moreover, the guideline raises several concerns over benzodiazepine tolerance and withdrawal. The study even reports amplified risk of accident while driving a vehicle in association with benzodiazepine use.

Both APA and NICE suggest the use of CBT alongside these medications and self-help modeled on CBT principles. Moreover, these guidelines also suggest appropriate dosages and prescription and since BDZs are associated with an unsatisfactory outcome in the long term, they should not be prescribed more than 2 to 4 weeks in GAD. However, it is important to understand that for panic disorders, benzodiazepines are not a suitable choice.

The International Psychopharmacology Algorithm Group (IPAP) released a psychopharmacological treatment algorithm for GAD (Davidson JR, et al 2010), in which they suggest a serial line of approach to the pharmacotherapy of GAD and recommend several approaches past the first level of treatment. The research guideline also agrees to prescription of SNRIs as second line pharmacotherapy intervention.

Literature also supports the prescription of BZDs for some patients at higher risk for abuse. Ciraulo et al. (2000) discussed Benzodiazepine treatment in substance abuse patients and concluded that if enough education on the risks of combining BZDs with alcohol or other intolerable substances, and if medical professional responsibly holds transparent discussion on diversion mechanisms and monitors for any adverse effects and misuse, then prescription of BZDs as first-line interventions can be made under special circumstances.

El-Guebaly et al. (2010) discuss in detail the guidelines for the responsible prescription of benzodiazepines and conclude that physiological dependence depends mostly on the dosage and the duration of exposure. The study concluded that dependency can be reduced by intermittent exposure to BDZs as opposed to a continued exposure. If misuse of BZDs is identified in patients, the Canadian guidelines on benzodiazepine receptor agonist use disorder among adults suggest a patient centric and step by step care approach to gradually decrease the dosage of BZDs in the management of Benzodiazepine receptor agonist (BZRA) (Conn et al., 2020).

AGREE II tool was used to determine the best clinical guideline to follow. The tool was developed by The Agree Enterprise Trust (2009). It is commonly utilized in the evaluation of the quality and reporting of clinical practice guidelines. The tool entails 23 key items classified into six major domains. The first domain is interested in the scope and purpose of the clinical guideline. The second domain focuses on stakeholder involvement (inclusion of health providers, target users, and patients). The rigor of development is the third domain, focusing on gathering and synthesizing available evidence utilized to develop the guideline (The Agree Enterprise Trust, 2009). Clarity of presentation, focusing on language, format, and structure of the given domain, is the fourth domain. The fifth domain is interested in applicability in relation to barriers and facilitators, approaches for enhancing uptake, and cost implications. The last domain focuses

on editorial independence, ensuring that the recommendations made in the guideline are not in any way biased because of competing interests (The Agree Enterprise Trust, 2009). Therefore, the tool will be applicable in this DNP project as the aim is to use the guideline to promote de-escalation of benzodiazepine use in adults with GAD. The tool will help appraise if the clinical guideline followed by health providers is appropriate.

Reconciling Best-Practices

Potential Evidence-Based Solutions

Several studies have been conducted on various aspects of benzodiazepine use, misuse and on measurers to address the health challenges posed by misuse of the drugs. For instance, Roy-Byrne (2015) conducted a meta-analysis to investigate the best approach in the treatment of refractory anxiety using coordinated anxiety learning and management (CALM) tool. Similarly, Bandelow et al. (2015) explored the application of Hamilton anxiety rating scale (HAM-A) in managing GAD among patients who had misused benzodiazepine. Similarly, Carr et al. (2019) also conducted quality improvement project on how to implement benzodiazepine protocols using 3-month PDSA improvement cycle.

The literature also includes clinical guidelines for the management of panic disorder and GAD by the National Institute for Clinical Excellence (2004). The American Psychiatric Association (2008) also published guidelines on the treatment of patients with panic disorder suggests the use of tricyclic antidepressants. The literature supports the implementation of EBP in de-escalation of benzodiazepine among patients with GAD (Bandelow et al., 2017; Carr et al., 2019; Shinfuku, 2019; Liebrenz et al., 2015).

Proposed Evidence-Based Intervention

The purpose of this DNP project is to implement a guideline compliance program that assist in helping providers appropriately prescribe and/or de-escalate benzodiazepines use. The aim is to address the problem of benzodiazepines misuse associated with a lack of knowledge of the risks related to this class of medications and using the appropriate guideline to treat patients with GAD. The proposed intervention involves educating prescribers and designing and implementing an evidence-based reference card with guidelines for treating adult patients with GAD.

Review of Literature

An in-depth literature review was conducted to answer the research question, "Among adults with general anxiety disorders (**P**), does implementation of de-escalation benzodiazepine program used as a guideline to safe treatment of anxiety (**I**), lead to reduce benzodiazepine use, adherence to healthy lifestyle, maintance of sobriety (**O**) in eight weeks (**T**)?

A search of the nursing literature utilizing data bases was initiated. Databases searched included PubMed, CINAHL, Web of Science, Medline, Science Direct, EBSCOhost, Google Scholar, and ProQuest. The keywords used were *benzodiazepines, de-escalation of benzodiazepines, benzodiazepines abuse, benzodiazepines misuse, clinical guidelines for benzodiazepines prescription* and *monitoring*. Over 42 articles retrieved and after reviewing reports, the articles that directly discussed de-escalation of benzodiazepine use in outpatient and inpatient settings were included. All evidence was appraised using the Melnyk -Fineout Overhold Rapid Appraisal Forms. In three articles randomized control trials was used, 5 articles non-experimental design was used while in two articles systematic review of the literature was conducted. Different data was used to examine regional variation in trends in the relationship

between anti-anxiety medications (SSRI), different treatments (cognitive-behavioral therapy and combination) and BZDs. To facilitate generalizability, only participants with DSM-V GAD were selected. All studies used the instruments for measurement of anxiety.

Relevant Studies

Adult patients with anxiety disorder often abuse prescribed medications for their respective condition. A meta-analysis by Bandelow et al. (2017) examined pre-post effect in relation to changes in size prior and after commencing treatment with medications and psychotherapies. A total of 35,000 patients aged between 7 years and 65 years were included as an ideal sample population for the psychotherapy studies. The result would later indicate that individuals within this group exhibited less damaging effect within an outpatient setting that has been taking BZDs for a short time. The Hamilton Anxiety Rating Scale (HAM-A) was also utilized as an ideal diagnostic measure and analysis based on frequency and relative risk. The findings recorded indicated a significant decrease in anxiety levels after the implementation of a drug treatment regimen and CBT. In relation to the synthesis of this scholarly work, the evidence was robust and supported the treatment of GAD. The authors present the evidence that strategies other than BZDs are being used to treat anxiety and they substantially decrease levels of anxiety among adult patients. It would, therefore, go a long way in contributing to the application of tools and large data in the diagnosis and rating of patients with anxiety and on benzodiazepines as depicted in Table 2 (Appendix A).

Using meta-analysis methodology, Roy-Byrne (2015) sought to determine the best approach in the treatment of refractory anxiety over 12 months, 69 participants were receiving a different treatment for anxiety. The CALM tool was ideal for this study, especially in relation to identifying the most appropriate treatment options for individuals with anxiety. Similarly, to the

other studies, negative results of BZDs including high risk for dependence are explained along with a need to use strategies for improved assessment to determine best practice. The analysis was based on the actual frequency of using benzodiazepines, its relative risk, and other available options. The strength of the evidence provided was on its focus on multiple treatment options and the amalgamation of CBT as depicted in Table 2 (Appendix A). Authors present evidence that the clinician should proceed by exploring combination treatment with multiple modalities (this has usually been tried already) and then either multiple novel medications, more aggressive, longer-duration CBT, or a switch to another psychotherapeutic modality such as IPT or psychodynamic psychotherapy as depicted in Table 1 (Appendix A).

In a meta-analysis and a systematic review, Bandelow et al. (2015) compared the relative efficacy of pharmacological intervention as opposed to a combined treatment for GAD, panic disorder (PD). A total of 37,333 participants took part in the study which also included randomized trials with adults receiving pharmacological treatment for GAD. Similarly, the HAM-A was applied to this case of data analysis conducted based on frequency and relative risk. The preliminary findings recorded in this study indicated a lower level of anxiety after the implementation of a treatment plan with a selective serotonin reuptake inhibitor (SSRI). The study's transparent design, analytic approach based on the HAM-A scale and the presence of a predefined question, later answered appropriately, were some of the major strengths noted during the initial appraisal as depicted in Table 2 (Appendix A). However, the researchers' overreliance on a single viewer framework in the evaluation of published literature and the presence of mixed treatment meta-analyses were among some of the major weaknesses noted. This was further compounded by insufficient data when conducting respective statistical analyses. The authors provide evidence that selective serotonin reuptake inhibitors (SSRIs) are the most effective

treatment option for adults with anxiety and can be used as first line treatment. Therefore, steps to de-escalate BZDs use are taken by prescribing SSRIs (Bandelow et al., 2015).

A meta-analysis by Platt (2016) sought to ascertain the impact of using BZDs versus alternative treatment options. A total of 12 studies were appraised, in addition to the participation of 1338 adult patients with anxiety over a six-month period. The GAD, PDSS, and SPIN were ideal tools for this study as depicted in Table 2 (Appendix A). The analysis was based on the actual frequency of using benzodiazepines. The findings indicated that natural non-chemical anxiolytic treatments are available and can be safely recommended for patients. The strength of this study was in its use of empirical data while its weakness which went a long way in painting an elaborate picture of benzodiazepine addiction as a major public health issue. Similarly, to the other studies, contribution is to support that overuse of benzodiazepine drugs to treat anxiety, mood, and sleep disorders are a growing problem in clinical practice (Platt, 2016).

Utilizing a randomized control trial, Shinfuku (2019) investigated the short-and long-term effects of benzodiazepines. A total of 1228 participants took part in the study over a 13-week period. IV1 Tx, no Tx recorded for IV2, other Tx for IV3, and the level of anxiety for DV1. Similarly, to other studies, HAM-A tool was implemented to gauge the efficacy of treatment option and an accompanying analysis based on relative risk and frequency of use. After the first 8 weeks, it was discovered that no significant differences existed between prescribing benzodiazepines and antidepressants. The study was well designed, with accurate findings which supported the proposition. However, the limited number of studies used meant that further investigation on the role and safety of benzodiazepines. This study supports that long-term BZDs use is not endorsed in the treatment for anxiety disorder but is prevalent in the real-worlds clinical settings and presents gaps in evidence-based practice. It also presents

evidence that alternative interventions such as CBT, non-BZD medications have better outcomes in lowering anxiety level and de-escalating BZDs use as depicted in Table 2 (Appendix A).

Using quasi-experiment design, Carr et al. (2019) conducted quality improvement project that encouraged patients to commit to deprescribing BZD protocols and improve upon current benzodiazepine deprescribing archetypes within 3-month PDSA improvement cycle. Strength of the study are high specificity, procured optimal outcomes, relevant information regarding implementation of deprescribing protocols for adults (65+ years of age). Small sample size and data is limited to adults over 65 years of age. Information can be used to design and conduct future studies with larger sample size and population. Data alludes to potentially promising deprescribing protocols and provides insight into commonly encountered complications. Information can be used to design and conduct future studies with larger sample size and population. Data alludes to potentially promising deprescribing protocols and provides insight into commonly encountered complications. Authors present evidence that medication review, patient education, brief counseling helped empower patients and deprescribing BZDs was effective strategy to de-escalate BZDs use as depicted in Table 1 (Appendix A).

Given the significance of drug dependence, Liebrenz et al. (2015) conducted a qualitative study with 41 adults that were meeting criteria for BZD-dependence according to the 10th revision of ICD-10. Highlighting patients' self-reporting beliefs and perceptions on factors contributing to their initial BZD use for mental disorders, as well as treatment preferences and how they obtained BZDs. Primarily conducted to document patients' thoughts and perceptions about BZD use; assess trends and data to note applicability and utility value to development of refined comprehensive treatment planning. Strength of this study aggregate unadulterated subjective data reports from patients with thoughtful reflections on their reasons of BZD use.

Weakness was the limit in its ability to provide high-quality data with robust utility value; there is an inability to make evidence-based inferences after completion of the study. Participation was voluntary; therefore, there is an immediate inherent bias. Subjective patient reports provide assessment data pertinent to constructing future hypotheses, research studies, and treatment plans.

It is acute need of the time to identify BZD misuse risk factors prior to prescribing. Health care professionals are required to use innocuous alternatives, and to make fitting interventions to decrease the ongoing abuse. Since BZDs since have a place in therapy interventions of GAD, education of patients on the risks is tasked with a prescriber. Treatment plans and monitoring measures for abuse of substance need to be carefully implemented in the future with the aim of reducing inappropriate prescription rather than targeting all prescriptions. This will maintain accessibility to applicable patients with appropriate medical use symptoms. In this case, health care professionals must also keep themselves abreast with latest developments, abuse patterns and trends to divert abuse of prescribed substances.

Synthesis of Literature

Although the reviewed experimental studies (RCTs and quasi-experimental) had a wide range of similarities in their proposed EBP intervention, they still possessed marked differences which were unique to each study. Bandelow et al. (2017) and Shinfuku (2019) randomly selected large sample sizes ensuring generalization of their findings while Liebrenz et al. (2015) and Carr et al. (2019) had smaller sample sizes. Participants in all the studies were classified as adults between the ages of 18 to 65-70 years except for one study that focused on pregnant women. The inclusion criteria of all the studies stressed on and underlying diagnoses. Although an underlying inclusion criterion for participants in all the studies was receiving antianxiety medication and did

not specify other possible conditions contributing to anxiety. All studies used for this literature review adopted the same EBP intervention which stressed on the effect of psychoeducation on mediation choices among participant to decrease benzodiazepine use. Through psychoeducation on lifestyle changes among participants to decrease benzodiazepine use, all studies reported that participants experience less anxiety, higher productivity, and overall feeling healthy after they started exercising, meditating, walking, and started psychotherapy. Participants in the RCT study by Shinfuku (2019) were requested to frequent toxicology test to rule out BZDs use. Increased knowledge on available treatment options and healthy lifestyle choices was however noted in all participants of the various studies. A total of 11 guidelines were reviewed with a wide range of similarities in their proposed evidence-based projects (EBP) intervention, the studies still contained marked differences which were unique to each study. Some studies (Schmitz 2016) do not associate the role of gender in distinguishing abuse of BZDs. Whereas APA guideline suggests that females are not only more likely to abuse when they have a history of substance abuse but rather females are also susceptible to boss density loss from the use of SSRIs. All guidelines recognize the need for second- and third-line prescriptions if the first interventions don't show promising results.

Participants in all the studies were classified as adults between the ages of 18 to 65-70 years except for the study of (Rubinchik, et al. 2005) which sampled adults before the age of 49 since the focus of the study were female patients of GAD who were also pregnant. This study also examined children of up to 18 months of age who were exposed to BZDs interventions.

The addition criteria of all the studies stressed on and underlying diagnoses. Although an underlying addition criterion for participants in all the studies was receiving antianxiety medication and did not specify other possible conditions contributing to anxiety. All studies used

for this literature review embraced the same EBP intervention which stressed on the effect of psychoeducation on mediation choices among participant to decrease benzodiazepine use. Through psychoeducation on lifestyle changes among participants to decrease benzodiazepine use, all studies reported that participants experience less anxiety, higher productivity, and overall feeling healthy after they started exercising, meditating, walking, and started psychotherapy.

Guiding Theory

The theoretical framework that would assist with implementation of this evidence-based project (EBP) is Kurt Lewin's Change Theory. This theory was first introduced in the 1940s. It provides a ground for effective implementation of change by a person or an entire group of people (Curtis et al., 2016). For a patient with a new or currently existing diagnosis of anxiety to adapt to changes in medications and lifestyle through psychoeducation, going through a transformational change would need to occur. This change process goes beyond the superficial alterations which are easily noticeable to address the mental and emotional need to attain wellbeing.

Lewin's change theory is based on three basic core concepts. First one is 'driving force', the second is 'restraining force' and equilibrium being the third, which are simply referred as unfreeze, change, and refreeze (Lewin, 1999). In this model work is divided into three categories. Each category represents a step. Step one is Unfreezing. The subjects are made to unlearn their old habits. Different methods of perspective changing, and unlearning can be applied according to the subject. In the change phase new habits are introduced to the subject. In this stage compatibility of subject with the new method is also recorded. If this change process is successful, we enter the third and final stage that is refreeze. In this stage we try to make this

newly introduced habit a permanent habit. This will require periodic follow ups and deadline setting.

Lewin stated that while driving force tends to move in the directed direction, restraining forces which are also present, act as a barrier in the path of our new change process. The interaction of these forces usually causes imbalance however when restraining forces become equal to driving forces, equilibrium is reached and as result no change takes place. Recognizing the restraining forces timely, and successfully decreasing them is essential to achieve the desired effect of the newly introduced change. Prescriber should reinforce a patient's desire to obtain a healthy mind that will be used as a driving force for treatment while discouraging misuse of benzodiazepines which acts as a restraining force. Using the principles of Lewin's Change theory, prescribers should provide the patients with tools and knowledge to learn and apply this knowledge to get healthier lifestyle. This helps patients to be less dependent on medication while managing their anxiety and staying benzodiazepine free.

In 1999 Lewin and Gold explained that it is necessity for any social change to work that the patients should be able to reference whenever needed, by ensuring reinforcements and follow ups. Properly and systematically educating patients about danger of prescribed benzodiazepines medications and alternative options to treat anxiety through psychoeducation can potentially bring people towards healthier lifestyle and navigate towards protecting each other and enhancing overall patient outcomes with decreasing benzodiazepine crisis.

Application to the DNP Project

The de-escalation benzodiazepine program patterned through Kurt Lewin's Change theory contributes to the stages that the patient with anxiety was going through during the project. Lewin's complex processes were explained in three major stages of change. These stages

were referred to as *unfreezing*, *moving*, and *refreezing*; that an individual went through to achieve lasting change (see Appendix B).

In the *unfreezing* stage of change, the prescriber helped the patient, who may be misusing benzodiazepine, to understand the value and need for change, through detailed education (Lewin, 1999). The first stage, *unfreezing*, tends to decrease hostility to change from an inadequately educated patient about the need for change. This is a significant phase in the change process as it predicts the patient's reactions towards the change and points out if the process needs to be revised. During this phase, patients were educated on the negative long-term benzodiazepine use and other alternative strategies and medication regimens available should be shown to them. The potential risks of benzodiazepines were discussed thoroughly with patients because it is very necessary that the patient understands the process and importance of this project. To make sure that the patient can understand the rationale behind the initiation of this change process, effective communication crucial in this stage. The prescriber assessed the patient's currently used medications, his habits and any factors contributing to their anxiety.

After educating about the need for change and benzodiazepine misuse during the unfreezing stage, the second stage, the *moving* stage, focused on developing a favorable environment for change to occur (Curtis et al., 2016). In this stage, the prescriber introduced or reinforced healthier options to treat anxiety which guided patients to meditation, exercise, therapy, and prescribed alternative anti-anxiety medicines.

In the final stage of change theory, *refreezing*, stakeholders decided whether the change was successful or not while discussing challenges encountered or still facing, areas requiring improvement as well as planning for the way to move forward (Curtis et al., 2016). After making

sure that the new change is working for the patient, the prescriber tried to make this change a permanent habit.

Organizational Description

Setting

The project implementation occurred in an outpatient behavioral health clinic in Las Vegas, Nevada, in the summer of 2021. The clinic provides care to over 6,000 clients yearly with diverse mental illnesses including GAD. The team at the mental health clinic included psychiatrists, doctoral and masters prepared psychiatric nurse practitioners, medical assistants, an office manager, laboratory service personnel, information technology (IT) personnel as well as accounting/billing department. The clinic serves clients that over the age of 18 years to geriatric population. The common diagnoses managed at the clinic include bipolar disorder, depression, schizophrenia, substance abuse, posttraumatic stress disorder, attention deficit hyperactive disorder and anxiety disorder.

All patients receiving treatment at the clinic had some form of private, state, or federal-funded health insurance while others are private pay clients. Some of the clients are homeless residing at shelters who have health insurance coverage. The clinic is conveniently located on the public transportation route with primary care outpatient clinics as well as other healthcare facilities within proximity. The setting was selected for implementation of the project because of patients' subjective reports and objective assessment of benzodiazepine induced side effects including dependence as well as willingness to change to alternative strategies to treat anxiety.

Stakeholders

The Calm Clinic in Las Vegas, Nevada is part of a larger of franchise of health facilities. In this regard, organization stakeholders are the clinic management lead by the board and the chief executive officer. The management was expected to allow for the project to take place at the clinic and use of the resources. The organization management was also expected to implement the EBP findings if they meet outlined thresholds.

The interprofessional team at the practice site included psychiatrists, doctoral prepared nurse practitioners, medical assistants, an office manager, information technology (IT) personnel as well as accounting/billing department. Team members participated in this project according to their scope of practice and job description. The psychiatrists and other nurse practitioners referred patients, who were prescribed BZDs medications, to the Principal Investigator (PI) who was responsible for providing psychoeducation. Scheduling of participants for this project was the responsibility of the medical assistants. The preceptor for this project served as a resource for the PI while Information Technology (IT) personnel assisted in retrieving a list of patients with anxiety that are prescribed benzodiazepines from the electronic medical records (EMR) in the clinic. Project participants constituted an important group of this project's stakeholders whose understanding and implementation of the psychoeducational intervention were evaluated at the end of the entire project.

The major stakeholders within the ambulatory care setting who benefited from de-escalating benzodiazepine use program involved patients with anxiety, their families, healthcare providers involved in care, interdisciplinary healthcare team, insurance companies, and pharmaceutical companies. Some of the major drawbacks to integrating de-escalating benzodiazepine use within outpatient psychiatric care settings stem from being unaware of existing drug use, obtaining benzodiazepine from other sources, and receiving care from other

clinics with mental health services (Bersani et al., 2017). De-escalating benzodiazepine use in general has been supported by many professional groups.

DNP-prepared nurses or Advance Practice Nurses (APNs) with a specialization in psychiatry are well trained and well vexed in identifying, diagnosing, treating, and managing mental health disorders including GAD within the outpatient care setting. Although there were different avenues to integrate mental health services, the most beneficial approach is coordination of care (Olfson, 2016). In this way, patients with GAD who need a proper assessment using evidence-based practice tools, are directed to a clinic where the continuation of care can be provided (Olfson, 2016). Some of the disadvantages to this method of care delivery may be lack of reliable transportation to appointments, high copays, and conflict in schedule. Olfson (2016) describes a model of care where providers can receive specialized training in mental health disorders such as anxiety and continuation of holistic care, so continuation of care is smooth. In this business plan, the project is an advanced step further and instead of training Primary Care Providers (PCPs), DNP-prepared Psychiatric Mental Health Nurse Practitioners offer mental health services with de-escalation of benzodiazepine use and their follow up appointment. This decreases continuation of the same medication regimen that involves benzodiazepines, decreases risk for misuse, costs of care, and improve patients' outcomes. When de-escalation of benzodiazepine use programs are integrated into the treatment plan of all the patients with diagnosis of GAD and BZDs use, there is a multidisciplinary team involved and that decreases the risk for polypharmacy as well as provision of care to ensure that mental care needs are met without gaps.

Organization Assessment

Regarding informatics, the clinic has integrated various technologies into its operations.

For instance, there are electronic medical records for storing patient records and the use of computerized physician order entry. In line with the project purpose the clinic uses electronic prescription which will be used to retrieved records to evaluate the project progress.

At the clinic there is a holistic approach to delivering services to patients. The clinic leadership ensures that there are adequate human and fiscal resources to deliver feasible services in line with federal requirements and existing clinical guidelines. Also, there is coordination and collaboration between health care practitioners involved in patient care.

Strengths. The clinic has an organization where it is dedicated to evaluating existing ways of delivering services and improving them where there is need. Also, the clinic leadership has consistently supported and encouraged implementation of EBP which they are convinced about positive effects on the organization. The clinic has qualified and experienced team of psychiatrists who implemented the project.

Weaknesses. Whereas the organization is devoted to improving of services and implementing of EBP, only a few have been conducted at the site and their findings implemented. The organization has set a high threshold for approving EBP projects at the site and adopting their findings.

Opportunities. Providing an intervention to reduce the misuse of BZDs leads to an improvement in patient outcomes and have positive effects on the organization. The clinic attends to patients who have been diagnosed with GAD hence there is an opportunity to de-escalate the use of BZDs.

Threats. One threat was that the project was affected by COVID-19. There were regulations that limit physical contact and there was a chance of a ban on movement. This could lead to project discontinuation or postponement until such a

time it is feasible to implement as conceptualized.

Congruence

Risks associated with using benzodiazepines raise concern among patients and healthcare providers. Internal evidence such as patient's clinical status/circumstances, patient's preferences, and outcomes of quality improvement projects were considered during clinical decision making (Bersani et al., 2017). For this project, in addition to patients' subjective reports of benzodiazepine dependence and exacerbation of symptoms of anxiety, underlying disease processes related to prescribed benzodiazepines, patient's current underlying factors, lifestyle, stressors, dietary habits, medical conditions as well as physical activity level were analyzed prior to delivery of psychoeducational intervention and decreasing or discontinuing benzodiazepines. This internally generated data was compared with national and global statistics of the problem of benzodiazepine use crisis, fetal risks of its misuse and its impact on society.

The project took place at the Calm Clinic that is a Limited Liability Company (LLC) where patients with mental health needs received services at the same location as their outpatient mental health clinic-Anywhere Clinic. Alterations were made to the initial introduction of the program to the potential clients who are in the mental health clinic. The practice is operated by board-certified Psychiatrist Mental Health Nurse Practitioner and includes services offered by a board-certified DNP-prepared psychiatric nurse practitioner. Calm Clinic as a mental health practice was originally formed by Psychiatrist, Dr. Sam Zand in 2017. The main mission of the practice is to help patients to maintain mental health in a compassionate and professional environment. Their philosophy is to allow patients having a healthy and enjoyable life with an organizational goal for the team to provide a high quality, patient-centric, and safe care for the patient who suffer from anxiety and risking benzodiazepine dependence. Additionally,

decreasing benzodiazepine prescribing and therefore use by implementing de-escalating benzodiazepine program and education (Johnson & Garvin, 2017).

Statement of Mutual Agreement

The clinic's management and practitioners working at the facility have agreed to collaborate with the DNP student towards the implementation of this project. The management has permitted the student to implement the project at the facility towards improving benzodiazepine prescription practices among the practitioners at the clinic.

Methodology

Aims & Objectives

The purpose of the project was to implement a guideline compliance program that assists in helping providers appropriately prescribe and/or de-escalate benzodiazepine use. Through this program, prescribers were challenged to better utilize evidence-based practice guidelines when providing care for adults with GAD via a reminder card. This helped to reinforce best practice and ultimately reduce long-term risks to patients. Specific goals were to adhere to guidelines, de-escalate benzodiazepine use (when appropriate), and promote sobriety (**T**) over an eight-week time frame.

Objectives:

I. Provide education to prescribers to reinforce evidence-based guidelines in treatment of GAD and reinforce this teaching via a reminder card summarizing the guidelines for GAD on one page.

II. Evaluated Outcomes:

   a. Compliance Outcome 1: Ensure that 100% of patients were offered a non-pharmacologic adjunctive therapy at each visit

b. Compliance Outcome 2: Ensure that 100% of patients receiving appropriate medications either:
    i. If Benzodiazepine Dependent: offered opportunity to de-escalate at each visit. The goal was to reduce the benzodiazepine prescriptions by 50% or more.
    ii. If Benzodiazepine Naive: offered alternative or appropriate use of benzodiazepine per the GAD guidelines.
c. Health Outcome (Anxiety): The anxiety level of all the patients were monitored. The goal was to have reduction of anxiety from baseline, though the response may be very individualized.
d. Process Outcome 1: At least 75% of the prescribers at the Calm Clinic reported use of the reminder card while treating their patients with GAD.
e. Process Outcome 2: 100% of providers completed the program evaluation for the purpose of feedback and improvement.

Implementation Framework

The Plan-Do-Study-Act (PDSA) cycle served as the guiding framework to evaluate current guidelines used in screening, diagnosing, and treating adults with GAD (see Figure 1). The PDSA cycle is an iterative, four stage problem solving model used for improving a process or carrying out a change (Coury et al., 2017). It is often used in quality improvement projects, where the aim is to improve the quality of care through collaborative changes in practice.

Step 1: Plan

During Step 1, the DNP student recruited a team comprised of relevant stakeholders required to implement the change – 6 clinicians and administrative staff. Then, an initial meeting

to discuss the current treatments for patients with GAD, educate on benzodiazepines, and introduce a reminder card with the preferred guideline. The primary investigator discussed the importance and benefits of using GAD-7 to measure anxiety levels objectively, SSRI as first-line treatment v benzodiazepine, CBT as adjunctive therapy, and importance of offering the opportunity to de-escalate current benzodiazepine use. All relevant partners were notified of the study prior to the start date.

Step 2: Do

Step 2 involves implementing the reminder card. Three providers recruited patients to the project who are being treated for Generalized Anxiety Disorder. The providers utilized evidence-based guidelines and the card to treat the patients. Over a eight-week period, data was collected to determine their level of success with project outcomes (previously listed). Patients were assigned a random number for de-identification and chart reviews were completed retrospectively to evaluate project outcomes: 1) offered a non-pharmacologic adjunctive therapy at each visit; 2) offered appropriate medication therapy (naive v dependent); 3) objective evaluation of anxiety via GAD 7; and 4) overall number of benzodiazepine prescriptions used.

Step 3: Study

During Step 3, the project leader hosted discussion to gather feedback from the providers who used a quick reference card while treating adult patients with GAD, focusing on barriers and facilitators to implementation. To understand if the education and card resulted in an improvement the number of BZDs prescriptions, therefore, de-escalation of benzodiazepine use were assessed. In tandem, discussions about experience of using the card informed about needed improvements in using the guidelines.

Step 4: Act

Step 4 involved a final assessment of the process and thoughts on how to move ahead. The Act stage in this process for improvement was two-fold. Using the information and revelations assessed in the study phase, the team updated and altered the plan for change to build on change facilitators and address barriers to implementation. This step also involved documentation describing the outcomes of this process, including publication of results, so that others can evaluate the evidence generated here and consider changes in clinical practice. The second part of this phase was to reflect and create documentation that describes the outcome of this process so that others can see the outcome of this study and make their own plans for change.

Population and Setting

The population targeted in this change project was prescribers who are physician assistants and nurse practitioners treating adult patients diagnosed with GAD. This study occurred at the Calm Clinic in Las Vegas, Nevada. The clinic was responsible for providing outpatient mental healthcare for adults. Using the evidence-based practice guidelines to treat patients diagnosed with GAD while de-escalating benzodiazepine prescribing was a critical goal for the clinic.

Recruitment Method

Following IRB approval of the project, the providers utilized the card. After 8 weeks, the patient charts were reviewed. The charts were selected if the patient was 18 years old and older, diagnosed with GAD, and being treated at the Calm Clinic. Patients were English-speaking (Appendix H). The goal was to recruit 30 patients minimum, 50 maximum per provider (6) over a period of 8 weeks.

IRB Submission Process & Ethical Considerations

A review application for Internal Review Board (IRB) approval was obtained from Eastern Kentucky University (EKU) before the beginning of this project. After receiving approval from EKU's IRB.

Though the patients were treated for a mental illness, the goal of this project was to help providers comply to standards of care. Therefore, there was no increased risk to the patient. It is important to note also, that ultimately the decision to prescribe medication was made between the provider and with the input of the patient. Especially in the case of de-escalating use of benzodiazepine use in patients already using the medication, the goal was to offer the opportunity to de-escalate. Patients may choose their own path/therapy with the supervision of the individual medical provider. The reminder card was designed to merely "remind" the provider of best practice. The patient chart review was purely retrospective.

Instruments

Demographic & Pre-Intervention Form

The providers involved in the project were asked to complete a simple demographic form that describes their age, medical training, and experiences with benzodiazepine prescribing. The goal was to describe the population and document their input and perspective (Appendix C).

Chart Review

Patient information were organized by provider. Under each provider, the patients were assigned a random number for chart review and the master list linking the provider and patient maintained at the Calm Clinic by the primary investigator in the secure electronic health record. Each chart was reviewed to ensure:

- Offered of a non-pharmacology therapy at each visit for GAD
- Offered of appropriate medication therapy and/or opportunity to de-escalate
- Assessed anxiety using GAD-7
- Number of overall benzodiazepine prescriptions per provider pre and post intervention

GAD-7 Scale

To measure the anxiety level of the patients, pre-intervention and post-intervention, as well as during the 8-week implementation time, GAD scale-7 or GAD-7 scale was used (see Appendix D). This tool is a self-reported questionnaire that screens the severity of the anxiety of the patient. There are seven items or questions in the GAD-7 scale. The GAD-7 items include: 1) nervousness; 2) inability to stop worrying; 3) excessive worry; 4) restlessness; 5) difficulty in relaxing; 6) easy irritation; and 7 fear of something awful happening (see Appendix D). Assessment is indicated by the total score, which is made up by adding together the scores for the scale of all seven items. It measures the severity of different signs of GAD with each having some assigned points. The questions included are regarding excessive worry, easy irritation, fear of something awful happening, difficulty in relaxing, inability to stop worrying, nervousness, and restlessness. Each of these measures has a score rating of 10, and together they make total of 70 points. The specificity value is 0.82 and sensitivity value is 0.89 to identify as GAD diagnosis. The GAD-7 scale was developed in 1990s, and currently it is the most used tools to assess the anxiety level for GAD (Pascal et al., 2017).

Process Evaluation

During this project, a data collection form was provided to participants on the first and last day of the follow up appointments. The form collected information on anxiety level and

number of benzodiazepine prescriptions before and after starting the quick reference card use. Participants also completed a weekly log, during the 8-week of project, which tracked their BZDs scripts and patients GAD scores (see Appendix G).

Data Analysis, Security, and Storage

Only de-identified patient data was extracted during chart review. The chart review spreadsheet was kept locked in the office of the primary investigator at the Calm Clinic. After three years it will be destroyed as per EKU IRB policy.

Data was analyzed in chart review using measures of central tendency – mean, median, and mode. A paired sample, t-test was used to compare GAD-7 scores pre and post intervention for each domain. Cohen D efficient was used to determine overall effect. The process evaluation form was reviewed by two reviewers and coded for themes.

Timeline of Project Phases

Recruitment period of participants occurred approximately 7 days prior to the beginning of this project (see Appendix J). The eight-week de-escalating benzodiazepine project was conducted in the clinic within an eight-week timeframe while still preserving the fundamental principles of the project. Participants reported results from appointments weekly, for eight-week. The participants were established prescribers that work at the Calm Clinic. During the first meeting with the project leader, participants provided general information about the project and all guidelines on quick reference card. The Medical Assistant (MA) assisted with data of the patients which took about 15 to 20 minutes and was completed before the first and the last appointment.

Anticipated Implementation Barriers

The project sample size represented might be a small fraction of the target patient population which could have benefited from this project. The eight-week timeframe for project implementation and evaluation might not be adequate to assess the long-term use of quick reference cards by providers. Participants' personal assessment of using quick reference cards as well as alternative strategies to manage anxiety might pose a limitation to the project due to possible discrepancies in reporting. The community impact of the COVID 19 pandemic caused anxiety among patients might be leading to lower involvement in the project at the end due to underlying medical conditions which affected project sample size.

Results

The IRB approved the project on 10/08/2021. Recruitment of providers began 10/08/2021. A total of 6 (N=6) participants who were Mental Health Nurse Practitioners completed the pre and post-test assessment. There were 3 females and 3 male participants within the age range of 30 to 50 years of age: with a mean age of 36.

Compliance Outcomes

To assess compliance outcomes patient chart audits were completed anonymously and with permission of patients' provider. In total of 69 patients' charts were reviewed. The charts were audited to determine if outcomes were met.

Outcome 1: Charts were reviewed (N=69) and all the patients were offered CBT, exercise, meditation during the first appointment as a baseline and moving forward, continuing to monitor for 8 weeks. The goal to offer 100% of patients a non-pharmacologic adjunctive therapy at each visit was fully met.

Outcome 2: Benzodiazepine Prescriptions. The goal of this outcome was to ensure that 100% of patients received appropriate medications. Over the 8-week period, 16 benzodiazepine prescriptions were written for the selected sample of patients (N=69). Of these prescriptions, n=16 were given to the patients who were already using benzodiazepines, n=2 were given to the patients who were benzo naive. The average number of benzodiazepine prescriptions written to a group of 69 patients before introducing the quick reference card was 18 that included 4 prescriptions for benzo naïve patients and 14 for the patients who have already used the benzodiazepines. This indicates decrease in benzodiazepine prescriptions by 11% over the 8-week period. The goal to reduce prescriptions by 50% was not met, however, the PI intends to monitor the data.

The documentation in the chart indicated that 100% of these patients (N=69) were offered the opportunity to de-escalate benzodiazepine use by decreasing doses, alternative medications, psychotherapy or were prescribed medications according to guidelines, therefore, the goal of providing 100% of patients appropriate medications was met. This outcome goal was fully met.

Health Outcome: The anxiety level of all the patients (N=69) were monitored. The goal was to have overall reduction of anxiety in a group after reinforcing guideline adherence. The overall average on GAD-7 pre-intervention was 15.83 among all participants. The overall overage post-intervention was 10.90 among all participants. When analyzed, a paired sample t-test demonstrates a p -value of <0.001 which indicates that statistical significance was met. The finding was clinically significant because demonstrated decrease in GAD-7 scores when guidelines were followed by prescribers. The Cohen's d of (68) which indicated a large effect.

Process Outcomes

Outcome 1: Use of Guidelines. At least 75% of the prescribers reported use of the reminder card while treating their patients with GAD. Collectively, 5 out of 6 participants (83.33%) reported a consistent use of a quick reference card, 1 participant (16.67%) reported not being consistent with using the card.

Outcome 2: Program evaluation. A post intervention evaluation form was completed by all six participants on the last day of the group sessions. All participants (N=6; 100%) reported the sessions provided an overview of the EBP guidelines to treat GAD and explained the risk of benzodiazepines use. All the participants (N=6; 100%) reported the sessions provided tips on alternatives treatments for patients with GAD and ways on how to decrease number of BZDs prescriptions. All participants (N=6; 100%) reported the group sessions resulted in substantial reduced number of BZDs prescriptions through alternative medications and therapies.

Discussion

The findings indicated that utilizing EBP guidelines in treatments of patients with GAD decrease overall scores on GAD-7 and reduce number of BZDs prescriptions. Approximately two-thirds of patients showed improvement and recovery from their symptoms of anxiety, and three-quarters showed reliable improvement on symptoms of anxiety. Several RCTs (Bandelow et al., 2017; Shinfuku, 2019; Liebrenz et al., 2015; Carr et al., 2019) and qualitative study (Liebrenz et al., 2015) support the need to utilize guidelines to de-escalate use of benzodiazepines in treating patients with GAD through psychoeducation enforcing using alternative treatments and therapy. The literature reviewed in this project highlighted the positive

impact psychoeducation which emphasized first line treatments and guidelines for GAD, decreased use of benzodiazepines by choosing alternative anti-anxiety medications and treatments (Bersani et al., 2017). The findings from this project are consistent with the literature.

Participants reported improvement with their anxiety level as they were engaged in therapy and non-BZDs over the eight-week period of this project. The finding from the project was clinically significant because demonstrated decrease in GAD-7 scores when guidelines were followed by prescribers. Results of the paired t-test, presented in Table 3, compared the pre and post GAD-7 scores as well as a paired sample t-test for the overall GAD-7. There was significant increase in pre-test score for GAD-7 (M = 15.83, SD = ± 2.74) compared to post-test score for GAD-7 (M = 10.90, SD = ± 4.81) (Table 3).

Although, the goal to reduce prescriptions by 50 % was not met, 100 % of the patients were offered the opportunity to de-escalate benzodiazepine use by decreasing doses, alternative medications, psychotherapy. Based on the outcome of this project, utilizing EBP guidelines to de-escalate BZDs use with an emphasis on alternative medications and therapy can increase awareness and reduce benzodiazepine use. It also encourages behavioral changes on ways to manage care for patients with GAD and being prescribed BZDs.

Limitations

The project sample size (n=69) represented might be a small fraction of the target patient population which could have benefited from this project. The eight-week timeframe for project implementation and evaluation might not be adequate to assess the long-term use of quick reference cards by providers. Participants' personal assessment of using quick reference cards as well as alternative strategies to manage anxiety might pose a limitation to the project due to

possible discrepancies in reporting. The community impact of the COVID 19 pandemic caused increased anxiety among patients but might be leading to lower involvement in the project at the end due to underlying medical conditions which affected project sample size.

Implications

Clinical Practice

The EBP project focused on educating participants on EBP guidelines that will reduce prescribing BZDs through psychoeducation, using alternative anti-anxiety medications, and encouraging therapy. The intervention was successful in improving patient outcomes as evidenced by the post-intervention data and is aligned with the overwhelming support for psychoeducational intervention in already existing literature (Bandelow et al., 2017; Carr et al., 2019; Liebrenz et al., 2015; Shinfuku, 2019). This eight-week project although brief in time frame, suggested benefits for a longer duration of a similar project. The DNP-prepared nurse could thus play a leading role in identifying, implementing, and sustaining facility wide changes which would improve the overall wellbeing among the patients diagnosed with GAD.

Policy

At the local, state, and national levels, advocacy for legislations and programs which would improve health literacy through providers' education especially among mental health prescribers who treat patients diagnosed with GAD to be to be considered. Programs focused on psychoeducation explaining the EBP guidelines to treat patients with GAD and ways to minimize prescribing benzodiazepines could bridge the health disparity gap among patients diagnosed with GAD and using BZDs. According to the American Association of Colleges of Nursing (AACN), one role of the DNP-prepared advance practice nurse is to become an innovative leader in the transformation of the current health care system (AACN, 2004). The

DNP prepared nurse must be prepared and ready to lead, collaborate and advocate with the goal of improving patient and healthcare outcomes.

Quality and Safety

Prolonged use of benzodiazepine among persons with anxiety and related disorder may exacerbate health conditions by leading to increased anxiety and increase risk for complications including death (Hayhoe & Lee-Davey, 2018). This reinforces the need to de-escalate benzodiazepine use. De-escalating the use of benzodiazepines for adults is crucial in concerted health promotion initiatives to promote the appropriate use of the medication, prevent harm from abuse, and improve patient outcomes (Suss & Oldani 2020). Healthcare providers particularly nurse practitioners and physician assistant play a significant role in promoting proper use of and in de-escalation among patients with anxiety who have misused the drug (Platt et al., 2021). This is achieved by implementing evidenced based practice guidelines that will reduce potential for benzodiazepine misuse and abuse.

In addition to psychoeducation on EBP guidelines to treat patients with anxiety, healthcare providers are encouraged to routinely monitor patients at risk for benzodiazepine misuse and educate them about different options to treat their anxiety (Bersani et al., 2017). Adhering to evidence-based guidelines on appropriate screening protocol and benzodiazepine safety monitoring would not only decrease benzodiazepine use but eventually save lives (Bersani et al., 2017).

Education

Implementation of EBP guidelines leads to improving a quality of care and best outcomes for the patient with generalized anxiety, reduces cost and disparity, empowers clinicians, and

increases role satisfaction (Melnyk & Fineout-Overholt, 2015). Continuity of seeking and implementing current best evidence practice is imperative to prevent outdated treatments for patients diagnosed with GAD that will lead to poor patient outcomes. The DNP-prepared nurse must continue to implement practice change projects, educate providers, patients and their caregivers, advocate policy changes that sustains EBP change and embrace new evidence to combat non-adherence. It will be beneficial for future work to recognize the role of families/caregivers. Providing psychoeducation to the providers that treat patients with anxiety on the need to include healthy lifestyle changes in the lives of patients prescribed benzodiazepines and other anti-anxiety medications will be more effective than an individual session.

Sustainability

Long term strategies are needed to sustain a project change. Upon completion of this EBP change project, the PI and stakeholders at the implementation site was considering several approaches to sustain the positive changes that were achieved. These approaches include the addition of psychoeducational groups to treatment as usual for patients prescribed benzodiazepines and anti-anxiety medications. Psychiatrists, APRNs, and Physician Assistants (PA) at the clinical site recommended psychoeducational sessions about available treatments for generalized anxiety to patients, and front office staff have been assigned to compile names for the Licensed Clinical Social Workers (LCSW) who developed group sessions involving prescribers as well. Participants who took part in the recently completed EBP change project were given the opportunity to participate in educational sessions, with the goal of reinforcing what was previously learned.

Future Scholarship

Collaboration among a wide range of mental health providers is planned to engage a larger number of participants and to implement future projects in a larger area of the community. Poster presentations at professional organizations for mental health providers such as American Psychiatric Nurses Association (APNA) Nevada chapter will be utilized to accomplish this goal. Psychoeducational intervention based on EBP guidelines must be added to regular appointments and incorporated into treatments for patients prescribed BZDs medications and alternative treatments for GAD. Prescribers are more likely to adhere to EBP guidelines reference card if they have a better understanding of GAD, options of treatments, and risks related to benzodiazepine use.

Conclusion

The consequences of misusing benzodiazepines are dire. Utilizing psychoeducation during treatment as usual can be an effective intervention in improving utilization of quick reference cards as EBP guidelines for managing patients who suffer from anxiety. Psychoeducational interventions are designed to impart knowledge on risks of benzodiazepine misuse and choosing alternative medications and strategies to treat anxiety. The pre-test and post-test data analysis among participants before and after the project intervention will reinforce that psychoeducation positively impacts lifestyle changes among patients prescribed antianxiety medications. Implementing the tenets of this project at the practice site as well as other behavioral health sites could set new standards and eventually improve overall wellbeing for patients diagnosed with generalized anxiety disorder.

References

Baldwin, D. S., Anderson, I. M., Nutt, D. J., Allgulander, C., Bandelow, B., den Boer, J. A., Christmas, D. M., Davies, S., Fineberg, N., Lidbetter, N., Malizia, A., McCrone, P., Nabarro, D., O'Neill, C., Scott, J., van der Wee, N., & Wittchen, H. U. (2014). Evidence-based pharmacological treatment of anxiety disorders, post-traumatic stress disorder and obsessive-compulsive disorder: A revision of the 2005 guidelines from the British Association for Psychopharmacology. *Journal of Psychopharmacology*, 28(5), 403–439. https://doi.org/10.1177/0269881114525674

Balon, R., & Starcevic, V. (2020). Role of benzodiazepines in anxiety disorders. *Advances in Experimental Medicine and Biology*, *5*(3), 367-388. https://doi.org/10.1007/978-981-32-9705-0_20

Bandelow, B., Michaelis, S., & Wedekind, D. (2017). Treatment of anxiety disorders. *Dialogues in Clinical Neuroscience*, *19*(2), 93-107. https://dx.doi.org/10.31887%2FDCNS.2017.19.2%2Fbbandelow

Bathla, M., Singh, M., & Relan, P. (2016). Prevalence of anxiety and depressive symptoms among patients with hypothyroidism. *Indian Journal of Endocrinology and Metabolism*, *20*(4), 468-474. https://dx.doi.org/10.4103%2F2230-8210.183476

Bandelow, B., Reitt, M., Röver, C., Michaelis, S., Görlich, Y., & Wedekind, D. (2015). Efficacy of treatments for anxiety disorders. *International Clinical Psychopharmacology*, 30(4), 183-192.*https://doi.org/10.1097/yic.0000000000000078*

Bersani, F., Biondi, M., Coviello, M., Fagiolini, A., Majorana, M., Minichino, A., Coccanari Foreni, M. (2017). Psychoeducational intervention focused on healthy living improves psychopathological severity and lifestyle quality in psychiatric patients:

preliminary findings from a controlled study. *Journal of Mental Health*, 26(3), 271–275. https://doi.org/10.1080/09638237.2017.1294741

Brett, J., & Murnion, B. (2015). Management of benzodiazepine misuse and dependence. *Australian Prescriber,* 38(5), 152-155. https://doi.org/10.18773/austprescr.2015.055

Carr, F., Tian, P., Chow, J., Guzak, J., Triscott, M., Sun, X., & Dobbs. B. (2019). Deprescribing benzodiazepine among hospitalized older adults: quality improvement initiative. *BMJ Open Quality*, 8(3). *https://doi.10.1136/bmjoq-2018-000539*

Charfi, N. (2017). Chronic benzodiazepine use in aged patients with depressive disorder. https://doi.org/10.26226/morressier.5885d713d462b8028d891061

Conn, D. K., Hogan, D. B., Amdam, L., Cassidy, K. L., Cordell, P., Frank, C., Gardner, D., Goldhar, M., Ho, J. M., Kitamura, C., & Vasil, N. (2020). Canadian guidelines on benzodiazepine receptor agonist use disorder among older adults. *Canadian Geriatrics Journal*, 23(1), 116–122. https://doi.org/10.5770/cgj.23.419

Coury, J., Schneider, J. L., Rivelli, J. S., Petrik, A. F., Seibel, E., D'Agostini, B., Taplin, S. H., Green, B. B., & Coronado, G. D. (2017). Applying the Plan-Do-Study-Act (PDSA) approach to a large pragmatic study involving safety net clinics. *BMC Health Services Research*, *17*(1), 411. *https://doi.org/10.1186/s12913-017-2364-3*

Davidson, J. R., Zhang, W., Connor, K. M., Ji, J., Jobson, K., Lecrubier, Y., McFarlane, A. C., Newport, D. J., Nutt, D. J., Osser, D. N., Stein, D. J., Stowe, Z. N., Tajima, O., & Versiani, M. (2010). A psychopharmacological treatment algorithm for GAD

(GAD). *Journal of Psychopharmacology*, 24(1), 3–26. https://doi.org/10.1177/0269881108096505

Evans, K., Spiby, H., & Morrell, J. C. (2019). Non-pharmacological interventions to reduce the symptoms of mild to moderate anxiety in pregnant women. A systematic review and narrative synthesis of women's views on the acceptability of and satisfaction with interventions. *Archives of Women's Mental Health*, *23*(1), 11-28. *https://doi.org/10.1007/s00737-018-0936-9*

Faravelli, C., Rosi, S., & Truglia, E. (2019). Benzodiazepines. *Anxiety Disorders*, *8*(4), 313-338. https://doi.org/10.1002/9780470986844.ch17

Gautam, S., Jain, A., Gautam, M., Vahia, V. N., & Gautam, A. (2017). Clinical practice guidelines for the management of generalized anxiety disorder (GAD) and panic disorder (PD). *Indian journal of psychiatry*, *59*(1), 67-73. https://dx.doi.org/10.4103%2F0019-5545.196975

Hayhoe, B., & Lee-Davey, J. (2018). Tackling benzodiazepine misuse. *British Medical Journal*, 362-365. https://www.bmj.com/content/362/bmj.k3208

Hirschtritt, M. E., Olfson, M., & Kroenke, K. (2021). Balancing the risks and benefits of benzodiazepines. *JAMA*, *325*(4), 347-348. https://doi.org/10.1001/jama.2020.22106

Jones. (2016). Benzodiazepine withdrawal. *The International Handbook of Addiction Behaviour*, 108-112. https://doi.org/10.4324/9781315542355-25

Johnson, J., & Garvin, W. (2017). Advanced practice nurses: Developing a business plan for an independent ambulatory clinical practice. *Nursing Economic*, *35*(3), 126–141. https://go.gale.com/ps/i.do?id=GALE%7CA502001257&sid=googleScholar&v=2.1

&it=r&linkaccess=abs&issn=07461739&p=AONE&sw=w&userGroupName=anon%7E56b2bbf5

Lader, M. (2019). Benzodiazepines, anxiety and catecholamines. *Anxiety and the Anxiety Disorders*, 77-84. https://doi.org/10.4324/9780203728215-6

Lembke, A., Papac, J., & Humphreys, K. (2018). Our other prescription drug problem. *The New England Journal of Medicine, 378*(8), 693-695. https://doi.org/10.1176/appi.ps.201800321

Lewin, K., & Gold, M. (1999). The dynamics of group action. In M. Gold, M. Gold (Eds.), *The complete social scientist: A Kurt Lewin reader* (pp. 285-291). American Psychological Association.

Maust, D. T., Lin, L. A., & Blow, F. C. (2020). Benzodiazepine use and misuse among adults in the United States. *Psychiatric Services*, *70*(2), 97-106. https://dx.doi.org/10.1176%2Fappi.ps.201800321

Olfson, M. (2016). The rise of primary care physicians in the provision of US mental health care. *Journal of Health Politics, Policy & Law*, *41*(4), 559–583. https://doi.org/10.1215/03616878-3620821

Pascal, J., Shedden-Mora, M.C., & Lowe, B. (2017). Psychometric analysis of the Generalized Anxiety Disorder scale (GAD-7) in primary care using modern item response theory. *PLOS*. e0182162-e0182174. *https://doi.org/10.1371/journal.pone.0182162*

Peppin, J., Pergolizzi, J. V., Raffa, R. B., & Wright, S. L. (2020). *The benzodiazepines crisis*. Oxford University Press, USA.

Platt, L. M., Whitburn, A. I., Platt-Koch, A. G., & Koch, R. L. (2016). Nonpharmacological alternatives to benzodiazepine drugs for the treatment of anxiety in outpatient

populations: A literature review. *Journal of Psychosocial Nursing and Mental Health Services, 54*(8), 35-42. https://doi.org/10.3928/02793695-20160725-07

Roy-Byrne P. (2015). Treatment-refractory anxiety; definition, risk factors, and treatment challenges. *Treatment of Affective Dysfunction in Challenging Contexts*, *17*(2), 191-206. https://doi.org/10.31887/dcns.2015.17.2/proybyrne

Samardzic, J., & Svob Strac, D. (2016). Benzodiazepines and anxiety disorders: From laboratory to clinic. *New Developments in Anxiety Disorders*. https://doi.org/10.5772/64959

Schmitz A. (2016). Benzodiazepine use, misuse, and abuse: A review. The mental health clinician, 6(3), 120–126. https://doi.org/10.9740/mhc.2016.05.120

School of Health and Related Research (ScHARR), University of Sheffield. (2004). Clinical Guidelines for the Management of Anxiety: Management of Anxiety (Panic Disorder, with or without Agoraphobia, and Generalised Anxiety Disorder) in Adults in Primary, Secondary and Community Care. National Collaborating Centre for Primary Care (UK).

Shinfuku M., Kishimoto T., Uchida H., Suzuki T., & Mimura M. (2019). Effectiveness and safety of long-term benzodiazepine use in anxiety disorders: A systematic review and meta-analysis. *Int Clin Psychopharmacol, 34*(5), 211-221. https://doi.org/10.1097/yic.0000000000000276

Silberman, E., Balon, R., Starcevic, V., Shader, R., Cosci, F., Fava, G. A. & Sonino, N. (2021). Benzodiazepines: it's time to return to the evidence. *The British Journal of Psychiatry, 218*(3), 125-127. https://doi.org/10.1192/bjp.2020.164

Simon, N. M., Hofmann, S. G., Rosenfield, D., Hoeppner, S. S., Hoge, E. A., Bui, E., & Khalsa,

S. B. S. (2021). Efficacy of yoga vs cognitive behavioral therapy vs stress education for the treatment of generalized anxiety disorder: a randomized clinical trial. *JAMA Psychiatry*, *78*(1), 13-20. https://doi.org/10.1001/jamapsychiatry.2020.2496

Strawn, J. R., Geracioti, L., Rajdev, N., Clemenza, K., & Levine, A. (2018). Pharmacotherapy for GAD in adult and pediatric patients: An evidence-based treatment review. *Expert Opinion on Pharmacotherapy*, *19*(10), 1057–1070. https://doi.org/10.1080/14656566.2018.1491966

Suss, T., & Oldani, M. (2020). Little helpers no more: A framework for collaborative deprescribing of benzodiazepines in older adults. *Journal of Psychosocial Nursing and Mental Health Services*, *58*(1), 23-28. https://doi.org/10.3928/02793695-20191218-05

Sapra, A., Bhandari, P., Sharma, S., Chanpura, T., & Lopp, L. (2020). Using generalized anxiety disorder-2 (GAD-2) and GAD-7 in a primary care setting. *Cureus*, *12*(5), e8224-https://dx.doi.org/10.7759%2Fcureus.8224

The Agree Enterprise Trust. (2009). Appraisal of Guidelines for Research & Evaluation II. https://www.agreetrust.org/wp-content/uploads/2017/12/AGREE-II-Users-Manual-and-23-item-Instrument-2009-Update-2017.pdf

Trivedi, R., Post, E., Sun, H., Pomerantz, A., Saxon, A., Piette, J., & Nelson, K. (2015). Prevalence, comorbidity, and prognosis of mental health among US veterans. *American Journal of Public Health*, *105*(12), 2564–2569. https://doi.org/10.2105/ajph.2015.302836

Tyrer, P. (2019). Why benzodiazepines are not going away. *Advances in Psychiatric Treatment*, *18*(4), 259-262. https://doi.org/10.1192/apt.bp.111.009209

Appendix A

Table 1. Hierarchy Table

Melnyk Level	Evidence 1 (Bandelow, et al., 2017)	Evidence 2 (Bandelow, et al., 2015)	Evidence 3 (Roy-Byrne, et al., 2015).	Evidence 4 (Platt, et al, 2016)	Evidence 5 (Carr, et al., 2019).	Evidence 6 (Liebrenz, et al, 2015)
I	X		X			
II		X				
III						
IV				X		
V						X
VI					X	
VII						

Table 2: Synthesizing the Evidence

Fist Author (Year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definition)	Measurement	Data Analysis	Findings	Appraisal Worth to Practice
Bandelow, B, et al Dialogues in Clinical Neuroscience 2017:19(2):93-107	None	MA Purpose: compare the pre-post effect size differences (before and after treatment) between medications and psychotherapies	N=35,000 patients From 7yo to 65yo patients included in psychotherapy studies were less severely ill than those recruited for medication trials. Outpatient settings	IV1: Tx IV2: No Tx IV3: Other Tx DV1: level of anxiety	DV1 Hamilton Anxiety Rating Scale (HAM-A)	*Frequency *Relative risk	Anxiety level is lower after drug treatment and CBT.	Level of Evidence: I Strengths: large data, robust evidence-based recommendations that support the treatment of GAD, PDA, and SAD. Weaknesses: exclusion many groups Contribution: Large data and tools to diagnose and rate anxiety. In project, benzodiazepines can be used for a limited time period.

Bandelow, B, et al Int Clin Psychopharmacol 2015:30(4):183-92	None	MA SR CR Purpose: compare the efficacy of pharmacological, psychological and combined treatments for the three main anxiety disorders (panic disorder, GAD and social phobia)	N= 37,333 patients N= 27 publications Randomized controlled trials including adult participants (aged ≥18) receiving any pharmacological treatment for GAD	IV1: BZD IV2: No Tx IV3: SSRI DV1: level of anxiety	DV1 HAM-A	*Frequency *Relative risk	Anxiety level is lower after drug treatment that involves selective serotonin reuptake inhibitors	Level of Evidence: I Strengths: robust and transparent design, predefined research question was answered, analysis used standard and prespecified definitions for response and remission, analyzed extracted data using robust statistical methods. Weaknesses: used a single reviewer to assess publications during the data selection, some limitations evidence available for mixed treatment MA strength and validity of some treatment, limited data used to inform the statistical analyses Contribution

								compare the efficacy of pharmacologic al, psychological and combined treatments for the three main anxiety disorders
Roy-Byrne, P. Dialogue s in Clinical Neurosci ence 2015: 17(2): 191–206	None	MA Purpose: approach for treatment refractory anxiety STAR-D study for anxiety disorders	Panic N = 61 GAD N = 69 MDD N = 79 Over 12 months	IV1: Tx IV2: No Tx IV3: Other Tx DV1: level of anxiety	CALM study Effecti veness of differe nt method s of treatme nt for anxiety	Frequ ency of using benzo s and other metho ds of treatm ents Relati ve risk	A very low use of evidenc e-based anxiety treatmen ts in both primary care and even specialt y settings, though rates are much lower in primary care	Level of evidence: I Strength: the clinician should proceed by exploring combination treatment with multiple modalities (this has usually been tried already) and then either multiple novel medications, more aggressive, longer-duration CBT, or a switch to another psychotherapeu tic modality such as IPT or psychodynamic psychotherapy.

Platt, L.M. et al Journal of Psychosocial Nursing and Mental Health Services: 2016: 54(8), 35–42.]	None	MA Purpose: effect of using benzos , benzos vs alternative treatment Meta-analyses, Literature review	N=12 studies N = 1338 adult patients with anxiety Over 6 months clinical settings.	IV1: BZDs Tx IV2: No Tx IV3: Other Tx DV1: level of anxiety DV2: frequency of BZDs use	GAD 7 PDSS, SPIN	other methods of treatments Relative risk	Natural, non-chemical, anxiolytic treatments exist and can be safely recommended to patients.	Level of evidence: I Strength: strong data that supports that growing evidence exists that these treatments can be safely recommended to patients with anxiety. Weakness: not disclosed Contribution: Supports that overuse of benzodiazepine drugs to treat anxiety, mood, and sleep disorders is a growing problem in clinical practice.
Carr, F.,et al. BMJ 2019. *8*(3)	None	QI Purpose: Encouraging patients to commit to deprescribing BZD protocols and improve upon current benzodiaze	N= 12. Patients 65 or older currently using BZDs in a hospital's specialized treatment unit. Length of study over 3 months.	Number of patients that completed 100%, 50-99%, and <50% deprescribe. Proportion of patients that refused and reason for refusal.	Percentile (Quantitative)	Patient tolerance to deprescribe protocols Patient participation	Common side effect: Worsening of anxiety Medication review, patient education, and brief	Level of evidence: III Strength: High specificity, procured optimal outcomes, relevant information regarding implementation of deprescribing

		pine deprescribing archetypes. 3 month PDSA improvement cycle: method of Quality Improvement.		Incidence of complication		Success of depscribing Complications associated with depscribing protocol	counseling helped empower patients Depscribing successful	protocols for adults (65+ years of age). Weakness: Small sample size and data is limited to adults over 65 years of age. Contribution: Information can be used to design and conduct future studies with larger sample size and population. Data alludes to potentially promising deprescribing protocols and provides insight into commonly encountered complications.
Liebrenz M, et al PLoS ONE2015 10(11)	None	QS. Purpose: Primarily conducted to document patients' thoughts and perceptions about BZD use; assess trends and data to note applicabilit	N= 41. Adult patients meeting criteria for BZD-dependence according to the 10th revision of ICD-10 Patients at Psychiatric University	Highlighting patients' self-reporting beliefs and perceptions on factors contributing to their initial BZD use for mental disorders, as well as treatment preferences and how they	Subjective reporting and disclosures from patients via interview assessment	Frequency of use Reason for use Methods of obtaining BZD	Patients were transparent and communicative with regards to providing information relating to their	Level of evidence: VI Strength: aggregate unadulterated subjective data reports from patients with thoughtful reflections on their reasons of BZD use. Weaknesses: limit in its ability to

y and utility value to development of refined comprehensive treatment planning.	Hospital, Zurich between 2011-2012 General treatment settings and specialized SUD settings.	obtained BZDs.		BZD use. Patients are not utilizing pharmacotherapy with BZDs for abusive purposes, or as a means of un-substantiated increases in euphoria, or to satiate addiction.	provide high-quality data with robust utility value; there is an inability to make evidence-based inferences subsequent to completion of the study. Participation was voluntary; therefore, there is an immediate inherent bias. Contribution: Subjective patient reports provides assessment data pertinent to constructing future hypotheses, research studies, and treatment plans.

BAI = Beck Anxiety Inventory; CALM = Coordinated Anxiety Learning and Management; DV = dependent variable; EPDS = Edinburgh Postnatal Depression Scale; GAD-2 = GAD–2 items; GAD-7= GAD–7 items; AHM-A- Hamilton anxiety scale; IV=independent variable; NR= narrative synthesis; MA = meta-analysis; PDQ=Prenatal Distress Questionnaire; PHQ-9=Patient Health Questionnaire–9; ICD-10= International Classification of Diseases; PSWQ =Penn State Worry Questionnaire; RCT = randomized controlled study; SR = systematic review; QS = qualitative study

Table 3. Synthesizing the Evidence

Intervention Table

Intervention Details	Bandelow, B, et al 2017	Bandelow, B, et al 2015	Roy-Byrne, P 2015	Platt, L.M. et al 2016	Carr, F.,et et al 2019	Liebrenz M, et al 2015
Psychotherapy CBT	X	X	X		X	X
Combining psychotherapy and medications other than benzo	X	X	X	X	X	X
Assessment and intervention plan for benzo dependent or at risk	X		X		X	X
Exercise (eg, aerobic	X	X		X		

training, such as jogging 5 km three times a week)						
Hypnosis, autogenic training, and biofeedback or complementary medicine methods	X	X		X	X	
Stepwise plan for drug treatment	X		X	X	X	X

Appendix B

Theoretical Conceptual Framework

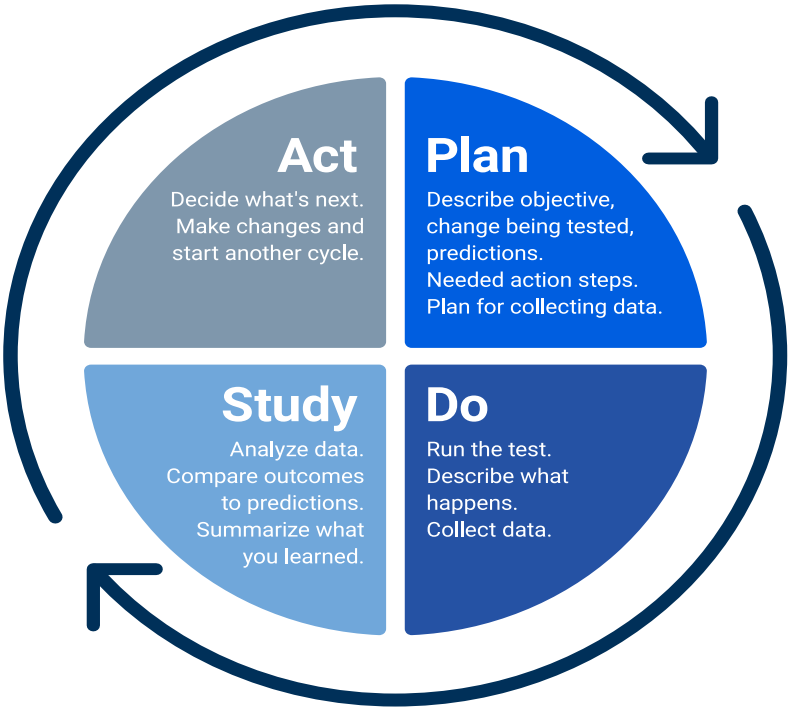
Kurt Lewin's Change Theory

- Stages
  - Unfreeze
  - Change
  - Refreeze

Lewin, K., & Gold, M. (1999)

EKU

Figure 1: Model for Improvement



Appendix C

Demographic & Pre-Intervention Form

Demographic form Question #	Question	Inclusion Rationale
1	Q: What is your age? Choices: 21-29 yo 30-39 yo 40-49 yo 50-59 yo 60or older	To identify generational learning preference
2	Q: Which type of degree do you have ? Choices: APRN PA	To distinguish educational paths

3	Q: What is your population of focus? Choices: Family Adult Gerontology Pediatrics Other	To distinguish within population that is being treated
4	Q: In your clinical training, have you encountered barriers in learning how to prescribe benzodiazepines? Choices: Yes No If yes, check all that apply: No access to guidelines Personal preferences	To assess barriers in prescribing benzodiazepines

5	Q: When you make choices to prescribe medications for GAD, what do you primarily base your choices on? Choices: Current patient's medications Personal preferences Other	To distinguish choices in prescribing medications
6	Q: How often are you using guidelines for Generalized Anxiety Treatment? Choices: Always Never Sometimes	To determinate if guidelines are used
7	Q: What tools do you use in diagnosing GAD? Choices:	To assess what tool is used

	Beck Anxiety Inventory (BAI) Penn State Worry Questionnaire (PSWQ) GAD 7 (GAD-7)	
8	What are the challenges when prescribing medications to treat patients with GAD? Describe	To allow clinicians to express their challenges in treating patient with GAD
9	What are the most common strategies do you use in treating patients with GAD? Scale 1-5 Choices: CTB Meditation Benzodiazepines Anxiolytics SSRIs	To determinate strategies that are used in treatment of GAD

Appendix D

GAD-7 Form

GAD-7

Over the last 2 weeks, how often have you been bothered by the following problems? (Use "✔" to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

(For office coding: Total Score T____ = ____ + ____ + ____)

Appendix E

Chart Review

Provider: Participants	Offered a non-pharmacologic therapy	Appropriate Medication Therapy	GAD—7 Baseline (Goal: ___)	GAD-7 Post	Number of Benzo Rx
Patient_ID 1					
Patient_ID 2					
Patient_ID 3					
Patient_ID 4					
Patient_ID 5					
Patient_ID 6					

Appendix F

Reference Card

GAD-7

Over the last 2 weeks, how often have you been bothered by the following problems? (Use "✔" to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

(For office coding: Total Score T___ = ___ + ___ + ___)

The first-line treatment and gold standard for treating anxiety is **CBT**

Medications: (SSRI) escitalopram, paroxetine, sertraline, (SNRIs) venlafaxine, duloxetine

2nd line gad maintenance: buspirone (BuSpar)

3rd line: benzodiazepines

Alternatives for GAD maintenance: hydroxyzine, pregabalin, quetiapine

tricyclic antidepressants (TCAs), monoamine oxidase inhibitors (MAOIs),atypical antipsychotic medications, other medications used off-label, such as beta-blockers

Lifestyle changes: Exercise, breathing techniques, meditation and mindfulness, restful sleep, avoid anxiety triggers (reduce or stop caffeine, alcohol, tobacco and other substances)

How is GAD diagnosed? DSMV-5 symptoms, difficult to control worry over 6 months: restlessness, easily fatigued, difficult concentration, irritable, muscle tension, sleep disturbance

Acute GAD treatment: be

Appendix G

Statement of Mutual Agreement

Eastern Kentucky University
Doctor of Nursing Practice (DNP) Program
Statement of Mutual Agreement

The purpose of this document is describe the nature of the agreement for the Doctor of Nursing Practice (DNP) Project between:
Student Name: Magdalena Malloy PMHNP-BC, DNP student_____
Partnering Organization Name: Calm Clinic_____

This statement of mutual agreement is completed in the DNP Project planning phase as a precursor to the Institutional Review Board (IRB) and to show general organizational support for the DNP Project.

General Information:

DNP Project Title:	Guideline Utilization to Promote De-escalation of Benzodiazepine Use in Adults with Generalized Anxiety Disorder
Partnering Organization:	Name of Organization: Calm Clinic Name of Organizational Contact: Scott Baxter or Sam Zand Phone:541 805-5857 Email: pa.scott.baxter@gmail.com or drzand@icloud.com

Brief Description of the Project:

Identified Problem/Gap:	Not using 1st line treatments for Generalized Anxiety Disorder
Proposed Intervention(s):	Utilizing cards with guideline to treat anxiety according to EBP
Proposed Evaluation of: • Outcomes • Process	Less prescriptions for benzodiazepines, lower score of GAD-7 Offering alternative treatments and meds
Description of On-Site Activities: • Student's Role • Meetings • Access to Data	Monitoring, educating, supporting staff and patients as needed Collecting data based on charts/retrospective chart review HIPPA compliance

Intellectual Property: • **Ownership** • **Plans for Dissemination** • **Non-disclosure expectations** • **Publication Plans**	**Retrospective chart review** **Protected data** **Destroyed after 3 years** **No publication plans** ***** All EKU DNP Projects will require at minimum a de-identified abstract to be uploaded into the digital repository as a marker of academic work.**

Institutional Review Board:

EKU is the IRB of Record	**The organization agrees to let EKU be the IRB of Record.** ❑ **X Yes** ❑ **No** ❑ **Other: (Explain)** ❑
Organization is the IRB of Record	**The organization prefers to be the IRB of Record.** ❑ **Yes** ❑ **X No** ❑ **Other: (Explain)**

Other elements for clarification prior to implementation of the DNP Project. Describe.

DNP Student Signature: _____
Date: 08/09/2021

Partnering Organization's Signature: _____
Date: 8/10/21

EKU
DOCTOR OF NURSING PRACTICE

Appendix H

Recruitment Flyer

Evidence Based Practice Project

Topic: De-escalating Benzodiazepine Use in Adults with Generalized Anxiety Disorder

Pupose: To study the effectiveness of GAD treatments acoording to treatment guidelines, without using Benzodiazepine

Weekly Plan

- Overview of currect guidlines to treat GAD
- Discussing benifits of de-escalating Benzodiazepine
- Changing GAD treatment practice by using quick reference cards
- Evaluating change results

Participants required: Pysical Assistants & Psychiatric Mental Health Nurse Practitioners

Project Timeframe: Weekly 15 - 20 minutes report of results (8 weeks)

Location: Calm Clininc

Magdalena Malloy, PMHNBC

Tel: (919) 257-0067

*Refreshments avaiable

Appendix I

Weekly Agenda for De-escalating Benzodiazepine Use Project

Weekly Agenda	Topics
Week 1	EBP guidelines and GAD treatment, GAD 7, DSM V GAD categories and proper dx, first line GAD tx, therapies, de-escalating use of benzodiazepine
Week 2	Reporting data from appointment Discussion
Week 3	Reporting data from appointment Discussion
Week 4	Reporting data from appointment Discussion
Week 5	Reporting data from appointment Discussion
Week 6	Reporting data from appointment Discussion
Week 7	Reporting data from appointment

	Discussion
Week 8	Chart Review Evaluation