

# Use of Benzodiazepines for Anxiety and Mood Disorders among High School Students with Low Academic Status: Implications for Mental Health Interventions

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## ABSTRACT

The prevalence of anxiety and mood disorders in adolescents is a growing public health concern worldwide. Mental disorders are a global health issue that can devastate the adolescent and family's mental, physical, emotional, developmental health, and social life. We examined the influence of motivational interviewing (MI) on the relationship between Benzodiazepine medication Use and Anxiety disorders among adolescent university students. A random sample of 1,000 students over 18 attending a large University in southeastern Nigeria was screened (using PHQ-9 and GAD-7). Adolescents with results indicative of anxiety or depressive symptoms ( $n = 120$ ) were advised to seek psychological health care. Participants who screened positive received either two sessions of MI or treatment as usual. The MI group demonstrated more willingness and confidence in treatment initiation. MI enhanced group treatment engagement in adolescents diagnosed with anxiety and mood disorders. Results indicate that Motivational interviewing mediates between benzodiazepine medication and Cognitive behavioral therapy in treating adolescent anxiety disorders.

## INTRODUCTION

Low-academic performance results in feelings of sadness, anxiety, fear, inferiority complex, pessimism, low self-esteem, ambivalence and low self-efficacy, insomnia, substance abuse addiction, lower mental health, and sometimes suicide (Umoh & Akpan, 2014). Nearly 1 in 3 adolescents ages 13 to 18 will experience an anxiety disorder. Of adolescents with any anxiety disorder, an estimated 8.3% had severe impairment (Berk, 2018; Christine et al., 2020). Approximately 6.0% of US adolescents aged 12-19 reported psychotropic drug use (Advokat, Comaty & Julien, 2019; Brown & Sammons, 2002; Christine et al., 2020). This growth in psychotropic medications in pediatric populations has led to controversies, including debates about the societal value and cultural meaning of pharmacological treatment of childhood behavioral and emotional disorders.

Benzodiazepines are the most used psychopharmacological treatment/ medications for anxiety disorders, particularly generalized anxiety disorder (Advokat et al., 2019). Benzodiazepines can be lethal and have played a significant role in the current overdose crisis (Preston et al., 2021). Addressing the intersection between Anxiety and the Use of Benzodiazepines is critical for adolescents with low academic performance. Furthermore, side effects are common. Because of the associated problems with their use, benzodiazepines have become stigmatized, as have the patients who use them and perhaps the doctors who prescribe them (Miller, 2022). Given the high dropout rates and limited resources available in psychiatric settings, the importance of engaging adolescents in evidence-based treatments cannot be understated. Research has shown that psychotherapy (cognitive-behavioral) and pharmacological treatment (selective serotonin reuptake inhibitors, SSRIs) are effective treatments. However, adolescents are highly resistant to considering

psychological care for themselves. Referring adolescents to mental health care without appropriately motivating them often fails. This study aimed to determine the efficacy of motivational interviewing (MI) as a brief pre-treatment intervention, to enhance treatment engagement in a group cognitive behavioral therapy (CBT setting) for adolescents with anxiety and mood disorders.

Adolescence is the peak period for anxiety disorders associated with the immaturity of neural networks underlying emotional regulation in this population (Xie et al., 2021). Generalized anxiety syndromes, social anxiety disorder (SAD), panic disorder, obsessive-compulsive disorder, and phobias are relatively common in adolescents. SAD is ranked among the top 10 chronic disorders, mental or physical, affecting objective outcomes such as days of work lost (Preston et al., 2021). Anxiety disorders often begin in adolescence and present a progressive, persistent, chronic, or recurrent course. The symptoms of anxiety in teenagers include recurring fears and worries about routine parts of everyday life, irritability, trouble concentrating, extreme self-consciousness or sensitivity to criticism, withdrawal from social activity, avoidance of difficult or new situations, chronic complaints about stomachaches or headaches (Preston, O'Neal, Talaga & Moore, 2021).

There are apparent differences in the characteristics of anxiety disorders in adolescents compared to children, including more severe symptoms, comorbid mood disorders, and difficulties attending school. Teens' symptoms are frequently more pronounced than expected in adults, secondary to their lack of resources and coping strategies. This is due to adolescents' normative drive for increased autonomy and their increased capacity for abstract, hypothetical reasoning, self-awareness, and self-reflection. Early intervention in adolescents' mental health can help build up the social and emotional skills essential for learning and life, support future good mental health, and discourage risky behavior such as smoking and substance use (Stahl, 2018). However, mental health issues are often neglected in current specialized medical care, and physicians encounter substantial barriers in motivating adolescents to utilize psychological support.

During routine visits in a school counseling unit or busy primary care practice, Counselors and providers can easily miss the psychosocial, behavioral, and socioeconomic symptoms that herald an underlying depression or anxiety disorder. They may also be unsure how to evaluate the everyday stress of academic stress and differentiate the severe signs of AD. School counselors and Nurses are uniquely positioned to provide more in-depth screening for such disorders. Finding psychiatric providers for referral can be another barrier to the early identification of at-risk teens.

### **Research Problem**

There is no classroom in any country where all students have identical learning styles and performance outcomes (Umoh & Akpan, 2014). The achievement gap among students has raised many concerns and resulted in significant empirical research. This achievement gap has lifetime consequences, including depression and anxiety disorders. Prescription drug abuse is an ever-growing problem globally. Benzodiazepines are the most used psychopharmacological treatment/ medications for anxiety disorders, particularly generalized anxiety disorder. While these drugs are rarely the primary drug of teen abuse, many seek them to escape everyday pressures. Benzodiazepines are not recommended for routine use. However, mental health issues are often neglected in current specialized medical care, and physicians encounter substantial barriers in motivating adolescents to utilize psychological support.

### **Purpose of the study**

The purpose of the current article was to: (a) provide clinicians with the clinical information needed to identify risk factors for and symptoms of AD at an early point in adolescence period (b) provide motivational interviewing techniques for early detection and intervention, and (c) provide a preliminary screening tool

to guide assessment.

### **Research question**

Does motivational interviewing (MI) mediate between using benzodiazepine medication and Cognitive behavioral therapy in treating anxiety disorders in adolescents?

## **BENZODIAZEPINE AND THE ADOLESCENT**

Benzodiazepines (BZD) are a group of depressant drugs used in treating drug use, anxiety, sleep disturbances, and depression, in addition to antidepressant drugs (AD) to address initial symptoms of anxiety. Benzodiazepines help speed up the onset of sleep, decrease awakening throughout the night, increase the amount of time spent sleeping, and reduce compulsive and excessive anxiety, fear, and tension (Advokat, Comaty, & Julien, 2019); (Barbui, 2009; Preston et al., 2021). Prompt benzodiazepines can ease the uncomfortable stress associated with the attack and give the absolute patient confidence that treatment can control the symptoms (Offidiani et al., 2013). This approach can improve short-term tolerability, although it may increase the risk of sedation and requires warnings not to drive after taking benzodiazepines (Offidiani et al., 2013).

Symptoms of benzodiazepine overdose include sedation and drowsiness, confusion, dizziness, blurred vision, weakness, numb feelings, increased feelings of isolation, poor judgment and decision-making capabilities, slurred speech, coma, and death from respiratory depression. Upon discontinuation, many individuals experience a “discontinuation syndrome” marked by uncomfortable and distressing physical symptoms, making it difficult for some to stop taking their medication (Advokat et al., 2019; Forand & DeRubies, 2013). Boggs et al. (2020), Whitely, Melissa & Jureidini, (2020), and Forand & De Rubies (2013) reported increased suicide risk in adolescents.

Because benzodiazepines are associated with dependence and withdrawal symptoms (Forand & DeRubies, 2013; Khan et al., 2017), Barbui (2009) suggests that clinicians administer benzodiazepines at the lowest effective dose for the shortest time. However, since the introduction of the newer antidepressants (ADs) for the treatment of anxiety disorders in the 1990s, treatment guidelines promulgated under various sponsorships now recommend that BZs should only be prescribed for the short-term treatment of anxiety disorders and that ADs should be the drugs of first choice for all anxiety disorders, and particularly if long-term treatment is planned (American Psychiatric Association, 1991). Despite the issuance of varying guideline recommendations, BZs are still widely prescribed in the US, and their use has not changed much between 2001 (Stahl, 2002), 2007 (IMS Health, 2007), and 2015 (Greenblatt et al., 2018) for the treatment of anxiety disorders. In the US, the Harvard/Brown Anxiety Research Project reported that advertising and guidelines had only a moderate impact on their clinicians’ prescribing practices in treating panic disorder, social phobia, and generalized anxiety disorder (GAD). BZs were still the most prescribed agents. Prescription drug abuse is an ever-growing problem in the United States and elsewhere. While these drugs are rarely the primary drug of teen abuse, many seek them to escape everyday pressures.

A recent commentary was published in *JAMA Psychiatry* by Moore et al. (2015), which proposed to either ban or severely restrict the prescribing of BZs because of claims of their lack of or, at the most, very weak clinical efficacy, their high tolerance to the clinical effect and their severe toxicity. A similar attack against BZ prescribing because of overuse, misuse, and abuse occurred in the 1980s. The APA appointed a task force to assess and place these reports into proper perspective (Salzman, 1990). Many of its findings are still relevant today. Recent reviews support the efficacy and safety of the newer ADs in treating anxiety disorders but also point out that BZs, at least for the short term, should also be considered an accepted treatment for anxiety disorders. One of the reasons frequently cited by guidelines as the basis for their

recommendations is the potential difficulty in treating withdrawal symptoms after BZ discontinuation.

Regarding tolerability, new ADs such as SSRIs and SNRIs certainly cause disturbing adverse events (AEs), such as nausea, dizziness, and sexual dysfunction, to mention only a few. Also, like the BZs, abrupt withdrawal of ADs can cause discontinuation symptoms, necessitating taper as prudent clinical practice. There is limited evidence or no empirical data to show that ADs are safer drugs than BZs.

Offidani et al. (2013) found only three trials in the literature, which compared a BZ and a second-generation AD with each other for an anxiety disorder, two studies in GAD and one in PD. One of the GAD trials was a failed 6-week trial since venlafaxine, diazepam, and placebo did not differ in efficacy (Hackett et al., 2003). The other was a 4-week methodologically oriented study in which lorazepam and paroxetine differed significantly from placebo (Feltner et al., 2009). The only comparison of a new SSRI (paroxetine) with a BZ (clonazepam) in PD was made by Nardi et al. (2011, 2012) in an open label. Offidani et al. (2013) concluded, 'Change in the prescribing pattern favoring newer ADs over BZs in treating anxiety disorders has occurred without supporting evidence. Indeed, the role and usefulness of BZs need to be reappraised'. The present authors agree with these conclusions (Rickels, 2013). Roy-Byrne (2014) acclaimed that 'with careful use, the BZs may have found another valid indication for therapy, namely as an augmentation to other therapies. Since controlled clinical trials do not yet support current antidepressant treatment guidelines and BZs are still widely prescribed despite guideline recommendations, particularly by non-psychiatrists, short-term therapy, and well-designed long-term clinical trials are needed to inform clinical practice.

## **Psychotherapy and Anxiety Disorders**

Treating anxiety disorders requires a multimodal approach and a comprehensive therapeutic approach to reduce symptoms, avoid long-term complications, prevent the appearance of psychiatric comorbidity, and develop anxiety disorders in adolescents. Therapy can help identify the underlying causes of worry and fears; teach how to relax; look at situations differently and develop better coping and problem-solving skills (McFadden et al., 2012). Therapy is an individualized system of treatment that involves specific attention to symptoms and diagnosis, unlike group-focused medications. Interpersonal psychotherapy for adolescents (IPT-A) aims to help adolescents recognize their feelings and think about how interpersonal events or conflicts might affect their mood, enhance social functioning and interpersonal problem-solving skills, lessen stress, decrease depressive symptoms, and create a positive environment for improved academic achievement. When integrated, motivational interviewing (MI) engages the client and enhances the client's readiness to change. CBT is used to help clients actively change their behaviors (Miller & Rollnick, 2013; Hughes et al., 2017). Teachers and the school counseling team are uniquely positioned to play a vital role in this assessment and referral process.

## **Motivational Interviewing (MI)**

MI is a collaborative, evidence-based counseling technique designed to intrinsically motivate and strengthen patients' commitment to improving a range of health behaviors. MI has previously been shown to be effective in adolescent populations. It has been evaluated across different chronic medical conditions and positively affects the uptake of cognitive behavioral therapy (CBT). In a trial examining whether cognitive-behavioral therapy (CBT) could be improved by integrating motivational interviewing (MI) to target resistance, MI-CBT outperformed CBT over a 6-month follow-up. Addressing resistance is a theoretical and empirically supported mechanism of MI's additive effect (Morrison et al., 2017). In a randomized clinical trial using MI to enhance adolescent mental health treatment engagement, the researchers reported that MI used, as a pre-treatment intervention, enhanced group treatment engagement in adolescents diagnosed with anxiety and mood disorders compared to the treatment as usual condition. They concluded that MI is a promising intervention to facilitate engagement in adolescent mental health settings (Dean et al., 2016). The



current study attempted to provide an answer to the question: Does motivational interviewing (MI) mediate between using benzodiazepine medication and Cognitive behavioral therapy in treating anxiety disorders in adolescents?

## METHODS/DESIGN

The first intervention was the psychoeducation of the adolescents and parents about anxiety. A thousand (1,000) adolescent (ages 18-25) students in the Nnamdi Azikiwe University, Awka, Anambra State, Nigeria, were sampled. After providing informed consent, participants completed the self-report screening questionnaires, the Generalized Anxiety Disorder 7-item scale (GAD-7), and the depression portion of the Patient Health Questionnaire (PHQ-9). Patient-reported outcomes on disease-related parameters were assessed after the standardized screening questionnaires. Positive screening, defined as a GAD-7 or PHQ-9 score  $\geq 7$ , was recommended for supportive counseling. Negative screening results were conveyed to the adolescents, and a psychoeducational handout was provided. Adolescents with results indicative of anxiety or depressive symptoms ( $n = 120$ ) were advised to seek psychological health care in clusters from treating physicians in the University's specialized outpatient department. Screening Anxiety and depression were screened as part of the clinical routine. Participants who screened positive received either two sessions of MI or treatment as usual (TAU, regarded as the typical daily clinical practice), focused on recommending them to seek psychological health care for further evaluation. MI efficacy was compared to the TAU as the control condition. The behavior changes counseling index (BECCI) was used to measure motivational interviewing. The Confidence Ruler was used to rate confidence levels on a 0-10. Immediate feedback was provided based on the results of the screening tools. Motivational interviewing techniques and focus group discussion were applied in exploring participants' experiences and perspectives.

The primary outcome was the utilization rate of psychological health care after counseling by an MI-trained consultant vs. an untrained physician. Treatment manuals developed for each intervention were made available to ensure a standardized administration of the two protocols. An independent psychologist assessed the audiotaped sessions to verify intervention integrity. Additionally, reasons for not claiming psychological support and changes in disease-related parameters were evaluated in a 6-month follow-up session.

**Eligibility/Inclusion criteria:** Adolescents with chronic medical conditions are eligible for mental health screening if they are between 18 and above. Chronic medical conditions are diseases that persist for  $> 1$  year. They significantly impair the patient's daily routine and require continuous care and medical treatment. To achieve high external validity, all patients attending the outpatient department of the sampled University Clinics, who fulfilled the inclusion criteria, were screened. Patients who screened positive for depression or anxiety symptoms were counseled by their treating physician and the University-based counselors, who had previously been randomized to perform either MI or TAU. Participants who were currently attending regular psychotherapy at the time of recruitment, or those with psychosis, acute suicidality, severe intellectual disability ( $IQ < 70$ ), inability to communicate (verbally or in writing), or who currently abuse alcohol or drugs were excluded (Dean et al., 2016).

## DATA ANALYSIS AND RESULTS

The MI group demonstrated more willingness and confidence in treatment initiation, and ratings of treatment readiness were significantly higher for those randomized to MI. Outcome measures were the mean number of MI sessions attended, treatment initiation, and ratings of readiness for treatment. As a pre-treatment intervention, MI enhanced group treatment engagement in adolescents diagnosed with anxiety and mood disorders compared to the treatment as usual condition.

**The Impact of Motivational Interviewing (Mediator) on the way Teenager sees him/herself as confident (independent variable) and the use of benzodiazepines (Dependent variable) using SPSS**

Table 1: ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	409.849	2	204.925	235.974	<.001 <sup>b</sup>
	Residual	3240.083	3731	.868		
	Total	3649.932	3733			

a. Dependent Variable: Student use of Benzodiazepine

b. Predictors: (Constant), Teenager sees himself/herself as a confident person (T1 Scale of student’s self-efficacy), Motivational Interviewing (knowledge and motivation) as Mediator

The SPSS ANOVA table of regression shows a significant relationship of <0.001 between the impact of Motivational Interviewing on the teenager’s self-efficacy or confidence in himself/herself, which affects the use of benzodiazepines.

Table 2

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.816	.044		18.530	<.001
	Motivational Interviewing	.149	.019	.120	7.692	<.001
	Teenager sees himself/herself as a confident person	-.319	.017	-.297	-19.053	<.001

a. Dependent Variable: T1 Scale of student’s science self-efficacy (confidence)

The Multiple Regression coefficient tables show a significant relationship of <0.001 that Motivational Interviewing predicts the teenager’s self-efficacy or confidence in himself/herself, which affects the use of benzodiazepines. The lesser the teenager sees himself/herself as confident, the higher the use of benzodiazepine. As students engage in psychological treatment, the use of benzodiazepine reduces. There is a significant association between benzodiazepine use and CBT in treating Adolescence Anxiety Disorders when MI is the intervening variable.

Table 3: Demographic and Clinical Characteristics of 120 students

Characteristics	Treatment Condition	
	M <sub>1</sub> + CBT N=60	TAU + CBT N=60
Age, years, mean (S.D)	18.5 (3.2)	18.5 (3.2)
Sex n (%)		
Female	5 (8.3%)	46 (77%)

Male	55 (91.7%)	14 (23%)
Ethnicity		
Igbo	45 (75%)	55 (92%)
Hausa	15 (25%)	5 (8%)
Take benzodiazepine medication n (%)	14 (23.3%)	14 (23%)
Clinical disorder n (%)		
Mood disorder	42 (70%)	46 (77%)
Anxiety disorder	18 (30%)	14 (23%)
Baseline readiness ruler, mean (S.D)	8.2 (2.3)	5.9 (1.7)
Post-treatment assessment complete cessation n(%)	12 (86%)	2 (14%)

### Specific Impact of the Intervention on Benzodiazepine Use

Table 3 presents descriptive statistics for the variables related to benzodiazepine use according to group and assessment time. At the posttreatment assessment, 86% of participants who were engaged with MI- CBT reported complete cessation of their medication, compared with 14% in the TAU group. Only two TAU participants indicated attempts at stopping their medication, and none reported complete discontinuation. No change was observed at the 6-month follow-up.

## DISCUSSION OF FINDINGS

The study examined the impact of MI as a pre-intervention strategy for treating anxiety disorders. MI sessions provide education on anxiety disorders, benzodiazepines, and psychotherapy. Physicians offering MI to adolescents may be a model for optimizing healthcare management in daily clinical practice. This may improve adolescents' long-term well-being by improving adherence to medical treatment and preventing negative lifelong consequences into adulthood. MI may be taught to and implemented by physicians in primary care, at least for those physicians who treat patients with chronic conditions. In the long term, stabilizing mental conditions in adolescents through an early referral to mental health care could lead to better treatment adherence and self-management in chronic conditions, thus preventing long-term health consequences. Currently, physicians are often untrained (Reinauer et al., 2018).

Adequate behavioral management can stop or delay symptoms' evolution, slow the progression, and even reverse the disorder. The objective of these interventions is to train the child to acquire coping skills, improve self-confidence, restructure erroneous cognitions, and modify behaviors by practicing new ones (relaxation and breathing techniques, study techniques, social skill training, dramatization exercises or "role-play" and gradual exposure to situations that provoke anxiety. The goal of the treatment is to reduce the angst and stress of the adolescent.

According to the National Institute of Mental Health (2013a), the most common treatment for anxiety disorders is psychotherapy, medication, or a combination. Anxiety can be treated in various ways, and people should discuss this with their physicians to determine what treatment is appropriate for them. Treatment includes psychotherapy, Cognitive Behavioral Therapy, medication, beta-blockers, and stress management techniques. Efficacy, adverse effects, interactions, costs, and patient preference should be considered when developing a treatment plan.

Cognitive- Behavioral Therapy (CBT) is an evidence-based intervention for adolescent anxiety disorders, but little is known about whether and how parents should be involved. Patterns of parent-child interactions

in the context of anxiety appear to differ between children and adolescents. Parental factors associated with teenage anxiety disorders include perceived parental control, parental modeling/reinforcement of anxious behaviors, and low parental warmth. Treatment outcomes indicate that CBT with parental involvement is an effective intervention for teenage anxiety disorders; however, it is impossible to conclude whether parental involvement (generally or in any form) enhances treatment outcomes. Furthermore, a randomized-controlled trial reported poorer remission rates from CBT for adolescents than for children.

Motivational interviewing explains that when someone feels autonomous to control their behavior and has the knowledge and skills to achieve desired outcomes, they are more likely to put in the effort and persist in changing behavior. The findings of this study may provide patients and clinicians with insights into how integrated and collaborative care using motivational interviewing and medications could potentially increase treatment outcomes in the mental health system. Further research is needed to identify how to optimize motivational interviewing in treating adolescents with anxiety disorders.

## CONCLUSION AND RECOMMENDATIONS

Practitioners should explore the effectiveness of behavioral and psychosocial interventions and practices like motivational interviewing, contingency management, community reinforcement approach, peer-based counseling, support programs, and cognitive behavioral therapy as complementary to medications. Motivational interviewing is widely implemented to help people change their behavior (Lindahl & Burke, 2012). Motivational interviewing engages clients, elicits change talk, and motivates patients to make positive, healthier choices (Teyber & Teyber, 2017). Motivational interviewing has been applied as an adjunct for treatments such as CBT and interpersonal psychotherapy (IPT) to increase motivation for and commitment to the intervention, incredibly when treatment components are challenging and require cognitive restructuring. MI can be delivered by physicians treating patients with chronic conditions who have screened positive for anxiety and depression symptoms to decrease these adolescents' unwillingness and concerns regarding psychological healthcare.

## LIMITATIONS OF THE STUDY

The present study used cross-sectional data collected through a random sample survey. Although still low, the survey's response rate was consistent with other college health surveys administered to the study population. This could be attributed to our use of best practices in survey administration, including offering an incentive, using an online survey, and emphasizing our protection of confidentiality and anonymity. In addition, our sample was randomly selected among enrolled students at the university. Based on previous random sample studies conducted at the institution, we believe our sample was representative of the student population at the sampled institutions. Social desirability and response bias are significant concerns for surveys measuring taboo topics such as HIV, sexual behavior, illegal behavior, and unsocial attitudes. Survey respondents may favor a more normative presentation of their behaviors, which can lead to underreporting behaviors. Likewise, this may also lead to the over-reporting of more positive attitudes seen as normative. Due to the perception of our topic as stigmatization sensitive, we went to extensive lengths to promote honesty, assuring participants that their responses were anonymous and confidential. Our survey did not identify the specific benzodiazepine medication the student engaged in, so we could not compare the types.

Further research is required to identify whether there are types of parental involvement in CBT that bring clinical benefits to adolescents with anxiety disorders generally and in specific circumstances.

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