

## Effectiveness of Mindfulness Based Therapy in Improving Mental Health of Adolescents Drug Addicts

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### Abstract

The present study aimed to examine the effectiveness of mindfulness based therapy in improving the mental health of adolescent's drug addicts. The sample of this study included 40 male adolescents, were randomly selected from the various Drug De-addiction Centers (Nasha Mukti Kendras) of Moradabad city. Depression Anxiety Stress Scale (DASS-21) was used to measure the mental health of subjects. 8 sessions of the mindfulness-based therapy were administered on adolescent drug addicts. After this phase the post-intervention scores on mental health were obtained from subjects and were compared with the pre-intervention scores. The results indicated that the mindfulness therapy was significantly effective in decreasing stress, anxiety, and depression of adolescent drug addicts ( $p < 0.05$ ). The study findings have implications for further research as well for designing mental health promoting interventions for adolescent drug addicts.

**Key Words:** Mindfulness-Based Therapy, Depression, Anxiety, Stress, Drug Addiction

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### Introduction

As the drug epidemic continues to painstakingly seep into the country's social and cultural aspects, drug addiction naturally trickles into our adolescent's. India too is caught in this vicious circle of drug abuse, and the numbers of adolescent's drug addicts are increasing day by day. What started off as casual use among a minuscule population of high-income group adolescent in the metro has permeated to all sections of society. Recreational use of drugs during adolescence increases the likelihood of eventual drug abuse or dependence (DiClemente *et al.*, 1996). Making the adolescent of our nation will eventually determine the country's moral, political, and social persuasions. Drug use in adolescence is associated with problems in multiple areas. Problem drug use negatively impacts adolescent's cognitive functioning, health, academic and career performance, and social functioning. Adolescent drug abuse increases the incidence of a host of dangerous behaviors, including risky driving, risky sexual behavior, violence, crime, and rate of fatalities from accidental injuries, suicides, and homicides (Durant, 1999; Eaton, 2010; Santelli, 2001; Batalis & Collins, 2005). Also, adolescent's drug addicts are often co-morbid with other behavioral health problems, including mood, anxiety, psychotic and disruptive behavior disorders (Kessler, 1994, 1996; Lewinsohn, 1993). It is estimated that, in India, by the time most boys reach the ninth grade, about 50 percent of them have tried at least one of the gateway drugs. However, there is a wide regional variation across states in term of the incidence of the substance abuse. Apart from affecting the financial stability, addiction increases conflicts and causes untold emotional pain for every member of the family.

Some form of psychotherapy is usually considered as a treatment option for virtually all adolescents seeking treatment for drug addiction. Among new methods of drug treatment, especially psychological treatments, integrating mindfulness mediation techniques with traditional cognitive behavioral therapies can be mentioned, the combination of which is referred to as the third wave of behavioral therapy. Examples of these new approaches are Mindfulness-Based Relapse Prevention

(MBRP) and Mindfulness- Based Cognitive Therapy (MBCT) to prevent recurrence of depression and drug abuse.

Mindfulness involves awareness of, attention to, and acceptance of all phenomena occurring in the present moment (Kabat-Zinn, 1982). Mindfulness involves the ability to experience and tolerate current emotions, thoughts, sensations, and urges without becoming overwhelmed and without feeling compelled to engage in behaviors meant to "turn off" those experiences or act on those urges. Mindfulness is therefore distinct from forms of meditation in which practitioners focus on a sensation, phrase, or point in space (Levin & Dakwar, 2009). Although mindfulness was originally derived from the Vipassana Buddhist tradition (Rosenberg, 1998; Thera, 1962), the concept of mindfulness in current psychiatric research and clinical practice has been fully detached from any religious connotations. Mindfulness skills were first used formally in medicine in 1979, when Jon Kabat- Zinn implemented mindfulness-based stress reduction (MBSR) at the University of Massachusetts Medical School (Kabat-Zinn, 1982). Mindfulness-based stress reduction combines mindfulness meditation, yoga, and informal mindfulness practices to help patients cope with stress, pain, and illness (Kabat-Zinn, 1982).

Despite the misconception that mindfulness practices need to be time-consuming and formal, mindfulness practice can be flexibly incorporated into everyday life. Although some individuals engage in a formal daily practice for 45 minutes or longer (Kabat- Zinn, 1990); research shows that individuals report benefits from practicing for only a few minutes a day (Teasdale *et al.*, 2000; Bowen *et al.*, 2009; Wupperman *et al.*, 2012). A brief mindfulness exercise can help an individual disengage from automatic thinking by focusing on breath for one minute.

The use of drugs is associated with poor mindfulness skills. Drug use may be viewed as avoidance behavior in response to aversive internal or external cues. Drug use is reinforcing in the short term, becomes habitual over time, and is associated with significant morbidity. Mindfulness practice and the resulting mindfulness skills may target drug addiction through several mechanisms. First, attention to the present moment supports early awareness of negative emotions and urges (Bowen *et al.*, 2009). Adaptive strategies for coping are more likely to be effective if employed when aversive internal states first emerge than when they escalate to become overwhelming and thus less manageable. Second, the habituation to aversive internal states produced through the practice of mindfulness increases tolerance of negative thoughts and feelings (Teasdale *et al.*, 2002) and reduces thought-suppression. Through these mechanisms, habituation may reduce cognitive and maladaptive behavioral responses to urges, such as drug use due to craving (Bowen, Witkiewitz, Dillworth, & Marlatt, 2007). Third, deliberately experiencing the present moment creates a space for awareness of internal and external cues and awareness of the tendencies towards drug use and other automatic, reactive behaviors (Kutz, Borysenko, & Benson, 1985; Safran & Segal, 1990). Fourth, mindfulness increases the capacity to experience positive emotions and feelings of fulfillment (Farb, Anderson, & Segal, 2012). In sum, the practice of mindfulness by adolescents with problem drug use involves the capacity to experience full moment-to-moment contact with the external world and internal responses, which results in greater control over behavior.

The literature does support the use of mindfulness-based approaches with adolescents for a variety of targets, including pain management (Thompson & Gauntlett-Gilbert, 2008), relapse prevention in depression (Allen, 2006), conduct disorder (Singh, 2007), and other externalizing disorders (Bögels, 2008). Mindfulness-focused interventions have shown efficacy in treating a variety of disorders in behavioral health (Baer, 2003; K. W. Brown, Ryan, & Creswell, 2007;

Chambers, Gullone, & Allen, 2009; Singh, 2007; Toneatto, Vettese, & Nguyen, 2007). These approaches have also been used in psychiatric outpatients (Biegel, Brown, Shapiro, & Schubert, 2009), youth correctional populations (Himelstein, 2011a; Samuelson, 2007), and in classroom settings (Beauchemin, Hutchins, & Patterson, 2008). In general, results from these studies include reductions in symptoms, stress, and anxiety.

Bootzin & Stevens(2005) investigated the use of mindfulness-based stress reduction with adolescents who had received treatment for substance abuse and presented with sleep problems . They find that completers of the mindfulness program had significant reductions in self-reported sleepiness, worry and mental-health distress, as well as significant improvements in aspects of sleep quality. In another study, Witkiewitz, Marlatt, and Walker(2005), through examining the effectiveness of mindfulness therapy on prisoners' alcohol rehabilitation treatment, indicated that mindfulness therapy can play a key role in treating alcoholic prisoners and controlling their generalized anxiety, compromising an important part of the problems of the people who are trying to withdraw their addiction .

Dabaghi, Asgharnejad Farid, Atef Vahid, and Bolahri(2007) conducted a study to investigate the effectiveness of mindfulness-based relapse prevention. The researchers concluded that using mindfulness- based cognitive relapse prevention can significantly increase the effectiveness of medical therapy and cognitive behavior therapy for treating opioid dependence and also improve patients' mental health. Garland's (2011) study conducted on the effectiveness of the mindfulness-based therapy indicated that mindfulness training can increase the cognitive control on addiction and decrease stress associated with alcohol abuse; therefore, it can play a key role in alcohol abuse treatment.

Aghayousefi, Oraki, Zare and Imani (2013) conducted a study to investigate the effectiveness of mindfulness therapy in reducing anxiety, depression and stress of adult drug addicts. The results of multivariate covariance analysis indicated that there was a significant difference between the results of pretest and posttest of the experimental group. The findings point out that mindfulness training was effective in reducing anxiety, depression, and stress of adult's drug addicts.

Over the last thirty-five years research on mindfulness based interventions have shown promising results for diverse populations including chronic pain patients, adolescent psychiatric outpatients and correctional populations. One population that may benefit from the increased self-management abilities acquired through mindfulness practice is adolescents who struggle with issues of drug addiction. Adolescent drug use continues to be a major problem with significant societal consequences. Because established treatment modalities for adolescent drug addicts are useful but not optimally effective, there is an urgent need for the development of novel treatments or augmentation strategies. Furthermore, mindfulness-based intervention research is beginning to burgeon with adult populations, however very few emphasize the treatment of adolescent drug addictions. Therefore, there is a relevant need for contributing such new research for the adolescent drug addicts.

The hypotheses were as follows:

1. Level of depression of adolescent's drug addicts will be significantly different after mindfulness training.
2. Level of anxiety of adolescent's drug addicts will be significantly different after mindfulness training.
3. Level of stress of adolescent's drug addicts will be significantly different after mindfulness training.

## Method

**Sample:** The within subject design was used for the present study. By using random sampling 40 male adolescents, were selected from the various Drug De-addiction Centers (Nasha Mukti Kendra) of Moradabad city. Besides considering all moral conditions, the inclusion criteria of the current study include:

- 1) Having informed consent to participate in the research;
- 2) Being detoxified during the last week;
- 3) Being male, being at least 18 years old and at most 20 years old;
- 4) Not participating in any other medical sessions;
- 5) Not suffering from mental retardation or severe disabilities;
- 6) Not using drugs.

The subjects first completed the Depression Anxiety Stress Scale (DASS-21). Afterwards, mindfulness-based stress management training was administered for 8 two hour sessions (One session per week). At the end of the sessions, the subjects again completed again the Depression Anxiety Stress Scale (DASS-21).

**Tool:** The short-form of the Depression Anxiety Stress Scale (DASS-21): This is a self-report scale developed by S. H. Lovibond and P. F. Lovinond. It has 21 items and three scales for each indicator under study and is designed to measure the negative emotional states of depression, anxiety and stress. The depression scale assesses depression, feelings of restlessness and blame, despair, devaluing life, self-dissatisfaction, lack of interest/involvement, and immobility. The anxiety scale measures automatic arousal, situational anxiety, and subjective experience of anxiety. The stress scale is sensitive to the levels of chronic arousal which cause difficulty in achieving peace and evaluates nerve impulses and being easily confused, irritability and impatience. Respondents use a 4-point Likert type scale ranges from 0 to 3 (0 = never, 1 = low, 2 = moderate, and 3 = high) to assess experiencing these states in the previous week. The scores on depression, anxiety, and stress are calculated by the sum of the scores on related items. Test-retest coefficients for depression, anxiety, and stress were 0.84, 0.89, and 0.90, respectively. These correlation coefficients were significant ( $p < 0.001$ ). Considering intra-class correlation (0.74), the scale's validity is acceptable.

## Sessions of Training Mindfulness Technique

Mindfulness-based stress management program is administered in 8 two hour sessions. These 8 intervention sessions were performed based on mindfulness-based stress reduction (MBSR) program. The summary in this regard is given in Table-1:

### **Table 1 -List of mindfulness-based intervention sessions:**

**Session 1:** Welcome and guidelines, brief personal introductions, the implementation of the pre-test, meditation training to train the presence of mind, body-scan meditation, and determining the dates of the sessions, homework assignments (body scan, and mindfulness of a shared activity).

**Session 2:** Eating a raisin with awareness, self-awareness, training how to deal with challenges with which an individual encounters and three- minute breathing meditation homework.

**Session 3:** Body meditation, training and gaining the ability to delay judgment, identify stress symptoms, and gain knowledge of mind and body.

**Session 4:** Body meditations, acquiring the ability to practice sitting meditation and listening to the environmental sounds.

**Session 5:** Body meditation, expanding their knowledge to other areas including physical sensations, sounds, and thoughts or feelings or undetermined purposes.

**Session 6:** Body meditation, reviewing the exercises and experiences of the participants.

**Session 7:** Body meditation, combining sitting meditation, bodily check, and yoga exercises.

**Session 8:** Group discussion reviews of the program, focusing on the lessons learned by the end, becoming ready for doing the exercises alone and the implementation of the post-test.

## Results and Discussion

The present study was undertaken to examine the effectiveness of mindfulness based therapy in improving the mental health of adolescent's drug addicts. From the results given in Table 1, it appeared that there is extensive difference in post test depression level of adolescent drug addicts. The mean of pre test and post test depression scores were 23.47 and 20.77 respectively for adolescent's drug addicts. The results indicate that mindfulness enhances mental health of drug addicts, as the difference between the pre and post test scores of drug addicts adolescent's was also found statistically significant (\*\*P<0.05). Thus, hypothesis presuming significant difference in level of depression of adolescent's drug addicts after mindfulness training was confirmed.

**Table -1: Mean, SD and t-value of Pre and Post Depression level Scores of Adolescent's Drug Addicts**

Students	N	Mean	SD	t-value
Pre Test	40	23.47	5.22	2.43*
Post Test	40	20.77	3.48	

\*\* P<0.05

It was apparent from the results presented in the Table-2 that level of anxiety score was lower after mindfulness training as the mean pre and post test scores were found to be 22.37 and 19.56 respectively for adolescent's drug addicts. The difference between pre and post test scores with regard to level of anxiety of adolescent's drug addicts was found statistically significant (\*\* P<0.05). It seems that the mindfulness training increase the mental health of adolescent drug addicts and it decreases there level of anxiety. Hence hypothesis presuming significant difference in level of anxiety of adolescent's drug addicts after mindfulness training was found to be proved.

**Table -2: Mean, SD and t-value of Pre and Post Anxiety level Scores of Adolescent's Drug Addicts**

Students	N	Mean	SD	t-value
Pre Test	40	22.37	4.76	2.51*
Post Test	40	19.56	3.46	

\*\* P&lt;0.05

Table -3 reveals that the mean post test stress score of adolescent's drug addicts is 21.02 which is lower than the corresponding pre test mean stress score of 24.20. The t value for pre and post test mean stress scores of adolescent's drug addicts was found statistically significant(\*\*P<0.05). It seems that the mindfulness training was effective in reducing stress in adolescent drug addicts Hence hypothesis presuming significant difference in level of stress of adolescent's drug addicts after mindfulness training was confirmed.

**Table -3: Mean, SD and t-value of Pre and Post Stress level Scores of Adolescent's Drug Addicts**

Students	N	Mean	SD	t-value
Pre Test	40	24.20	5.36	2.48*
Post Test	40	21.02	3.41	

\*\* P&lt;0.05

Considering the above result it can be said that the mindfulness training plays a vital role in enhancing mental health of adolescent's drug addicts. This study supports previous research of Biegel et al. (2009); Bowen et al., (2009) demonstrating that mindfulness-based interventions are feasible treatments for adolescent and drug using populations. Garland, Boettiger, Gaylord, West, Chanon, and Howard (2012) demonstrated that mindfulness is correlated with controlling attention and emotion regulation. In this regard, increasing the control over the visual clues of drug and alcohol abuse can be effective in treating these disorders.

Adolescents are particularly vulnerable to the decision to use drug because of the unique and sensitive developmental balance of drive and emotion. Mindfulness treatments specifically focus on the capacity to tolerate negative affects and enhance behavioral flexibility; these treatments may address the difficulties experienced by adolescent drug addicts. The theoretical mechanism of action of mindfulness is unique. Change is fostered in an individual's reactions to key addictive processes, such as craving, avoidance, negative affect, and drug -related stimuli, not by supporting reactive control or cognitive appraisal, but with a response characterized by nonjudgmental awareness and attention. Through this mechanism, mindfulness-based treatments may support the development of an array of cognitive and emotional skills in the service of enduring and adaptive change. By teaching adolescents to purposely experience stimuli that contributed to their drug use in the first place, mindfulness may allow adolescents to react with flexibility and awareness, thus ultimately replacing their maladaptive patterns with intentional and adaptive behavior. Experiencing pleasure and an increased sense of meaning may serve as protective factors against drug use.

Although this study shows promising results, some limitations are worth consideration. First, no control group was used to validate the results from the treatment group. Because of this, the significant differences that did occur might be due to some factor other than participating in the treatment intervention. Future research should aim to conduct randomized clinical trials in order to decrease threats to internal validity. Studies of different forms of mindfulness treatments in for adolescent drug addicts would be helpful to determine if anyone has advantages over another. Such research could result in an efficacious therapy for adolescent drug addicts and could have widespread implications for treatment of this vulnerable population. Finally, what kind of adolescent's, with what types of addiction are most likely to benefit from mindfulness training? Are there gender differences in perceived credibility and/or treatment response? Are treatment effects consistent or disparate across other demographic subgroups, including age, race, ethnicity, level of education, and/or religious beliefs? Can the clinical response to mindfulness-based interventions for addiction treatment and recovery be predicted, in part, by adolescent preferences? Future studies in this area may answer these questions.

Although there are limitations to this study, the results suggest that the mindfulness-based intervention is a promising intervention for the mental health of adolescent's drug addicts.

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