Effectiveness of Mindfulness Based Cognitive Therapy (MBCT) in Reducing Anger Among Working Population

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Abstract: The current study seeks to investigate the influence of Mindfulness Based Cognitive Therapy (MBCT) in reducing anger among working population (N=30). The participants' ages ranged from 30 to 60 years. The mean age of the participants was 43.77. All the participants came from an urban or semi-urban middle-class background. All the participants were working in Electrofiers Private Ltd., Bhopal. These participants were randomly assigned to two groups. The experimental group got MBCT once in a fortnight, whereas the control group received no intervention. The "Personal Information Form" was used to collect the information, and “The Buss & Perry Aggression Questionnaire" was used to assess anger levels before and after the intervention. The data was evaluated using the t-test. It was found that MBCT helped the participants in reducing anger.

***Keywords*: *Anger, Intervention, MBCT*.**

I. INTRODUCTION

In psychology, anger is defined as an emotion characterized by tension and hostility that arises from frustration, real or imagined injury by another, or perceived injustice. It is a complex emotional state marked by varying degrees of intensity and is commonly associated with physical and psychological arousal such as increased heart rate and elevated blood pressure. Anger can manifest behaviorally to remove the object of anger or simply express the emotion, and it is distinct from but can activate aggression. Psychologists view anger as a natural and functional emotion important for individual survival and social cooperation, but uncontrolled anger can harm personal well-being and relationships. It triggers physiological responses associated with the fight-or-flight mechanism and functions both as a protective response and as a form of communication in social contexts. **(American Psychological Association. "Anger." APA, https://www.apa.org/topics/anger.)**

Cognitive-behavioral therapy and mindfulness techniques like meditation and present-moment awareness are combined in Mindfulness-Based Cognitive Therapy (MBCT). Originally created to keep people from relapsing into recurrent

depression, it assists people in accepting their thoughts and feelings instead of trying to change them. Over the course of eight weeks, MBCT improves mindfulness abilities to control negative patterns. According to research, MBCT helps treat treatment-resistant depression, lessens lingering symptoms, and prevents relapse just as well as antidepressants. It enhances self-compassion, stress, anxiety, emotional control, attention, and general wellbeing. By improving self-awareness and resilience, MBCT also helps people with physical illnesses like cancer and eating disorders, as well as mental health conditions like bipolar disorder and social anxiety.

O'Dean et. al. (2025) conducted four comprehensive meta-analyses to examine the relationships between trait mindfulness, trait anger, and trait aggression, as well as to evaluate the effects of mindfulness-based interventions on these outcomes (Author, Year). Data from 118 correlational and experimental studies revealed small-to-medium inverse associations between dispositional mindfulness and both anger ($r = -0.23$, $p < .001$) and aggression ($r = -0.19$, $p < .001$), based on self-report correlational analyses (^{k}anger = 243, ^{k}aggression = 286). Experimental studies (^{k}anger = 95, ^{k}aggression = 38) demonstrated medium effects, with mindfulness-based interventions significantly reducing anger ($d = -0.48$, $p < .001$) and aggression ($d = -0.61$, $p < .001$) compared to controls. The largest effect sizes were reported in Asian samples, and studies with passive controls yielded stronger effects than those with active controls. Effect sizes were consistent across clinical, forensic, medical, student, and community populations. These findings support mindfulness training as an effective strategy for regulating anger and aggression, while underscoring the need for more rigorous methodological designs in future research.

Sharma et al. (2025) conducted a study to address the prevalence of high-risk behaviors and violent activities among youth, highlighting the need for effective psychological interventions. They explored the effects of a mindfulness-based program on aggression in young individuals. The study involved fifty participants aged 18–25 who completed the Buss-Perry Aggression Questionnaire, a sociodemographic schedule, and the World Health Organization Quality of Life assessment both before and after the intervention. The results demonstrated improvements in well-being and relaxation, significant decreases in anger, hostility, physical aggression, and verbal aggression, as well as enhanced quality of life in the physical and environmental domains at one-month follow-up. These outcomes indicate that mindfulness-based programs can effectively reduce aggression and improve self-control, advocating for their inclusion in youth aggression management programs.

Borders, Earleywine, and Jajodia (2010) used structural equation modeling to investigate the connections among aggression, rumination, and mindfulness. The study discovered that rumination partially mediated the relationship between mindfulness and aggressive behaviors, and that it was associated with higher levels of hostility, anger, and verbal aggression. Rumination, however, did not act as a mediator in the association between physical aggression and mindfulness. The results support the hypothesis

that mindfulness could lessen rumination, which could lessen aggression, even though the data were non-experimental and could not prove causation. According to the authors, more experimental and longitudinal studies are necessary on mindfulness as a strategy to lessen aggression and rumination.

Ahmed et. al (2024) assert that mindfulness-based interventions are successful in improving psychological well-being. Anger management issues and low self-esteem are common among academic nursing students, and they have a detrimental impact on their general well-being as well as their social and academic growth. This study used a quasi-experimental pre-posttest non-equivalent group design to assess the effects of a mindfulness program on nursing students' anxiety, anger, and self-esteem. Purposively chosen 120 first-year students were split into study and control groups (n = 60 each) at Sohag University's Faculty of Nursing. The Adolescent Anger Rating Scale (AARS), a self-esteem scale, an anxiety inventory, and a personal data questionnaire were used to gather data. Results showed significant reductions in anxiety and anger, alongside improved self-esteem, in the study group post-intervention. The results support replicating the program to strengthen generalizability and improve student mental health.

According to **Kriakous et al. (2021)**, burnout and occupational stress are common challenges faced by healthcare professionals (HCPs), often leading to adverse psychological outcomes. Mindfulness-based stress reduction (MBSR) has been increasingly studied as a supportive intervention to address these issues. This systematic review aimed to provide an updated evaluation of the effectiveness of MBSR for improving psychological functioning among HCPs, extending the evidence base beyond studies published prior to December 2019. Three electronic databases—Medline, PsychInfo, and Web of Science—were searched, and eligible quantitative studies included randomized controlled trials, clinical controlled trials, pre-post designs, and those with up to 12-month follow-up periods. Using PRISMA guidelines, 30 studies met the inclusion criteria. Findings indicated that MBSR effectively reduced anxiety, depression, and stress, while simultaneously enhancing mindfulness and self-compassion. However, its impact on reducing burnout or improving resilience was less conclusive. Evidence also suggested that abbreviated MBSR programs can be as beneficial as the traditional 8-week format. Overall, MBSR demonstrates potential as an effective intervention to support the psychological well-being of HCPs, though future research should focus on stronger methodological designs, larger and more diverse samples, and active intervention comparisons.

Milani et. al. (2013) examined how mindfulness-based cognitive therapy (MBCT) reduced aggression in teenage boys at a juvenile correction and rehabilitation center in Zahedan province from 1991 to 1992. Their study used an experimental design with test and control groups, including pre-tests post-tests, and follow-ups. They measured aggression with the Buss and Perry Aggression Questionnaire (1992), a tool that has shown reliability and validity across many groups. The study involved 22 boys (10 in the test group and 12 in the control group), all chosen through a census at the facility. The researchers put the boys

into groups by matching their pre-test aggression scores then assigning them. The test group went through eight MBCT sessions, with a follow-up check two weeks after the post-test. The team used ANCOVA to analyze their data. They found that MBCT lowered overall aggression in the test group compared to the control group during both the post-test and follow-up stages ($P < 0.01$). Furthermore, Furthermore, significant decreases were observed in anger, physical aggression, and hostility subscales during these phases ($P < 0.05$), although no significant change emerged in the verbal aggression subscale. These findings suggest that mindfulness-based cognitive training is an effective intervention for reducing aggressive behaviors in this population.

Nur'aini & Patry (2024) point out that student mental health has an impact on education. This stems from growing academic and social pressures. Mindfulness-Based Stress Reduction (MBSR) methods have an influence on stress reduction and mental well-being improvement across different groups. Yet, schools don't often use or study these methods. This study set out to assess how well MBSR methods boost students' mental health and learning skills. It measured stress levels emotional health, and grades before and after MBSR training. The study split 100 high school students into two groups. One group took part in MBSR sessions for eight weeks, while the other did not. The team gathered data using stress and emotional health scales, along with grade reports. They then looked at this data using basic stats and t-tests. The results demonstrated that compared to students who did not take the MBSR course, those who did had significantly lower levels of stress and better emotional health.

Alomari (2023) assessed the degree of mindfulness among university students based on gender and academic achievement using the Five Facet Mindfulness Questionnaire (FFMQ), which includes 39 items across five factors: observation, description, acting with awareness, nonjudging, and nonreactivity. The FFMQ was translated into Arabic and piloted with 60 students to verify validity and reliability before being administered to a cluster sample of 489 male and female students from public universities. Results indicated a moderate level of mindfulness across all five domains, with no significant gender differences. Students with higher academic achievement displayed greater mindfulness, although the relationship between mindfulness and academic achievement was weak, explaining less than 1% of the variance in academic performance. These findings contribute to growing evidence that mindfulness may be positively associated with academic success, despite its modest predictive power in this context.

According to **Anh et. al. (2022)** Financial limitations frequently prevent students, especially those in low- and middle-income countries (LMICs), from accessing mental health interventions. This emphasizes the need for stress-reduction techniques that are practical, economical, and long-lasting in this setting. In this study, college students exposed to stressful situations are asked to examine the long-term effects of an eight-week standardized Mindfulness-Based Stress Reduction (MBSR) intervention on their brain activity and psychological outcomes. Students in the intervention group demonstrated significant

reductions in negative emotional states, as evidenced by a 33% decrease in Perceived Stress Scale (PSS) scores and nearly 40% reductions in Depression, Anxiety, Stress Scale (DASS-42) subscale scores, according to the study, which used a combination of psychological assessments and electrophysiological measures (EEG). In contrast, the control group did not exhibit any statistically significant changes. Increased alpha band power in the frontal and occipital lobes was found to be longitudinally associated with the intervention, according to spectral analysis of EEG data. This augmentation was especially noticeable during stress-induction tasks, indicating that MBSR practitioners had a greater capacity to tolerate negative emotional states. These results lend credence to the idea that MBSR improves psychological and neurophysiological stress indices over time, supporting its use as a long-term, successful strategy for stress management among students in LMICs.

According to **Lu et al. (2023),** students pursuing careers in health care often endure high levels of stress because of rigorous coursework, hefty workloads, disturbed work-life balance, and lack of sleep. These factors can have a detrimental effect on their mental health and possibly the health of their future patients. During school, it is essential to address this stress. Prior studies on mindfulness-based interventions (MBIs) have either included a variety of intervention types and durations or have mostly concentrated on working health professionals. In a recent systematic review and meta-analysis, the effects of 6- to 12-week MBIs with weekly sessions lasting one to two hours on stress reduction in aspiring medical professionals were specifically examined. The analysis of randomized controlled trials revealed a moderate impact of MBIs on stress reduction; however, because of the high risk of bias, the results should be interpreted with caution, underscoring the need for more high-caliber research. Overall, research points to MBIs as a promising strategy for reducing stress in students pursuing health professions, highlighting how they could be incorporated into healthcare education to enhance students' psychological health and preparedness for the workforce**.**

Petcharat and Liehr (2017) conducted a comprehensive literature review examining the evidence base for mindfulness training (MT) effectiveness in promoting psychological well-being among parents of children with special needs, analyzing five studies that met specific inclusion criteria from an initial pool of 56 articles across three databases. The results showed that developing a more mindful parenting style was linked to a significant decrease in parents' levels of stress, anxiety, and depression while also raising mindful awareness and enhancing psychological health in general. Furthermore, parents were more accepting of their kids, which was associated with fewer behavioral issues in the kids and more positive parent-child relationships. The authors highlighted the practical implications for healthcare professionals working with families of children with special needs by emphasizing that mental health nurses are uniquely positioned to implement mindfulness-based approaches to promote psychological well-being in this vulnerable population because mindfulness interventions fall within the scope of independent

nursing practice.

According to **Bazzano et al. (2013)** parents and primary caregivers of children with developmental disabilities face significant stress that adversely affects their quality of life and family functioning. To address this, they developed and evaluated a community-based Mindfulness-Based Stress Reduction (MBSR) program. Both English and Spanish participants participated in the eight-week program, which included stress discussion, meditation, and gentle stretching. 87% of the 76 participants finished the program, indicating a noteworthy 22% decrease in parental stress and a 33% reduction in perceived stress. Additionally, two months after the intervention, participants reported improvements in self-compassion, mindfulness, and well-being. These findings underline the significance of focusing on cultural and socioeconomic factors in future research and imply that MBSR is an effective intervention to lower stress and enhance psychological well-being in this population.

The effect of mindfulness-based interventions (MBIs) on caregivers, particularly parents of children with cerebral palsy (CP), was investigated by **Sharma, Zaidi, and Kazmi (2022)**. The study aimed to assess the effectiveness of MBIs in lowering caregiver burden and improving psychological well-being in light of the high levels of stress these caregivers endure. A systematic review of the body of existing literature was part of the research. According to the review, MBIs help caregivers become more emotionally resilient and develop better coping mechanisms by successfully lowering stress, anxiety, and depressive symptoms. The study underlined that MBIs provide easily accessible, non-pharmacological methods to promote the mental health of caregivers. They recommended more clinical implementation and research to optimize intervention protocols for this population, concluding that parents of children with cerebral palsy can benefit psychologically from incorporating mindfulness practices.

Milani, Nikmanesh, & Farnam (2013) investigated the effectiveness of mindfulness-based cognitive therapy training (MBCT) in reducing aggression among adolescent males at a juvenile correction and rehabilitation center in Zahedan province during 1991 to 1992. A pretest, posttest, and follow-up strategy were used in an experimental design that included an experimental and a control group. 22 participants—10 experimental and 12 control—were chosen by census and their data were collected using the Buss and Perry Aggression Questionnaire (1992). Participants were matched, placed in equivalent groups, and assigned at random based on their pretest aggression scores. Eight group MBCT sessions were given to the experimental group. Two weeks following posttest sessions, follow-up testing was conducted. The effectiveness of MBCT in reducing aggressive behaviors was demonstrated by ANCOVA, which revealed significant reductions in aggression in the experimental group during posttest and follow-up ($P < 0.01$), especially in anger, physical aggression, and hostility ($P < 0.05$), but not verbal aggression.

II. RESEARCH TOOLS

The Buss and Perry Aggression Questionnaire (BPAQ) is a 29-item self-report instrument developed in 1992 to measure various dimensions

of aggression, including physical, verbal, anger, and hostility. It uses factor analysis to identify distinct aggression factors and has been widely used in clinical, community, and research settings to assess aggression and monitor treatment outcomes. The tool has demonstrated reliability and validity across diverse populations and has been adapted and validated in various cultures, making it a standard measure for understanding aggressive behavior in psychological research.

III. DATA COLLECTION

The Buss and Perry Aggression Questionnaire (BPAQ) developed by Arnold H. Buss and Mark Perry (1992) was administered to the subjects individually. The scale was administered according to standard instructions.

A cover sheet was used to collect information regarding demographic characteristics of the subjects. This included gender, age, income, religion, type of family, marital status and residential background. Subjects were assured that their results would be kept confidential and would be used only for research purposes. Table III.I shows the distribution of participants as per their age/

Table III.I

Participant distribution by Age Range (N=30)		
Age Group	**Experimental Group**	**Control Group**
30-40	4	4
41-50	8	8
51-60	3	3
Total	15	15

The intervention was carried out in a quiet room at work, where mindfulness-based cognitive therapy (MBCT) was given to working individuals over the course of 15 days. Participants in the experimental group underwent MBCT, which emphasized anger reduction through guided mindfulness practices and cognitive strategies that increased present-moment awareness and emotional regulation. Each session encouraged participants to monitor their anger-related thoughts, body sensations, and emotional triggers without judgment, so increasing mindful self-awareness and adaptive coping.

Each session included standard amenities such as mats, pre-recorded guided meditation audios, and headphones. Ethical approval was obtained, and subjects gave informed consent before participating. Participants were randomly assigned to the experimental group, and baseline assessments of anger were gathered using the BPAQ. Over the course of 15 days, MBCT sessions were provided on schedule, and participants were asked to provide written comments. At the conclusion of the intervention, anger levels were reviewed to determine the effects of MBCT.

IV. SCORING OF BPAQ

The Buss and Perry Aggression Questionnaire (BPAQ) consists of 29 items, each of which is scored on a 5-point Likert scale from 1 ("extremely uncharacteristic of me") to 5 ("extremely characteristic of me"). The BPAQ assesses four types of aggression: physical aggression (9 items), verbal aggression (5 items), anger (7 items), and hostility (8 things). Scores for each subscale are totaled across relevant items, and the total aggressiveness score is calculated by adding all items, resulting in a theoretical range of 29 to 145, with higher scores indicating greater aggression.

Two items should be reverse-scored; once all items have been correctly scored, subscale and overall scores can be compared to normative data. BPAQ normally takes between 5 and 10 minutes to complete. The compact style enables respondents to answer 29 items with minimal effort while collecting multiple aggression aspects.

V. STATISTICAL ANALYSIS

Table V.I shows the pre and post assessment scores for the experimental and control groups. The results show a significant difference in aggressiveness measures between the experimental and control groups following the intervention. The experimental group showed significant declines in mean scores across all subtests (Physical Aggression, Verbal Aggression, Anger, and Hostility), showing major reductions in aggressive tendencies post-intervention. Notably, the total aggression score decreased from 93.13 (SD = 4.93) before the test to 74.6 (SD = 3.98) after it. In contrast, the control group showed insignificant changes in all subtests, with total aggression ratings remaining nearly constant (93.4-pre;92.47-post).

Table V.I Pre & Post test Aggression scores (Sub-test & Total)

Sub Test	Control Group Pre Mean	Control Group Pre SD	Control Group Post Mean	Control Group Post SD	Experimental Group Pre Mean	Experimental Group Pre SD	Experimental Group Post Mean	Experimental Group Post
Physical Aggression	28.87	2.25	28.6	2.2	28.27	2.02	22.73	1.79
Verbal Aggression	14.53	1.06	14.47	1.06	14.53	1.13	11.87	0.92
Anger	25.13	0.74	25.07	0.8	24.33	1.8	18.33	1.35
Hostility	24.87	0.64	24.33	0.72	26	0.85	21.67	0.9
Aggression (Total)	93.4	4.05	92.47	3.99	93.13	4.93	74.6	3.98

The t-test was used to analyze the mean differences between the pre and post assessments. Prior to and following the test, the experimental group's stress levels varied considerably (Table V.II), while the pre-test and post-test aggression levels of the control group do not differ substantially (Table V.III). Due to MBCT, participants in the intervention group reported feeling less aggressive. (Figure V.I.).

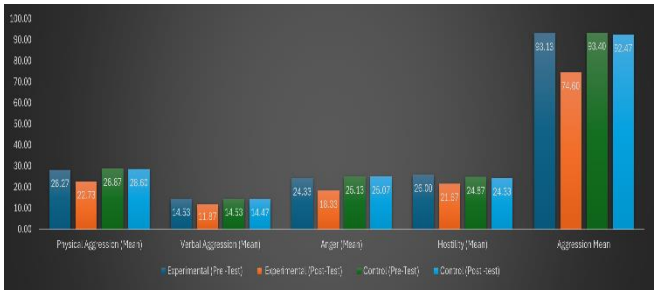
TABLE V.II Experimental Group pre and post t-test scores

Group	Time	N	Aggression Mean	SD Total	t-value
Experimental	Pre	15	93.13	4.93	11.33
Experimental	Post	15	74.6	3.98	

TABLE V.III Control Group pre and post t-test scores

Group	Time	N	Aggression Mean	SD Total	t-value
Control	Pre	15	93.4	4.05	0.63
Control	Post	15	92.47	3.99	

Figure V.I Comparison between means of Experimental & Control groups (Pre & Post Test)



VI. CONCLUSION

The t-statistic measures how many standard errors the coefficient is away from zero. Generally, any t-value greater than +2 or less than – 2 is acceptable. "*The higher the t-value, the greater the confidence we have in the coefficient as a predictor. Low t-values are indications of low reliability of the predictive power of that coefficient*." https://www.allbusiness.com/barrons_dictionary/dictionary-t-value-4942040-1.html

The study's findings significantly support the efficacy of Mindfulness-Based Cognitive Therapy (MBCT) in lowering anger among working people. In the experimental group, the pre- and post-intervention comparison revealed a t-statistic of 11.33, with a two-tailed p-value < 0.000001, suggesting a highly significant drop in anger scores from 93.13 (SD=4.93) to 74.60 (SD=3.98). In contrast, the control group experienced limited change between pre- and post-assessments, with a t-statistic of 0.6335 and a p-value of 0.5315, indicating no statistically significant difference. Aggression scores in this group remained steady, ranging from a mean of 93.4 (SD=4.05) to 92.47 (SD=3.99). The study validates the usefulness of Mindfulness-Based Cognitive Therapy (MBCT) in lowering anger in working adults, adding to the expanding body of evidence supporting mindfulness therapies' potential to improve emotional regulation.

Overall, the data indicates that MBCT is a potential intervention for anger management in the workplace, since it promotes emotional resilience, self-awareness, and improved interpersonal connections. Integrating MBCT into occupational health programs may reduce work-related emotional distress while increasing productivity. Future research should focus on reproducing these findings with varied and bigger groups in order to provide more robust evidence for MBCT's usefulness in anger reduction.

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