

# Research Paper

## Effect of Mindfulness-based Stress Reduction Intervention on Job Stress Among Primary School Teachers in Nigeria



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**Citation** Ossai OV. Effect of Mindfulness-based Stress Reduction Intervention on Job Stress Among Primary School Teachers in Nigeria. *Journal of Research & Health*. 2024; 14(1):55-62. <http://dx.doi.org/10.32598/JRH.14.1.2324.1>

**doi**: <http://dx.doi.org/10.32598/JRH.14.1.2324.1>



### ABSTRACT

**Background:** Despite numerous research reports demonstrating the effectiveness of mindfulness-based stress reduction (MBSR) intervention on psychological well-being, it is unclear how MBSR intervention affects primary school teachers' job stress, especially in a developing country like Nigeria. This study aims to examine whether MBSR intervention is effective in stress reduction among primary school teachers in Nigeria.

**Methods:** This study employed a quasi-experimental pre-test-post-test design with a control group. A total of 70 primary school teachers with stress symptoms were selected using a random sampling technique in Nsukka City, Nigeria during the third academic session of 2023. Thereafter, the sampled teachers were randomly assigned to experimental and control groups (each group=35). The teacher stress scale (TSS) and perceived stress scale (PSS) were administered. Teachers in the experimental group received a MBSR intervention for eight weeks while the control group received no treatment. The data were analyzed using analysis of variance (ANOVA) in SPSS software, version 29.

**Results:** The results showed that the MBSR interventions had a significant reduction in the job stress of primary school teachers in the study ( $F_{(1,126,68)}=159.386$ ;  $P=0.001$ ,  $\eta^2=0.221$ ). Also, a statistically significant interaction effect was observed between time and intervention ( $F_{(2,67)}=120.272$ ;  $P=0.001$ ,  $\eta^2=0.115$ ).

**Conclusion:** This intervention relies on the individual's ability to consciously involve their efforts to pay attention to the surroundings, body sensations, thoughts, and emotions in dealing with job stress. This study adds to the emerging literature on mindfulness-based interventions in solving related psychological problems.

**Keywords:** Stress, Workplace, Intervention, School teachers

#### Article info:

Received: 20 Jun 2023

Accepted: 05 Sep 2023

Publish: 01 Jan 2024

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## Introduction

Globally, the teaching career has been described as very demanding and stressful [1–3]. Daily, teaching requires both physical and mental energy [4, 5]. Stress affects the health and well-being of teachers, as well as their recruitment and retention in the profession [6]. In primary schools, teachers face challenging demands, such as a heavy workload, emotional strain, and limited resources [7–9]. In Nigerian primary schools, the situation is common as a result of the instructional approach, in which a class teacher is expected to teach all school subjects with limited instructional resources [10–12]. The term "teacher stress" describes a variety of physiological, emotional, and psychological reactions to the stressors in the teaching profession, including exhaustion, burnout, depression, and others. Teachers throughout the world have encountered turmoil and tension when attempting to organize and regulate the kids in the classroom [13]. Over the years, numerous studies have sought to pinpoint the main factors contributing to teacher stress [14–16]. These studies concluded that instructors are highly stressed because they must deal with their students' emotions and behavior, both of which interfere with their ability to teach [15, 17, 18].

Several variables have been identified as predisposing teachers to excessive stress [19]. Among teachers, daily aggravation arising from students' behavior issues was recognized as a source of pressure. It frequently results in feelings of inadequacy, exhaustion, and low self-efficacy [15, 20, 21]. According to Granziera, Collie, and Martin [22], teacher stress can be associated with a high rate of teacher attrition, low self-efficacy, decreased job satisfaction, and impaired bodily and emotional. According to Skaalvik et al. [21], stress among instructors may result in lower levels of student involvement and academic achievement. The causes of teacher stress have been determined by several other studies. In particular, these factors include low self-efficacy, unsatisfactory work, inadequate organizational support, a hostile school climate, attrition, weariness, and unfavorable relationships between teachers and students [23]. A successful mental health management intervention is crucial to reduce stress among teachers in primary schools especially in Nigeria. In a meta-analysis regarding the effectiveness of psychological therapies targeted at reducing teacher strain and stress, Iancu et al. [24] found mindfulness interventions have significant benefits on stress and burnout dimensions, weariness, and personal accomplishment.

Mindfulness practice is a form of consciousness that promotes self-awareness, insight, and compassion [25]. The concept of mindfulness has been used by Buddhist lineages for approximately 2500 years [26]. Psychologists believe that many psychological disorders are caused by judgmental minds that categorize events as good or bad and invariably result in frustration, distress, anxiety, and depression [27, 28]. In modern psychology, mindfulness is considered a means of increasing consciousness and openness to mental developments that can affect emotional suffering and unhelpful behavior [29, 30]. According to Santorelli et al. [31], mindfulness-based stress reduction (MBSR) involves the practice of paying conscious attention to one's surroundings, body sensations, thoughts, and emotions. Its main purpose is to help individuals cope with stressful thoughts and events [31]. Several research studies have shown that MBSR reduces negative reactions to stressful situations and boosts empathy and compassion among practitioners [32, 33]. The MBSR process includes body scans, calm breathing, present-moment focus, guided imagery, and non-judgmental observation [28, 33]. Numerous researchers have studied the effectiveness of MBSR interventions using either the original MBSR procedure [31, 34] or modified versions [27, 35]. Many previous studies have reported that significant benefits of MBSR on signs of general distress can be indicative of a range of psychological conditions [36] and quality of life [37].

MBSR has been extensively studied. Beshai et al. [38] used a mindfulness-based intervention to reduce stress levels and enhance well-being among teachers. An intervention group was randomly assigned to the comparison group. Stress, well-being, mindfulness, and self-compassion were measured before the start of the study commencement and during the intervention sessions. The stress level was significantly lower and well-being level was significantly higher in the intervention condition. Bonde et al. [26] conducted an experimental study with cluster-randomized controls to test MBSR. The main result on stress was measured by Cohen's perceived stress scale (PSS). Bootstrapping was used to detect cluster effects using a mixed-effect linear regression model. PSS scores of the intervention group were statistically significantly lower than the wait-list control group by 1.7 (95% CI, 0.04%-3.3%). The mean PSS scores of the intervention group at six months were significantly lower than the wait-list control group by 2.1 (95% CI, 0.5%-3.8%).

Frank et al. [32] conducted a pilot study on MBSR for educators. A modified 8-week MBSR programme was offered to 36 high school teachers as a control group. MBSR participants demonstrated considerable improve-

ments in self-discipline, self-compassion, and mindfulness. Also, significant improvements were observed in the rate and quality of sleep among study participants. Gold et al. [6] conducted a study on MBSR for primary school teachers. A stress-reduction MBSR course was offered to primary school teachers. MBSR was presented to a group of primary school teachers, and their responses were assessed for stress, anxiety, and depression, as well as progress toward a predetermined objective. The mindfulness skills questionnaire showed strong progress on two dimensions. Teachers in a typical Nigerian primary school are burdened by high-stress level as a result of heavy and excessive workloads, children's disruptive behavior, poor work conditions, unfriendly school climate, lack of instructional resources, and poor school facilities. In Nigeria, it has been reported in the literature that many potential sources of stress can predispose teachers to impaired health status as well as job burnout, low job satisfaction, and psychological distress. It is pertinent to note that while MBSR intervention has been used in other countries for different populations, the intervention has not been used in Nigeria, especially for primary school teachers. However, it is unclear whether MBSR intervention can help ameliorate the stress of primary school teachers in Nigeria. Therefore, it is imperative to seek research solutions, which can offer support for teachers to optimally manage their stressors for optimal productivity. The current study was conducted to determine whether MBSR intervention was effective in reducing job stress among primary school teachers in Nigeria. Many facets of teachers' work lives and pressures were considered

## Methods

### Sample and sampling methods

The researchers conducted a quasi-experimental pre-test-post-test design with a control group. The research participants included 70 primary school teachers with stress symptoms. The samples were selected using a random sampling technique in Nsukka City, Nigeria during the third academic session of 2023. Thereafter, the sampled teachers were randomly assigned to experimental and control groups (each group=35). Teachers who participated in the study were randomly selected. Each primary school teacher in the two groups completed an informed consent form before participating in this study. The teacher stress scale (TSS) and PSS were administered. Teachers in the experimental group received a MBSR intervention that lasted for eight weeks while the control group received no treatment. The data were analyzed using analysis of variance (ANOVA) in SPSS

software, version 29. Using the two instruments, the researcher can ascertain the level of job stress among the study population. Eligibility criteria included manifestation of moderate to high stress levels and the provision of written informed consent to participate.

### Instrumentation

The TSS is a scale that contains 23 items, which elicit information on teachers' stress across different areas of the teaching profession [39]. The instrument's items cut across areas, such as lesson planning, behavior of fellow teachers, inability to recognize, and classroom control of students' behavior. The rating was on a five-point Likert scale ranging from, extremely stressful=5 to not at all stressful=1. A total aggregate score was obtained by adding the individual responses and a high score showed higher stress.

The PSS-10 contains 10 items that are used to assess the stressfulness of life situations [40]. The PSS-10 measures the degree to which life has been experienced as unpredictable, uncontrollable, and overloaded in the past month. The PSS-10 has a five-point Likert scale (0=never, 1=almost never, 2=once in a while, 3=often, 4=very often). Sample items include "in the last month, how often have you felt that things were going your way" and "in the last month, how often have you found that you could not cope with all the things that you had to do." Six negative items are scored in the non-reversed direction (i.e. "how often have you felt that you can control the crucial things in your life"). Four positive items are scored in the reversed direction (i.e. "how often have you felt that things were going your way"). The total scores range from 0 to 40, with higher scores indicating greater perceived stress. To ensure the reliability and validity of the instruments, the instruments were subjected to trial testing, after which the reliability scores were calculated using the IBM SPSS, software, version 29. The PSS and TSS had Cronbach's  $\alpha$  reliability scores of 0.91 and 0.88, respectively.

### Procedure

The MBSR intervention package was presented to primary school teachers using a modified version of Kabat-Zinn [34] course manuals. This package was designed to be used for eight weeks. For each course period, a course plan was prepared by the researcher by reviewing relevant literature and with the help of experts in educational psychology, stating how the course training will be conducted. Each course plan was designed to be observed 8 times in 1-hour sessions per week, including a 5-hour

session normally conducted on a Saturday between the 5<sup>th</sup> and 6<sup>th</sup> week as a silent day observation. Information in the MBSR intervention package is meant to guide the research assistants in coaching primary school teachers [35]. The primary school teachers in the waitlist control group were scheduled to receive their course intervention one month after the last follow-up meeting. The research data were collected two times (pre-test and post-test). In this study, the research assistants are certified clinicians with industrial experience at the Nsukka Psychotherapy Centre. The research assistants were trained on the rudiments of the MBSR intervention package.

**Data analysis**

Data were analyzed in the IBM SPSS software, version 29 using repeated measures ANOVA (statistical significance level was set at  $P < 0.05$ ). Analysis of primary school teachers’ demographic characteristics was performed for each group using relevant statistical tests.

**Results**

**Demographic characteristics of the study participants**

Based on the biodata of this study, 41% of the participants were men and 59% were women. Also, 24% of the participants were in the age bracket of 25-30; 43% of the participants were in the age bracket of 31-35; and 33% of the participants were in the age bracket of 36-40.

Table 1 shows the timelines in the intervention of the study. Table 2 presents the pre-test-post-test, and follow-up tests of the participants in mindfulness and waiting groups. The data show that at pre-test, the mean ratings of participants in mindfulness and waiting groups were almost the same based on their stress perceptions. However, in the post-test, the participants’ mean stress rating drastically decreased compared to participants on the waiting list. A further decline was observed in the mean ratings of participants in the mindfulness group compared to the waiting list.

Since differences exist in the post-test and follow-up test, the dataset was subjected to repeated ANOVA. The data showed a significant difference in terms of time ( $F_{(1,126, 68)} = 531.468$ ;  $P = 0.001$ ,  $\eta^2 = 0.507$ ). With regard to intervention, a significant difference was observed ( $F_{(1,126, 68)} = 159.386$ ;  $P = 0.001$ ,  $\eta^2 = 0.221$ ). Finally, a statistically significant interaction effect was observed between time and intervention ( $F_{(2, 67)} = 120.272$ ;  $P = 0.001$ ,  $\eta^2 = 0.115$ ). Since  $P < 0.05$ , the alternative hypotheses were accepted. Furthermore, a post hoc test was conducted since a significant difference was observed in terms of time and intervention. Holm post hoc test revealed a significant difference in Mean $\pm$ SD ratings of mindfulness and waiting list ( $-23.013 \pm 1.823$ ;  $P = 0.001$ ). Concerning significant differences exist between pre-test and post-test ( $35.577 \pm 1.308$ ;  $P = 0.001$ ), pre-test and follow-up ( $338.150 \pm 1.308$ ;  $P = 0.001$ ), and post-test and follow-up ( $2.573 \pm 1.308$ ;  $P = 0.001$ ).

Data in Table 3 illustrates the pre-test, post-test, and follow-up test results for the participants in the mindfulness and waiting groups, as determined by TSS. In terms of stress perceptions, the data indicate that the mean ratings of participants in mindfulness and waiting groups were almost identical at pre-test. However, in the post-test, the participant’s mean stress rating dramatically decreased when compared to participants in the control group. Participants in the mindfulness group experienced a further decline in mean ratings as compared to those in the control group.

According to the difference between the post-test and the follow-up test, the dataset was subjected to repeated ANOVA. According to the data, a significant difference was observed in terms of time ( $F_{(1,165, 68)} = 32.320$ ;  $P = 0.001$ ,  $\eta^2 = 0.048$ ). In terms of the intervention, a significant difference was observed ( $F_{(1, 68)} = 174.340$ ;  $P = 0.001$ ,  $\eta^2 = 0.448$ ). Finally, a statistically significant interaction effect was observed between time and intervention ( $F_{(1,165, 68)} = 156.390$ ;  $P = 0.001$ ,  $\eta^2 = 0.232$ ). Since  $P < 0.05$ , the alternative hypotheses were accepted. In addition, a post hoc analysis was performed since a significant difference was observed in both time and in-

**Table 1.** Timelines in the intervention procedures

Time	Title of Session	Activity
1	Pre-test	The assessment is done before the intervention in the form of baseline data using TSS and PSS
2	Post-test	The assessment is done after the intervention to check for the effectiveness of the MBSR
3	Follow up	The assessment is done after the intervention to check for the overall long-term effectiveness of the MBSR over a specific period.

Abbreviations: MBSR: Mindfulness-based stress reduction; TSS: Teacher stress scale; PSS: Perceived stress scale.



**Table 2.** Mean±SD of stress among primary school teachers as measured by PSS

Times	Intervention	Mean±SD	No.
Pre-test	Mindfulness	85.147±7.287	34
	Waiting	84.743±8.078	35
Post-test	Mindfulness	31.765±6.805	34
	Waiting	66.971±13.652	35
Follow-up	Mindfulness	29.676±5.762	34
	Waiting	63.914±13.821	35



intervention. A post hoc Holm test revealed a significant difference in Mean±SD ratings of mindfulness and control group (-11.886±1.132; P=0.001). In terms of time, significant differences exist between pre-test and post-test (35.577±0.956; P=0.001), pre-test and follow-up (34.000±0.956; P=0.001) and post-test and follow-up (3.200±0.956; P=0.001).

## Discussion

The study was conducted to examine how MBSR affects the job stress level among primary school teachers in Nigeria. In the post-test, MBSR significantly reduced primary school teachers' job stress. Through MBSR interventions, primary school teachers can effectively manage their stress. The results of the study indicated that most participants experienced drastically reduced stress after the intervention. This is consistent with the research conducted by Beshai et al. [38], who reported that those in the intervention group experienced significantly lower levels of stress and higher levels of well-being following the intervention than the comparison group. This means that the basic tenets of MBSR tend

to ameliorate job stress among primary school teachers. As demonstrated by previous studies [6, 41, 42], MBSR interventions are effective in helping people with stress-related problems. The study results support the results of Burton et al. [43] who reported that occupational stress was significantly decreased.

In this study, the results indicate that teachers in a typical Nigerian primary school are under high-stress level as a result of heavy and excessive workloads. MBSR intervention is very effective in reducing stress-related issues. The results of this study confirm the results of Bonde et al. [26], who discovered a statistically significant decrease in the mean score for perceived stress in the intervention group. Additionally, the results of previous research using MBSR intervention to treat occupational stress were substantial among the study participants [44]. Several plausible arguments can account for the differences among the groups studied. However, in this study, it can be validly claimed that the greater percentage of the significant difference in the post-test scores of the participants on the MBSR can be attributed to the effect of the intervention. Similarly, a previous

**Table 3.** Mean±SD of stress among primary school teachers as measured by TSS (n=35)

Times	Intervention	Mean±SD
Pre-test	Mindfulness	56.057±3.955
	Waiting	55.543±4.321
Post-test	Mindfulness	15.000±3.888
	Waiting	35.000±11.494
Follow-up	Mindfulness	13.714±3.801
	Waiting	29.886±8.149



study conducted by Omid et al. [45] showed encouraging results on the effectiveness of MBSR intervention for stress reduction among different population groups. Another previous study by Gouda et al. [46] reveals that the effectiveness of MBSR intervention on job stress and related symptoms among research participants who received MBSR intervention for job stress from the pre- to the post-treatment phases was also supported by these authors. Teachers in Nigeria are particularly prone to excessive job stress which impairs their performance on the job. However, if the MBSR intervention is carefully administered, it will lead to a positive outcome. This assertion is supported by the results of Jennings and DeMauro [47] who found that MBSRIs decreased teachers' job stress among students at sampled schools, which is similar to the results in this study. It is imperative to note that the statistically significant interaction effect between time and intervention can be attributed to the efficacy of the instructional package. This result implies that teachers' job stress can hamper their productivity and job performance. Therefore, teachers who are prone to stress must be subjected to intervention to help them cope effectively with their job demands.

## Conclusion

According to the study, primary school teachers' work-related stress can be effectively reduced by MBSR intervention. A vigorous application of MBSR intervention for job stress among primary school teachers can highly benefit their academic productivity, psychological health, and overall well-being by identifying and addressing the causes of their job stress. It may be possible to study how well MBSRI works for teachers about their job stress and other crucial psychological factors to improve their productivity.

## Ethical Considerations

### Compliance with ethical guidelines

The Ethical Approval was obtained from the Ethics Committee of the Faculty of Education, University of Nigeria (Code: REB/FE/OO3/F2). The participants provided written informed consent to take part in this study.

### Funding

This research did not receive any grant from funding agencies in the public, commercial, or non-profit sectors.

## Acknowledgments

The author appreciates all the people who contributed in several ways to the success of the research study, especially the research assistants who facilitated the clinical and intervention procedures.

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