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The Impact of Mindfulness on Stress Reduction among Female Teachers in Mangalore

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Abstract

Objective: The aim of the current study was investigating the efficacy of a Dialectical Behaviour Therapy (DBT)-informed Mindfulness intervention (DBT-MI) in reducing stress in schoolteachers. It is well accepted that teaching is a high-stress profession, and individuals who experience this may become burned out and perform poorly. This study aims to contribute with empirical evidence about the impact that mindfulness exerts on teacher well-being.

Materials and Methods: A quasi-experimental, non-equivalent control group design was adopted. The sample consisted of 30 female teachers in the age range of 25 to 45 working in state syllabus schools in Mangalore for the study. Teachers were classified as low and high stress based on their Teacher Stress Inventory scores developed by Michael J. Fimian & Fastenau, P. S. (1990). The TSI assesses teacher stress across 10 dimensions. Those in the experimental group (n=15) took a 4-week, DBT-informed mindfulness intervention in addition to treatment as usual, whereas participants in the control group (n=15) did not take any intervention. Pre-test and post-test Analyses were carried out. Wilcoxon signed-rank test and Mann-Whitney U test were performed to analyse the data.

Results: The experimental group showed a significant decrease in stress scores after intervention ($p < 0.001$), and there was no significant change in stress scores in the control group ($p = 1.000$) the post-test difference between the experimental and control groups was statistically significant.

Conclusion: This research concludes that mindfulness (DBT) training has a stress-reducing effect among teachers. Results highlight the importance of structured psychological interventions to improve teacher mental health and professional functioning.

Keywords; mindfulness, teacher stress, DBT intervention, Mangalore, stress reduction

INTRODUCTION

Stress is a common human response that happens when demands exceed someone's ability to cope. Teaching involves many demands, such as preparing lessons, managing classrooms, dealing with administrative tasks, and adjusting to changing policies. Because of this, teachers often endure prolonged stress. This job-related stress can lead to emotional exhaustion, burnout, and lower job satisfaction.

These problems can harm teaching, reduce student engagement, and negatively impact student outcomes. Mindfulness-based interventions (MBIs) have received attention as a practical way to lessen stress and burnout in teachers, improve their well-being and emotional control, and boost their confidence. A meta-analysis of 29 studies with more than 1,400 teachers showed that MBIs had a medium effect size ($g \approx 0.60$) in areas like stress reduction and better psychosocial functioning (Klingbeil & Renshaw, 2018).

A systematic review from 2017 found significant promise in MBIs for enhancing teachers' emotional regulation, which is crucial for reducing stress and burnout (Emerson et al., 2017). Recent studies have further supported the evidence for mindfulness-based programs. For instance, a randomized controlled trial showed that taking part in an eight-week MBSR program significantly lowered perceived stress among lower-secondary school teachers at three- and six-month follow-ups compared to a waitlist control group (Hwang et al., 2019).

Given the challenging nature of teaching, especially in cultures and institutions that may lack formal mental health support, there is a strong need for structured, evidence-based programs designed for educators. Mindfulness training offers a flexible, scalable, and potentially culturally suitable way to build resilience, emotional regulation, and long-term well-being among teachers. This study aims to evaluate the effectiveness of a structured mindfulness program based on Dialectical Behavior Therapy (DBT) mindfulness principles among school teachers. The study will focus on reducing stress, improving emotional regulation, and boosting professional functioning.

Research indicates the possible benefits of mindfulness programs for teachers. Studies on mindfulness interventions have reported many positive results. A large eight-week MBSR program for educators found significant increases in mindfulness, self-compassion, and work accomplishments, along with decreases in anxiety, fatigue, and emotional exhaustion (Dave et al., 2020). A randomized controlled trial involving teachers, students, and parents showed improvements in mindfulness, emotional regulation, and teaching effectiveness, which positively influenced students' social skills and the school environment (Carvalho et al., 2021).

Finally, studies on DBT-based interventions suggest that structured DBT-mindfulness programs can support resilience and emotional regulation. Teachers participating in DBT-informed mindfulness training showed improvements in resilience and reductions in burnout. These findings suggest that DBT-based mindfulness holds promise for enhancing teacher well-being, stress management, and professional effectiveness.

METHOD

Aim

To assess the impact of a structured DBT-based mindfulness intervention on stress among female teachers.

Objectives

- To assess the baseline stress levels of teachers using Teacher Stress Inventory
- To implement the Dialectical Behavioural Therapy mindfulness module among the intervention group
- To compare the Pre-and Post-intervention stress levels of the experimental and control groups.

Hypothesis

- H₀₁: There is no significant difference in the level of stress between pre- and post-test scores among the teachers in the experimental group.
- H₀₂: There is no significant difference in the level of stress in post-test scores between the control group and the experimental group of teachers.
- H₀₃: There is no significant difference in the level of stress between pre- and post-test scores among the teachers in the control group.

VARIABLES

- The study consists of two types of variables: Independent and Dependent variables
- Independent variable- Mindfulness
- Dependent variable- Stress Reduction

Sample and Inclusion/Exclusion criteria

The study employed Purposive sampling. The sample included 30 women teachers aged 25–45 years from two state syllabus schools in Mangalore 15 teachers from each school. The inclusion criteria were having at least one year of teaching experience, currently working in Mangalore, and being willing to participate in the intervention. Participants were excluded if they had a diagnosed mental health disorder, Teachers who fall outside the 25-45 years age group, Male Teachers aged 25-45 years were excluded and teachers who were not employed in Mangalore.

Ethical consideration

Ethical clearance was received from the research committee of the institution. Informed consent was obtained from all the participants. Confidentiality was ensured, and their names would be anonymous. Data collected was for academic purpose and were aware of their rights to withdraw at any point. All published literature and past research work referred in the study were duly credited using the APA referencing system as per institutional guidelines. The greatest possible ethical neutrality and integrity were always upheld during the investigation, analysis, and interpretation.

TOOLS

Socio-Demographic Profile Sheet:

Socio-Demographic Profile Sheet is a sheet of characteristics of the participants. It will be made up of

elementary personal information needed for the research. It will be maintained confidential at all times. Sociodemographic information such as Name, Age, Gender, Teaching experience, Educational qualification, Teaching hours

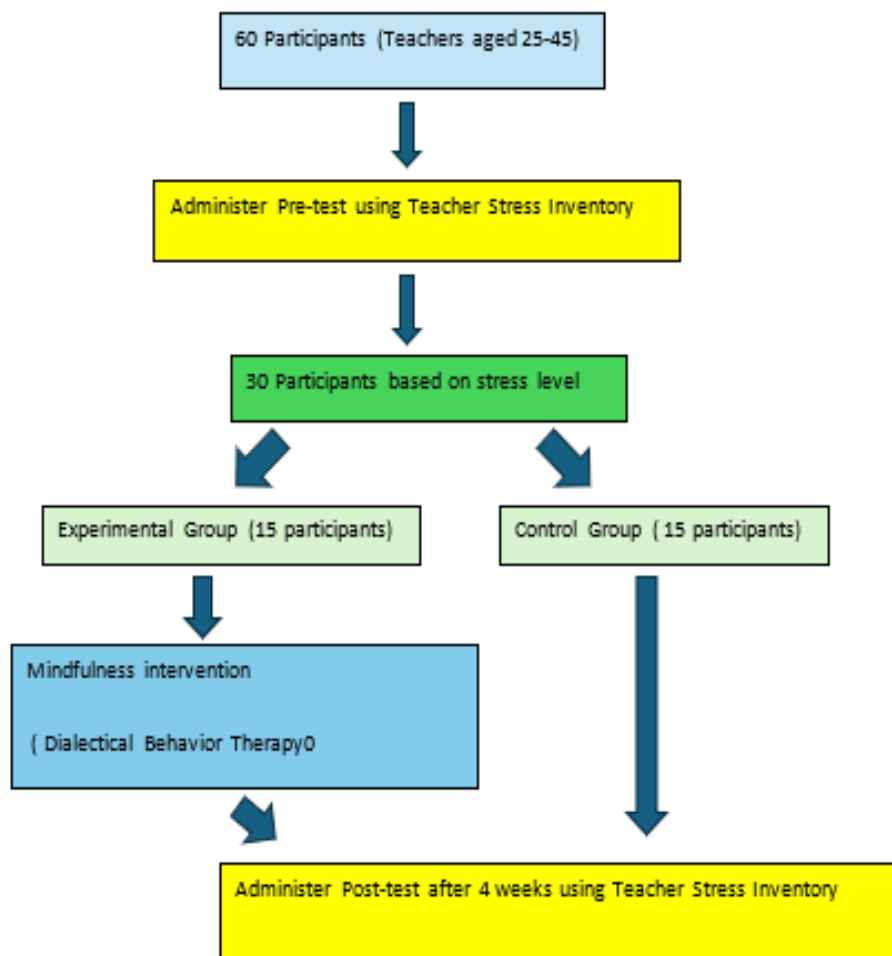
Teacher stress inventory by Fimian, M. J., & Fastenau, P. S. (1990).

The Teacher Stress Inventory (TSI) is a measure of occupational stress among teachers. The TSI is 49 items

from a five-point Likert scale measure ten dimensions, and they are split into 10 aspects to teacher stress, such as sources of stress, emotional expressions and coping strategies.

Study design and Procedure

The study employed a quasi-experimental, non-equivalent control group design



The procedure was conducted in four Phases

Phase I:

- The research proposal was submitted to the ethical committee for approval.
- Once approved, two schools in Mangalore will be approached to recruit participants. The purpose of the study, the group process, and ethical considerations will be explained to the schools.

Phase II:

Recruitment and Pre-Test:

- A total of 60 female teachers will be recruited from state syllabus (30 participants from each school).
- A pre-test will be conducted using the Teacher Stress Inventory (TSI) to assess baseline stress levels.
- From the 60 participants, 30 Female teachers will be selected based on their stress levels (judgmental sampling).

- The selected participants will be divided into two groups:
- **Experimental Group:** 15 female teachers will undergo the mindfulness intervention.
- **Control Group:** 15 female teachers will not receive any intervention but will remain part of the study.

Phase III

Experimental Group Mindfulness Intervention:

- Invitations will be sent to the experimental group for group process sessions.
- The sessions will commence with an explanation of ethical considerations.
- The experimental group will participate in two sessions of Dialectical Behaviour Therapy (DBT) mindfulness module interventions, each lasting 45 minutes.

The mindfulness training program will last for 45 minutes. Participants will be guided through each technique, with instructions provided for practice. To ensure consistency, participants will be asked to practice the techniques daily for 4 weeks. Their progress will be tracked through weekly brief check-ins, either in person or through a digital platform.

These will include reflections on their experiences with the techniques; any challenges faced, and observed changes in stress levels. 8. To ensure practice consistency, participants will be asked to practice mindfulness techniques daily for four weeks. Weekly check-ins (either in-person or digitally) will track their progress, address challenges, and gather reflections.

Control Group:

The control group will be contacted at the beginning to explain the process but will not receive any intervention.

Phase IV:

- After four weeks, a post-test using the Teacher Stress Inventory (TSI) will be administered to both the experimental and control groups to measure stress levels.
- Data from the pre-test and post-test will be scored, analysed, and interpreted.
- A comparison of stress levels between the experimental and control groups will determine the effectiveness of the mindfulness intervention.

INTERVENTION

Rationale for Intervention planning

The justification for designing a DBT-oriented mindfulness intervention for teachers rests on the fact that the occupation of teaching is exceedingly demanding. Teachers are frequently overloaded with academic duties, emotional demands, administrative work, and classroom organization, which contribute to increased stress levels, burnout, and diminished competence in their job. In the Indian context, particularly among female government school teachers, these stressors are compounded by large class sizes, poor infrastructure, social pressure, and juggling professional and family responsibilities. These complicate the risk of chronic stress and associated mental health problems. Mindfulness, specifically through the Dialectical Behaviour Therapy (DBT) module, has emerged as a successful intervention in improving emotional regulation, stress reduction, and enhancing coping skills. DBT's systematic mindfulness module fosters self-awareness and emotional management, which are essential for coping with occupational stress. In spite of international empirical validation for mindfulness interventions, culturally adapted and systematic DBT-based mindfulness programs do not exist for teachers in India. This research hopes to fill that gap by presenting context-specific empirical evidence. The intervention methods included Mindful Breathing, Describe Your Emotions, Thought Diffusion, Judgment Diffusion, and Focus Shifting are intended to be uncomplicated, accessible, and time-effective so that they can work for busy teachers. Each method assists in addressing various facets of stress, emotional awareness, negative thinking reduction, and being present in the moment. The considerable decrease in stress levels among the intervention group following the program, compared to the control group, demonstrates the efficacy of such interventions in real-world school contexts. In addition, the intervention aligns with several of the Sustainable Development Goals, such as ensuring good health and well-being, improving the quality of education, facilitating decent work conditions, and promoting cooperative efforts towards enhancing mental health support systems for teachers.

RESULTS

As shown in Table 1 presents the results of the Shapiro-Wilk test for normality in Teacher stress levels across groups. The Control Group has a p-value of 0.682, suggesting that the data follows a normal distribution. However, the Experimental Group has a p-value of 0.046, indicating a deviation from normality. Which means the data

for this group is not normally distributed and may require non-parametric tests for further analysis.

Table 2 The Mann-Whitney U test was conducted to assess teacher stress across the experimental and control groups. It was hypothesized that there would be no significant differences in teacher stress between the two groups. The Z value is -1.749 and the p-value is 0.080. Since the p-value is greater than 0.05, the null hypothesis is accepted, indicating that there is no significant difference in teacher stress between the experimental and control groups. This suggests that the distribution of teacher stress scores is similar across both groups, even though the mean rank for the experimental group (18.30) is higher than that of the control group (12.70).

The Mann-Whitney U test ($Z = -1.749$, $p = 0.080$) indicates that there is no statistically significant difference in teacher stress between the groups. Although the mean rank of the experimental group (18.30) is higher than that of the control group (12.70), the p-value suggests that both groups were comparable at baseline (before the mindfulness intervention was introduced)

Since this analysis is based on pre-test data, future comparisons with post-test results will help determine whether the intervention had any long-term impact on teacher stress. Further research should also consider individual differences in mindfulness practice, workload, and coping mechanisms to better understand how mindfulness affects teacher well-being.

Table 3, presents the findings of the Wilcoxon Signed-Ranks Test, which was performed to compare the pre-test and post-test scores on the teacher stress inventory within the experimental group. The analysis indicated that all 15 participants exhibited lower scores in the post-test compared to the pre-test, with a complete absence of negative ranks or ties. This is illustrated by the positive ranks (Mean Rank = 8.00, Sum of Ranks = 120.00). The Z statistic was -3.408, accompanied by a p-value of 0.001, signifying a statistically significant decrease in stress levels following the mindfulness intervention ($p < 0.05$).

Therefore, the null hypothesis that there is no significant difference in the level of stress between pre- and post-test scores among teachers in the experimental group is rejected.

Table 4 presents the outcomes of the Wilcoxon Signed-Ranks Test performed to assess the pre-test and post-test results on the teacher stress inventory for the control group.

The analysis demonstrated that all 15 participants displayed the same scores for both the pre- and post-tests, as evidenced by 15 ties and an absence of positive or negative ranks. As a result, the Z value is 0.000 and the p-value is 1.000, indicating that the results are not statistically significant ($p > 0.05$). Therefore, the null hypothesis that there is no significant difference in the level of stress between pre- and post-test scores among teachers in the control group is accepted.

DISCUSSION

The current research explored the impact of mindfulness-based intervention on teacher stress. Research suggests that mindfulness-based interventions (MBIs) can help teachers better regulate their emotions and reduce stress. Systematic reviews show improvements in teachers' emotional regulation and resilience (Emerson et al., 2017), while meta-analytic evidence shows moderate effect sizes for MBIs in reducing stress and improving psychosocial functioning (Klingbeil & Renshaw, 2018). Individual studies, including cluster-randomized trials, have shown that structured programs like eight-week MBSR interventions significantly decrease perceived stress and improve well-being among educators (Hwang et al., 2019).

The results of this research confirm these findings in the experimental group. There was a significant decrease in pre-test and post-test stress scores as indicated by the Wilcoxon Signed-Ranks Test ($Z = -3.408$, $p = 0.001$), which means that the mindfulness intervention had a positive effect on teachers participating in the program.

On the other hand, the control group did not manifest a significant difference in stress scores ($Z = 0.000$, $p = 1.000$), indicating that under no intervention, stress levels among educators did not change. This is in keeping with research by Jennings et al. (2011) and Roeser et al. (2013), which similarly indicated sustained stress among control groups who were not trained in mindfulness practices.

Nonetheless, the Mann-Whitney U test of post-test scores between the experimental and control groups ($U = 70.500$, $p = 0.080$) did not show a statistically significant difference. Even though the experimental group had a higher mean rank, the difference was not significant enough. This could be due to factors like small sample size, differences in individuals' stress levels, or short intervention duration.

Although within-group improvement among the experimental group lends support to the worth of mindfulness, failure to detect a significant between-group

effect attests to the need for more research. Larger samples, extended intervention duration, and follow-up studies may serve to elucidate the long-term effect and greater generalizability of such programs.

Overall, the results indicate that mindfulness interventions are able to decrease stress in teachers within individuals but that stronger designs are necessary to demonstrate statistically significant between-group effects.

LIMITATIONS

The research only targeted 30 women teachers from Mangalore, which could be a shortcoming and Male teachers and volunteers from diverse geographies, were excluded in the study, limiting broader applicability of the findings.

IMPLICATIONS

The outcomes of this research have significant implications that are consistent with a number of Sustainable Development Goals (SDGs). Concerning SDG 4: Quality Education, schools can integrate DBT mindfulness modules into teacher education programs to enable educators to better control their emotions and minimize stress levels, thus leading to improved teaching quality. In the context of SDG 3: Good Health and Well-being, educators can incorporate short, daily mindfulness exercises, e.g., 10-minute breathing exercises, as a mode of self-care to enhance and sustain their mental well-being. Furthermore, extending DBT skills outside of treatment settings, as emphasized in SDG 8: Decent Work and Economic Growth, highlights their utility in creating a healthy and productive workplace for educators. The incorporation of mindfulness in teacher professional development, as well as the enhancement of mental health support in schools, has the double benefit of serving SDG 3 and SDG 4, which results in improved teacher well-being and improved educational outcomes. Additionally, consistent with SDG 17: Partnerships for the Goals, the enlargement of research in a range of school contexts can reinforce partnerships and contribute to the construction of evidence-based practices that assist educators in multiple regions.

CONCLUSION

This study shows that a short mindfulness program based on Dialectical Behaviour Therapy (DBT) can successfully reduce the levels of stress among teachers. The findings coincide with previous international research highlighting the benefits of mindfulness.

The findings suggest that DBT mindfulness is a viable and effective option for busy teachers, especially when

sessions are as short as approximately 45 minutes. However, to maintain these benefits in the long term, schools need to focus on regulating teachers' workloads and providing ongoing support.

Encouraging the mental health of teachers is imperative, as it not only benefits the educators but also improves the classroom environment and student learning. Adding DBT mindfulness to teacher support programs can lead to healthier teachers, enhanced classroom experiences, and improved student outcomes. This is a major step toward sustainable improvements in the education system.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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Tables

Table 1: Shapiro-Wilk Test of Normality

Type of group	Statistics	df	p-value
Experimental	0.879	15	0.046
Control	0.959	15	0.682

Table 2: Mann-Whitney U Test for Experimental and controlled group (Pre-test)

Type of group	Mean rank	Z Value	p-value
Experimental	18.30	-1.749	0.080
Control	12.70		

Table 3: Wilcoxon Signed-Rank test for Experimental group (pre-test vs post-test)

							Rank	n	Mean rank	Sum of ranks	Z value	P value
		post-test - pretest					Positive ranks	15	8.00	120.00		-
							Negative ranks	0	-	-	-	-
							Ties	0	-	-	-3.408	0.001
							Total	15				

Table 4: Wilcoxon Signed-Rank test for Control group (pre-test vs post-test)

		Ranks	n	Mean rank	Sum of ranks	Z value	P value
Posttestcontrol- pretestcontrol		Positive rank	0	-	-	-	-
		Negative rank	0	-	-	-	-
		Ties	15	-	-	0.000	1.000
		Total	15	-	-		

Appendix A

Dialectical behaviour therapy, Mindfulness module

Name of the technique	Objective	Rationale for choosing the technique	Time required to practice	Instructions
Mindful Breathing	To help teachers relax and stay present by focusing on their breath.	It is simple and helps in quickly reducing stress by grounding participants in the present moment.	10 minutes	1. Sit comfortably with your back straight and feet on the ground. 2. Close your eyes or keep a soft gaze. 3. Inhale deeply through your nose, counting to 4. 4. Hold your breath for a moment. 5. Exhale slowly through your mouth, counting to 6. 6. Focus on how your breath feels as it enters and leaves your body.

				Guide participants through 10 minutes of breathing practice.
Describe Your Emotions	To build emotional awareness by encouraging teachers to identify and describe their feelings.	Helps teachers understand and manage their emotions, which is crucial for stress management.	10 minutes	Take a moment to think about how you're feeling right now. - Name the emotion you're experiencing (e.g., happy, sad, nervous). - Think about what caused this feeling. - Describe it in one sentence, like, 'I feel nervous because I have a lot to do.' Give participants for 10 minute to reflect or write it down.
Thought Diffusion	To encourage detachment from negative thoughts by visualizing them as passing clouds.	Reduces the impact of negative thoughts by creating a sense of distance from them.	10 minutes	-Close your eyes and imagine sitting by a calm river or watching the sky. - Picture your stressful or negative thought as a cloud drifting by. - Let the cloud pass without holding onto it. - If another thought comes up, do the same. Guide participants through 10 minutes of visualization.
Judgment Diffusion	To promote self-acceptance by letting go of judgments about their feelings.	Encourages a non-judgmental stance towards oneself, which reduces self-critical stress.	10 minutes	Close your eyes and notice if you're judging yourself or your feelings. - Acknowledge the judgment, but remind yourself: 'This is just a thought, not a fact.' - Let the judgment go and focus on accepting yourself as you are. Guide participants through 10 minutes of practice.
Focus Shifting (Inner & Outer)	To balance awareness of thoughts with surroundings, helping shift focus to the present.	Supports flexibility in focus, making it easier to divert attention from stressors to the present.	5 minutes	-Focus on your breath for 10 seconds -Then look around and focus on an object in the room. -Notice its shape, color and texture for 10 seconds. -Alternate between focusing on your inner world and outer world Guide participants through a few rounds of focus shifting for 5 minutes.