

Effect of Diaphragmatic Breathing and Jacobson's Relaxation Technique in Female School Teachers with Burnout Syndrome

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ABSTRACT

Burnout is a self-explanatory term which says person is no longer able to use his energy for fulfilling demands. Burnout results from chronic workplace stress. Three classical symptoms of burnout are: exhaustion, depersonalization, reduced personal accomplishment. Burnout has bad impact on work-life balance. Teachers participated in the study were subjected to diaphragmatic breathing and Jacobson's relaxation technique. Diaphragmatic breathing and Jacobson's relaxation technique were given as interventions. Intervention was given for a period of four weeks, three times a week. Total twelve sessions were conducted. Teachers were again assessed for burnout following four weeks of intervention sessions. Obtained data was statistically analysed. Statistical analysis has shown significant difference between pre intervention and post intervention scores of all the four primary dimensions. Significant difference is obtained between pre and post intervention scores of all the four primary dimensions and the total BAT-23 score as p value obtained was <0.001. This study concludes that Diaphragmatic breathing and Jacobson's relaxation technique are effective in reducing the levels of Burnout

Keywords: Burnout Syndrome, Diaphragmatic Breathing, Jacobson's Relaxation Technique.

INTRODUCTION

The World Health Organization's International Classification of Diseases (ICD- 11; 2019) defines burnout as: A syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions, feeling of energy depletion or exhaustion, increased mental distance from one's job, or feeling of negativism or cynicism related to one's job, and reduced professional efficiency⁽¹⁾. Burnout is a self-explanatory term in itself which says that the person is burned out, which means he is no longer able to burn or use his energy for fulfilling demands. Burnout is also considered as mental health problem which arises in context of work⁽²⁾. Three classical symptoms of burnout syndrome are exhaustion, depersonalization and reduced personal accomplishment⁽³⁾. Burnout was first defined by Freudenberger⁽⁶⁾ as a syndrome affecting predominantly people in jobs with a high social and ethical responsibility.⁽⁷⁾

There are different tools to assess burnout. This study has used Work related version of Burnout Assessment Tool as an outcome

measure. Work related version of Burnout Assessment Tool is a well validated 33 item questionnaires with an excellent test-retest reliability (Cronbach's alpha is 0.95 for the total BAT-C) ⁽⁹⁾. The work-related version applies to individuals with recent or current work experience (few weeks to 1 month). Scale has total 33 items. Core dimensions assessed are: exhaustion, mental distance, impaired emotional and cognitive control (23 items). Secondary dimensions assessed are: psychological and psychosomatic complains (10 items).

Professionals in the fields like education, healthcare, social workers and psychologist often experience high rates of burnout ⁽⁴⁾.

Female teachers navigate complexities of professional responsibilities alongside domestic duties, including childcare, household management and caregiving. This often requires organizational skills and the ability to prioritise effectively. They often face a multitude of stressors that can impact their well-being, job satisfaction, and overall effectiveness in the classroom. These stressors can be categorized into several key areas: workload and time pressure, classroom management, student diversity, individual needs, administrative challenges, organizational challenges, parental and community expectations, work life balance, lack of resources and support, large classes, not having enough resources, and not getting enough support from school administration. When teachers deal with these challenges for a long time without having good ways to cope, it might lead to burnout. This affects not only their health and happiness at work but also how effective they are in teaching and engaging with students in the classroom. Diaphragmatic Breathing and Jacobson's Relaxation contribute to stress management and enhanced attention and lower cortisol levels ⁽⁸⁾. Breathing exercises and relaxation technique not only physically relax body but also foster emotional challenges ⁽⁸⁾.

Aim is to find the effect of diaphragmatic breathing and Jacobson's relaxation technique in female school teachers with burnout syndrome.

Objectives are to assess burnout syndrome and find the effect of Diaphragmatic Breathing and Jacobson's relaxation technique in female school teachers with Burnout Syndrome.

MATERIALS & METHODS

Materials used are case record form, informed consent document, Burnout Assessment Tool – work related version, pen and Mat.

Method: IEC approval was taken. Sample selection was done with appropriate sampling technique and considering the inclusion and exclusion criteria. Procedure and need of study was explained and informed consent was taken. After taking the demographic data, the pre-intervention burnout was determined by burnout assessment tool – work related version. The 4-week intervention consisted of 3 weekly sessions for each of the participant. The intervention featured a combination of Diaphragmatic Breathing and Jacobson's progressive muscle relaxation. After four weeks, the post intervention burnout assessment tool work related was used to assess the burnout.

The collected data was compiled and statically, analysed for results and conclusion

STATISTICAL ANALYSIS

Statistical analysis was performed using SPSS 21.0 Version.

RESULT

The study results showed that among 4 dimensions of burnout, exhaustion was the highly affected dimension with mean of 31.09 ± 4.61 , followed by cognitive impairment with mean of 20.48 ± 3.83 , emotional impairment with mean of 19.55 ± 3.21 and mental distance with mean of 17.70 ± 4.30 . Among 33 teachers, 88% teachers reported high levels of exhaustion, 9 % teachers reported high levels of cognitive impairment and 3% teachers reported high levels of emotional impairment. It is observed that there is significant

improvement in score of emotional impairment, followed by mental distance, cognitive impairment and then exhaustion, post intervention ($p < 0.001$). Post intervention, emotional impairment dimension has showed improvement of 67.7% followed by 64.5% improvement in mental distance, 64.4% improvement in

cognitive impairment and 63.94% improvement in dimension of exhaustion. This difference was calculated based on their pre and post intervention scores. Exhaustion was the most affected dimension among all 4 dimensions, and it has shown less improvement in comparison to other 3 dimensions of burnout.

Table 1: Pre and post intervention comparative analysis of Exhaustion score

Sr. No.	Pre-intervention Exhaustion score	Post-intervention Exhaustion score	Test used	Statistics	Significance (p value)
01	Mean \pm SD = 31.09 \pm 4.61	Mean \pm SD = 19.88 \pm 4.06	Paired t Test	t = 15.321	<0.001

Interpretation: According to the Paired t Test, post-intervention Exhaustion score (mean \pm SD = 19.88 \pm 4.06) was statistically significantly lower than that of pre-intervention (mean \pm SD = 31.09 \pm 4.61) (t = 15.321, $p < 0.001$).

It can be stated that, the intervention had significantly lowered the Exhaustion score.

Figure 1: Bar Graph showing mean Exhaustion score:

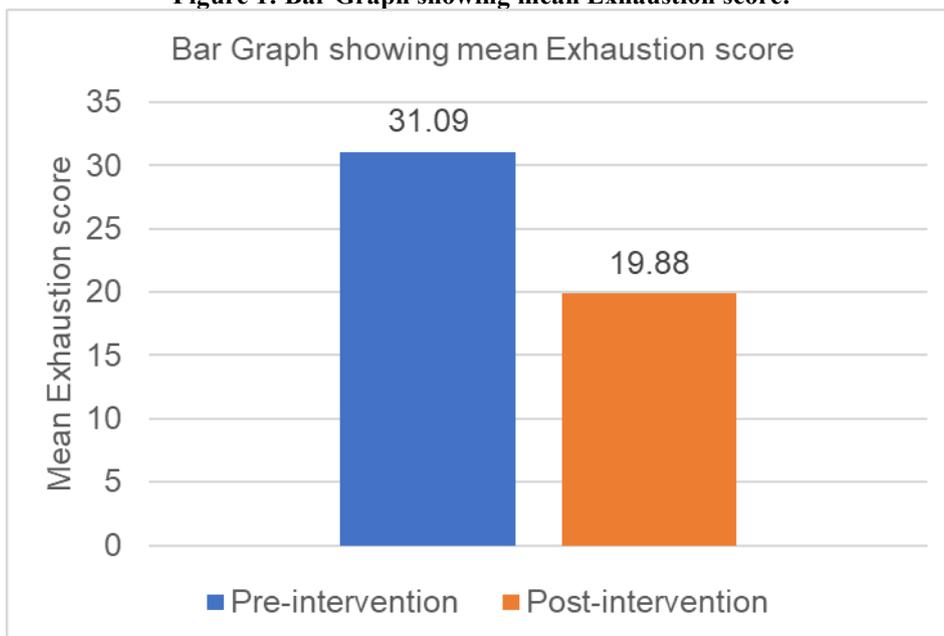


Table 2: Pre and post intervention comparative analysis of Mental Distance score

Sr. No.	Pre-intervention Mental Distance score	Post-intervention Mental Distance score	Test used	Statistics	Significance (p value)
01	Mean \pm SD = 17.70 \pm 4.30	Mean \pm SD = 11.42 \pm 3.08	Wilcoxon Signed Ranks Test	Z = -4.897	<0.001

Interpretation: According to the Wilcoxon Signed Ranks Test, post-intervention Mental Distance score (mean \pm SD = 11.42 \pm 3.08) was statistically significantly lower than that of pre-intervention (mean \pm SD = 17.70 \pm 4.30) (Z = -4.897, $p < 0.001$).

It can be stated that, the intervention had significantly lowered the Mental Distance score.

Figure 2: Bar Graph showing mean Mental Distance score:

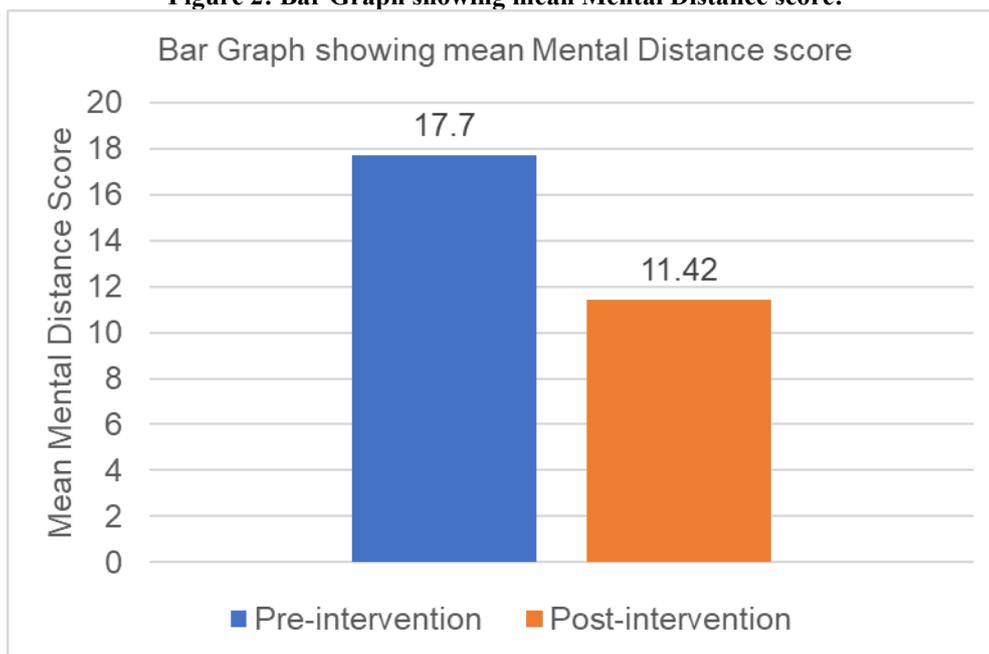


Table 3: Pre and post intervention comparative analysis of Cognitive Impairment score

Sr. No.	Pre-intervention Cognitive Impairment score	Post Intervention Cognitive Impairment score	Test used	Statistics	Significance (p value)
01	Mean \pm SD = 20.48 \pm 3.83	Mean \pm SD = 13.18 \pm 2.86	Wilcoxon Signed Ranks Test	Z = -4.876	<0.001

Interpretation: According to the Wilcoxon Signed Ranks Test, post-intervention Cognitive Impairment score (mean \pm SD = 13.18 \pm 2.86) was statistically significantly lower than that of pre-intervention (mean \pm SD = 20.48 \pm 3.83) (Z = -4.876, p < 0.001).

It can be stated that, the intervention had significantly lowered the Cognitive Impairment score.

Figure 3: Bar Graph showing mean Cognitive Impairment score:

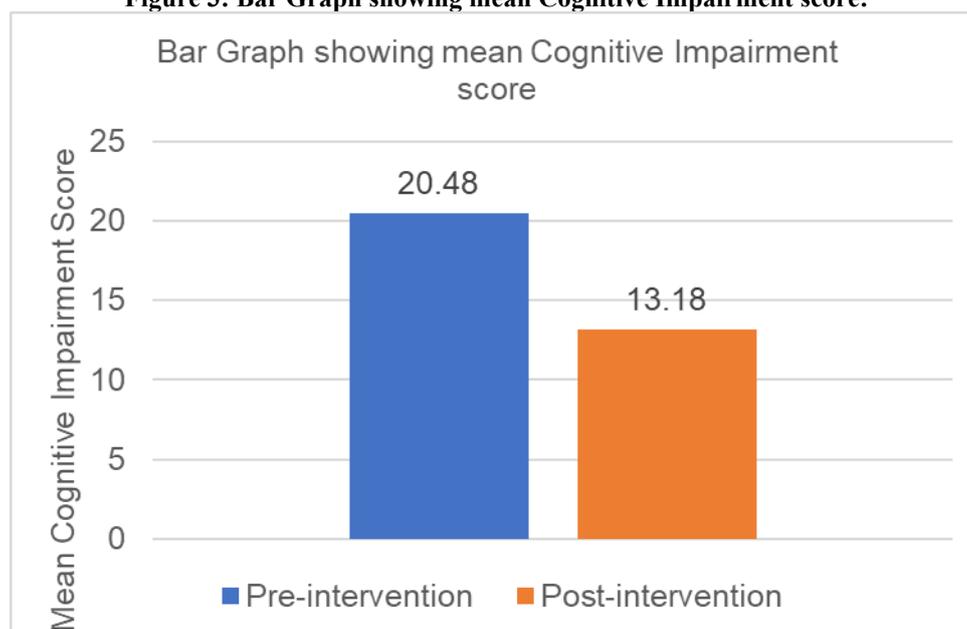


Table 4: Pre and post intervention comparative analysis of Emotional Impairment score:

Sr. No.	Pre-intervention Emotional Impairment score	Post-intervention Emotional Impairment score	Test used	Statistics	Significance (p value)
01	Mean \pm SD = 19.55 \pm 3.21	Mean \pm SD = 13.24 \pm 2.67	Wilcoxon Signed Ranks Test	Z = -5.023	<0.001

Interpretation: According to the Wilcoxon Signed Ranks Test, post-intervention Emotional Impairment score (mean \pm SD = 13.24 \pm 2.67) was statistically significantly lower than that of pre-intervention (mean \pm SD = 19.55 \pm 3.21) (Z = -5.023, p < 0.001).

It can be stated that, the intervention had significantly lowered the Emotional Impairment score.

Figure 4: Bar Graph showing mean Emotional Impairment score:

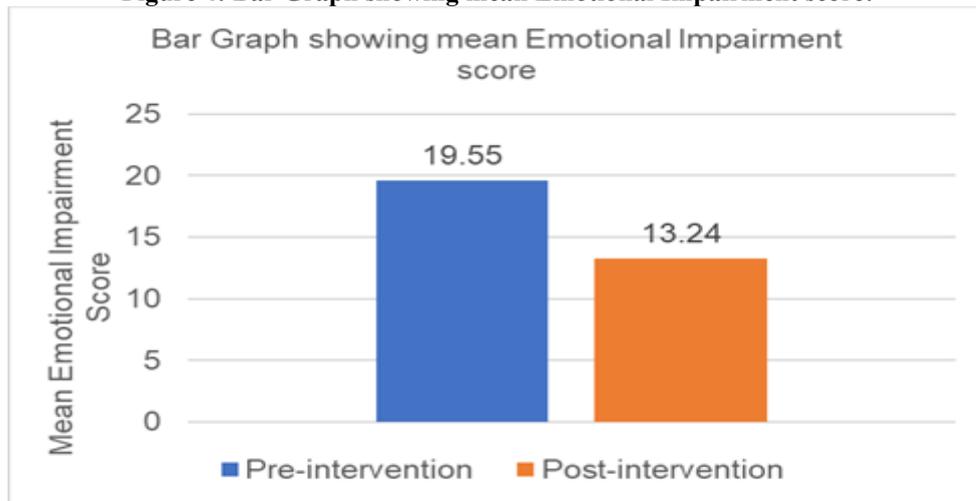


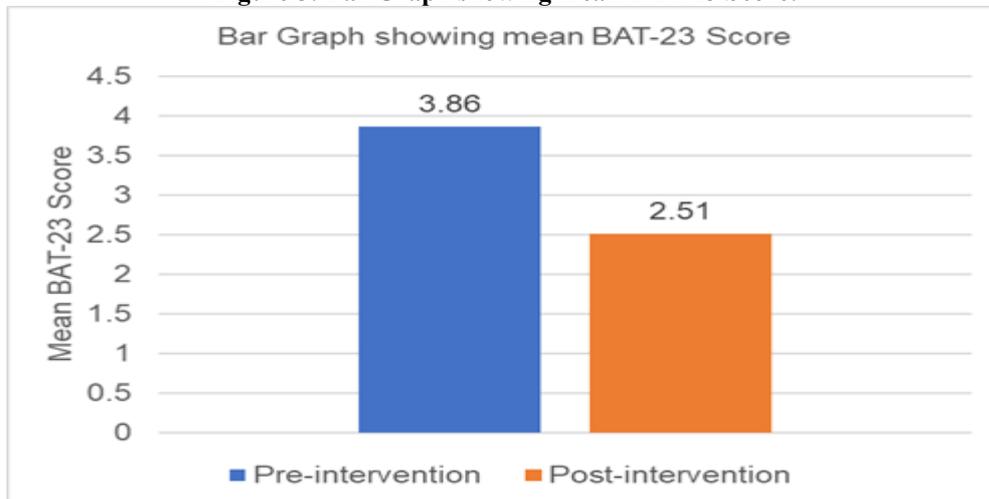
Table 5: Pre and post intervention comparative analysis of BAT-23 score:

Sr. No.	Pre-intervention BAT-23 Score	Post-intervention BAT-23 Score	Test used	Statistics	Significance (p value)
01	Mean \pm SD = 3.86 \pm 0.30	Mean \pm SD = 2.51 \pm 0.35	Paired t Test	t = 20.472	<0.001

Interpretation: According to the Paired t Test, post-intervention BAT-23 Score (mean \pm SD = 2.51 \pm 0.35) was statistically significantly lower than that of pre-intervention (mean \pm SD = 3.86 \pm 0.30) (t = 20.472, p < 0.001).

It can be stated that, the intervention had significantly lowered the BAT-23 Score.

Figure 5: Bar Graph showing mean BAT-23 Score:



DISCUSSION

In this study, we focused on assessing burnout levels in teachers teaching in a school. Our main finding is that diaphragmatic breathing and Jacobson's relaxation technique are effective in reducing burnout which helps teachers overcome stress. Total 33 female teachers, between the ages of 30 to 55 years, with mean \pm SD age of 40.76 ± 8.47 years, were recruited for the study based on inclusion and exclusion criteria.

In a study conducted by Antoniou, Alexander-Stamatios, et al, entitled "Occupational Stress and Professional Burnout in Teachers of Primary and Secondary Education: The Role of Coping Strategies", it is proved that female teachers reported significantly higher level of occupational stress and lower level of personal accomplishment than male teachers, which is in reference to social role theory, gender roles and expectations, which states that females self is self in relation with others⁽¹⁶⁾. Building on evidence that female teachers are disproportionately affected by burnout, this study focused exclusively on female educators.

Among 33 teachers, 88% teachers reported high levels of exhaustion, 9 % teachers reported high levels of cognitive impairment and 3% teachers reported high levels of emotional impairment. In a study conducted by Wright T.A., Bonett D.G, entitled "The contribution of burnout to work performance" it is observed that emotional exhaustion is the strongest predictor of decrease in job performance among the dimensions of burnout.

In study conducted by Chaudhuri A et al, entitled "Effect of progressive muscle relaxation in female health care professionals", research revealed that teachers face numerous workplace stressors, including lengthy working hours, inadequate resources, and insufficient compensation. Female healthcare professionals who practice Jacobson's relaxation technique experience reduced stress and improved overall well-being

In study conducted by Pelit-Aksu S et al, entitled "Effect of progressive muscle relaxation exercise on clinical stress and burnout in student nurse interns", they have found that Jacobson's relaxation technique is effective as level of burnout decreased in all of the students at the end of internship course, there was a significant difference in post-test scores between groups; experimental group post-test scores on the scales were lower than those of the control group. Hence, it is proved that Jacobson's relaxation is effective in reducing burnout.

In study conducted by Kumaresan A et al, entitled "Efficacy of physiotherapy management on burnout syndrome amongst IT professionals during the COVID-19 pandemic" in Work, two groups were made: experimental group received Bhastrika pranayama and Jacobson's relaxation technique. Control group received Diaphragmatic breathing and chest expansion exercise. The combination of Jacobson's relaxation technique with Bhastrika Pranayama proved to be an effective and safe intervention for a better and quick recovery from burnout syndrome among IT professionals in work-from-home during the COVID-19 pandemic. The results showed that the joint application of Jacobson's relaxation technique and diaphragmatic breathing exercises significantly mitigated burnout levels.

In study conducted by Hopper SI et al, entitled "Effectiveness of diaphragmatic breathing for reducing physiological and psychological stress in adults: a quantitative systematic review" it is demonstrated that Diaphragmatic breathing effectively reduces both physiological and psychological stress. Diaphragmatic breathing and Jacobson's relaxation aids in stress control, improves attention and reduces levels of cortisol⁽⁸⁾. Breathing exercises and relaxation technique not only physically relax body but also foster emotional challenges⁽⁸⁾. Jacobson's relaxation technique is proven to counter balance effects of the stress by activating parasympathetic nervous system.⁽²⁷⁾ Post intervention this study has found that

dimension of emotional impairment has shown maximum improvement amongst all 4 dimensions, of 67.7%.

Diaphragmatic breathing facilitates circulation of cerebrospinal fluid which provides nutrients for cognitive processing⁽⁸⁾. Increased gamma wave amplitude in the frontal, parietal, and temporal lobes indicates enhanced cognitive functions⁽⁸⁾. These effects of Diaphragmatic breathing facilitate improvement in cognitive functioning. Post intervention this study has found 64.4% improvement in dimension of cognitive impairment.

Moreover, this study has explored that teachers of primary education experience more burnout than teachers of secondary education. School level being the one of the important variables along with other workplace stressors.

There is a scarcity of studies focusing on female school teachers.

Along with diaphragmatic breathing and Jacobson's Relaxation Technique, there is need to find out other coping strategies for the same. Aerobic exercises, yoga can be one of them.

Regular aerobic exercise can act as a powerful buffer against burnout by improving mood and reducing stress hormones like cortisol. This increased sense of well-being and decreased physiological arousal can help individuals feel more resilient and engaged⁽⁹⁾.

In addition to state of improvement in the level of burnout, teachers should be given one particular time in their daily routine to take a break and practice these techniques as taught to keep their burnout levels low. Of course, there are several factors to be accounted for in order to work against the development of burnout in teachers, like personal support, work satisfaction and workload management.

The goal is to significantly reduce levels of depersonalization and exhaustion, which can, in turn, enhance teachers' sense of personal accomplishment and create a more positive work environment. Additionally, continuous professional development

opportunities, supportive task performance and regular exercises, which incorporate diaphragmatic breathing, relaxation, and even aerobic exercise⁽⁹⁾ will reduce burnout and help them cope with the professional challenges and improve their personal well-being⁽⁹⁾.

CONCLUSION

This study concludes that Diaphragmatic breathing and Jacobson's relaxation technique are effective in reducing levels of burnout.

Declaration by Authors

Ethical Approval: Approved

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Conflict of Interest: The authors declare no conflict of interest.

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