Indian Journal of Psychology and Education
July, 2024, Vol. 14,No.2, pp 26-31

Effectivity of Yoga Relaxation Methods in Reducing Stress among Senior Citizens

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Abstract

Senior citizens often face various challenges that cause stress impacting their mental well-being. Hence, there is a need to follow for effective coping strategies to manage stress. For this purpose, the researcher tried to investigate the effect of Mind Sound Resonance Technique and Deep Relaxation Technique on Perceived Stress among senior citizens. The objective of the study was to compare the significant effect of Mind Sound Resonance Technique, Deep Relaxation Technique, and of Control Group of senior citizens on Perceived Stress.An experimental design and utilized non-probability sampling techniques. Three groups were: one experimental group received the Mind Sound Resonance Technique intervention, the second experimental group received the Deep Relaxation Technique intervention and third group was Control group. Each group received 15 sessions of intervention. The Control Group maintained their regular activities without any intervention. A final sample of 91 senior citizens was statistically analysed with non-parametric ANCOVA statistical technique followed by a post hoc test. Standardized tool i.e., Perceived Stress Scale was used to conduct pre-test and post-test. Both Mind Sound Resonance Technique and Deep Relaxation Technique significantly reduced Perceived Stress among senior citizens, however, Deep Relaxation Technique exhibited a considerable impact on reducing stress, as compared to the effect by Mind Sound Resonance Technique and the control group.

Keywords: Mind Sound Resonance Technique, Deep Relaxation Technique, Senior Citizens, Perceived Stress.

Senior citizens reaching the final phase of the human lifespan, encounter various challenges and "geriatric syndromes" such as instability, reduced functionality, cognitive impairments, or incontinence (Morley, 2004; Hurlock, 2015).

In this stage, individuals face multiple stressors including chronic illnesses, cognitive impairments, caregiving stress, loss of independence, and financial dependency, contributing to elevated stress levels (Rani, 2014; Ramchandra & Salunkhe, 2014). These adversities often lead to depression or coping mechanisms, causing significant challenges in psychomotor abilities and limiting activities of daily living (ADL) like walking, climbing stairs, or engaging in leisure activities (Rani, 2014).

India, identified as an aging nation with a substantial population above 60 years (Ingle & Nath, 2008) emphasizes the necessity for healthy aging as the senior citizens' population is expected to exceed 315 million by 2050 (Subaiya & Bansod, 2014).

Within yoga practices, relaxation techniques are pivotal, aiming to alleviate tension, anxiety, and induce a state of well-being. Strategies incorporating relaxation techniques from yoga, including mind sound resonance and deep relaxation techniques, may offer valuable solutions for managing stress and promoting better health among senior citizens. Perceived Stress can be understood as the degree of stress perceived by the mind at a given point in time.

Previous studies have shown that Mind Sound Resonance Technique (MSRT) and Deep Relaxation Techniques (DRT) were utilized with other conventional therapies, like Integrated Approach of Yoga Therapy (IAYT) etc. MSRT was beneficial in enhancing psychological and cognitive functions in school children of 14-16 years (Anusuya, Mohanty, and Saoji, 2021) and DRT brought a decrease in anxiety and depression after one week of yoga intervention in individuals with hypertension (Metri, 2017). Studies have also highlighted that Mind Sound Resonance Technique (MSRT) is effective in significantly decreasing perceived stress levels in school teachers aged 30 to 55 years (Rao, Metri, Raghuram, and Hongasandra, 2017). However, there were fewer studies to know the effect of MSRT and DRT on perceived stress among senior citizens.

The journey of human life is invaluable. Senior Citizens encounter challenges related to Perceived Stress requiring insulation to maintain their daily routines and ensure healthy aging. In this context, relaxation techniques like MSRT and DRT hold promise, potentially offering senior citizens the means to lead healthier lives. These techniques could enhance their productivity, enabling them to share their experiences and contribute meaningfully to family, society, and the nation, thus alleviating the sense of burden on themselves and their caregivers.

The Mind Sound Resonance Technique (MSRT), developed by Swāmi Vivekānanda Yoga Anusandhāna Samsthāna (SVYĀSĀ) in Bangalore, is a mindfulness-centered advanced yogic relaxation method (Subarna, Kashinath, Nagaratna, & Nagendra, 2015). This technique is designed to augment health, concentration, memory, induce relaxation, and enhance overall life quality (Nagendra, 2010). Its foundations lie in traditional texts such as the Māndukya Upanishad and Hatha Yoga Pradīpikā. MSRT incorporates concepts of OM and nādānusandhāna, aligning with Patanjali's definition of yoga as mastery over mental modifications (Shah & Zala, 2019; Singh et al., 2022). The practice involves the chanting of specific sounds like A, U, M, and AUM, as well as the Mahā Mṛtyunjaya Mantra and the Pranava mantra.

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The Deep Relaxation Technique (DRT) practiced by SVYĀSĀ is a beneficial yoga relaxation method that aims to foster body and mind awareness (Deshpande, 2008). This technique involves the relaxation of various body parts by directing focused attention to them, accompanied by the chanting of sounds such as A, U, M, AUM, and OM.

The study aims to investigate the effect of MSRT and DRT on the Perceived Stress of senior citizens, with the ultimate goal of improving their quality of life. Specifically focused on evaluating these relaxation techniques' effects on senior citizens residing in U.T. Chandigarh, this research endeavours to expand the knowledge base in this field.

Objectives

1. To study the levels of Perceived Stress in Senior Citizens with respect to Mind Sound Resonance Technique, Deep Relaxation Technique, and Control Group.
2. To compare the significant effect of Mind Sound Resonance Technique, Deep Relaxation Technique, and of the Control Group on Perceived Stress among senior citizens.

Hypothesis

There will be no significant difference between the effect of Mind Sound Resonance Technique, Deep Relaxation Technique, and of the Control Group on Perceived Stress.

Method

Design: A pre-test and post-test randomized control group design. The snowball sampling technique was used to collect the data.

Sample: The researcher selected the sample from different community settings and parks. A preliminary list of interested participants were contacted resulting in total 264 senior citizens.

Out of 264 senior citizens, 131 verbally consented to participate and underwent further screening based on inclusion and exclusion criteria. Eligibility criteria for this research were to include senior citizen without hearing loss or with mild hearing loss (utilizing hearing aids for profound hearing loss), should not have a bias with regards to the chanting of mantras and willing to attend 15 sessions of yoga relaxation techniques. The study included both male and female senior citizens aged between 60 to 80 years. Exclusion criteria consisted of individuals who failed to comply with instructions, were hospitalized during the study period, or were senior citizens with severe mental illnesses. Participants unwilling to provide written consent were also excluded.

Out of 131 senior citizens, fourteen did not meet the criteria, resulting in 117 senior citizens. Further, 117 senior citizens underwent a comprehensive screening through the PGI Health Questionnaire (PGIH.Q.), leading to the selection of 108 senior citizens having moderate to excellent health status.

The screened 108 qualified senior citizens were randomly divided into three groups i.e., Mind Sound Resonance Technique Experimental Group-I (MSRT-EGI) receiving Mind Sound Resonance Technique intervention, Deep Relaxation Technique Experimental Group-II (DRT-EGII) underwent Deep Relaxation Technique intervention, and a third group was a Control Group (CG).

However, unforeseen circumstances prompted the withdrawal of 17 senior citizens i.e., six (6) from MSRT-EGI, six (6) from DRT-EGII, and five (5) from CG, ultimately comprised of a final sample size of 91 senior citizens. Subsequently, data analysis was conducted based on information collected from 30 participants in MSRT-EGI, 30 in DRT-EGII, and 31 in the Control Group (CG).

Tools used:

1. PGI Health Questionnaire N-1 (PGIH.Q.N-1-vwp) was updated in 2016 by Dr. Santosh K. Verma, Dr. N.N. Wig, and Dr. Dwarka Pershad. The questionnaire comprised 38 items. The questionnaire is segregated into two parts i.e., Part-A (Physical distress) and Part-B (Psychological distress).
2. Perceived Stress Scale-10 (PSS-10) developed by Sheldon Cohen and Gail M. Williamson (1988). The researcher adapted it into the Hindi language. This PSS-10 was used by Sandhu, Ismail, & Rampal in 2015.

Intervention:

Interventions used in this study were Mind Sound Resonance Technique (MSRT), Deep Relaxation Technique (DRT), and the third group was the control group (CG) where no specific intervention was used and continued their regular daily activities.

Group MSRT-EGI senior citizens were engaged in a structured 15-session program of MSRT, with each session lasting for 45 minutes. Within this timeframe, 10 minutes were allotted for instructions and addressing senior citizens' queries, leaving 35 minutes solely for MSRT practice. Group DRT-EGII was also given 15 sessions of DRT intervention gradually. The researcher utilized her voice to administer the techniques in Hindi which is easily understood in the region. Recording was implemented to maintain consistency in technique administration.

Upon completion of the 15 sessions of each intervention, a post-test on the Perceived Stress Scale was administered to all groups i.e., MSRT-EGI, DRT-EGII, and CG mirroring the pre-test procedure. The data collection phase for this study spanned approximately one year due to the necessity of individualized interventions for senior citizens in certain locations.

Statistical Technique:

Descriptive statistic was employed to summarize the data. Frequencies and corresponding percentages were used to illustrate the occurrence of different variables. As non-probability sampling methods were employed in sample selection, therefore, Quade Ranked ANCOVA was employed for intergroup analysis. This method is distribution-free and

evaluates the consistency of residuals across groups, particularly addressing non-normally distributed residuals within the independent variables (Ur Rehman, 2020; Cangür, Sungur, & Ankarali, 2018). Post -hoc analysis was conducted to discern and compare significant differences among three groups—MSRT-EGI, DRT-EGII, and CG. The predetermined level of significance was set at $p < 0.05$.

Results and Discussion

1st objective: To study levels of Perceived Stress in Senior Citizens with respect to Mind Sound Resonance Technique, Deep Relaxation Technique, and Control Group, for which frequencies and percentages were employed.

Perceived Stress to low Perceived Stress in the post-test due to MSRT intervention among senior citizens of MSRT-EGI group.

Table 1 and Figure 1.b depicts that there is a shift in the levels of Perceived Stress i.e., from high Perceived Stress to low Perceived Stress in senior citizens due to the DRT among senior citizens of DRT-EGII group.

Results (Table 1, Figure 1.c)depicts that there is a slight change in the levels of Perceived Stress among senior citizens of the Control Group (CG), the probable reason could be due to routine activities.

2nd objective: To compare the significant effect of Mind Sound Resonance Technique, Deep Relaxation Technique, and of the Control Group among senior citizens on Perceived Stress, for which Quade's ANCOVA was used.

Table 1. Distribution of Senior Citizens in MSRT-EGI, DRT-EGII, and CG

Groups	Number of Senior Citizens	Low Perceived Stress (Low P.S.) (%)	Moderate Perceived Stress (Mod. P.S.) (%)	High Perceived Stress (High P.S.) (%)	Total
MSRT-EGI	Pre-Test	8(26.7)	21(70.0)	1(3.3)	30(100)
	Post-Test	20(66.7)	10(33.3)	0	30(100)
DRT-EGII	Pre-Test	15(50)	14(46.7)	1(3.3)	30(100)
	Post-Test	20(66.7)	10(33.3)	0	30(100)
CG	Pre-Test	21(67.7)	9(29)	1(3.3)	31(100)
	Post-Test	21(67.7)	10(32.3)	0	31(100)

Abbreviations: MSRT-EGI, Mind Sound Resonance Technique Experimental Group-I; DRT-EGII, Deep Relaxation Technique Experimental-II; CG, Control Group; P.S., Perceived Stress; Mod., Moderate.

Results(Table 1,Figure 1a) shows that there is a shift in the levels of Perceived Stress i.e., from high

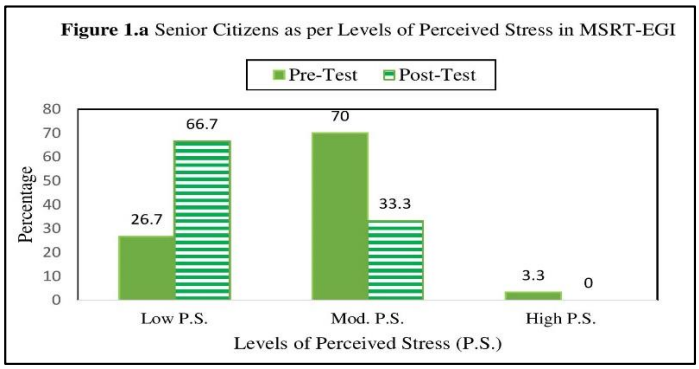

Figure 1.a Senior Citizens as per Levels of Perceived Stress in MSRT-EGI

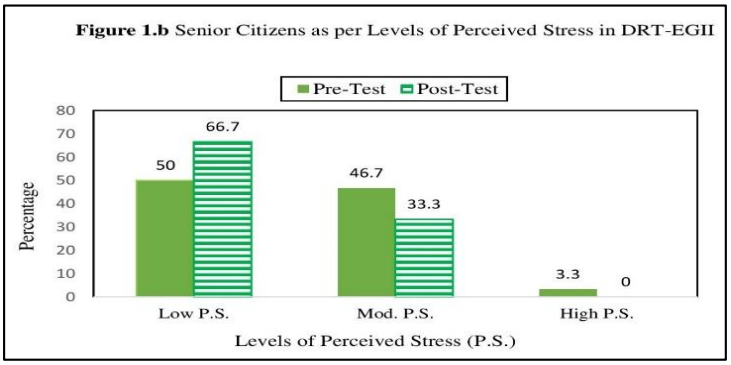

Figure 1.b Senior Citizens as per Levels of Perceived Stress in DRT-EGII

Results(Table 2) shows that there was a significant difference between the post-test scores of the three groups i.e., MSRT-EGI, DRT-EGII and CG, at a 0.05 level after controlling for initial differences in their pre-test scores. The magnitude of the difference was large as seen from the effect size.

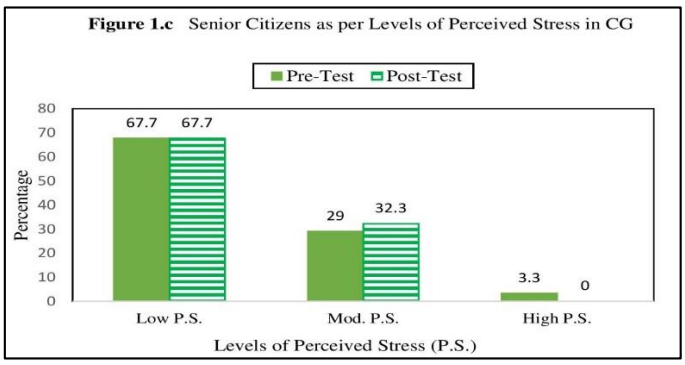

Figure 1.c Senior Citizens as per Levels of Perceived Stress in CG

Results(Table 3) reveals that there was no significant difference in Perceived Stress between the effect of the Mind Sound Resonance Technique and Deep Relaxation Technique of the MSRT-EGI and DRT-EGII groups respectively. However, there was a statistically significant difference between the MSRT technique given to senior citizen participants of DRT-EGII was more effective than the MSRT relaxation technique and CG in reducing Perceived Stress for senior citizens.

Table 2. Difference Among Residual Means of Three Groups for Perceived Stress(df=2,88)

Source	**Type III Sum ofSquares**	**df**	**Mea Square**	**F**
Groups	5921.229	2	2960.615	6.45
Error	40419.052	88	459.307	
Corrected Total	2861.538	90		

*Significant at 0.01 level

Therefore, Hypothesis: There will be no significant difference between the effect of Mind Sound Resonance Technique, Deep Relaxation Technique, and the Control Group on Perceived Stress:

- is only accepted for the comparison of effects between the Mind Sound Resonance Technique (MSRT) and Deep Relaxation Technique (DRT)
- stands rejected for the comparison of the Mind Sound Resonance Technique (MSRT) with the Control Group (CG)
- stands rejected for Deep Relaxation Technique (DRT) with the Control Group (CG).

Table 3. Post Hoc Test for Perceived Stress

Groups	**Residual Means**	**Mean Difference**	**p-value****
MSRT-EGI DRT-EGII	-4.43 -7.05	2.62	894(N.S.)
MSRT- EGI CG	-4.43 11.13	-15.56	.021*
DRT-EGII CG	-7.05 11.13	-18.18	.006*

*Significant at 0.05 level

Abbreviations: MSRT-EGI, Mind Sound Resonance Technique Experimental Group-I;
DRT- EGII, Deep Relaxation Technique Experimental-II; CG, Control Group; N.S., Non-significant

group and the Control group; and the DRT group and the Control Group. The table also reveals that the residual Means of DRT-EGII was lower than MSRT-EGI and CG. It implies that the DRT relaxation

Based on the analysis, it is evident that the MSRT and DRT were found to be effective in reducing Perceived Stress among senior citizens for the MSRT-EGI and DRT-EGII groups respectively. These outcomes align with studies by Pareek (2003) and Nagaraj (2020), both indicating a significant alteration in stress levels among participants who underwent relaxation techniques when compared to individuals in the control group.A study by Rao, Metri, Raghuram, & Hongasandra (2017) highlighted that MSRT induces deep relaxation, potentially modulating the hypothalamus-pituitary axis, thereby reducing anxiety and stress. Consequently, the notable enhancement in Perceived Stress scores among senior citizens in the MSRT-EGI group could be attributed to the Mind Sound Resonance Technique intervention.

The positive impact of the DRT is supported by the work of Khemka (2012). The reduction in Perceived Stress due to DRT could be attributed to mindfulness instructions and focusing on body awareness which aids in detachment from stressors.Comparatively, studies by Pareek (2003) and Alphonsa (2018) echo the present study's findings, indicating an increase in stress levels within control groups not exposed to relaxation techniques, emphasizing the importance of such interventions in stress reduction.In essence, these studies collectively reinforce the efficacy of relaxation techniques like MSRT and DRT in reducing stress levels among senior citizens, highlighting their potential for promoting mental well-being when integrated into routine activities.

Conclusion

From the above results, it is concluded that MSRT and DRT are useful techniques for reducing Perceived Stress in senior citizens but DRT had a greater effect in reducing Perceived Stress as compared to the MSRT and of CG.

It is suggested that incorporating relaxation methodologies like the MSRT in conjunction with other yoga practices like asana and pranayama could not only enhance the quality of life for senior citizens but also potentially render government investments in healthcare facilities for this demographic more cost-effective.

Acknowledgment

Gratitude to the Almighty and thanks to the participants of this study and those whose cooperation led to the successful completion of this research. My thanks to my family and Dr. Harashish Jindal for support.

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