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Effect of Yoga Relaxation Techniques on Mental Efficiency

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ABSTRACT

Background: An elderly person in the age group of 60 years or above usually faces challenges related to mental efficiency. Due to their problems with physical movements, yoga relaxation techniques are easy to follow and may facilitate enhancing mental efficiency.

Purpose: To compare the significant effect of the Mind Sound Resonance Technique and Deep Relaxation Technique among the elderly on mental efficiency and its dimensions vis-à-vis mental functions, mental status, percept and motion equity, and depression.

Methods: The present study was an experimental design and used a non-probability sampling technique to select the sample of elderly participants. They were divided into three groups vis-à-vis Experimental Group-I (EG-I), Experimental Group-II (EG-II), and the Control Group (CG). EG-I received Mind Sound Resonance Technique (MSRT) and EG-II received Deep Relaxation Technique (DRT) for 15 sessions. The CG continued with routine activities. A final sample of 91 participants was analyzed using non-parametric ANCOVA followed by a post hoc test. Pre-tests and post-tests for EG-I, EG-II, and CG were conducted on a standardized tool of mental efficiency.

Results: It was found that the difference among the three groups was significant at a 0.05 level for mental efficiency (overall) and each of its dimensions. Post hoc tests revealed that MSRT was more effective than DRT and CG for enhancing mental efficiency.

Conclusion: MSRT is a more useful technique for improving mental efficiency in the elderly.

1. Introduction

Old age is an inevitable phase of life. Aging brings about multifaceted physical, psychological, and social changes, impacting overall health significantly (Kaur, 2011). Dixit (2009) emphasizes that aging encompasses external bodily alterations and internal self-awareness. Physiological shifts, such as calcium-related bone weakening leading to muscle decline and hair loss, alongside hormonal fluctuations affecting sleep, appetite, and behavior, are common among the elderly. One of the problems the elderly face is problems in mental efficiency.

Mental efficiency encompasses diverse cognitive abilities classified into fluid and crystallized categories (Papalia *et al.*, 2015). The fluid abilities relate primarily to problem-solving and perceptual skills, and crystallized abilities are reliant on accumulated knowledge; both these abilities decline with age (Gard *et al.*, 2014). The present study assesses mental efficiency through a questionnaire that evaluates mental functions, status, equity, and depression scores among the elderly (Kohli *et al.*, 2016). Mental functions relate to the total emotional and intellectual response of an individual to external reality (Merriam-Webster Dictionary, 2022); mental status includes assessment of orientation, judgment, memory, problem-solving ability, and contact with reality (The Free Dictionary, 2012). Percept and motion equity is a process by which individuals organize and interpret their sensory impressions to give meaning to their environment (Karpagam, 2006). Depression is described as a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings, and sense of well-being (Kumari, 2017).

Despite an increase in geriatric services and medical care, the health of older adults remains a significant concern. They have the right to live healthily and manage their lives with minimal assistance, ensuring that aging does not become a burden. Many older adults face challenges in engaging in physical exercises due to various diseases, decreased physical capacity, hospital appointments, and family responsibilities.

In this direction, non-pharmacological techniques like relaxation techniques are valuable for managing

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health issues (Alrawashdeh, 2017). Relaxation techniques took various shapes with time. The benefits of numerous relaxation techniques are well-documented in the literature (Gopichandran, 2018; Khemka, 2012; Saoji *et al.*, 2017; Shah & Zala, 2019; Singh, 2015; Wang *et al.*, 2018). Yoga relaxation techniques work on different layers of the mind to promote integrated health. These range from physical asanas to mindfulness-based methods like Mind Sound Resonance Technique and Deep Relaxation Technique.

Mind Sound Resonance Technique (MSRT), developed by Swāmi Vivekānanda Yoga Anusandhāna Samsthāna (SVYĀSĀ), Bangalore, is a mindfulness-based advanced yogic relaxation approach (Mohanty *et al.*, 2015). MSRT aims to enhance health, concentration, and memory; induce relaxation; and improve overall quality of life (Nagendra, 2010). Rooted in traditional texts like the Māndukya Upanishad and Hatha Yoga Pradīpikā, MSRT incorporates concepts of OM and nādānusandhāna (नादानुसंधान) (Shah & Zala, 2019; Singh *et al.*, 2022). The word Nādānusandhāna (नादानुसंधान) can be understood by bifurcating into two: nāda signifies the inner sound (Saraswati, 2013) and anusandhāna is referred to exploration or search (Saraswati, 1993). Nādānusandhāna (नादानुसंधान) signifies making a connection with nāda. It involves delving into one's inner world. MSRT aims to align with Patanjali's definition of yoga as mastery over mental modifications (Shah & Zala, 2019; Singh *et al.*, 2022). It involves chanting specific sounds like A, U, M, and AUM, the Mahā Mrtyunjaya Mantra, and the Pranava mantra. Mantras offer physiological and psychological benefits, resonating through various layers of consciousness to induce balance and harmony (Vadiraja, n.d.).

Deep Relaxation Technique (DRT) as practiced by SVYĀSĀ is also one of the useful yoga relaxation techniques for developing body and mind awareness (Deshpande, 2008). It includes relaxation of different body parts by bringing one's awareness to one's body parts with chanting of A, U, M, AUM sounds, and OM.

The Mind Sound Resonance Technique (MSRT) and Deep Relaxation Technique (DRT) are part of the Integrated Yoga Therapy Module (IAYT) at Swami Vivekananda Yoga Anusandhana Samsthana (SVYĀSĀ), Prashanti Kutiram, Bengaluru, and its centres to treat various ailments.

The present research paper is a part of a thesis entitled "Effect of Mind Sound Resonance Technique and Deep Relaxation Technique on Mental Efficiency, Perceived Stress, and Activities of Daily Living among Geriatrics." The study was limited to the sample of geriatrics residing in U.T. Chandigarh, keeping in view the time constraints and the available resources.

The findings of the present research are expected to make significant contributions by exploring the effects of MSRT and DRT on enhancing mental efficiency and its dimensions, i.e., mental functions, mental status, percept and motion equity, and depression among the elderly, ultimately improving their quality of life.

1.1. Objectives

To compare the significant effect of the Mind Sound Resonance Technique, Deep Relaxation Technique, and the Control Group among the elderly on:

- Mental Efficiency in Totality
- Mental Functions
- Mental Status
- Percept and Motion Equity
- Depression

1.2. Hypotheses

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

- $H_{(a)}$ Mental Efficiency in totality
- $H_{(b)}$ Mental Functions
- $H_{(c)}$ Mental Status
- $H_{(d)}$ Percept and Motion Equity
- $H_{(e)}$ Depression

2. Methodology

2.1. Design

In the present study, a pre-test post-test randomized control group design was used to see the effect of interventions.

2.2. Sample

The snowball sampling technique was used to collect the sample of elderlies from different places where they were available in groups, i.e., parks and community places. The purpose of the study was explained, and an initial list of interested participants was made. Out of two hundred and sixty-four elderlies, 131 verbally consented to take part in the study; these were further screened on inclusion and exclusion criteria.

An elderly person who had no hearing loss or mild hearing loss or was using a hearing aid and had no bias concerning the chanting of mantras was included in the sample. Additionally, those who volunteered to perform yoga relaxation techniques for 15 sessions were eligible to be part of experimental groups. The study encompassed both males and females aged between 60 and 80 years. The exclusion criteria comprised individuals who were hospitalized during the study period or suffering from severe

mental illnesses. Those who had not given informed consent were also excluded from the study.

In this way, the researcher was able to find fourteen individuals who did not meet the specified criteria, leaving 117 participants eligible for further screening. The 117 eligible elderly underwent a screening process using the PGI Health Questionnaire (Verma *et al.*, 2016). Out of this subset, 108 individuals were selected.

These 108 qualified elderly were then randomly divided into three groups with the lottery method. In Experimental Group I (EGI) were 36 elderlies who received the Mind Sound Resonance Technique; Experimental Group II (EGII) had 36 elderlies for the Deep Relaxation Technique, and the third group of 36 elderlies was the Control Group (CG). However, unforeseen circumstances led to the withdrawal of 17 participants (6 from EGI, 6 from EGII, and 5 from CG), resulting in a final sample size of 91 elderlies, i.e., 30 participants in EGI, 30 in EGII, and 31 in the CG.

2.3. Tools

- The PGI Health Questionnaire N-1 (PGIH.Q.N-1-vwp), by Verma *et al.* (2016) was used for screening elderlies. The test-retest reliability shows a correlation of 0.88, while the split-half reliability is 0.86. The correlation of the physical distress section with the total score is 0.81, and the correlation of the psychological distress section with the total score is 0.86. The correlation between the physical and psychological sections is 0.56. This questionnaire consisted of 38 items and was divided into Part A (Physical distress) with 16 items and Part B (Psychological distress) with 22 items. Each item had options. After comprehending the items, the elderly tick-marked the option that was closely aligned with his/her answer.
- The PGI Battery Assessment of Mental Efficiency in Elderly (PGI-BAMEE), developed by Kohli *et al.* (2016), is available in both English and Hindi. The components in the questionnaire address various aspects related to mental efficiency in old age, such as depression, memory, perceptuo-motor functions, motivation, alertness, and orientation. The PGI-BAMEE consists of four sub-tests: the first is 'The Set Test,' the second is the 'Mental Status Questionnaire,' the third is 'Measures of Percept and Motion Equity,' and the fourth is the 'Depression Scale.' There is no time limit for completing the test, but it usually takes around 20 minutes. Each sub-test provides different and valuable information about the elderly's mental health. The depression scale demonstrates high split-half reliability (r = 0.82). It also shows a strong correlation (r = 0.82) with the original 30-item English version of the Geriatric Depression Scale.
    - The researcher interacted individually with each elderly person and offered support in comprehending statements of the questionnaire as required. The elderlies also had to draw designs independently as per the instructions given in the questionnaire.
    - The scores of each dimension of mental efficiency on PGI-BAMEE and the score of mental efficiency in totality were calculated. To calculate the score of mental efficiency in totality, the scores of each of the three dimensions, i.e., set-test, mental status, and percept and motion equity, were added, and the scores of depression were reversed and then added to the obtained score. The overall score was divided into high, moderate, and low levels of mental efficiency.
- The Mind Sound Resonance Technique (MSRT) and the Deep Relaxation Technique (DRT) were the interventions developed by Swami Vivekananda Yoga Anusandhana Samsthana (SVYĀSĀ) given to the elderly. The interventions were given by the first author, who is a trained yoga therapist.

2.4. Data Collection Procedure

Pre-tests of mental efficiency were conducted for the elderly of EGI, EGII, and CG using PGI-BAMEE. EGI elderlies received MSRT in the 15 sessions in a structured way. Each session was 45 minutes long, out of which 10 minutes were allocated for instructions and addressing queries, with the remaining 35 minutes dedicated to MSRT practice. In the same way, the EGII elderlies practiced the Deep Relaxation Technique in 15 sessions in a structured way.

2.4.1. Common Structure of Interventions

The common structure of the session of EGI and EGII intervention groups was as follows:

- The session commenced with exchanging greetings and inquiring about the well-being of the elderly participants.
- The researcher provided an overview of the day's session, followed by a demonstration of the specific part of the technique scheduled for that day.
- The 15 sessions of each intervention were structured from simple to complex, i.e., one step was taught to the participant/s in one session, and the next step was added to the step taught in the previous session in the subsequent sessions, and so on. The stepwise training was given till the 9th session, and the practice of

complete intervention techniques, i.e., MSRT to EGI and DRT to EGII, was given from the 10th to the 15th. The queries of participants were also answered before beginning the interventions.

- The researcher delivered instructions on MSRT and DRT interventions in the Hindi language by recording her voice. The content and sound were validated by experts and through a pilot study to maintain consistency in the administration of yoga relaxation techniques. The audio recording was played through a portable amplifier, which the researcher carried to the elderly's venue at a planned time for each session. MSRT and DRT were performed in the sitting position by EGI and EGII participants, respectively.
- Participants were supplied with handouts of the Mahā Mrtyunjaya Mantra (**महा मृत्युंजय मंत्र**) (Nagendra, 2010; Nagendra, n.d.) and the concluding mantra to facilitate their learning of the mantra for the MSRT intervention.
- In MSRT, the researcher conveyed in the instructions to the elders that they should experience feelings of peace, happiness, and improved health while chanting the sounds and mantra.
- After the session of intervention, participants were requested to practice MSRT and DRT on their own as much as possible.
- For MSRT intervention, to enhance the sensitivity required for experiencing the resonance generated by sounds and mantras within the body, the EGI participants were required to place their hands on their thighs, stomach, cheeks/head, and stomach during the chanting of 'A-kāra,' 'U-kāra,' 'M-kāra,' and 'AUM,' respectively. Some participants found it challenging to change hand positions during practice, so they were given the option to keep their hands only on their stomachs or thighs throughout the session.
- The interventions were conducted in small groups to ensure that individual attention could be given to each elderly person and necessary corrections could also be made.
- If a participant in the intervention missed a session, a catch-up session was scheduled to ensure the intervention's continuity.
- EGI and EGII elderlies were regularly updated about the number of sessions, and the researcher stayed in touch with the control group and asked about their daily activities.
- The steps of the Mind Sound Resonance Technique (Nagendra, 2010; Nagendra, n.d.) intervention are briefly as follows:
    - Mahā Mrtyunjaya Mantra (**महा मृत्युंजय मंत्र**) was to be chanted loudly.
    - Āhata (आहत) phase: Sounds of A (अ), U (उ), M (म्), and AUM (अ-उ-म्) were to be chanted loudly one by one successively; it completed one round. In this way, a total of five rounds were to be completed. The complete body resonance was to be felt at every step.
    - Āhata (आहत)–Anāhata (अनाहत) phase: In this step, loud chanting (i.e., Āhata) of sound 'A' was to be followed by its mental chanting (i.e., Anāhata). Similarly, loud chanting of sound 'U' was to be followed by mental chanting of 'U'. Same way, it was to be done for 'M' and A-U-M sound. This got one round complete. Three rounds were to be completed in the above manner. The resonance was to be felt in every step.
    - Āhata (आहत) phase of Mahā Mrtyunjaya Mantra: Loud chanting of the Mahā Mrtyunjaya Mantra was to be performed. Three rounds of mantra chanting were performed. The pattern of resonant waves was to be felt throughout the body.
    - Āhata (आहत)–Anāhata (अनाहत) phase of Mahā Mrtyunjaya Mantra: The loud chanting of Mrtyunjaya Mantra was to be followed by its mental chant. This was one round of Āhata–Anāhata method. Three rounds of Āhata–Anāhata of the Mahā Mrtyunjaya Mantra were to be completed in this manner. The resonance was to be felt in every step. The pattern of resonant waves was to be felt throughout the body.
    - Anāhata rounds (अनाहत) of 'AUM (ॐ): In this step, AUM (OM [ॐ]) was to be chanted nine times in the mind. The resonant waves were to be felt throughout the body.
    - Ajapājapa (अजपाजप) AUM to silence: AUM (OM [ॐ]) was to be felt inside. The resonant waves of 'OM' growing and expanding throughout the body and merging into silence were to be felt.
    - The silence was to be experienced.
    - The resolution was to be taken in the mind and spoken 9 times clearly in the mind in this state of silence.
    - The practice was to be ended with the closing mantra.

The steps of the Deep Relaxation Technique (Nagarathna & Nagendra, 2010) intervention are briefly as follows:

- The part-by-part relaxation of the lower portion of the body was to be done. At the end of all steps, the sound of 'A-kāra (अकार [अ]) was to be chanted loudly.
- The part-by-part relaxation of the middle portion of the body was to be done. At the end of all steps, the sound of 'U-kāra (उकार [उ]) was to be chanted loudly.

- The part-by-part relaxation of the upper portion of the body, i.e., the complete head region, was to be done. At the end of all steps, the sound of 'M-kāra (मकार [म्]) was to be chanted loudly.
- The whole body was to be observed to relax more. At the end, 'AUM (अ-उ-म्) was to be chanted loudly.
- In this step, it was instructed to come out of body consciousness and visualize that the body was lying on the ground.
- The blue sky was to be visualized, and the spreading of peace and happiness everywhere was to be enjoyed.
- It was instructed to come back to body consciousness. In the end, 'AUM-kāra (ॐ) was to be chanted loudly.
- It was instructed to sit up when feeling comfortable.

After the completion of 15 sessions of each intervention, post-tests on PGI-BAMEE were conducted on the elderly. In the same way, post-tests were also conducted for CG elderlies after 15 days. The period of data collection for the present study took about one year, as in some places the researcher had to give intervention to the elderly individually.

2.5. Statistical Technique

In this study, the non-probability sampling technique was used. Non-parametric Quade Ranked ANCOVA was used for between-group analysis, followed by a post hoc test that was conducted to compare groups and discern significant differences within the three groups, i.e., EGI, EGII, and CG. The level of significance was set as $p < 0.05$.

3. Results and Analysis

3.1. The Results of Non-Parametric ANCOVA

Table 1 shows that there is a significant difference between the post-test scores of the three groups at a 0.05 level after controlling for initial differences in their pre-test scores for mental efficiency in totality (overall) and its dimensions, i.e., mental functions, mental status, percept and motion equity, and depression, respectively. The effect size was large among the residual means of three groups in mental efficiency in totality (overall), mental functions, mental status, percept and motion equity, and in depression it was a medium effect size.

Table 1: Difference Among Residual Means of Mental Efficiency (overall and dimension wise)

Overall and dimension-wise	F-value	p-value	Partial eta squared
Mental Efficiency in Totality (overall)	20.815	0.000*	0.321
Mental Functions	10.001	0.000*	0.185
Mental Status	10.004	0.001*	0.185
Percept and Motion Equity	10.037	0.001*	0.186
Depression	3.630	0.031*	0.076
**p < .05.*			

3.2. The Results of Post Hoc Test

3.2.1. Mental Efficiency in Totality (overall)

Table 2 reveals that there is a significant difference between the mean scores of the two groups, i.e., EGI (MSRT) and EGII (DRT), for mental efficiency in totality. Similarly, there was a significant difference between the mean scores of EGI (MSRT) and CG. The table also reveals that the residual means of EGI (MSRT) were greater than those of EGII (DRT) and CG. It implies that the MSRT (EGI) relaxation technique was more effective for mental efficiency than the DRT (EGII) relaxation technique and CG.

Table 2: Post Hoc Test for Mental Efficiency in Totality (overall)

Groups	Residual means	Mean difference	p-value
EGI (MSRT) EGII (DRT)	14.05 -4.26	18.32	0.000*
EGI (MSRT) CG	14.05 -9.47	23.52	0.000*
EGII (DRT) CG	-4.26 -9.47	.-5.20	0.399
**p < .05.*			

Therefore, Hypothesis $H_{(a)}$: There will be no significant difference between the effect of the Mind Sound Resonance Technique, Deep Relaxation Technique, and the Control Group on mental efficiency in totality is accepted for comparison of effects between the Deep Relaxation Technique and Control Group and stands rejected for comparison of effects between the Mind Sound Resonance Technique and Deep Relaxation Technique, the Mind Sound Resonance Technique and Control Group.

3.2.2. Mental Functions

Table 3 depicts a significant difference between the mean scores of the EGI (MSRT) & EGII (DRT) groups and the EGI (MSRT) & CG groups for mental functions. It is further seen that the residual means of mental functions for EGI (MSRT) were greater than those for EGII (DRT) and CG. It implies that the MSRT (EGI) relaxation technique was more effective than the DRT (EGII) relaxation technique and CG.

Table 3: Post Hoc Test for Mental Functions

Groups	Residual means	Mean difference	p-value
EGI (MSRT) EGII (DRT)	10.52 -2.99	13.51	0.005*
EGI (MSRT) CG	10.52 -7.29	17.81	0.000*
EGII (DRT) CG	-2.99 -7.29	4.30	0.907
*$p < .05$.			

Therefore, Hypothesis $H_{(b)}$: There will be no significant difference between the effect of the Mind Sound Resonance Technique, Deep Relaxation Technique, and the Control Group on mental functions is accepted for comparison of the Deep Relaxation Technique with the Control Group and stands rejected for comparison of the Mind Sound Resonance Technique with the Deep Relaxation Technique and the Mind Sound Resonance Technique with the Control Group.

3.2.3. Mental Status

Table 4 depicts that the difference between the mean scores of the EGI (MSRT) and EGII (DRT) groups was statistically significant for mental status. There was also a significant difference between the mean scores of the EGI (MSRT) and CG groups for mental status. The table also shows that the residual means of EGI (MSRT) were greater than those of EGII (DRT) and CG, which implies that MSRT (EGI) was more effective than DRT (EGII) and CG in improving mental status.

Table 4: Post Hoc Test for Mental Status

Groups	Residual means	Mean difference	p-value
EGI (MSRT) EGII (DRT)	12.08 -2.87	14.95	0.008*
EGI (MSRT) CG	12.08 -8.91	20.99	0.000*
EGII (DRT) CG	-2.87 -8.91	6.04	0.642
*$p < .05$.			

Therefore, Hypothesis $H_{(c)}$: There will be no significant difference between the effect of the Mind Sound Resonance Technique, Deep Relaxation Technique, and the Control Group on mental status is accepted for the comparison of the Deep Relaxation Technique with the Control Group and stands rejected for the comparison of the Mind Sound Resonance Technique with the Deep Relaxation Technique and the Mind Sound Resonance Technique with the Control Group.

3.2.4. Percept and Motion Equity

Table 5 depicts that the difference between the mean scores of groups EGI (MSRT) & EGII (DRT) and EGI (MSRT) & CG was statistically significant for percept and motion equity. The table also reveals that the residual means of Percept and Motion Equity for EGI (MSRT) were greater than those of EGII (DRT) and CG, which shows that MSRT (EGI) was more effective than DRT (EGII) and CG.

Table 5: Post Hoc Test for Percept and Motion Equity

Groups	Residual means	Mean difference	p-value
EGI (MSRT) EGII (DRT)	12.45 -3.66	16.11	0.005*
EGI (MSRT) CG	12.45 -8.50	20.95	0.000*
EGII (DRT) CG	-3.66 -8.50	4.84	0.975
*$p < .05$.			

Therefore, Hypothesis $H_{(d)}$: There will be no significant difference between the effect of the Mind Sound Resonance Technique, the Deep Relaxation Technique, and the Control Group on Percept and Motion Equity is accepted for the comparison of the effects between the Deep Relaxation Technique and the Control Group and stands rejected for the comparison of the effects between the Mind Sound Resonance Technique and the Deep Relaxation Technique and the Mind Sound Resonance Technique with the Control Group.

3.2.5. Depression

Table 6 depicts that the difference between the mean scores of depression for the EGI (MSRT) and CG groups was statistically significant as compared to groups EGI (MSRT) & EGII (DRT) and groups EGII (DRT) & CG. The residual means of depression for EGI (MSRT) was less than CG; therefore, it may be concluded that MSRT (EGI) was more effective than following routine activities alone in reducing depression among elderlies.

Table 6: Post Hoc Test for Depression

Groups	Residual means	Mean difference	p-value
EGI (MSRT) EGII (DRT)	-6.26 -0.027	-6.24	0.406
EGI (MSRT) CG	-6.26 6.09	-12.36	0.031*
EGII (DRT) CG	-0.027 6.09	-6.12	0.414
*$p < .05$.			

Therefore, Hypothesis $H_{(e)}$: There will be no significant difference between the effect of the Mind Sound Resonance Technique, Deep Relaxation Technique, and the Control Group on depression is accepted for comparison of effects between the Deep Relaxation Technique and the Control Group and the Mind Sound Resonance Technique with the Control Group, whereas it stands rejected for the comparison of the Mind Sound Resonance Technique with the Control Group.

4. Discussion

One of the yoga relaxation techniques used was the Mind Sound Resonance Technique (MSRT). The chantings of A'(अ)', U'(उ)', M'(म्)', and AUM'(अ-उ-म्)' sounds, the Mahā Mrtyunjaya Mantra, and the Pranava mantra and the resonance produced through these chantings in the Mind Sound Resonance Technique could be the probable reason for the increase in mental efficiency of the elderlies of Experimental Group-I.

A related study conducted by PS *et al*. (2020) suggested that relaxation training improves one's ability to remain vigilant and monitor distractors without losing focus. MSRT is a yoga relaxation technique that involves relaxation through chanting. The resonance produced by chanting may be the reason that MSRT improves the ability to remain vigilant and keeps the focus intact. Furthermore, active and passive chantings (Satish *et al*., 2021) also affect the cognitive ability of an individual, which further corroborates the results of the present study.

Dhansoia *et al*. (2015) stated in their study that MSRT improves psychomotor performance which implied that MSRT may have lead to improvement in Percept and Motion Equity dimension of Mental Efficiency in the present study. A study on cognitive abilities in school children by Anusuya *et al*. (2021) stated that the possible underlying mechanism for improvement could be attributed to parasympathetic dominance resulting from OM chanting and mantra chanting. Therefore, the improvement in the perceptions of the elderly participants of EGI (MSRT) compared to those in EGII and CG is supported.

A study conducted by Vadiraja (n.d.) stated that the Maha Mrtyunjaya Mantra alleviates fears from the mind. Hence, the chanting of the Maha Mrtyunjaya Mantra may have been the reason for reducing depression more effectively for elderly participants of EGI.

The other yoga relaxation technique used was the Deep Relaxation Technique (DRT). A study by Khemka (2012), which measured sustained attention before and after administering the DRT, showed a significant improvement in attention that may be attributed to the tools used, a larger sample size, and the broader age range of 18-64 years, which are in contrast to our study. One probable reason for improvement in mental functions in the EGI group as compared to the EGII group could be that DRT intervention had only a minimal number of audible chantings as compared to MSRT intervention.

The studies conducted by Yogitha *et al*. (2016) and Ebnezar and Yogitha (2012) also showed different results than our study, which could be because DRT was used as a part of a comprehensive yoga module in their studies, whereas only DRT was given to the elderly participants as an intervention.

5. Conclusion

From the above results, it is concluded that the Mind Sound Resonance Technique had a greater effect on mental efficiency in totality, mental functions, mental status, percept and motion equity, and depression as compared to the Deep Relaxation Technique and the Control Group. Thus, MSRT is a more useful technique for improving mental efficiency in the elderly.

6. Future Scope

It is recommended that relaxation techniques like the Mind Sound Resonance Technique, along with other yoga practices such as asana and pranayama, might be included in the National Mental Health Programme, especially for the elderly. It will not only improve the elderly's quality of life but also make government investment in healthcare facilities more cost-effective.

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Authorship Contribution

Parineeta Jindal: Conceptualization, Methodology, and Data interpretation and Anuradha Sharma: Methodology and Data interpretation.

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Conflict of Interest

There is no conflict of interest.

Ethical Approvals

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Declaration

It is an original article and has been neither sent elsewhere nor published anywhere.

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