



# Effect Of Spiritual Silence Practices on The Neuro-Cognition Functioning: A Pre-Post Study

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## ARTICLE INFO

## ABSTRACT

The present study aims to identify and address the effects of Spiritual Silence practices on the Neuro-cognition of participants in a pre-post practice study for which purposive sampling on 30 Silence practitioners have been conducted. The Addenbrooke's Cognitive Examination-III (English and Hindi) has been administered pre and post study to track the changes in the neurocognitive aspects after the end of the 5-7-days retreat program. The result show that there has been significant changes post-practice with increase in fluency, visuospatial abilities, memory and attention.

**Keywords:** Maun, Spiritual Silence, Emotional State, Physical State, Neuro-cognition, Mental State.

## 1. INTRODUCTION

Silence is considered as the foundation and Ultimate Spiritual Sadhana. It is perennial and omnipresent as the background, mid-ground and foreground of Spiritual Practices. The Vedic sciences propound the incredible benefits of Spiritual silence for a practitioner that includes mental, emotional and physical wellbeing. In this context, this research paper seeks to address Spiritual Silence as a practice tool for all kinds of Indigenous psychology provides the centre stage to coalesce Vedic sciences with psychology through extensive research. Adding spiritual dimension to the above mood disorders, this research will highlight the impact of spiritual silence on mental health on normal population as a pilot study before addressing it for patients with mood disorders. The essence of Silence or Maun in Yogic system is stated as the foundation to Dharana which means single minded concentration. The intention that is driven by thought directs the prana or vital energy to flow a certain way with a specific purpose.

Without disrupting the intentional circulation of prana and gaining more control over this process, Silence is proposed in the early stages of spiritual practice. At the later stage of Dhyan where reflection upon thoughts and intentions are initiated, silence provides the backdrop to evaluate the mental contents (Shashtri, 2023). It is also mentioned that at the Ultimate state of Samadhi, inner silence is achieved which indicates the unification of mind and body in harmony. Mental health concerns are mostly imbalances in the mind-body dynamics. Taking inspiration from the Yogic practice like Maun Sadhna can help restore the inner balance. This is in fact suggested by Ayurveda and other Yogic practices that Maun can heal the mind and body by rejuvenating them.

Apart from this, the self-concept and identity-based issue that are part of mental health issues can be covered with the philosophy of Detachment. While evaluating the mental contents and intentions during observation of Silence, practitioner use discernment to take away meaning from contents that are of no use anymore. This helps gain volitional control over the mental process which is considered as the true path to Self-realization. In modern times, the significance of Silence becomes stronger as withdrawing from the sensory gratification and indulging in self-realization beings' purification to the mental activities as mentioned in Srimad Bhagwat 3.24.42. (Swami, 2003).

## Spiritual Silence in Other Religions

Christianity mentions Monastic Silence in psalms of David- "I was silent and still; I held my peace to no avail; my distress grew worse; my heart became hot within me. While I mused, the fire burned; then I spoke with my tongue" (Psalm 39: 3). In Judaism, Silence is observed in beit midrash and monasteries for 2 minutes between prayers. Buddhism actively practices Spiritual silence and one such practice is Vipassana that is known for unifying the mind, body and speech.

**Operational Definition** – ‘Not speaking or communicating with the external world and practicing ancient spiritual techniques.’

## 2. REVIEW OF LITERATURE

Executive functions like puzzle solving and game playing are known to show high brain activity. But rest has shown negative spikes in a study which the scientists call as default baseline of the brain activity (Pezzulo & Corbetta, 2021). Silence activates the auditory cortex and shifts the baseline of brain waves. (Voisin et al., 2006). In a recent study it was found that silence related experiences in meditations change the left uncinate fasciculus of the brain that is responsible for attention and relaxation (Ben-Soussan et al, 2020). Meditation is known to deepen the mental silence especially affecting the right inferior frontal cortex and right temporal cortex where attentional contemplation occurs (Hernández et al., 2015).

Studies have shown that silence can lead to neurogenesis although they can be short term benefits. The lasting effects of silence has not been studied. But for 2 hours of silence in a study with mice, there has been cell growth in the hippocampus of mice (Kirste et.al, 2015). This region is associated with memory formation. This study is yet to be replicated in human brain and if it becomes successful then there can be scope for dementia and depression prevention or mitigation measures in future.

Studies on Spiritual silence especially Vipassana show that silence-based meditation changes the brain microstructure which further leads to reduction in attentional effort. (Ben-Soussan et al., 2020). There is also topological modifications in the brain network in the right hippocampus with higher degree of connectivity in Vipassana meditators (Lardone et al., 2018). Furthermore, there is reduced psychological distress and increase in sense of well-being, mindfulness and self-compassion in a Vipassana meditators as reported after a 6-month follow-up (Szekeres et al., 2015).

### Research gap

The research literature evidently mentions the impact of silence on neurogenesis and brain activity with emphasis on the beneficial impact on the hippocampal region of brain. Some yogic practices like Sahaj yoga, Vipassana, Sudarshan kriya practice and other specific yogic modalities have been studied to understand the impact of ancient practices on the mental and emotional well-being of the practitioner. However, significant research is lacking to identify its impact, while silence is also practiced along with these modalities specifically which is called ‘Spiritual Silence’ in this research; also its impact on neurocognitive functioning of an individual.

## 3.METHODOLOGY

This is a pilot study on normal population for research aiming at identifying the neurocognitive changes in people diagnosed with mood disorders who underwent silence practices. The aim of this study is finding the effects of Silence practice on neuro-cognition. The participants from Vipassana retreat program and Advance Meditation Course of Art of Living were selected using random sampling of age group 25-45 years old, and then tools for neuro- cognition were administered before the start of the program and end of the program. There were 15 males and 15 female participants in the sample group. There were no social exclusion criteria.

### 3.1. Research Hypotheses:

From the research literature the following hypotheses were formulated.

1. There will be significant improvement in the level of **attention and orientation** post- practice.
2. There will be significant improvement in the level of **verbal fluency** post-practice.
3. There will be significant improvement in the level of **Memory** post-practice
4. There will be significant improvement in the level of **Language** post-practice
5. There will be significant improvement in the level **Visuospatial Abilities** post-practice.

Below is a table that illustrates the sample distribution of participants according to different criteria.

### 3.2. Tool description

- ADDENBROOKE'S COGNITIVE EXAMINATION - ACE-III Indian English and ADDENBROOKE'S COGNITIVE EXAMINATION - ACE-III Indian Hindi (For measuring Neuro-cognitive Functions such as Attention, language, fluency, memory visuospatial abilities and their various dimensions) that contains 19 test activities. The ACE-III is found to be highly sensitive (82/100: 1.00 and 0.93 and 1.00).

#### 4. RESULTS

**TABLE 1: PAIRED SAMPLE t-TEST FOR PRE AND POST NEUROCOGNITIVE DIMENSIONS**

Pre-Post	Mean	Std. Deviation	T	Sig (2 tailed)
Attention	-4.367	9.579	-2.497	.018
Memory	-1.900	2.139	-4.865	.000
Fluency	-14.567	6.027	-13.238	.000
Language	11.567	6.151	10.299	.000
Visuospatial	-1.433	2.388	-3.288	.003
Total Neurocognitive	-9.833	14.147	-3.807	.001

Table 1: Results of paired sample t-test for Neurocognition

The paired sample t-test for the participants of the Silence practice shows that there has been significant difference in attention before and after Silence practice with Mean=4.367 and s.d.= 9.579. This difference is significant with .018 at 95% confidence interval. Hence, first hypothesis is accepted.

For verbal fluency, the mean difference is 14., 567, s.d.= 6.027, significant with .000 at 95% confidence interval. Hence the Second hypothesis has been accepted.

For memory, the mean difference is 1.900, s.d.= 2.139, significant with .000 at 95% confidence interval. Hence the Third hypothesis has been accepted.

For Language, the mean difference is 11.567, s.d.= 6.151, significant with .000 at 95% confidence interval. Hence the Second hypothesis has been accepted.

For Visuospatial abilities, the mean difference is 1.433, s.d.= 2.388, significant with .000 at 95% confidence interval. Hence the Second hypothesis has been accepted.

Overall neuro- cognition has been significantly improved post-practice with mean difference =9.833, s.d.= 14.147 and this difference was significant at 95% confidence interval.

#### 5. DISCUSSION

The Indigenous modalities have been considered as part of the culture and spirituality rather than seeing its psychological benefits and accepting them as prevalent methods of healing. The spiritual theories and inherent concepts seem profound and yet they are not considered scientific, or evidence based. It is evident that verbal fluency, attention and memory are significantly improved after Silence practice. These results need to be assessed in a bigger sample size to ascertain its replicability. Furthermore, Vipassana and Advance Meditation Course include dietary and daily routine changes that may have contributed to the changes to some extent which was not considered in the study. Precisely, there are several formats of Silence practice that includes specific routines and thus it is difficult to ascertain which activity reduces or enhances which aspect of the neuro-cognition. However, any spiritual practice is holistic in its approach, which is why it is recommended to take interest in the spiritual theory behind the practice. The researchers propose the psychology fraternity to identify the mental, emotional and cognitive processes that are part of the spiritual theories especially when these modalities are being used as intervention tools. Including psycho-spiritual aspects of neurocognitive functioning will greatly enhance and bring rigor to this study in future.

Incorporating Indigenous psychology and spiritual practices will help to eliminate the taboo pertaining to mental ailments and integrate them in the community rather than ostracizing them. Furthermore, spiritual silence can be practiced regularly for its benefits especially when there is a steep rise in mental health ailments.

#### 6. CONCLUSION

This study has showed that Spiritual Silence was effective in improving attention, visuospatial abilities, language and fluency in the quantitative analysis. From this pilot study, several aspects of Silence have been noted by the researchers. They deem emotional and physical well- being may also be important as the routine and dietary changes awarded by above mentioned practices perhaps led to these significant neurocognitive functioning improvements. The post- silence data has been taken right after the end of the retreat which is why the durability of the results are in question.

The participants who frequented this practice have recommended to do so on a regular basis due to its short-term effects. This is why the researchers conclude that Spiritual Silence is more than a remedy and is eligible to be a sustained spiritual practice that improves the neurocognitive functioning as it has been found that structured practices of Yoga in India include meditations that are beneficial in promoting cognitive functions (Brunner et al., 2017).

In conclusion, Silence Practice is found to be beneficial for enhancing neurocognitive functioning that may give sustained results if practised daily, not as a pill for health purposes rather for the overall wellbeing.

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