Review

Scientific Evidence of Practicing Gayatri Mantra: A Review Analysis

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ABSTRACT

Background: Mantra chanting practices have been seen to maintain good health and spiritual upliftment. Ancient texts admit that the mantra chanting, practised regularly with appropriate pronunciation and complete faith, alters the state of consciousness. Research on chanting has reported positive outcomes for different health parameters.

Aim: This article aimed to collect and analyze the available evidence of the effects of the Gayatri Mantra and to develop an ideal model to chant for achieving better health benefits.

Method: A systematic literature search was done on PubMed, Google Scholar, and Research Gate for published papers in English, where Gayatri Mantra alone was used as an intervention. This review included experimental studies on recent advances while spiritual texts were reviewed to develop a model for chanting.

Conclusion: Based on all the scientific studies and ancient literature, the present review concludes that Gayatri Mantra may benefit health parameters. Moreover, the developed model of chanting, based on the spiritual texts, may also be incorporated into the practice.

Introduction

Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. (Health and Well-Being.) However, a report published by the World Health Organization in 2019 revealed that an estimated one in every eight people is suffering from mental disorders worldwide. Several factors, like the closure of businesses (Conteh et al., 2022), marital satisfaction, social support, family conflicts, etc., influence mental health (Wu et al., 2020) and may lead to mental health disorders. Anxiety and depressive disorders are the two most common mental disorders in both males and females. An increase from 193 million to 246 million people with major depressive disorder and from 298 million to 374 million people with anxiety came out as a drastic mental health challenge.

Imbalanced mental health increases the risk of several other disorders like sleep disorders, diabetes, and cardiovascular disorders, while chronic medical conditions also contribute to mental health disorders. (Chapman et al., 2005) Several treatments are available to overcome mental health-related problems, like sedatives, hypnotics, or anxiolytic groups of drugs. It was reported that Psychiatric side effects (PSE) may be induced by pharmacological treatment, which range from short-lasting anxiety to severe confusion and alleged cases of suicide. (Tango C.R., 2005) Mantra Meditations were found to produce significant small-to-moderate positive effects in reducing anxiety, depression, stress, post-traumatic stress, and mental health-related poor quality of life. (Álvarez-Pérez et al., 2022) Among various Mantras of Vedic tradition, the Gayatri Mantra is one of the most essential mantras found to be effective for...
mental and cognitive functions. (Kumar, 2019). Hence, the study aims to systematically collect all the evidence related to the Gayatri Mantra’s beneficial effects and develop a model for chanting the Gayatri Mantra per the spiritual recommendations.

2. Methodology
2.1 Search strategy:

The literature search was completed on March 2023 from PubMed, Google Scholar, and Research Gate with the search terms related to ‘Gayatri Mantra.’ The keywords searched in the title/abstract of PubMed were ‘Gayatri Mantra’ or ‘Mantra’ or ‘chanting’ or ‘vedic hyme,’ with 213 results. An appropriate search strategy was adopted for the Google Scholar and Research Gate literature search. Additionally, three records were included by the direct search on Google.

After removing duplicates, the remaining studies were screened thoroughly by the author independently to check their eligibility according to the inclusion and exclusion criteria (mentioned below). Finally, nine studies were identified for the present review.

A. Inclusion criteria:
   a. Gayatri Mantra as a chief intervention
   b. Mental and physical health as the dependent variable
   c. Published research papers within the last ten years
   d. Free full text available

B. Exclusion criteria:
   a. Review study
   b. Language other than English

Figure 1

<table>
<thead>
<tr>
<th>Identification</th>
<th>Total records identified from: 2974 PubMed (n = 213) Google Scholar (n = 2658) Research gate (n = 100) Google (n = 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screened</td>
<td>Records screened (n = 228)</td>
</tr>
<tr>
<td>Eligibility</td>
<td>Reports assessed for eligibility. (n = 83)</td>
</tr>
<tr>
<td>Inclusion</td>
<td>Studies included in the review (n = 9)</td>
</tr>
<tr>
<td>Exclusion</td>
<td>Records removed Full paper screening: 2746 Duplicate records removed (n = 10) Ineligible after reading the title (n = 2567) Records removed for other reasons (n = 169)</td>
</tr>
<tr>
<td>Excluded</td>
<td>Records excluded (n = 145)</td>
</tr>
<tr>
<td>Excluded</td>
<td>Reports excluded: Gayatri Mantra is not an independent intervention (n = 72) Not fit with inclusion criteria (n = 2)</td>
</tr>
</tbody>
</table>
2.2 Understanding Mental and Neuro-Physiological Health

2.2.1 Mental health:
Mental health is a dynamic state of internal equilibrium that enables individuals to use their abilities in harmony with the universal values of society. The essential components of mental health are basic cognitive and social skills, the ability to recognize, express, and consistency in one’s own emotions, as well as empathize with others, flexibility, and the ability to cope with adverse life events and function in social roles, and harmonious relationship between body and mind. (Galderisi et al., 2015)

Unfortunately, according to a report published by the World Health Organization (WHO), the global burden of mental disorders in disability-adjusted life years (DALYs) is 129 million people (male- 45.9%, female- 54.1%) as of 2019, in which depression (39%) and anxiety (22%) are most prevalent. Since 2000, depressive and anxiety disorders have consistently been among the top ten leading causes of Year lived with Disabilities (YLD) worldwide. Memory, attention, thinking, decision-making, reasoning, perception, planning, and emotion are mainly studied among the several important mental health components.

2.2.2 Neuro-psychological health:
Neurophysiology is concerned with the function of the nervous system rather than the structure. Neurophysiological health is the state of brain functioning across cognitive, sensory, social-emotional, behavioural, and motor domains, allowing a person to realize his/her potential over life, irrespective of the presence or absence of disorders (WHO). Neurophysiological disorders negatively affect brain functions and alter an individual’s self-regulation power, focusing power, adaptive behaviour, etc. (Tango C.R., 2005). Neurophysiological methods are used to identify and define states of consciousness and unconsciousness.

3. Evidence of the Impact of Gayatri Mantra on Different Health Parameters (Kumar, 2017)

3.1 GAYATRI MANTRA AND MENTAL HEALTH

3.1.1 Gayatri Mantra and Anger Expression: (Sharma, 2019)

<table>
<thead>
<tr>
<th>SI No</th>
<th>Author/ Year</th>
<th>Location</th>
<th>IV</th>
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<th>Subjects</th>
<th>Study design and groups</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vandana Sharma (2019), Pune, India</td>
<td>Gayatri Mantra chanting</td>
<td>[Psycho-physiological state of youth]</td>
<td>i. State anger expression inventory (STAXI 2) ii. Psycho-physiological state inventory (PPSI)</td>
<td>60 participants (18-25Y) Thirty were in the experimental group, and 30 were in the control group.</td>
<td>Non-randomized control study</td>
<td>A significant difference in the scores obtained on physiological(P= 0.000), psychological(P=0.000), Psycho-physiological(P=0.000), S-ANG(P=0.000), S-ANG/F(P=0.000), S-ANG/V(P=0.000), S-ANG/P(P=0.000), T-ANG/P=0.000), T-ANG/I(P=0.000), T-ANG/R(P=0.002), F-ANG/R(P=0.000), AX-O(P=0.000), AC-I(P=0.000), AC-O(P=0.004), AX-Index(P=0.000) between both the groups. But there is no significant difference in the scores obtained on AX-I from pre-test to post-test in experimental group.</td>
<td>From the result of the study, it can be stated that There is a significant difference in the scores obtained on physiological, psychological, Psycho-physiological, S-ANG, S-ANG/F, S-ANG/V, S-ANG/P, T-ANG, T-ANG/I, T-ANG/R, AX-O, AC-O, AC-I, AX-Index from pre-test to post-test in experimental groups, while no significant results were found in the scores obtained on AX-I from pre-test to post-test in experimental group.</td>
<td></td>
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</table>
3.1.2 *Gayatri Mantra and cognitive function:* (Pradhan & Derle, 2012) (Narayanan et al., 2018); (Kumar, 2019)

<table>
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<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Balaram Pradhan and Seema Godse Derle. (2012) Nasik, Maharashtra, India.</td>
<td>Gayatri Mantra chanting</td>
<td>Attention</td>
<td>Digit letter substitution task</td>
<td>Sixty school students [12-14y]. (30 girls, 30 boys).</td>
<td>Randomized trial.</td>
<td>Both sessions, PL GM, showed significant improvement in total and net scores of DLST. The magnitude of net score improvement was more significant after GM. (21.67%) compared to P.L. (4.85%). The female group found better performance following GM. (P&lt;0.001) compared to P.L. chanting.</td>
<td>Both GM and P.L. lead to improvement in performance, as assessed by DLST. However, the influence of GM was significantly higher than that of the female group in the net score.</td>
</tr>
<tr>
<td>2</td>
<td>Narayanam, et al. (2018) Kerala, India</td>
<td>Gayatri Mantra</td>
<td>i) Spatial memory ii) Verbal memory</td>
<td>i. 10 PPT slides containing different line diagrams were used to measure spatial memory. After sowing, ask them to solve a math problem and then ask them to recall the slide. Based on that, marks were given to them. ii. Ten ppt slides consist of 3 letter words used to measure verbal memory. The rest of the process is the same.</td>
<td>Thirty healthy participants [11-14y].(15 boys,15 girls)</td>
<td>Non-randomized trial</td>
<td>In the present study, we have observed significant improvement in the spatial (p=0.0010) and verbal (p=0.0001) memory scores followed by GM. intervention.</td>
<td>There was a significant increase in both spatial and verbal memory scores, followed by the chanting of <em>Gayatri Mantra</em>.</td>
</tr>
<tr>
<td>3</td>
<td>Narottam kumar (2017) Bangalore, India</td>
<td>Gayatri Mantra &amp; OM chanting</td>
<td>Selective attention.</td>
<td>Color Stroop test.</td>
<td>30 healthy participants [18-30y]</td>
<td>Non-randomized control trial (self-as control)</td>
<td>The study shows a significant improvement in Stroop scores in both sessions (P &lt; 0.001; Wilcoxon’s Signed Rank test). Stroop scores increased statistically in both sessions among the students. The percentage improvement in attention was 16.16% after the Gayatri Mantra recitation, whereas it was 9.26 % after the Om recitation.</td>
<td>This pilot study suggests that the Gayatri Mantra and Om recitation are effective yoga-based Mantra to improve selection in undergraduate students immediately after the practice. The study also suggests that Gayatri Mantra is more effective than Om recitation.</td>
</tr>
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</table>
3.2 **GAYATRI MANTRA AND NEUROPHYSIOLOGICAL VARIABLE**

### 3.2.1 Gayatri Mantra and Brain: (Thomas & Rao, 2016.)

<table>
<thead>
<tr>
<th>SI No</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Susan Thomas, Shobini L. Rao. (2016) Bangalore, India</td>
<td>Gayatri Mantra meditation</td>
<td>Gamma &amp; beta waves, Bilateral superior temporal gyri, The right temporal lobe, Right insula, Left inferior parietal lobule, Lateral globus pallidus and culmen of the cerebellum.</td>
<td>i. A 32-channel EEG recorder. ii. 3T Skyra MRI System for scanning. iii. IFIS software for FMRI. iv. Statistical parametric mapping (SPM 8) for analyzing images. v. Talarich coordinates to plot active area.</td>
<td>20 meditative naïve subjects (12 for EEG &amp; 8 for FMRI) [20-35y]</td>
<td>Non-randomized trial</td>
<td>EEG: The EEG study showed that the percentage of gamma and beta waves increased in the post-He Gayatri Mantra listening phase concerning the pre-He Gayatri Mantra listening phase. FMRI: The results showed that the areas that had maximum activation were the bilateral superior temporal gyri, right temporal lobe, right insula, left inferior parietal lobule, lateral globus pallidus, and culmen of the cerebellum. In EEG, novice meditators can experience restlessness due to Gayatri Mantra listening for 10-15 minutes. In FMRI, the brain areas activated in meditation by regular volunteers included the right insula, which involves bodily self-awareness and emotional experience. The paradigms developed during both studies helped examine brain changes during meditation.</td>
<td></td>
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</table>

### 3.2.2 Gayatri Mantra and GSR, (Kumar, 2018)

<table>
<thead>
<tr>
<th>SI No</th>
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<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vikash Kumar et al. (2018) Haridwar, India</td>
<td>Gayatri Mantra</td>
<td>GSR</td>
<td>12 participants [17-24]</td>
<td>Non-randomized trial</td>
<td>The result indicated that the GSR signal during the Yagya ritual followed a defined pattern. Median GSR signals were decreased after the fire ritual, i.e., the latter half of the Yagya, compared to the first half of the Yagya (median fold change decrease 1.38; n=12; p=0.0010). Interestingly, this decrease in GSR was achieved significantly during obligations to fire with Gayatri Mantra (median fold change decrease 1.35; n=12; p=0.0024) and remained low compared to that of in the starting phase of the Yagya ritual.</td>
<td>Indicate the significance of the Gayatri Mantra in the Yagya ritual in achieving a relaxed state. Overall, the study indicated the tremendous potential of the Vedic traditional ritual of Yagya.</td>
<td></td>
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</tbody>
</table>
### 3.3 Gayatri Mantra and Cognitive Functions of ADHD Children (Krishnapriya & Chaube, 2020)

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Author/Year Location</th>
<th>IV DV (parameters)</th>
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<th>Subjects</th>
<th>Study design and groups</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Krishnapriya VK, Nandita Chaube. (2020), India</td>
<td>i. Gayatri Mantra Cognitive functions</td>
<td>i. Digit cancellation test ii. Trail making test iii. Digit span test iv. N backtest v. IOWA vi. Vanderbilt ADHD diagnostic parent rating scale. Vanderbilt ADHD diagnostic teacher rating scale.</td>
<td>One patient (6y old male)</td>
<td>Case study</td>
<td>Research improves the child’s cognitive functioning through computerized training and Gayatri Mantra chanting. However, there is more improvement after Gayatri Mantra chanting than computerized training.</td>
<td>Regular Vedic chanting can improve the cognitive functioning of ADHD children. It has better-sustaining effects than computerized training.</td>
</tr>
</tbody>
</table>

### 3.4 Gayatri Mantra and Physiological Parameters: (Rastogi et al., 2022)

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Author/Year Location</th>
<th>IV DV (parameters)</th>
<th>Tools</th>
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<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rohit Rastogi, et. al. (2022) Noida, India</td>
<td>Gayatri Mantra i. Blood sugar level ii. Knee pain iii. Body weight iv. Positive thoughts v. Energy level vi. Chronic constipation</td>
<td>Not mentioned in the paper.</td>
<td>11 diabetic patients [38-70Y]</td>
<td>Non-randomized control study (Self-test control)</td>
<td>The result shows a significant improvement in both G.M. and O.M. sessions. However, the analysis shows more improvement in the Gayatri Mantra than in the O.M. session.</td>
<td>The study indicates that four months of practice of Gayatri Mantra chanting for 15 minutes/day can improve the mentioned physiological parameters of the human body.</td>
</tr>
</tbody>
</table>

### 3.5 Gayatri Mantra and Environmental Factor: (Singh & Kumar Singh, 2018)

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Author/Year Location</th>
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<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ruchi Singh et. al. (2018) Haridwarr.</td>
<td>Gayatri Mantra S.aureus B.substilis E.coli Paeruginosa S.typhi</td>
<td>Glassware Flask Methanol Condenser Glass funnel (disc diffusion method)</td>
<td>N.A.</td>
<td>Experimen-tal study</td>
<td>The smoke of Yagya, which had Mantra chanting in treatment, showed statistically significant (p&lt;0.05) antimicrobial activity for all (1.25, 2.5,5 mg/discs) concentrations compared to smoke of non-Yagya, where Mantra chanting was absent. At the same time, other variables were identical in both procedures.</td>
<td>The present study showed that Yagya smoke had antimicrobial activity. In addition, the study demonstrated that smoke generated from Yagya in which the Mantra was chanted had higher anti-microbial activity than those without Mantra chanting.</td>
</tr>
</tbody>
</table>
4. Characteristics of the used Protocols and Textual Basis

<table>
<thead>
<tr>
<th>SL NO</th>
<th>Way of Chant</th>
<th>Group / Individual</th>
<th>Time (how much)</th>
<th>Subjects (age group)</th>
<th>Which Time of the Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mental with audio with closed eyes</td>
<td>Group</td>
<td>15 min for 21 days daily</td>
<td>18-25yrs (60)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>2</td>
<td>Verbal with closed eyes</td>
<td>Group</td>
<td>10 min (duration not mentioned)</td>
<td>12-14yrs (60)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>3</td>
<td>Verbal with closed eyes</td>
<td>Group</td>
<td>10 min for 16 weeks 5days/week</td>
<td>11-14yrs (30)</td>
<td>6:00 am</td>
</tr>
<tr>
<td>4</td>
<td>Verbal with closed eyes</td>
<td>Group</td>
<td>15 min (duration not mentioned)</td>
<td>18-30yrs (30)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>5</td>
<td>Mental with audio with closed eye</td>
<td>Group</td>
<td>15 min (duration not mentioned)</td>
<td>20-35yrs (12)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>6</td>
<td>Mental with audio with closed eye</td>
<td>Group</td>
<td>22 min (duration not mentioned)</td>
<td>20-35yrs (8)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>7</td>
<td>Verbal chat</td>
<td>Group</td>
<td>108 times (duration not mentioned)</td>
<td>Microbial activity</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>8</td>
<td>Not mentioned</td>
<td>Not mentioned</td>
<td>12 yajna performed (duration not mentioned)</td>
<td>17-24yrs (12) male</td>
<td>Evening</td>
</tr>
<tr>
<td>9</td>
<td>Verbal with closed eye</td>
<td>Group</td>
<td>15 min daily for 4 months</td>
<td>38-70yrs (11 diabetic patients)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>10</td>
<td>Not mentioned</td>
<td>Individual</td>
<td>40 min daily for 20 days</td>
<td>4yrs (1)</td>
<td>Morning</td>
</tr>
</tbody>
</table>

**Textual Basis of chanting**

In *Siddhasiddhantapaddhati*, a description of 5 qualities of vak (sound) is found: “para,” pasyanti,” “madhyama,” “vaikhari,” “matrika” (The Lonavla Yoga Institute (India) Lonavla, 2016). The vak does mantra practice. Therefore, one should lead the practice of chanting according to the provided sequence in Mantra Yoga tradition, which favours the four types of chanting: Vaikhari (verbal), ii) Upanshu (whisper), iii) Manasik (mental), and iv) Ajapa (effortless continuous chants) (MANTRA, 2015).

In this regard, Guru Gorakshanath said that “japa yajna” is ten times better than “vidhi yajna,” “upanshu” is 100 times better than “Japa,” “manas” is 1000 times better than “upanshu” (Mallinson, 2004). *Kularnavtantra* also says that japa done aloud (vachik) is the lowest, japa done with a low voice (upanshu) is middle, and japa done...
mentally (manas) is the best. (Woodroffe et al., 2007). So, according to the scripture, mental chanting is the superior way; however, one should only jump to this step directly after preparing the mind through the earlier steps of Verbal and Whisper.

**Recommended way of chanting**

1. **Time:** The preferred time for the practice should be in the morning or evening.
2. **Pronunciation and devotion:** Appropriated pronunciation and devotion are essential to mantra chanting. For developing devotion, an introductory session may be arranged for the participants to describe the scientific benefits based on spiritual principles. At the same time, an expert should supervise pronunciation before jumping into the self-practices.
3. **Sequence:** One should start with verbal chanting to concentrate the mind on the sound and successive whispering. Mental and ajapa steps should be practised as the mind gains clarity and profound concentration. Direct mental chants may slip the practitioner from the mindful state. The alteration in steps avoids the monotonous flow and helps to keep the mind focused.
4. **Speed:** The speed of the Mantra can also be opted according to one’s mental state. Chants may be speeded down from rapid chants when the mind is rajas predominant (overactive) while slow to fast chants in case of dull state of mind (Tamas) (Subrahmanya Iyer, 1949)
5. **Regularity:** Regularity and discipline must be maintained throughout the practice. Practice simultaneously for an extended period helps to gain stable results because regularity and longitudinal practice are the keys to ceasing mental agitations.

![Diagram of the recommended way of chanting](image)
5. Discussion

The study aimed to review the recent advances in Gayatri Mantra on health-related variables and identify the systematic way to chant. Out of 9 included studies, five studies (Kumar, 2019b; Narayanan & Venugopalan, 2018; Pradhan & Derle, 2012; Sharma, 2019; V.K. & Chaube, 2021) reported the improvement in mental health-related variables, two studies (Thomas & Rao, n.d.; Varma, 2018) showed better brain functioning, 1 study (Singh & Kumar Singh, 2018) reported reduction in the bacterial growth in environmental and 1 study (Rastogi et al., 2022) showed improvement in physiological parameters. The studies indicate that the recitation of the Gayatri Mantra creates harmony at the physical, mental, and environmental levels, which is the ultimate aim of yoga to create harmony between the internal and external environment.

Principles of chanting Mantra:

In Hindu tradition, Mantras are believed to be powerful verbal formulas that possess an innate power- the power of the associated deity; hence, the pronunciation of the chanting must be correct (Burchett, 2008). On the other hand, it may be harmful if pronounced incorrectly (MANTRA, 2015).

1. **Principle of Pronunciation:** Another considerable point is that the Gayatri Mantra should be practiced at sunrise, noon, or dusk. However, no restrictions are there concerning diet, drinking, or marital status (MANTRA, 2015). Hence, anyone can benefit, irrespective of their religion. All included studies were focused on this principle of mantra chanting.

2. **Principle of Sequence:** The included studies have been focused on a single type of chanting, verbal, mental, or listening, which has shown considerable positive changes. However, the ancient texts advocate four types of successive chants: Vaikhari (loud verbal), Upanshu (whispering sound), and Mansik (Mental), to Ajapa (Spontaneous). (MANTRA, 2015). Hence, the mentioned 4-step process may be more beneficial than a single type of chanting.

3. **Consideration of mental state:** The speed of chanting can also be accelerated low and high according to the mental state. The Mantra can be chanted quickly if the mind is disturbed, slowly when the mind is relaxed, and verbally if you feel sleepy. (MANTRA, 2015).

4. **Principle of Regularity:** Regular and repetitive practice of Mantra at the same time may help the mind to be quieter and ultimately help destroy the samskara, the self-forced habit patterns (MANTRA, 2015). In this regard, Maharshi Patanjali also emphasizes in the yoga sutra that regular abhyasa (practice) is the key to ceasing mental patterns. (Saraswati, 2008). Therefore, the Mantra must be chanted regularly. (MANTRA, 2015). Based on nine included studies, it has been found that the chanting duration ranged between 10-40 minutes in a session while the overall practice time ranged between 21 days to 4 months.

5. **Principle of Devotion:** Patanjali emphasizes the satkara-sevito (devotion) in any practice. (Saraswati, 2008). Devotion, in addition to chanting practices, is associated with parasympathetic activation. (Perry et al., 2022).

Scientific analysis of Mantra recitation revealed significant activation of clusters in regions associated with planning and executing voluntary motor output, visual processing, and mental imagery (Fox et al., 2016).

The existing scriptures direct the performance of Mantra chanting with correct pronunciation and emphasize regularity, sequence of practice, and feelings of sublimation. However, ancient literature says mental chanting is the best way to chant Mantra (Woodroffe et al., 2007). However, it is difficult for beginners as the mind deviates quickly without a firm foundation from verbal or whispering. Therefore, one should prepare his foundation with verbal chanting to control the mind first; then, upanshu and manasikjapa (Chanting) should be done. On the other hand, existing literature shows that verbal chanting also has a beneficial effect (KUMAR, 2019b; Narayanan & Venugopalan, 2018; Pradhan & Dale, 2012; Rastogi et al., 2022; Singh & Kumar Singh, 2018). Identifying the principle of chants, the authors developed a model to follow subsequently.

6. Conclusion

In the review, Neuro-physiological, cognitive, mental, physical, and environmental benefits have been identified, and the ideal model to chant Gayatri Mantra has been developed based on the available research papers and spiritual texts.

The study concludes that the positive health-related benefits of stress, anger, mental health, physical parameters, environmental factors (bacterial growth), self-awareness, balanced autonomic functions, and cognitive function of...
ADHD children can be obtained by Gayatri Mantra chanting. However, robust studies with gold-standard study designs, large populations, and uniform chanting procedures are needed to support the previous findings. A recommended model is also developed and provided in the study.

**Strength & Limitation**

**Strength:**
- A systematic strategy was administered to search the research papers.
- Collection and synthesis of the available scientific evidence on the health-related benefits by Gayatri Mantra.
- Develop an ideal model for practicing Gayatri Mantra based on spiritual texts and research.

**Limitation:**
- Quality assessment of the studies
- Unable to retrieve the paid published papers

**Future Scope:**
- The difference between verbal and mental chants can also be checked.
- Comparison of verbal/mental chants between dull and agitated minds can be checked to provide a suitable type of practice according to the individual.
- Longitudinal effects of Gayatri Mantra with subsequent follow-ups can be seen on different health-related parameters.
- The difference between regular and non-regular practitioners may be checked

**Conflict of Interest:**
NIL

**Reference**


17. Saraswati, S. S. Four Chapters on Freedom Commentary on the Yoga Sutras of Patanjali.