

Impact of Trataka(Yogic Gazing) on Mental Health of People with Insomnia

MR. UPDESH SINGH PAL, Ph.D. Scholar.
Department Physical Education Pedagogy, LNIPE INDIA
Updeshpal32@gmail.com

DR. YATENDRA K. SINGH, Associate Professor
Department of Physical Education Pedagogy, LNIPE INDIA
toyasi3@gmail.com

Abstract A prevalent illness that is linked to morbidity and a poor quality of life is insomnia or sleeplessness. One of yoga's six purification practices is called trataka. According to the literature, trataka may aid in reducing insomnia and it is closely associated with mental health. The effectiveness of trataka on the quality of mental health for those people who have it was examined in this study. Fifty insomniac subjects were chosen which divided half in control group and experimental group they underwent trataka (45 minutes) alternate days per week for 6 weeks. The Mental Health Inventory (MHI) was used to evaluate the quality of sleep before and after the intervention. This study revealed a significant increase in MHI global score and its associated sub-scale scores following the intervention. When it comes to treating insomnia, reducing its intensity, and enhancing a person's mental health, trataka may be an option.

Keywords - Trataka, Insomnia, Meditation, Sleep, Yoga, Mental health.

1.Introduction

Yoga is a philosophical, cultural, and social legacy of ancient India. It holds the potential to counteract stress-induced physiological changes. Yoga is frequently used to treat a variety of physical and mental disorders and is regarded by the scientific community as a mind-body medicine (Hagen & Nayar, 2014; Ramachandra et al., 2008). Around 10th Century, Sage Swatmarama wrote a text called Hatha Yoga Pradipika in which he explains the methodology of yoga techniques. It includes shatkarmas, asanas, pranayamas, mudras and bandhas. Theshatkarmas refers to six cleansing techniques (kriyas) which are dhauti, basti, neti, trataka, nauli and kapalabhati, to purify the body (Kusuma et al., 2021). One of the six purifying practices included in the yogic literature Hatha Yoga Pradipika is trataka, often known as yogic visual concentration (B. R. Raghavendra & Singh, 2016; B. Raghavendra & Ramamurthy, 2014) or yogic gazing (Karmakar, K., & Pant, G., 2017). In the practice of Trataka, a small object is focused on until tears begin to fall, at which point the object is clearly seen with the eyes closed as an inner image at the centre of the eyebrow (Karmakar, K., & Pant, G., 2017).

A major problem affecting 6-33% of the general population is insomnia or sleeplessness (Shathirapathiy et al., 2022). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) defines insomnia as: (1) unhappiness with sleep quantity or quality; (2) complaint of one or more of the following sleep difficulties: trouble falling asleep,

trouble staying asleep, waking up early in the morning, or having a non-restorative sleep; (3) significant distress or interference with daily functioning brought on by the sleep difficulty; (4) the sleep difficulty occurs at least three times per week; (5) the sleep difficulty has been present for at least three months; and (6) despite the adequate opportunity and circumstances for sleep, there is difficulty while sleeping (Seow et al., 2018).

Insomnia has negative effects on the individual, the community, and the psychiatric (depression, anxiety, panic disorder, and substance abuse or dependence). It also has negative effects on the physical (heart disease, hypertension, and chronic pain, gastrointestinal, neurologic, urinary, and breathing difficulties). Furthermore, increased incidences of sleeplessness were discovered in those who successfully committed suicide (Mai & Buysse, 2008).

Individuals with insomnia often complain about tiredness, nervousness, and general weakness and are prone to have negative emotions such as tension and irritability (Bougard et al., 2018) which can lead to depression, decreased cognitive function, substance abuse, and inhibited social and work ability. Other studies have established that insomnia is highly comorbid with psychiatric disorders and is a risk factor for the development of depression, anxiety, and suicide; such studies have expressed that early treatment programs for insomnia might reduce the risk of developing depression (Chen et al., 2020).

Cumulative evidence from systematic reviews and meta-analyses point out that poor sleep and insomnia are important risk factors for mental and somatic health as well as for individual economic risk (Fernandez-Mendoza & Vgontzas, 2013).

Patients with insomnia with short sleep duration showed poorer neuropsychological performance on tests of processing speed, switching attention, and number of short-term visual memory errors and omissions compared with control groups with normal sleep duration. In contrast, patients with insomnia with normal sleep duration group showed no significant deficits when compared with controls. (Fernandez-Mendoza & Vgontzas, 2013)

Trataka is found to be effective in improving memory and concentration. With this practice one is not only able to watch his concentration, but also intensify it. Trataka is also especially good for tackling insomnia (Nagammanavar, R. Y., & Natekar, D. S., 2020). However, to the best of our knowledge no study has examined the impact of trataka on mental health for those who suffer from insomnia. In order to assess the impact of trataka on mental health of people with insomnia, this study was carried out.

2. Material and methods

2.1 Study Design

A one-group pretest-posttest experimental study design was adopted. At the participants underwent 45 min of trataka session on alternate days for a period of 6 weeks. Assessments were made before and after the intervention.

2.2 Study participants

For the purpose of this study, 50 participants through purposive sampling technique, were selected between 30 to 55 years of age with a history of insomnia or Insomnia Severity Index (ISI) score greater than 7. The 50 participants were randomly divided into two groups – Control and Experimental of 25 members each. Group A was the control group, Group B was experimental. It was also taken care regarding the factors of excluding subjects associated with chronic systemic illness, chronic alcoholism, and chronic smoking, which were not included as a subject in the current study. A written informed consent was received from all the participants.

2.3 Intervention

Before the practice, the trataka technique was explained to each participant. Trataka is practiced for six weeks, beginning with 30 minutes of eye exercises and followed by 10-15 minutes of daily trataka between 6:00 and 7:00 p.m. In eye exercise, the participants were instructed to extend their elbows at the level of their shoulders, make a fist with their hands while keeping their thumbs pointing upward, concentrate on the tip of their thumbs (without looking away), and rotate their hands both clockwise and anti-clockwise while moving their hands vertically (up and down), horizontally (right and left), and diagonally (right up to left down and vice versa).

In the main practice, the participants were instructed to sit comfortably with their backs straight and to fix their gaze upon a steady flame without blinking until tears began to fall. The flame was set at their eye level. They were then instructed to close their eyes and picture the same flame as an inner image in the middle of their eyebrows.

2.4 Assessment

The Mental Health Inventory (MHI) by Jagdish and Srivastava, 1996) has been selected as a measure, which is a standard test and used worldwide by the researchers (Jagdish, S., & Srivastava, A. K. 1983). It consists of 56 items and each item is rated on 4-point rating scale

ranging from always to never with a score of 1 to 4. The inventory consists of six dimensions: Positive self-evaluation (PSE), Perception of reality (PR), Integration of Personality (IP), Autonomy (A), Group Oriented Attitude (GOA) and Environmental Mastery (EM). Each item has a range of 1-4 points (1 = 'Never', 2 = 'Rarely', 3 = 'Often', 4 = 'Always'). The Six dimensions scores are summed up to get one "global" score, with a range of 0-224 points. A total score of 195.89 and above indicates very good mental health, 195.89- 176.45 indicates good mental health, 176.45 – 157.01 indicates average mental health, 157.01 – 137.57 represents poor mental health, 137.57 and below represents very poor mental health. The Split-Half reliability for this scale obtained by the researcher was 0.73 and the construct validity was found to be 0.54

2.5 Test administration

The participants in this study were randomly divided into experimental and control group. The treatment was given under blind setup in which experimental group B was given 6 weeks practice session of Trataka kriya while control group A were engaged into their normal schedule. Before and after receiving treatment, data was taken from all the groups.

The questionnaire administered under the supervision of researcher. The instructions and methods of responses were explained clearly to all subjects, so that no item of the test was left unanswered by any subjects.

3. Results

Data were checked for normality using Shapiro Wilk test and Levene's test was used to test the Homogeneity of Variances between experimental and Control Group. The data obeyed both the assumptions of normality and homogeneity of variance. Statistical analysis of normally distributed data was done using paired sample t-test with the help of SPSS Version 20.

Table I showed the descriptive statistics (mean and standard deviation) of control group and Trataka training group before 6 weeks of training and after 6 weeks of training on Mental Health Inventory (MHI) and its dimensions.

Table I:

Descriptive Statistics (Mean and Standard Deviation) of Mental Health and its dimensions.

Variables Parameters	Control Group				Experimental Group			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1. Positive Self-Evaluation (PSE)	30.88	4.09	31.92	3.98	29.36	4.45	30.52	4.53
2. Perception of Reality (PR)	23.36	3.29	23.28	3.00	24.72	2.72	26.24	3.78
3. Integration of Personality (IP)	33.16	5.27	33.44	5.53	37.28	4.77	38.52	4.35
4. Autonomy (AUTNY)	17.96	3.13	18.00	3.12	18.80	3.25	20.40	3.38
5. Group Oriented Attitudes (GOA)	29.08	4.04	29.92	3.74	31.00	4.36	32.36	4.47
6. Environmental Mastery (EM)	28.32	3.77	28.36	3.96	29.92	3.51	31.04	4.22
Global Score	61.24	5.72	163.56	8.29	171.08	7.50	179.24	6.90

The results of this study showed a significant reduction in MHI global score and its subscales' Positive Self Evaluation (PSE), Perception of reality (PR), Integration of personality (IP), Autonomy (AUTNY), Group Oriented Attitudes (GOA) and Environmental Mastery (EM) scores.

Table II:

Dependent Sample t-test of MHI parameters between control and Experimental Group

Variables Parameters	Control Group		Experimental Group	
	t-value	p-value	t-value	p-value
1. Positive Self-Evaluation (PSE)	1.748	0.095	2.171	0.040

2. Perception of Reality (PR)	-0.150	0.882	2.544	0.018
3. Integration of Personality (IP)	0.595	0.558	2.200	0.038
4. Autonomy (AUTNY)	0.083	0.935	2.814	0.010
5. Group Oriented Attitudes (GOA)	1.572	0.129	2.247	0.034
6. Environmental Mastery (EM)	0.072	0.943	2.192	0.038
Global Score	1.985	0.059	5.257	<0.001

4. Discussion

The purpose of this study was to examine the effect of trataka on mental health of people with insomnia. The results showed a significant ($p < 0.001$) improvement in MHI global score from 171.08 (pre) to 179.24 (post) which indicates that the mental health of experimental group has improved from average state to good mental health state. Moreover, analysis of the subscales of MHI revealed that this improvement in mental health was characterized by a significant improvement in Positive self-evaluation, Perception of reality, Integration of Personality, Autonomy, Group Oriented Attitudes, and Environmental Mastery. It suggests that trataka might be effective in improving mental health of people with insomnia.

It is a well-established fact that poor mental health is closely associated with insomnia. It may play an important role as a risk factor, a comorbid condition and transdiagnostic symptom for many mental disorders including mood/anxiety disorders and schizophrenia. Insomnia may also play a role as a marker of disrupted neuroplasticity contributing to dysregulation of different neurobiological mechanisms involved in these different mental conditions (Palagini et al., 2022). The practice of trataka has been found effective in reducing the severity of insomnia and significantly improving the quality of sleep (Shathirapathy et al., 2022).

Literature also suggests that trataka improves selective attention, cognitive flexibility, and response inhibition after a 15 days training of thirty healthy male volunteers (B. R. Raghavendra & Singh, 2016). In a recent study, the practice of trataka leads to significant reduction in blood pressure and heart rate in patients with primary hypertensive after performing 30min of Trataka session (Kusuma et al., 2021). Similarly another study showed a significant reduction in systolic

blood pressure and no significant reduction in diastolic blood pressure between pre and post result of 15 minutes trataka, practiced by college level female students (Bhadra & Chatterjee, 2017). A significant improvement incognitive functions of the post covid elderly subjects and it is a well-established fact that mental health is associated with a low level of cognitive functions was shown in a study by(Sahana AU & Vijaya Kumar PS, 2022). Likewise, in another study, 20 min a day of trataka session has shown to reduce the anxiety levelof 30 adolescents after a month(Rajpoot & Vaishnav, 2014).The practice of trataka also reduces the heart rate and breathing rate significantly and it leads to increased vagal tone and reduced sympathetic arousal (B. Raghavendra & Ramamurthy, 2014).

In summary, the result of the study is consistent with the other studies on Trataka practice and mental health. However, in almost all the studies, the practice oftrataka included its effect on different variables like hypertension, blood pressure, cognition control, irritability, depression, anxiety...etc except the mental health of insomniac' people. To the best of our knowledge, no specific yoga practice including trataka has been reported to improve mental health in people with insomnia.

5. Conclusion

The results of this study suggest that trataka may be considered as a treatment modality in improving themental health of people suffering from insomnia.Trataka is not onlyacost-effectivemethod but also help insomniac' patient to cope up with stress, depression, sleep disorder, mood swings and enable them to overcome insomnia with better concentration, awareness, and better sleep quality.

Conflict of Interest

Authors declare no conflict of interest.

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