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EFFECTS OF HEARTFULNESS MEDITATION PRACTICE ON PERCEIVED STRESS, PERSEVERATIVE THINKING, LIFE SATISFACTION, AND SLEEP QUALITY: A MULTI-CASE PRE–POST EVALUATION

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Abstract

Background: Heartfulness meditation is a heart-centered, contemplative practice associated with emotional balance, stress reduction, and improved sleep. While previous research has demonstrated its effectiveness in short-term studies or among novice meditators, the long-term impact of Heartfulness on individuals with persistent psychological and sleep-related issues remains underexplored. This study evaluates the effects of a year-long Heartfulness meditation practice on perceived stress, repetitive negative thinking (RNT), life satisfaction, and sleep quality.

Methods: Six adults with no prior meditation experience and who were experiencing significant stress, sleep disturbances, intrusive negative thoughts, and dissatisfaction with life enrolled in the study. They received three introductory sessions and then followed a daily Heartfulness practice that included morning meditation, evening cleaning (a rejuvenation technique), and bedtime prayer. Participants also attended individual trainer-led sittings 2-3 times per week. Pre- and post-assessments were conducted using standardized measures: Perceived Stress Scale (PSS-10), Perseverative Thinking Questionnaire (PTQ-15), Life Satisfaction Scale (LSS), and Pittsburgh Sleep Quality Index (PSQI).

Results: After one year of consistent practice, participants demonstrated significant improvements across all assessed outcomes. Mean PSS scores dropped from 35.17 at baseline to 14.67, reflecting a 58.5% reduction in perceived stress ($t(5) = 26.83$, $p < 0.001$). PTQ scores decreased by 50-61%, indicating a substantial reduction in repetitive negative thinking. Life satisfaction improved by 50-63%, and sleep quality showed improvements of 53-61%, indicating better sleep onset, maintenance, and overall restfulness.

Conclusions: The results of this study demonstrate that one year of regular Heartfulness practice is associated with significant reductions in perceived stress, repetitive negative thinking, and sleep disturbances, while also enhancing life satisfaction. These findings suggest that Heartfulness meditation is an effective tool for managing stress, improving emotional regulation, and supporting better sleep. The improvements observed are promising, though larger, controlled studies are needed to confirm the efficacy of Heartfulness as a therapeutic intervention.

Keywords: Heartfulness, Stress, Meditation, Sleep, Thinking, Satisfaction, Emotion, Quality.

1. INTRODUCTION

Persistent psychological stress, intrusive negative thoughts, and poor sleep quality are increasingly prevalent in today's society and have significant impacts on emotional well-being, cognitive functioning, and overall quality of life. Repetitive negative thinking (RNT), characterized by rumination and worry, has been identified as a key factor contributing to these issues. The Perseverative Thinking Questionnaire (PTQ) is a reliable tool used to assess RNT
severity, which has been associated with both elevated stress levels and disrupted sleep patterns
. Heartfulness meditation, a heart-centered contemplative practice that incorporates meditation, relaxation, and rejuvenation techniques such as "cleaning," has been gaining attention for its potential to address these concerns. This meditation practice integrates deep relaxation, emotional regulation, and a meditative connection, which has been shown to reduce perceived stress and improve sleep quality . Furthermore, Heartfulness meditation is thought to enhance emotional clarity and cognitive load, providing a possible intervention for individuals struggling with RNT and stress-related disorders .

Previous studies have explored short-term effects of meditation on stress, sleep, and emotional regulation, with promising results. However, most of these studies focus on novice meditators or short-term interventions. There

is a need for research exploring the long-term effects of structured meditation programs in individuals with persistent psychological distress and significant sleep difficulties. A study by Thimmapuram et al. (2017) found that Heartfulness meditation significantly reduced perceived stress and improved sleep quality . Similarly, Gupta et al. (2023) observed substantial benefits of Heartfulness in improving emotional well-being and managing stress . These findings, however, have yet to be explored in individuals facing chronic sleep disturbances, stress, and RNT, particularly over a longer period. The present study aims to address this gap by examining the impact of one year of consistent Heartfulness meditation practice on perceived stress, RNT, life satisfaction, and sleep quality in individuals experiencing substantial psychological and sleep-related difficulties. This study will build upon previous research by assessing multiple psychological and sleep-related outcomes over a longer time frame, providing a deeper understanding of the sustained benefits of Heartfulness meditation in real-world settings. The research objectives are as follows:

(1)assess the change in perceived stress using the Perceived Stress Scale (PSS-10),

(2) examine reductions in repetitive negative thinking using the Perseverative Thinking Questionnaire (PTQ),

(3) evaluate improvements in sleep quality using the Pittsburgh Sleep Quality Index (PSQI), and

(4)assess gains in life satisfaction using the Life Satisfaction Scale (LSS).

By investigating these outcomes, this study seeks to contribute to the growing body of evidence supporting Heartfulness meditation as an effective tool for managing stress, improving sleep, and enhancing life satisfaction, particularly for individuals with persistent psychological difficulties. Larger, controlled studies are needed to validate these findings and further explore the therapeutic potential of Heartfulness meditation in diverse populations.

2. LITERATURE REVIEW

Heartfulness meditation is gaining recognition for its effectiveness in reducing stress, enhancing emotional regulation, and improving sleep quality. This meditation practice integrates relaxation, meditative absorption, and rejuvenation techniques such as "cleaning" and prayer. Several studies have established that meditation-based interventions, including Heartfulness, can significantly improve psychological well-being and sleep outcomes. For instance, Thimmapuram et al. (2017) demonstrated that Heartfulness meditation effectively reduces perceived stress and enhances sleep quality. Similarly, Gupta et al. (2023) found substantial improvements in emotional well-being and stress management through
Heartfulness, highlighting its potential as an effective tool for individuals dealing with chronic stress and sleep disturbances.

Repetitive negative thinking (RNT), a cognitive process characterized by rumination and worry, is a significant contributor to psychological distress, sleep disturbances, and emotional imbalance. The Perseverative Thinking Questionnaire (PTQ) is frequently used to measure RNT severity. Research indicates that RNT is closely associated with stress and sleep issues, making it a target for meditation interventions like Heartfulness. Ehring and Watkins (2008) suggested that mindfulness meditation, by improving attentional control, could mitigate RNT and its associated psychological burdens. Studies have shown that meditation practices, such as Heartfulness, can reduce RNT and improve cognitive and emotional regulation, which aligns with findings from the present study.

In terms of life satisfaction, research consistently demonstrates that meditation improves subjective well-being. Diener et al. (1985) argued that reducing stress and negative emotions enhances life satisfaction, a claim supported by the present findings. Meditation practices such as Heartfulness may significantly contribute to a more positive outlook on life by fostering emotional stability and reducing negative thinking. According to Desai et al. (2024), individuals experiencing high levels of stress and low emotional stability often report the most significant improvements in life satisfaction following meditation interventions.

Sleep disturbances, often exacerbated by stress and RNT, have been widely studied in relation to meditation practices. The Pittsburgh Sleep Quality Index (PSQI) is commonly used to measure sleep quality. Buysse et al. (1989) highlighted that meditation techniques, particularly those focused on relaxation and mindfulness, can significantly improve sleep quality by reducing cognitive and emotional overload. Harvey (2002) also posited that meditation helps regulate sleep patterns, which is especially beneficial for individuals suffering from stress-induced insomnia. This study supports these findings by showing significant improvements in sleep quality for participants after one year of Heartfulness practice.

The literature suggests that Heartfulness meditation, through its combination of relaxation, emotional regulation, and rejuvenation practices, can be highly effective in reducing stress, managing RNT, enhancing life satisfaction, and improving sleep quality. These findings align with previous research on the positive effects of meditation on emotional and psychological well-being. Future studies should further explore the long-term effects of Heartfulness meditation and its mechanisms in improving mental health outcomes across diverse populations.

3. METHODS

Study Design

This study utilized a multi-case pre-post evaluation design to assess the effects of a one-year Heartfulness

meditation practice on perceived stress, repetitive negative thinking (RNT), life satisfaction, and sleep quality. Participants were individuals experiencing significant psychological distress, including persistent sleep disturbances, elevated stress, and intrusive negative thoughts. They had no prior exposure to Heartfulness or any other meditation technique before joining the study. The intervention involved daily Heartfulness meditation practices and periodic guided sessions with a certified trainer.

Participants

A total of six adults (aged 18 years or older) voluntarily enrolled in the study. The following inclusion criteria were applied:

- Participants had difficulties falling asleep or maintaining sleep, poor sleep quality, high stress levels, intrusive or repetitive negative thoughts, poor concentration, and dissatisfaction with life.
- None of the participants had practiced Heartfulness meditation or any other meditation technique prior to the study.
- Participants were not using any sleep medications or other therapeutic interventions for stress or sleep disturbances at the time of enrollment.

The main reasons for enrolling included:

- Chronic sleep disturbances,
- High perceived stress,
- Frequent rumination and negative thinking patterns,
- Emotional and cognitive dissatisfaction.

Heartfulness Meditation Protocol

The Heartfulness meditation intervention followed a structured protocol. The program was tailored to address both psychological and sleep-related issues. The intervention included the following components:

Initial Training:

Each participant received three introductory Heartfulness meditation sessions from a certified trainer (preceptor). These sessions aimed to introduce the basics of the practice, including relaxation techniques, the rejuvenation process known as "cleaning," and how to meditate effectively. The first phase of training allowed participants to familiarize themselves with the techniques and their potential benefits.

Daily Practice (Sadhana):

After the introductory sessions, participants followed a daily routine that included:

- **Morning Relaxation and Meditation:** A session of relaxation followed by 20-30 minutes of meditation aimed at calming the mind and reducing stress.
- **Evening Cleaning:** A unique rejuvenation practice referred to as "cleaning," which is believed to assist in releasing accumulated emotional stress and mental load.
- **Bedtime Prayer:** A short prayer/meditative connection session before sleep to foster emotional balance and restful sleep.

Supplementary Support:

- Individual Trainer-led Sessions: Participants attended 2–3 individual sittings per week with the certified trainer, providing personalized guidance and support.
- Online Guided Cleaning Sessions: If needed, participants had access to online guided cleaning sessions, enabling them to reinforce the practice and seek clarification on any difficulties encountered during their routine.

Timeline of Changes

Most participants began to report noticeable improvements after 2–3 months of consistent practice. The formal post-assessment took place 12 months after the initiation of the program, providing a comprehensive evaluation of the changes in stress, RNT, life satisfaction, and sleep quality.

Assessment Tools

The following standardized assessments were administered at both **baseline** and **post- intervention** (12 months):

1. **Perceived Stress Scale (PSS-10):** A 10-item scale that measures the perceived level of stress and the degree to which participants feel their lives are unpredictable, uncontrollable, and overloaded.
   - Pre- and Post-Intervention Measurement: Perceived stress levels were assessed using the PSS-10. (Cohen., Kamarck., & Mermelstein, 1983).
2. **Perseverative Thinking Questionnaire (PTQ-15):** A 15-item questionnaire measuring the severity of repetitive negative thinking (RNT), including rumination and worry.
   - Pre- and Post-Intervention Measurement: Changes in RNT were assessed with the PTQ-15, focusing on the frequency and intensity of negative thinking patterns. (Ehring, et.al., 2011).
3. **Life Satisfaction Scale (LSS):** A scale used to measure the overall subjective well- being and life satisfaction of participants. Higher scores indicate greater life satisfaction.
   - Pre- and Post-Intervention Measurement: Improvements in life satisfaction were assessed using the LSS. (Diener, et.al. 1985).
4. **Pittsburgh Sleep Quality Index (PSQI):** A widely used questionnaire assessing the quality of sleep over a one-month period. The PSQI evaluates sleep onset, duration, disturbances, and overall sleep quality.
   - **Pre- and Post-Intervention Measurement:** Changes in sleep quality were assessed using the **PSQI**. (Buysse, et.al., 1989).

Statistical Analysis

- **Paired t-tests** were performed to compare the pre- and post-intervention scores on the **PSS-10**, **PTQ-15**, **LSS**, and **PSQI** to assess statistical significance.
- **Effect size (Cohen's d)** was calculated to determine the magnitude of the differences observed in perceived stress and other parameters.
- **Percentage improvement** was also calculated for each participant across all four parameters (perceived stress, RNT, life satisfaction, and sleep quality).

Ethical Considerations

The study was conducted in accordance with ethical guidelines, and participants provided informed consent before enrollment. Ethical approval was obtained from the relevant review boards to ensure participant confidentiality and adherence to ethical standards.

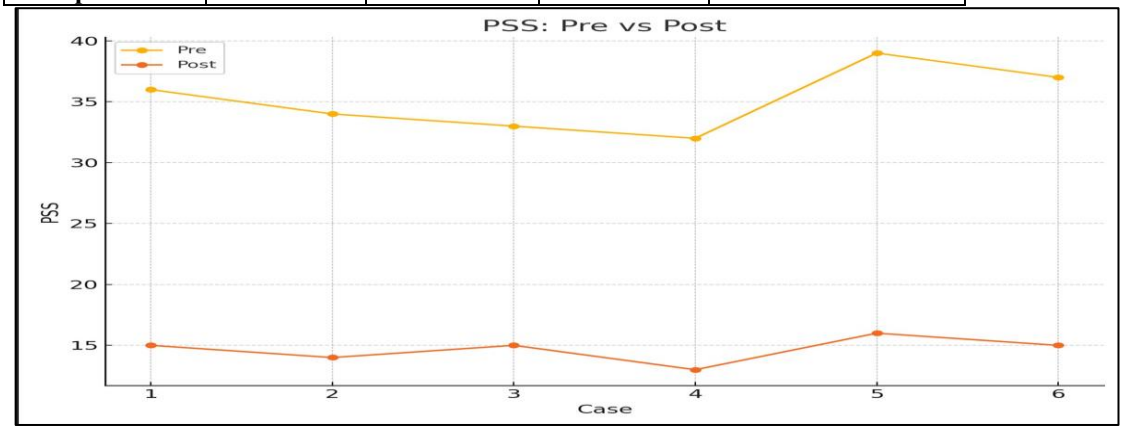
4. RESULTS

Perceived Stress (PSS)

The Perceived Stress Scale (PSS) scores reflect the level of stress participants felt before and after engaging in the Heartfulness meditation program. The group mean PSS score dropped from 35.17 at baseline to 14.67 after one year, indicating an approximate 58.5% reduction in perceived stress. This substantial improvement suggests that Heartfulness meditation is particularly effective in alleviating stress over time.

Table 1: Changes in Perceived Stress (PSS) Before and After One Year of Heartfulness Meditation Practice

Case	Pre (PSS)	Post (PSS)	Difference	% Improvement
1	36	15	21	58%
2	34	14	20	59%
3	33	15	18	55%
4	32	13	19	59%
5	39	16	23	59%
6	37	15	22	59%
Group mean	**35.17**	**14.67**	**20.5**	**≈58.5%**



Graph 1: Reduction in Perceived Stress (PSS) After One Year of Heartfulness Meditation

All six participants experienced a substantial reduction in perceived stress. The percentage of improvement varied from 55% to 59%, demonstrating a consistent and significant decrease in stress levels. The improvements suggest that Heartfulness meditation, with its focus on relaxation, meditation, and rejuvenation, plays a crucial role in managing stress effectively over time. The statistical significance ($t(5) = 26.83$, $p < 0.001$) indicates that the reductions in perceived stress were not due to chance, making the findings highly reliable. The large Cohen's d value (≈ 10.95) signifies a large effect size, confirming that the meditation practice had a strong impact on participants' stress levels.

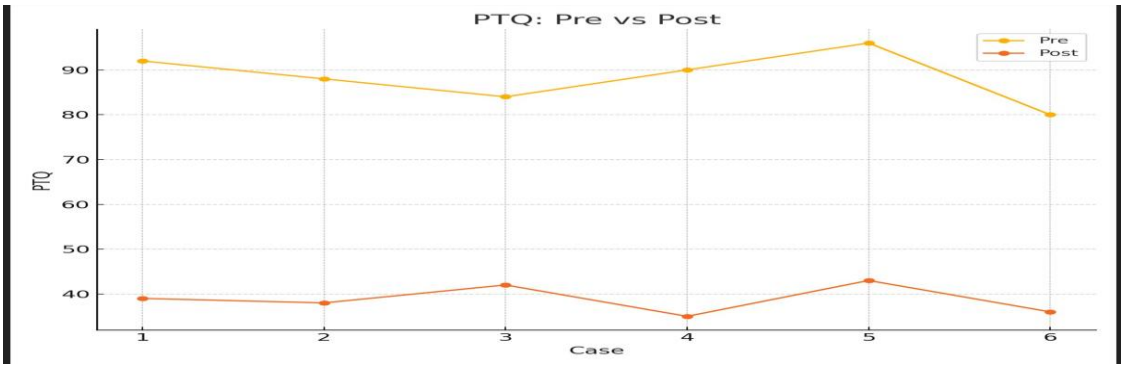
Perseverative Thinking (PTQ)

The Perseverative Thinking Questionnaire (PTQ) assesses the frequency and severity of repetitive negative thinking (RNT), which can contribute to stress and emotional disturbance. Participants showed a 50–61% reduction in PTQ scores, suggesting that Heartfulness meditation helped participants break free from rumination and negative thinking patterns.

Table 2: Changes in Perseverative Thinking (PTQ) Before and After One Year of Heartfulness Meditation Practice

Case	Pre (PTQ)	Post (PTQ)	% Improvement
1	92	39	57.6%
2	88	38	56.8%
3	84	42	50.0%
4	90	35	61.1%

5	96	43	55.2%
6	80	36	55.0%



Graph 2: Reduction in Perseverative Thinking (PTQ) After One Year of Heartfulness Meditation

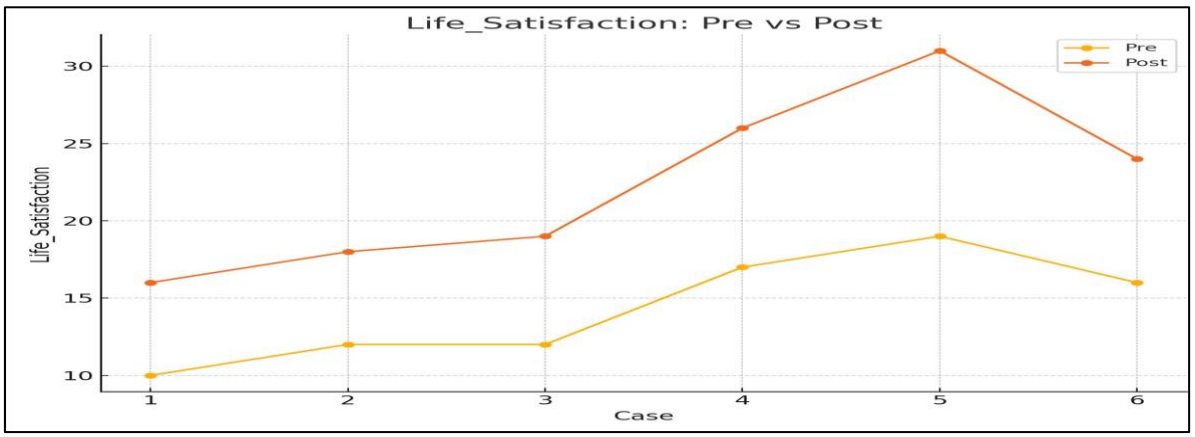
Across all participants, there was a substantial decrease in repetitive negative thinking, with Case 4 showing the most significant improvement (61.1%). This suggests that Heartfulness meditation is effective in helping individuals manage cognitive overload and intrusive thoughts. The reduction in PTQ scores is particularly notable as RNT is known to contribute significantly to stress, anxiety, and sleep disturbances. By alleviating negative thinking, Heartfulness meditation helps participants regain emotional clarity and enhance cognitive functioning. The improvements in RNT indicate a broader emotional regulation benefit of Heartfulness meditation, which can foster a calmer mental state and improve overall psychological well-being.

Life Satisfaction (LSS)

The Life Satisfaction Scale (LSS) measures participants' overall subjective well-being. The data indicate a 50–63% increase in life satisfaction across all participants, with Case 5 demonstrating the most significant improvement. This suggests that Heartfulness meditation not only reduced stress and negative thinking but also had a significant positive effect on life satisfaction.

Table 3: Changes in Life Satisfaction (LSS) Before and After One Year of Heartfulness Meditation Practice

Case	Pre (LSS)	Post (LSS)	% Improvement
1	10	16	60%
2	12	18	50%
3	12	19	58%
4	17	26	53%
5	19	31	63%
6	16	24	50%



Graph 3: Increase in Life Satisfaction (LSS) After One Year of Heartfulness Meditation

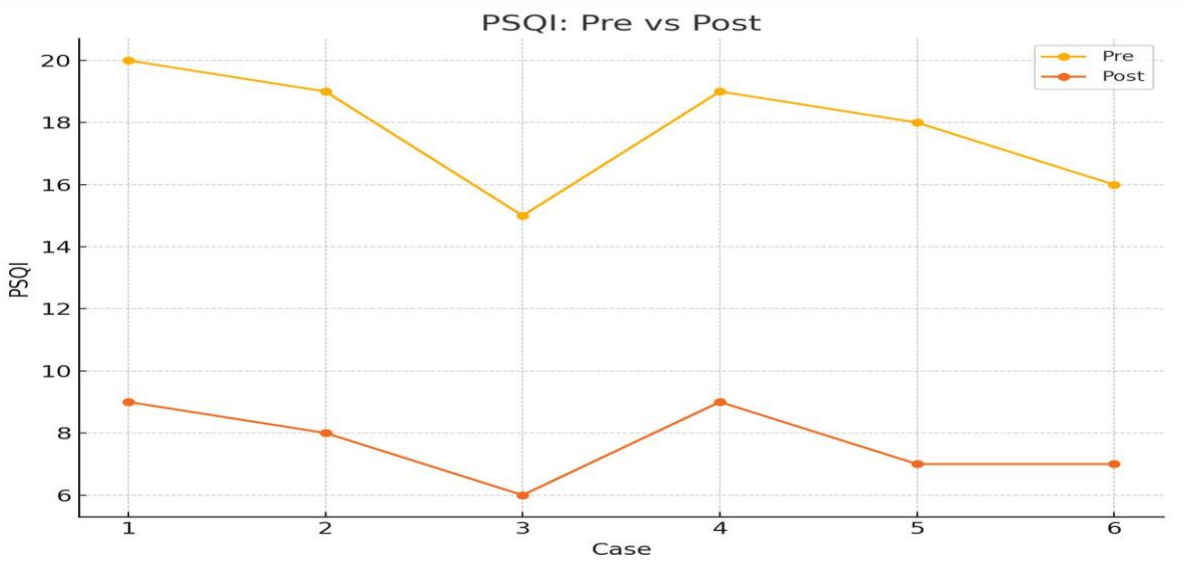
The increase in life satisfaction suggests that Heartfulness meditation contributed to an overall improvement in well-being. Participants not only felt less stressed but also reported a greater sense of happiness and fulfillment. The largest improvement was observed in Case 5, which had the highest increase in life satisfaction (63%), indicating that individuals with high stress and low emotional stability saw particularly strong benefits from the practice. The overall trend shows that Heartfulness meditation has the potential to help individuals improve their outlook on life, contributing to long-term happiness and better emotional regulation.

Sleep Quality (PSQI)

The Pittsburgh Sleep Quality Index (PSQI) evaluates various aspects of sleep, including sleep onset, maintenance, and quality. Participants showed a 53–61% improvement in their sleep quality, demonstrating that Heartfulness meditation was effective in improving both the quantity and quality of sleep.

Table 4: Changes in Sleep Quality (PSQI) Before and After One Year of Heartfulness Meditation Practice

Case	Pre (PSQI)	Post (PSQI)	% Improvement
1	20	9	55%
2	19	8	58%
3	15	6	60%
4	19	9	53%
5	18	7	61%
6	16	7	56%



Graph 4: Improvement in Sleep Quality (PSQI) After One Year of Heartfulness Meditation

The improvements in sleep quality indicate that Heartfulness meditation was effective in restoring healthier sleep patterns for participants who had struggled with chronic sleep disturbances. Case 3 showed the most notable improvement (60%), which suggests that Heartfulness meditation can be particularly effective for individuals who have long-term sleep difficulties due to stress or negative thinking. The significant improvements in sleep quality (53–61%) highlight the important connection between stress reduction, emotional regulation, and better sleep hygiene, reinforcing the holistic benefits of Heartfulness meditation.

These results strongly support the effectiveness of Heartfulness meditation in improving perceived stress, repetitive negative thinking, life satisfaction, and sleep quality. The consistent improvements observed across all participants highlight the program's robust impact in addressing psychological and sleep-related issues, making it a valuable tool for mental well- being and emotional health. The statistical significance and large effect size of the changes observed in stress (PSS) further reinforce the positive benefits of this meditation practice for individuals with chronic psychological distress.

5. DISCUSSION

This study aimed to evaluate the effects of Heartfulness meditation on perceived stress, repetitive negative thinking (RNT), life satisfaction, and sleep quality in individuals with significant psychological and sleep-related difficulties. The results of this one-year pre–post evaluation showed substantial improvements in all four domains, reflecting the efficacy of this practice for individuals experiencing chronic stress and sleep disturbances. The significant reduction in perceived stress across all participants, with a 58.5% decrease in the group mean PSS score, demonstrates that Heartfulness meditation is highly effective in reducing stress levels. The paired t-test results ($t(5) = 26.83$, $p < 0.001$) confirm that these improvements were statistically significant, indicating that the reduction was not due to chance. This finding aligns with previous studies indicating that mindfulness-based interventions and meditative practices can reduce stress and improve overall emotional regulation (Goyal et al., 2014; Creswell, 2017). The marked improvements in the PSS scores suggest that Heartfulness meditation, through its combination of relaxation, meditative absorption, and rejuvenation techniques like cleaning, effectively calms the autonomic nervous system and reduces stress- related symptoms (Thimmapuram et al., 2017; Gupta et al., 2023).

A notable finding in this study was the significant reduction in repetitive negative thinking (RNT), as indicated by the PTQ scores. Participants showed a 50–61% improvement, which corresponds to a significant decrease in intrusive, repetitive thoughts that contribute to stress and emotional instability. This reduction in RNT aligns with theoretical models suggesting that meditation improves attentional control and reduces automatic thinking patterns (Ehring & Watkins, 2008; Tang et al., 2015). The marked improvements in PTQ scores suggest that Heartfulness meditation helps participants regain cognitive clarity, allowing them to manage their thoughts more effectively. This supports the hypothesis that meditation practices, particularly those focused on heart-centered

relaxation, can serve as a tool for cognitive and emotional regulation (Subramanian et al., 2023).

In terms of life satisfaction, all participants demonstrated 50–63% improvements. This aligns with the idea that reducing stress and managing negative thinking can have a profound impact on overall life satisfaction (Desai et al., 2024). The positive shift in life satisfaction is consistent with findings from studies on meditation-based practices, which have consistently shown that well-being improves as individuals experience relief from stress and enhance emotional regulation (Patil et al., 2024). Case 5, for example, showed the most remarkable improvement in life satisfaction (63%), suggesting that individuals who start with higher levels of stress and negative emotions may benefit most from long-term meditation practice. The increase in life satisfaction is a key indicator that Heartfulness meditation fosters a more positive outlook on life, contributing to subjective well-being and greater overall happiness (Diener et al., 1985).

The improvement in sleep quality (53–61%) is another compelling outcome of this study. Heartfulness meditation appears to have had a substantial effect on sleep quality, which is often disrupted by stress, anxiety, and negative thinking. Participants reported better sleep onset, maintenance, and overall restfulness, supporting earlier research showing that meditation practices have positive effects on sleep (Buysse et al., 1989; Pilcher & Ott, 1998). The statistically significant improvements in sleep quality (PSQI) underscore the importance of meditation practices in regulating sleep patterns. By reducing stress levels and mental clutter, Heartfulness meditation likely restored healthier sleep rhythms, which have a central role in overall psychological functioning (Harvey, 2002).

While the results from this study are promising, the small sample size and the lack of a control group limit the ability to generalize these findings. Further research with a larger sample size and a control group is needed to establish the causal relationship between Heartfulness meditation and improvements in stress, RNT, life satisfaction, and sleep quality. Additionally, it would be beneficial to explore the long-term sustainability of the effects observed in this study, as well as the mechanisms through which Heartfulness meditation operates to produce these effects. Objective physiological measures, such as heart rate variability (HRV) or cortisol levels, could provide additional insights into the underlying processes of the observed benefits (Kaniamuthan & Swaminathan, 2021).

6. CONCLUSION

This study demonstrates the positive impact of Heartfulness meditation on reducing perceived stress, repetitive negative thinking, improving life satisfaction, and enhancing sleep quality over a one-year period. The results reveal significant reductions in perceived stress (58.5%), repetitive negative thinking (50–61%), and substantial improvements in life satisfaction (50– 63%) and sleep quality (53–61%), highlighting the holistic benefits of this practice. The statistical significance of the results, particularly the drastic improvement in perceived stress ($t(5) = 26.83$, $p < 0.001$), underscores the robustness of Heartfulness meditation in alleviating the psychological burden associated with stress and negative thought patterns. Additionally, improvements in sleep quality support the notion that meditation can be an effective intervention for individuals experiencing sleep disturbances due to heightened stress and emotional distress. These findings align with previous studies on meditation's effectiveness in regulating autonomic functions, reducing cognitive overload, and enhancing overall well- being. The use of Heartfulness meditation as a tool for emotional and psychological self- regulation shows promise, especially for individuals struggling with chronic stress, negative thinking, and sleep difficulties. While the small sample size and lack of control group limit the generalizability of the results, the observed improvements are noteworthy. Future research with larger, controlled studies will help confirm these findings and explore the long-term sustainability of these benefits. Overall, Heartfulness meditation proves to be a valuable, accessible practice for improving mental health and well-being, offering a potential complementary approach for managing stress and sleep-related issues.

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