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Original Research Article

The role of Anupreksha meditation in alleviating negative thinking among adults: a cross-sectional study

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ABSTRACT

Background: Anupreksha-based meditations (AM) involve focusing on objects including images, colors, sounds, and the nature of the body and soul. Similar to Preksha meditation, which has shown positive effects on mental and physical well-being, AM is proposed to have potential benefits. However, the impact of AM on negative thinking, a key factor in various psycho-physiological ailments, has not been thoroughly examined. This study aimed to explore the effectiveness of AM in reducing negative thoughts and improving mental-health and well-being. It hypothesized that practicing AM can positively alter thought patterns and enhance overall well-being.
Methods: A total of 462 English-speaking participants aged 19 to 60 years. Among them, 233 were regular AM practitioners with at least 12 months of experience, and 229 were non-meditators. Self-reported scales were used to measure perseverative thinking, mindfulness, self-compassion, and spiritual well-being.
Results: Data were checked for normality and the Mann-Whitney U-test was performed. The AM group showed significant lower perseverative thinking scores ($p<0.001$) and higher mindfulness, self-compassion, and spiritual well-being scores ($p<0.001$). The scores of perseverative thinking negatively correlated with mindfulness (rho -0.53; $p<0.001$), self-compassion (rho -0.43; $p<0.001$), and spiritual well-being (rho -0.22; $p<0.001$) in meditators. Additionally, mindfulness positively correlated with self-compassion (rho 0.42; $p<0.001$) and spiritual well-being (rho 0.36; $p<0.001$).
Conclusions: Shreds of evidence indicated that the practice of Anupreksha-based meditations alleviates negative thoughts by promoting mindfulness, self-compassion, and spiritual well-being. Therefore, the AM can be suggested to improve the positive state of mind and also can be practiced to mitigate psychological-related issues.

Keywords: Anupreksha meditation, Mindfulness, Perseverative thinking, Self-compassion, Spiritual well-being

INTRODUCTION

Mental well-being is a state of balance and harmony in which individuals experience positive emotions, maintain satisfying relationships, and cope effectively with the challenges of life.[1] It encircles a sense of purpose, resilience, and self-acceptance, as well as the ability to function optimally in various domains, including work, education, and social interactions.[2]

Thought patterns play a major role in mental health, such as the thinking pattern of oneself, and how one perceives the world, which affects mental well-being. What we think, and how we think, affects how we feel is the core principle in mental health research and clinical practice. Various thinking patterns are linked with adverse mental outcomes. According to previous study, deliberating about negative emotions predicts higher levels of depressive symptoms and the results future in depressive

episodes.[3] The phenomenon often finds its roots in negative thinking patterns.

Repetitive negative thinking (RNT) is identified by instructiveness, repetitiveness, and difficulties in disengaging from negative and affective content.[4] Inclusively, 37% of the total variation in RNT was explained by the combination of rumination, worry, depression symptoms, and anxiety symptoms.[5] RNT narrates a dimensional rather than categorical process, even though to a lesser degree it is active in non-clinical populations. It is related to deleterious health effects and is prognostic for the development of affective mental disorders including depression. Increased levels of RNT are surrounded by worry (future-directed negative thoughts) and rumination (past-directed negative thoughts) as found in several clinical disorders including depression and anxiety.[6]

Rumination is correlated to a number of negative emotions like depression, anxiety, and anger, and emotional, cognitive, and somatic arousal. Studies found that insomniac patients or psychiatric patients showed poor sleep quality characterized by rumination and depressive traits.[4]

Correspondingly, the higher levels of RNT are connected with depression and anxiety symptoms and clinical diagnosis. RNT has been referred to as a major risk factor for thinking patterns that result in multiple mental disorders. Impact on RNT, lifestyle practices hold promise for reducing or preventing several mental health problems in clinical and non-clinical populations.[7]

The practice of several lifestyle-based programs like cognitive-behaviour therapy (CBT), yoga, meditation, mindfulness, expressive writing, mindfulness, engagement counselling, and life review has shown a significant reduction in RNT pattern.[8] Mindfulness-based intervention before sleep helps in the major reduction of RNT in the non-clinical population.[9] Particular interest in this study is the practice of meditation.

Growing evidence suggests that mental well-being is closely linked to physical health outcomes. Individuals with high levels of mental well-being are less likely to develop chronic diseases such as cardiovascular disorders, diabetes, and autoimmune conditions.[10] It plays a crucial role in fostering positive interpersonal relationships and social connections. It helps in enhancing empathy, communication, and cooperation, thereby contributing to the formation and maintenance of supportive social networks.[11] It is a key determinant of overall quality of life. Individuals with high levels of mental well-being report greater satisfaction with life, higher levels of happiness, and a greater sense of fulfilment and purpose.

For many centuries, meditation has been a mystical branch of major religions for promoting spiritual development such as gaining insight into reality and attaining transcendental states of consciousness.[12] Meditation is the self-regulation of attention to suspend involvement in the habitual stream of thoughts. The main goal of meditation is to reach a state of "thoughtless awareness", during which a person is passively aware of sensations of the present moment.[13] Although there are a number of different meditation techniques, the elements of muscle and 'logic' relaxation, self-induced state, and self-focused skills are considered essential. The practice is believed to result in a state of physical and mental relaxation. Various studies have shown meditation has significant effects on affective and cognitive processes, the altered states induce relaxation, and regulate perseverance, attention, and emotions.[14]

Meditation is not a monolithic practice but is a broad term encompassing a multitude of techniques like focused attention meditation (FAM), and open attention meditation (OAM). FAM is the starting point for any novice meditator, as it is easy to concentrate and avoid mind-wandering thoughts. The process of this method is to stay in the monitoring state, remaining attentive to any experience that might arise, without selecting, judging, or focusing on any particular object.

Anupreksha-based meditation falls into the category of FAM. The process involves repeated contemplation and understanding of prior selected experiences. Anupreksha is also about revising and thinking about what was concentrated upon and analysing it after the exercise. The practice of Anupreksha fulfils two-fold objectives: to contemplate eternal truth, and to bring attitudinal changes through autosuggestion. This technique is used for the reinforcement of positive qualities or for reversing negative traits.[15]

Literature on Anupreksha meditation is scarce. The Anupreksha meditation has never been explored to study mental well-being and life orientation. Hence, we aimed to assess the role of Anupreksha-based meditation on repetitive negative thinking, mindfulness, self-compassion, spiritual health, and life orientation among Anupreksha-based meditators and compare the findings with non-meditators.

METHODS

Participants

In the cross-sectional study, 462 participants (270 females) with ages ranging between 19 and 60 years. Anupreksha meditation practitioners' group (AMP, n=233) were recruited from Arham Vijja centers, across India. The participants with no exposure to any meditative practices were assigned to the control group (CTL; n=229). The participants with a minimum of six days per week for one year of AM practice were included in the AMP. Whereas, control participants never had the experience of meditation in their total life span. The

present study was commenced between March 2023 to May 2023.

Exclusion criteria

The exclusion criteria were (i) the presence of any illness, (ii) particularly psychiatric disorders, (iii) the person on any medication, and (iv) a history of smoking or alcohol. None of the participants were involved in any other ongoing research activity.

Demographic information

All participants were asked to provide their demographic information such as age, gender, meditation experience (in years), and years of meditation shown in Table 1.

This study was approved by the ethics committee of the SVYASA University (RES/IEC-SVYASA/280/2022), Bengaluru. Written informed consent was obtained from each participant after explaining the design and assessment tools of the study.

Assessment tools

Mindful attention awareness scale (MAAS)

The MAAS was used to assess state mindfulness.[16] The 15-item MAAS questionnaire measures how respondents are openly attentive to and aware of the present moment experience. Items are rated on the 6-point Likert scale from 1 (almost always) to 6 (almost never). The score is computed by calculating the mean of 15 items. Higher scores reflect higher levels of dispositional mindfulness. The MAAS showed the internal consistency reliability was 0.74.

Perseverative thinking questionnaire (PTQ)

Repetitive negative thinking (RNT) was measured by PTQ.[17] The PTQ consists of 15 items that assess content-independent characteristics of RNT. Items are rated on a 5-point Likert scale ranging from 0 (never) to 4 (almost always). The PTQ has been validated and shown high internal consistency across samples, with Cronbach's alpha from 0.94 to 0.95.[7]

Self-compassion scale- short form

Self-compassion was measured by the SCS-SF consisting of a 12-item measure comprising six dimensions including self-kindness (2, 6), self-judgements (11, 12), common humanity (5, 10), isolation (4, 8), mindfulness (3, 7), over-identified (1, 9). Items are rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). To calculate the overall self-compassion score, negative subscale items such as self-judgment, isolation, and over-identification are reversed scored. Subsequently, to determine the average of each subscale the mean values are calculated. High total scores indicate higher levels of self-compassion. SCS-SF demonstrated adequate internal consistency, Cronbach's alpha ≥0.86, and a near-perfect correlation with the long-form SCS, r≥0.97 in all samples.[18]

Spiritual health and life orientation measures (SHALOM)

The SHALOM comprises two components viz., spiritual health measure (SHM) and life-orientation measure (LOM). The LOM emphasizes the 'ideals' people have for spiritual health. Assessed through four sets of relationships, with self, others, environment, and/or God. The SHM is about reflective response on 'lived experience/how they feel each item reflects their personal experience most of the time.' It consists of 20-item with four domains personal (5, 9, 14, 16, 18), communal (1, 3, 8, 17, 19), environmental (4, 7, 10, 12, 20), and transcendental (2, 6, 11, 13, 15). All four domains are scored using Likert scale responses from 1 (very low) to 5 (very high). It showed good reliability (Cronbach's alpha, composite reliability, and variance extracted) as well as (construct, concurrent, discriminant, and predictive) validity.[19]

Intervention

Anupreksha-based meditation

In the Shreemad Uttaradhyan Sutra, Tirthankar Mahaveer introduces the principle and effects of Anupreksha. Anupreksha involves repeatedly contemplating and reflecting on what has been learned or perceived, which can be done through listening, reading, watching, or contemplating one's own thoughts. One effective method to practice Anupreksha is by using images. Anupreksha-based meditation aims at accepting good energies through the auspicious image of the inner self and closing doors to inauspicious and developing or constructing a new inner body that keeps purifying negative thoughts.[20]

The practice involves four stages: darshana (seeing), grahana (adopting), dhaaran (absorbing), and sadhana (indulging). This process includes focusing on an image, observing the afterimage as it fades from the mind, and then refocusing on the image, repeating the process continuously.[21] Various objects or images can be used, such as ashtamangal (eight auspicious symbols), purushakar (shape of soul or dhyana posture), arham (auspicious symbol of Jains), chandrabindu or any other symbol, depending on the qualities one wishes to cultivate.[20,21] These symbols are represented in five colors: white, red, yellow, green, and blue, which correspond to the five divine beings (pancha parmeshthi) and their various physical, mental, and spiritual properties.[20,21] Meditations are named based on the symbols used, such as ashtamangal dhyana for ashtamangal, purushakar dhyana for purushakar, and arham dhyana for arham. In this study, we have considered practitioners of purushakar meditation and ashtamangal meditation.

Table 1: Demographic data of participants.

Variables	Mediators	Non-mediators
Gender		
Female	145	125
Male	88	104
Age (years)	41±10	40±10
Education		
Under graduation	1	4
Graduation	132	136
Post graduation	100	89
Years of practice		
1-5	70	
5-10	89	
10 and above	74	

Statistical analysis

Statistical analysis was done using the JAMOVI, 2.3.16 in Windows. The data were checked for normal distribution and homogeneity of variance by applying the Shapiro-Wilk test and Levene test. The Mann-Whitney U-test was performed for between-group analysis for self-reported assessment. Statistical significance was considered at $p<0.05$. The descriptive statistics including mean values, standard deviations (SDs), significant values, Mann-Whitney U-test, and effect size are given in Table 1. The Spearman's correlation was performed to check the relationship among MAAS, PTQ, SCS, and SHALOM.

RESULTS

The outcomes of the present study showed significant differences in the meditator group compared to the non-meditator group. The Mann-Whitney U-test showed significantly lower preservative thinking and higher mindfulness, self-kindness, self-judgment, common humanity, isolation, over-identified, self-compassion, personal, communal, environmental, and transcendental, at $p<0.001$ levels shown in Table 2.

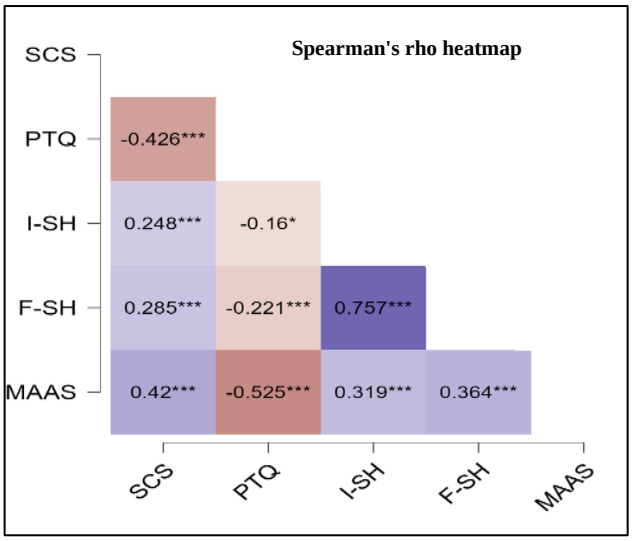

Figure 1: Correlation between mental health self-reported assessments.

Table 2: Descriptive outcomes of mental health self-reported assessments.

Group/variables	Meditation (M±SD)	Control (M±SD)	Man-Whitney U-test	Effect size	P value
PTQ	19.55±8.5	33.03±11.76	9981	0.62	<0.001
SCS_SK	3.78±0.72	3.15±1	17339	0.35	<0.001
SCS_SJ	3.48±0.82	2.98±1	18603	0.3	<0.001
SCS_CH	3.57±0.72	3.16±0.91	20205	0.24	<0.001
SCS_I	3.63±0.83	2.68±1.06	13181	0.5	<0.001
SCS_MF	4±0.04	3±0.04	8632	0.67	<0.001
SCS_OI	4±0.05	3±0.06	11545	0.56	<0.001
SCS	3.71±0.37	2.96±0.61	7529	0.71	<0.001
MAAS	4.41±0.89	3.48±0.98	12976	0.51	<0.001
I_SH_P	4.13±0.57	4±0.68	24321	0.088	>0.05
I_SH_C	4.16±0.57	3.97±0.58	21593	0.19	<0.001
I_SH_E	4.28±0.38	4.1±0.57	22280	0.16	<0.01
I_SH_T	4.41±0.38	3.64±0.97	13834	0.48	<0.001
I_SH	4.24±0.35	3.93±0.58	17938	0.32	<0.001
F_SH_P	4±0.49	3.7±0.7	19552	0.26	<0.001
F_SH_C	4.04±0.48	3.86±0.64	22396	0.16	<0.01
F_SH_E	4.04±0.47	3.89±0.67	24180	0.093	>0.05
F_SH_T	4.22±0.45	3.42±0.99	13058	0.51	<0.001
F_SH	4.07±0.37	3.72±0.62	16650	0.37	<0.001

Note: (MAAS: Mindfulness attention awareness scale, SCS: self-compassion scale, SK: self-kindness, SJ: self-judgments, CH: common humanity, I: Isolation, MF: Mindfulness, OI: Over identified, PTQ: perseverative thinking questionnaire, I_SH: Ideal SHALOM, F_SH: actual feeling SHALOM, P: Personal, C: Communal, E: Environmental, T: Transcendental).

Spearman's correlation showed a negative correlation of perseverative thinking with mindfulness (rho -0.53; p<001), self-compassion (rho -0.43; p<001), and spiritual well-being (rho -0.22; p<001) in meditators. Moreover, mindfulness showed a positive correlation with self-compassion (rho 0.42; p<001), and spiritual well-being (rho 0.36; p<001) shown in Figure 1. However, the non-mediator did not show any correlation among variables.

DISCUSSION

In the present study, we examined the physical and mental health of adults. As expected, meditation practice is to cultivate present-moment awareness and non-judgmental observation of thoughts, emotions, and sensations, Anupreksha-based meditation showed significant differences in the meditators group compared to non-meditators in various parameters. Meditation has long been associated with enhancing spiritual health and life orientation measures. This cultivates an awareness of the interconnectedness of all things and fosters a sense of unity with the universe. By regularly practicing meditation, individuals become more attuned to the spiritual dimension of life and experience a deeper sense of connection to oneself. These findings shed light on the distinct psychological outlines associated with meditation practice versus non-practice.

The statistical test yielded significant differences in perseverative thinking in AMP compared to non-meditators in the present study which suggests a decreased tendency toward repetitive thoughts. This is consistent with the notion that meditation practice may help individuals disengage from rumination and cognitive rigidity. A previous study reported that regular meditation can induce neuroplastic changes in the brain.[22] The prefrontal cortex is responsible for decision-making and impulse control and shows increased activity with meditation practice.[23] Conversely, the amygdala, the brain's fear center shows decreased activity suggesting a reduced sensitivity to negative stimuli. A previous study reported that excessive accessibility to negative thoughts deteriorates executive function performance and diminishes the attentional process for problem-solving.[24] However, numerous meditative studies showed that practices of meditation can improve executive functions and emotional regulation skills, allowing individuals to respond to negative thoughts with greater equanimity and self-compassion.[24] By cultivating a sense of inner calm and stability through meditation, individuals become less prone to being overwhelmed by negative emotions triggered by negative thinking. Meditation might have helped individuals develop awareness of their thoughts and emotions without becoming entangled in them. A previous study reported that meditation cultivates a non-judgmental and accepting stance toward their inner experiences, and meditators may become less prone to rumination.[25] Through regular meditation practice, individuals learn to observe their thoughts with detachment and to let go of repetitive and unproductive patterns of thinking, leading to reduced rumination over time. In the present study, AMP reported a negative correlation of perseverative thinking with mindfulness, self-compassion, and spiritual well-being. This evidence suggests that the practice of meditation has the potential to mitigate negative thinking by promoting mindfulness and positivity.[26]

The personal well-being of SHALOM refers to a sense of fulfilment in an individual, satisfaction, and psychological health. In the present study, meditators showed higher personal well-being scores compared to non-meditators. The outcomes of the study are aligned with previous studies that meditation facilitates discerning and articulating personal experiences while promoting detachment from detrimental thoughts and emotions.[27] Several studies reported that regular meditation practice may reduce stress, anxiety, and depression while enhancing mood, emotional regulation, and overall psychological resilience.[28] Meditators often report increased self-awareness, self-compassion, and a greater sense of inner peace and contentment which lead to personal well-being.

The outcomes of the present study showed higher scores of communal well-being in the AMP compared to non-meditators. It encompasses the quality of relationships, social connections, and a sense of belonging within communities. It suggested that meditation practices often emphasize qualities such as compassion, empathy, and kindness toward oneself and others. Previous studies reported that meditation enhances interpersonal relationships and greater empathy towards others.[29] Studies also suggest that meditation may increase prosocial behaviour, strengthen social bonds, and reduce feelings of loneliness and isolation. Meditators may be more adept at conflict resolution and building supportive social networks, leading to a greater sense of connectedness and communal well-being.

Anupreksha-based meditation practice showed significantly higher environmental scores which can foster a deeper connection with nature and the surrounding environment. The practice of meditation develops a heightened appreciation for the beauty and wonder of the natural world, leading to increased feelings of awe, gratitude, and ecological consciousness.[30] Studies have shown that meditation can promote pro-environmental behaviours, such as reducing consumption, conserving resources, and supporting environmental conservation efforts.[31] By cultivating a sense of interconnectedness with all living beings and the planet, meditators may experience greater environmental well-being.

The meditator showed a significantly higher score in transcendental well-being which indicates that the meditator might have experienced transcendence, inner peace, and spiritual fulfilment. Transcendental well-being refers to experiences of spirituality, transcendence, and

connection to a higher power or ultimate reality. Studies have shown that meditation can enhance spiritual well-being by fostering a sense of purpose, meaning, and connection to something greater than oneself.[32] Meditators may develop a deeper understanding of spiritual principles, engage in spiritual practices, and experience greater levels of inner peace, joy, and fulfilment compared to non-meditators.

The present study showed heightened self-kindness in meditators compared to non-meditators. The outcomes of the study aligned with the previous study that reported regular meditation may lead to greater self-compassion.[33] Meditators may develop a greater sense of self-worth, self-acceptance, and self-love, leading to enhanced well-being and resilience. Meditators also reported higher self-judgment indicating that meditation might have helped individuals become more aware of their thoughts and emotions without getting caught up in self-critical narratives.[34] The present study showed heightened common humanity scores in meditators compared to non-meditators. It suggested that meditation may foster a sense of interconnectedness and empathy towards others, as well as an understanding that everyone experiences suffering and challenges in life.[35] A previous study reported that meditators may develop a greater sense of common humanity, feeling less isolated leading to increased self-compassion and resilience.[33]

Higher scores of over-identifications in meditators suggest that practitioners become overly immersed or identified with their thoughts, emotions, or experiences, leading to distress or suffering. Through meditation practice, individuals learn to cultivate a more balanced and detached perspective on their inner experiences. A previous study reported that meditation improves mental resilience to observe thoughts and emotions with mindfulness and self-compassion to prevent being overly identified or overwhelmed.[36] Over time, meditators may develop a greater sense of equanimity and resilience, reducing the impact of challenging thoughts and emotions on their overall well-being.

Mindfulness scores have been observed higher in meditators compared to non-meditators. This outcome suggests that meditation might have cultivated mindfulness and inner peace, which can enhance self-awareness and emotional regulation.[36] Meditation enhances the mental resilience to observe their thoughts, emotions, and sensations without reacting impulsively or getting caught up in negative patterns of thinking.[37]

Furthermore, correlation analysis revealed positive associations between mindfulness and various aspects of psychology spheres including self-compassion, personal, communal, environmental, and transcendental. These findings underscore the interconnectedness of mindfulness and self-compassion, suggesting that practitioners are more tend to exhibit greater levels of compassion towards themselves and others.

The current study was a cross-sectional design that limits cause-and-effect relationships. Significant age differences, as well as differences in the amount of practice, may have confounded the group comparisons. Reliance on self-reported data for variables such as meditation practice and psychological measures introduces the possibility of response bias affecting the accuracy of the results. Additionally, there is room for improvement in the assessment of meditation practice, such as considering the depth of meditation.

Despite these limitations, the present study also has several strengths. It included large samples from a wide range of age groups in the general population, encompassing both females and males. This enabled us to understand the effects of meditation on mindfulness, self-compassion, repetitive negative thinking, spiritual health, and life orientation with respect to gender diversity.

CONCLUSION

In summary, the present study delved into the multifaceted impacts of meditation on the physical, mental, and spiritual well-being of adults. Shreds of evidence suggest the role of meditation in alleviating negative thinking patterns and enhancing overall well-being. The AM tackles the root cause of negativity by reducing RNT, cultivates a space of observation through mindfulness, and rewires the brain for better emotional regulation. Therefore, the AM may be introduced as a therapeutic tool in clinical and non-clinical people. However, further longitudinal and experimental studies are warranted to establish causality and elucidate the underlying mechanisms driving these observed effects.

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REFERENCES

1. WHO. Mental Health. 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response/?gad_source=1&gclid=Cj0KCQjwwYSwBhDcARIsAOyL0fjD8keezw8fzlk9AdBnU-xw0wsItkw5R1xoRgVLVH8TCVwIvZkTx8saAj8kEALw_wcB. Accessed on 21 April 2024.
2. Srivastava K. Positive mental health and its relationship with resilience. Ind Psychiatr J. 2011;20(2):75.

3. Nolen-Hoeksema S. The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. J Abnorm Psychol. 2000;109(3):504.
4. Ehring T, Watkins ER. Repetitive negative thinking as a transdiagnostic process. Int J Cogn Ther. 2008;1(3):192-205.
5. Gustavson DE, Pont A du, Whisman MA, Miyake A. Evidence for transdiagnostic repetitive negative thinking and its association with rumination, worry, and depression and anxiety symptoms: A commonality analysis. Collabra Psychol. 2018;4(1).
6. Watkins ER. Constructive and unconstructive repetitive thought. Psychol Bull. 2008;134(2):163.
7. Schlosser M, Jones R, Demnitz-King H, Marchant NL. Meditation experience is associated with lower levels of repetitive negative thinking: the key role of self-compassion. Curr Psychol. 2022;41(5):3144-55.
8. Spinhoven P, Klein N, Kennis M, Cramer AO, Siegle G, Cuijpers P, et al. The effects of cognitive-behavior therapy for depression on repetitive negative thinking: a meta-analysis. Behav Res Ther. 2018;106:71-85.
9. Sommerhoff A, Ehring T, Takano K. Effects of induced mindfulness at night on repetitive negative thinking: ecological momentary assessment study. JMIR Ment Health. 2023;10(1):e44365.
10. Mahindru A, Patil P, Agrawal V. Role of physical activity on mental health and well-being: a review. Cureus. 2023;15(1):e33475.
11. Tough H, Siegrist J, Fekete C. Social relationships, mental health and wellbeing in physical disability: a systematic review. BMC Public Health. 2017;17(1):414.
12. Ott U, Hölzel BK, Vaitl D. Brain Structure and Meditation: How Spiritual Practice Shapes the Brain. Neurosci Conscious Spirit. 2011;1:119-28.
13. Saraswati S. Four chapters on freedom: commentary on yoga sutras of Patanjali. Yoga Publications Trust; 2006.
14. Lippelt DP, Hommel B, Colzato LS. Focused attention, open monitoring and loving kindness meditation: effects on attention, conflict monitoring, and creativity: a review. Front Psychol. 2014;5:1083.
15. Vagh MG. Preksha meditation: the technique for purifying and knowing self. Int J Yogic Hum Mov Sport Sci. 2019;4(1):818-21.
16. Brown KW, Ryan RM. The benefits of being present: mindfulness and its role in psychological well-being. J Pers Soc Psychol. 2003;84(4):822-48.
17. Ehring T, Zetsche U, Weidacker K, Wahl K, Schönfeld S, Ehlers A. The perseverative thinking questionnaire (PTQ): validation of a content-independent measure of repetitive negative thinking. J Behav Ther Exp Psychiatr. 2011;42(2):225-32.
18. Raes F, Pommier E, Neff KD, Van Gucht D. Construction and factorial validation of a short form of the self-compassion scale. Clin Psychol Psychother. 2011;18(3):250-5.
19. Gomez R, Fisher JW. Domains of spiritual well-being and development and validation of the spiritual well-being questionnaire. Pers Indiv Dif. 2003;35(8):1975-91.
20. Praveen R, Galada N, Jain P. As the Image Brightens. 1st edn. Anand Tirth Kendriya Foundation; 2016.
21. Praveen R. Ignite Divinity. 1st edn. Notion Press; 2017.
22. Chau BKH, Keuper K, Lo M, So KF, Chan CCH, Lee TMC. Meditation-induced neuroplastic changes of the prefrontal network are associated with reduced valence perception in older people. Brain Neurosci Adv. 2018;2:239821281877182.
23. Krishna D, Prasanna K, Angadi B, Singh B, Anurag S, Deepeshwar S. Heartfulness meditation alters electroencephalogram oscillations: an electroencephalogram study. Int J Yoga. 2022;15(3):205.
24. Watkins E. Rumination and executive function in depression: an experimental study. J Neurol Neurosurg Psychiatr. 2002;72(3):400-2.
25. Ding X, Du J, Zhou Y, An Y, Xu W, Zhang N. State mindfulness, rumination, and emotions in daily life: an ambulatory assessment study. Asian J Soc Psychol. 2019;22(4):369-77.
26. Koster EHW, De Lissnyder E, Derakshan N, De Raedt R. Understanding depressive rumination from a cognitive science perspective: the impaired disengagement hypothesis. Clin Psychol Rev. 2011;31(1):138-45.
27. Fazia T, Bubbico F, Iliakis I, Salvato G, Berzuini G, Bruno S, et al. Short-term meditation training fosters mindfulness and emotion regulation: a pilot study. Front Psychol. 2020;11:558803.
28. Krishna D, Singh D, Prasanna K. A cross-sectional study on impulsiveness, mindfulness, and World Health Organization quality of life in heartfulness meditators. Yoga Mimamsa. 2022;54(1):24-30.
29. Centeno RPR, Fernandez KTG. Effect of mindfulness on empathy and self-compassion: an adapted MBCT Program on Filipino College Students. Behav Sci. 2020;10(3):61.
30. O' Leary K, Dockray S. The effects of two novel gratitude and mindfulness interventions on well-being. J Altern Complement Med. 2015;21(4):243-5.
31. Riordan KM, MacCoon DG, Barrett B, Rosenkranz MA, Chungyalpa D, Lam SU, et al. Does meditation training promote pro-environmental behavior? A cross-sectional comparison and a randomized controlled trial. J Environ Psychol. 2022;84:101900.
32. Marquès-Brocksopp L. Mindfulness, spiritual well-being, and visual impairment: an exploratory study. Br J Vis Impair. 2014;32(2):108-23.
33. Liu C, Chen H, Zhang A, Gong X, Wu K, Liu CY, Chiou WK. The effects of short video app-guided loving-kindness meditation on college students' mindfulness, self-compassion, positive

psychological capital, and suicide ideation. Psicol Reflex Crít. 2023;36:32.
34. Hitchcock PF, Britton WB, Mehta KP, Frank MJ. Self-judgment dissected: a computational modeling analysis of self-referential processing and its relationship to trait mindfulness facets and depression symptoms. Cogn Affect Behav Neurosci. 2023;23(1):171-89.
35. Hu Z, Wen Y, Wang Y, Lin Y, Shi J, Yu Z, et al. Effectiveness of mindfulness-based interventions on empathy: A meta-analysis. Front Psychol. 2022;13:992575.
36. Vago DR, David SA. Self-awareness, self-regulation, and self-transcendence (S-ART): a framework for understanding the neurobiological mechanisms of mindfulness. Front Hum Neurosci. 2012;6:1-30.
37. Krishna D, Singh D, Prasanna K. A cross-sectional study on impulsiveness, mindfulness, and World Health Organization quality of life in heartfulness meditators. Yoga Mimamsa. 2022;54(1):24.

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