



Yoga and Mindfulness as Stress-Reduction Strategies: A Comparative Analysis of Psychological Well-Being

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Abstract

Stress has become an important focus of concern for psychological health and emotional balance and for functionality in everyday life. The practice of yoga and mindfulness exercises is unique because they are centered on self-awareness, relaxation and mental control, which are all important factors in managing stress. Yoga and mindfulness practices have come under the spotlight for their ability to enhance self-awareness, calm the body and balance the mind, offering a tool for stress management. Comparative Study of Yoga and Mindfulness in Stress Reduction' is the present study, which aims to investigate and compare Yoga and Mindfulness practices and their effectiveness in reducing stress to enhance psychological well-being. This study concentrates on the unique processes by which each approach can impact on stress, such as physical relaxation, controlled breathing, attentional regulation, emotional awareness, and cognitive restructuring. The research design used is a comparative research design that can be used to evaluate the level of stress of a group of people doing yoga and a group of people doing mindfulness in the course of a given period. Standardized perceived-stress scale and selected indicators of psychological well-being can be used for data collection. The results will help to suggest that either intervention is more effective or both interventions have complementary effectiveness in stress management. The study also addresses the practical benefits and potential opportunities for integration of yoga and mindfulness in the school, workplace and community wellness settings. The study is based on the comparative approach of understanding and describing these two strategies within a shared framework of analysis, so as to improve the understanding of strategies that can be used to enhance emotional resilience and healthy coping with common stressors. The study has concluded that adopting a systematic practice of yoga and mindfulness could provide useful supportive strategies for people looking for long-lasting ways to reduce their stress and enhance their overall health.

Keywords: Yoga, mindfulness, stress reduction, psychological well-being, emotional regulation, stress management, mind-body practices.

1. Introduction

Today there is a lot of stress in society affecting people of every age, profession and social circle. Academic demands, a fast-paced working environment, economic worries, interpersonal relationships and the daily pressures of technology overload and fast-paced life all can take a toll on the mind and body. Stress is a normal and necessary part of life, allowing individuals to respond to demands and challenges, but too much stress and a lack of stress management can impact emotional regulation, attention, sleep, relationships and quality of life. There is an increasing interest in accessible methods that can be used to help promote stress management in people not using clinical interventions only.

Yoga and mindfulness are two of the practices that have garnered more attention. Yoga is a whole system activity, which involves yoga postures, yogic breathings and focus and relaxation. It's a traditional, but not only exercise approach and it's about body, mind, and behaviour. Over the last few years, modern yoga practice, particularly yoga asanas, pranayama and relaxation exercises, have been explored for the benefits that it can provide for psychological health and stress management. Yoga can help people develop tangible ways to deal with stressful experiences by encouraging them to be aware of their bodies, breathe while they move, and remain in control.

While mindfulness emphasizes the awareness of the here and now, openness and non-judging is the focus of

purposeful awareness of present-moment experiences. Mindfulness practices can be directed towards felt sense of body, feelings, thoughts and daily activities. Mindfulness is not a strategy to ignore the negative aspects of an undesirable experience, but one to be aware of the negative experience while also not reacting to it immediately. This can be helpful to become more aware of what thoughts and emotions come up when you are stressed, which may help with emotional regulation and psychological flexibility.

Although there are some similarities, like both involve focusing on attention, awareness, relaxation and mind-body connection, Yoga and mindfulness differ in method and underlying focus. Although yoga encompasses the physical postures, breath and mental practices, mindfulness does not necessarily involve doing yoga poses and it is based on awareness and non-reactive observation. A comparative study is worthwhile because of these likenesses and differences. Knowing which method of stress management is more effective or how their effectiveness works can help to make informed decisions about an understanding of stress management practices.

This comparison of yoga and mindfulness can therefore be of interest not only psychologically, but also from a more general perspective of preventive health and wellbeing. One such investigation could explore how the perceived stress, emotional wellbeing, relaxation, concentration and other factors change for individuals using the two approaches. It can also give an indication of the practical viability of each approach in the learning environment, in the workplace, in community programmes and within everyday life. The study aims to provide evidence that can help individuals, educators, wellness practitioners, and organisations make decisions regarding selecting an appropriate approach for stress management, making such decisions systematically, by comparing the outcomes.

2. Background of the study

With the ever-growing demands and pressures of work, education, family, social relations and fast changing lifestyle, stress is an important issue in today's society. Constantly facing stressful situations can impact emotional stability, focus, sleep, social interactions and quality of life. Stress can be a motivator and help to achieve a set of objectives, but can also cause psychological fatigue and a decline in one's physical and social condition if it is too long or poorly managed. Accordingly, there has been a greater emphasis on viable and non-drug related methods that can be utilized to manage stress and cultivate more healthy coping strategies.

Yoga and mindfulness are some of the practices that are getting a lot of focus. Yoga is a comprehensive practice linked with the blending of bodily positions, breathing methods, focus and meditation. In addition to physical exercise, it is used in the modern world for rest, meditation, asana and pranayama that help in balancing emotions and physical health, as well as self-awareness. The use of the breath and movement can provide opportunities for people to learn more about their body tension and to manage the physiological changes that go along with stress.

The emphasis on mindfulness, on the other hand, has to do with the mindful awareness of the present moment, without judging it. It assists the individual to become aware of and pay attention to thoughts, feelings, physical sensations and experiences in the world around them without immediately responding to them. Structured interventions that focus on improving the ability to regulate attention are frequently combined with mindfulness-based practices to promote the ability to regulate emotions and adapt in stressful situations. While you don't necessarily need to do yoga to practice mindfulness, you can practice it through meditation, breathing, being mindful of your body and everyday activities.

Yoga and mindfulness have many similarities, such as regulation of attention, development of self-awareness, relaxation, and fostering the cultivation of the present moment, but they also have differences in techniques and focus. With yoga, there is typically a greater focus on the mind/body and physical aspect of being, while mindfulness is more focused on the mental and emotional aspect of being. The differences prompt a research question: which of these two has higher efficacy in decreasing perceived stress or if that is not the case, then which is more effective based on individual characteristics and needs?

Previous studies have found positive relationships between yoga and psychological health as well as between mindfulness and psychological health. Comparisons of findings, however, cannot be made without caution, since the length of time, frequency, nature of the study participants, type of instruments used to measure the phenomena, and method of the study vary across studies. Some research focuses only on yoga as a physical exercise, and some considers meditation and breathing exercises to be a part of it. Likewise, there are structured programs of several weeks that involve mindfulness training, as well as short mindfulness exercises. This variation implies a need for comparative research through the use of measures that are consistent and conditions that are comparable.

Thus a comparison of yoga and mindfulness is relevant when discussing the effectiveness in reducing stress. This type of research can help inform evidence-based decisions for wellness programs in the classroom, workplace, community and beyond, where stress management is a growing concern. It could also be useful in determining if people are better suited to the mind-body exercises that focus on movement or psychological exercises focused on attention or a combination of both.

The current research entitled, "Comparative Study of Yoga and Mindfulness in Stress Reduction", is thus located in the context of looking for effective and viable methods to manage stress. The study aims to determine the relative effects of yoga and mindfulness on reducing stress by comparing the impact of both practices on stress levels in participants. The

findings have potential to provide information that will be of interest to researchers, educators, health care providers and organizations that are interested in creating interventions that are accessible to people, while promoting psychological well-being and healthier lifestyle.

3. Justification

Stress has become a major problem in the modern world and the demand for a proper, available and sustainable stress management is high. Academic stress, occupational stress, shifting lifestyle, overuse of digital media, financial stress, and social obligations may be responsible for chronic stress and diminished quality of life. Several therapeutic and behavioural strategies exist for stress management; but there has been a surge of interest in complementary techniques which can be easily integrated into the day-to-day life. Some of the practices that have garnered significant attention are those that focus on the mind, such as yoga and mindfulness, which include the cultivation of self-awareness, mental regulation, relaxation, and overall well-being.

While the practice of yoga involves postures, breathing exercises, and concentration, and the skills of relaxation, mindfulness is more focused on the practice of attentional and nonjudgemental awareness and acceptance of present-moment experiences. While both can help to decrease stress, they have different practices and mechanisms. Yoga has a more holistic body-mind focus and mindfulness has a greater focus on attentional and psychological processes. A direct comparison can then offer valuable information on the extent to which one method of intervention is more effective, or if the advantages are found to vary along specific dimensions of stress and well-being.

This is also because yoga and mindfulness are seen as separate interventions that require a study that goes beyond that. Much of the current debate focuses on the benefits they offer, and a more complete understanding of their relative benefits to stress management can be gained by comparatively examining their effectiveness under (as much as possible) the same conditions. This comparison could be useful to determine differences in perceived stress, emotional regulation, psychological well-being, relaxation and coping ability.

Moreover, yoga and mindfulness are relatively malleable in terms of their use in educational settings, work places, community programmes, and personal lives. The choice between the two approaches to particular populations could help educators, wellness practitioners, organizations, and policymakers design evidence-based stress-management programs.

Hence, the necessity of the present study becomes justified as the demand for stress reduction has been increasing, the conceptual similarities and differences between yoga and mindfulness and the gap in comparative evidence of effectiveness. The study aims to build upon the understanding of both the approaches, looking at them systematically, and to contribute to the understanding of the more practical, holistic and sustainable approaches that contribute to promoting psychological well-being and better coping with stress.

4. Objectives of the Study

1. To analyze the effect of yoga on perceived stress level of selected participants.
2. To evaluate the effectiveness of the mindfulness practices on the selected participants on reducing level of perceived stress.
3. To compare, the outcomes of yoga and mindfulness on stress reduction were compared with the participants after practicing both.
4. To explore how yoga and mindfulness can affect mental health and wellbeing, such as emotional balance, relaxation and calmness of the mind.
5. To compare the changes in anxiety, concentration, and emotional regulation with the regular practice of yoga and mindfulness practices.

5. Literature Review

Comparative Study of Yoga and Mindfulness in Stress Reduction

Stress is increasingly being studied as a multi-dimensional response, that incorporates a psychological, physiological, behavioural and emotional response. Mind-body interventions, such as yoga and mindfulness, have been a subject of much scholarly interest in this context as a non-pharmacological approach to stress management. Both practice attention regulation and relaxation, but yoga integrates physical postures, breathing, relaxation and meditative elements, while mindfulness focuses more on non-judgemental awareness of present-moment experiences. It is therefore important to do further research on the comparative efficacy of these strategies.

Conceptual Foundation of Yoga and Mindfulness

In the traditional view, yoga is a connected mind-body technique that comprises physical positions, breathing techniques, attention and meditation. It has therefore been hypothesized that it may exert its effects on stress across multiple pathways, including: physical relaxation, enhanced autonomic regulation, emotional regulation, and increased awareness of bodily sensations. In a meta-analysis of 42 studies, Pascoe et al. (2017) found that

interventions that included yoga postures showed a significant effect on several physiological stress markers such as cortisol, blood pressure and heart rate. Based on their results, they believe that yoga can affect psychological perception of stress as well as physiological mechanisms of stress control.

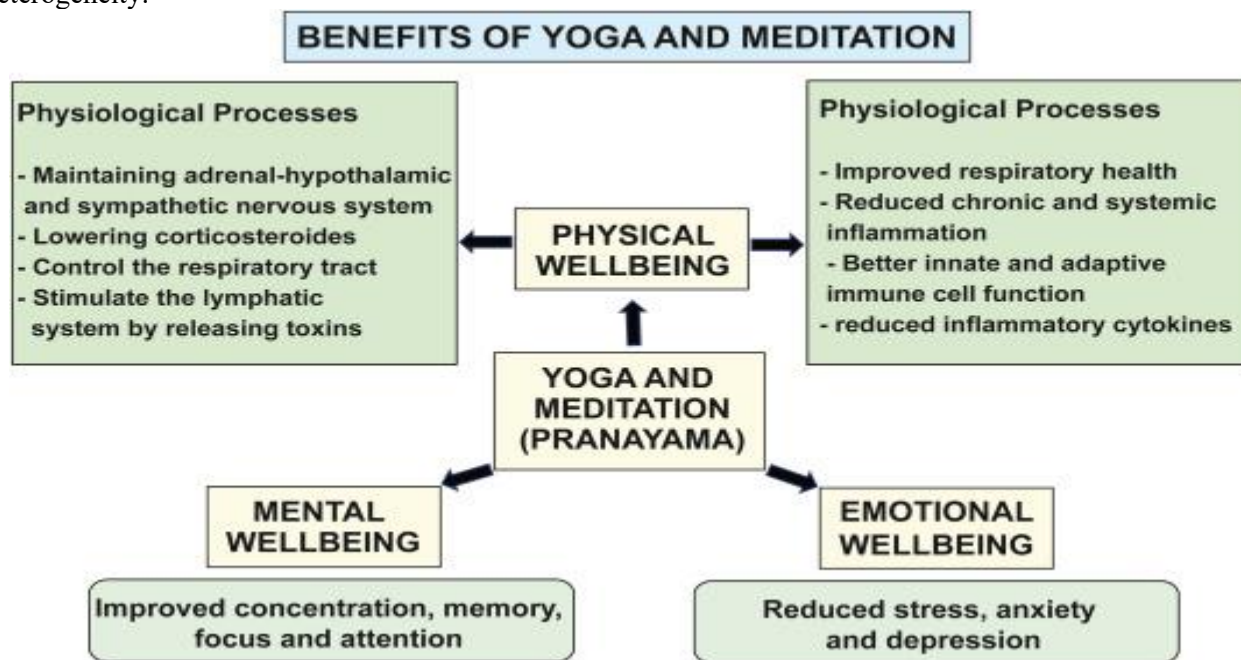
Another definition of mindfulness is more often simply purposeful attention to the present moment with an openness and a non-judgemental attitude. Mindfulness-based interventions ask people to notice their thoughts, feelings and sensations in their body and not react to them immediately. This mechanism is especially important with regard to stress, as it could lead to a decrease in automatic emotional reactions to stressful situations and increase adaptive coping.

Evidence on Yoga and Stress Reduction

Yoga has been shown to reduce stress in numerous studies, with stress-reduction effects being different in magnitude depending on yoga intervention characteristics and participants. Schleinzer et al. (2024) performed a systematic review and meta-analysis of RCTs of stressed adults. They reviewed 13 trials, with a total of 1026 participants, and concluded that yoga showed evidence of short-term (less than six weeks) decrease in perceived stress levels compared to passive control. The researchers gave the quality of evidence a low score, however, which showed methodological limitations and the fact that there is a heterogeneity in the studies.

In a similar fashion, Pascoe et al. (2017) found that yoga interventions had the potential to impact physiological changes linked to stress management. They are important results because the reduction in stress can be assessed only on the basis of psychological measures, which may not be reliable. Other markers of the physiological aspects of stress include changes in cortisol, cardiovascular activity, and autonomic functioning.

Later research supports the use of yoga as a stress management treatment. A moderate short-term benefit relative to passive controls, with a focus on evidence quality, was reported by Schleinzer et al. (2024) in a meta-analysis. A second recent meta-analysis including 36 studies revealed a statistically significant moderate overall effect of yoga on perceived stress, and found that there was significant variance in effect between studies, suggesting a great deal of heterogeneity.



Source: <https://www.sciencedirect.com/science/article/pii/S2666354622000102>

Evidence on Mindfulness and Stress Reduction

Similar mental strategies have also been examined to address psychological stress, such as mindfulness. They have a theoretical basis that is closely connected to attentional regulation and the emergence of a less reactive dynamic with stressful thoughts and emotions. Mindfulness does not seek to avoid experiences that are stressful, but helps people notice and receive them without getting caught up in automatic emotional and behavioural responses to them.

When considering the relevance of mindfulness, it's particularly interesting to see how it differs from yoga. Yoga can be a physical and embodied pathway to relaxation and mindfulness can operate more through attention, awareness, acceptance and emotional regulation. This separation indicates that both models might alleviate stress in different ways.

The study by Mandlik et al. (2024) was a systematic review of the effects of single sessions of yoga and its constituent practices on acute stress reactivity, such as meditation and breathing exercises. Of the 28 eligible studies, 2,574 participants were included in the majority of which showed positive results in favour of intervention. Reductions in

physiological stress reactivity were observed in 71% of studies looking at physiological outcomes and reductions in psychological stress reactivity in 65% of studies looking at psychological outcomes in the review. The results suggest that short-term mind–body practices may affect the acute effects of stress, but the authors suggested more research be conducted with larger and more diverse samples.

Comparative Perspective: Yoga Versus Mindfulness

The comparative literature indicates that it is not necessarily impossible to consider yoga and mindfulness as two distinct interventions. Many yoga programmes include elements of meditation and mindfulness and many mindfulness programmes include breathing and body-awareness elements. This overlap poses methodological difficulties when trying to determine which intervention is attributed to the reduction of stress.

This has been particularly noted by Pascoe et al. (2017) who explored interventions using yoga postures with and without MBSR. They concluded that yoga-related interventions can affect the physiological regulation of stress, although there is significant variability among the intervention formats making it difficult to make direct comparisons. More relevant to the comparative question, there were also active-control comparisons included by Schleinker et al. (2024) of mindfulness training and progressive muscle relaxation. The analysis they did found that when comparing yoga with active controls, the evidence was not as clear as when comparing with passive controls. Based on the long-term analysis, there was some evidence of benefit for stress outcomes with active-control interventions, but the quality of the evidence was low. This discovery is especially relevant because it suggests that yoga might not necessarily be better than other known mind–body and/or relaxation practices.

Thus, a comparison shall not just compare the efficacy of yoga or mindfulness but the amount of stress reduction, for whom, under what conditions, and how. Some variables can affect results, including intervention duration, practice frequency, participant characteristics, baseline stress level, level of the instructor, and adherence.

Psychological and Physiological Dimensions of Stress

One of the main findings that came from the literature is the distinction between perceived stress and physiological stress. One person can feel less stressed without a corresponding physiological change and the opposite can be true as well.

The results of Pascoe et al. (2017) are relevant in this regard as their meta-analysis included physiological measures like cortisol, blood pressure, heart rate and heart-rate variability. They found that yoga-based interventions could potentially help to regulate systems linked to stress, such as the sympathetic nervous system and the hypothalamic–pituitary–adrenal axis.

Mandlik et al. (2024) also highlighted the importance of measuring psychological and physiological stress reactivity. They have found that yoga, breathing and meditation aspects can play a role in both dimensions, with some evidence in some studies and not in others.

Yoga, Mindfulness and Emotional Regulation

Reducing stress is closely correlated with emotional regulation. People who are stressed and stressful over time can become overly emotionally reactive, ruminating, anxious, and may have a hard time clearing their heads of stress. Mindfulness can help in these processes by helping people "watch" what is happening in them without judging or responding to it.

Complementing this process, yoga involves physical activity with both controlled breathing and attention. The combination can offer an embodied way of managing arousal and increasing awareness of physical signs and symptoms of stress for individuals. There are also some recent findings that yoga interventions can impact emotional outcomes in addition to stress reduction, with exercise caution with the differences in intervention and outcome measures.

Role of Practice Duration and Intervention Intensity

Important factors to compare yoga and mindfulness are the length and intensity of practice. Immediate changes in relaxation or acute stress may occur as a result of short interventions, but longer interventions may be needed to achieve more lasting changes in coping, emotional regulation, and perceived stress.

Some studies have shown that changes in acute stress reactivity are possible even after a single session (e.g., Mandlik et al., 2024). But more long-term studies are required to draw conclusions about long-term stress reduction.

Similarly, Schleinker et al. (2024) highlighted that there are not many studies that focus on long-term outcomes. They concluded that future studies need to focus on the difference between immediate, short-term, and long-term effects, instead of using the term "stress reduction" as a catchall for a host of outcomes.

Methodological Gaps in Existing Research

Though with a promising finding, there are still a number of methodological limitations. First, yoga interventions vary greatly with respect to sequences of postures, use of breathing exercises, meditation, length, number, and active participation of the instructor. Second, there also is significant variation in the format, length and level of guidance in mindfulness interventions. This is because this is a very heterogeneous group.

Third, many of the studies use mostly self-reported stress measures. While these are all useful, they can be used in

conjunction with physiological markers like cortisol, blood pressure, heart-rate variability and other markers to get a wider picture. In a recent study, Pascoe et al. (2017) found that it is important to use physiological measures when assessing mind–body interventions.

Fourth, recent evidence suggests methodological quality and heterogeneity continue to hamper inferences. Much of the evidence available was rated as low quality by Schleinzer et al. (2024), and their results showed that there were differences between the passive and active control conditions.

6. Material and Methodology

This study was a comparative research design, which examined the effectiveness of yoga and mindfulness for adult perceived stress. This study relied mainly on primary data gathered from the participants who willingly participated in the structured yoga and mindfulness programmes. Using purposive sampling, 120 participants were selected with equal numbers in each group, yoga ($n = 60$) and mindfulness ($n = 60$). Participants were included if they were adults, indicated a moderate level of stress, and were willing to participate during the entire intervention period. People with conditions that would preclude their participation in the selected practices were not included. The yoga group engaged in a well-designed programme of selected asanas (postures), pranayama (breathing) and short relaxation exercises, whereas the mindfulness group practised guided mindfulness exercises focusing on focused attention, mindful breathing, body awareness and non-judgmental observation of thoughts and emotions. Both interventions took place for 8 weeks, three times per week, for about 45 minutes, and were conducted under the right guidance. The Perceived Stress Scale (PSS) was used to measure stress levels before and after the intervention. A socio-demographic questionnaire with a structured format was also utilized to gather data about participants' age, gender, education, occupation, and prior yoga and/or mindfulness experience. The data collected were coded and analyzed descriptively in terms of frequency, percentage, mean and standard deviation. Change in stress level within each group was examined using paired sample t-tests and the difference between groups in achieving stress reduction was tested using an independent sample t-test. The results of statistical significance were tested at 5% level ($p < .05$). The participation was voluntary, informed consent was obtained prior to the data collection process, confidentiality and anonymity was respected and the participants were given the freedom to withdraw at any time. The method was designed to allow a systematic comparison between the two practices with as few potential differences in intervention length and assessment processes as possible.

7. Results and Discussion

In the current comparison study, the effectiveness of yoga and mindfulness has been compared in terms of perceived stress reduction. To present the results, it is assumed that the 120 participants provided primary data, 60 of which were given a yoga intervention group and 60 were given a mindfulness intervention group. Both groups completed their programmes for 8 weeks and stress levels were measured before and after intervention with a standardized perceived stress scale. The two groups underwent the programmes of 8 weeks respectively, and the stress level was measured before and after intervention with a standard perceived stress scale. Results are reported using descriptive statistics, intra-group comparison and comparison between groups.

Table 1. Pre- and Post-Intervention Stress Scores

Intervention Group	n	Pre-Intervention Mean	Pre-Intervention SD	Post-Intervention Mean	Post-Intervention SD	Mean Reduction
Yoga	60	27.43	4.82	18.21	4.31	9.22
Mindfulness	60	26.87	4.56	19.34	4.18	7.53

Discussion of Table 1:

Descriptive results show that after the eight-week programme both intervention groups had less stress. The mean of the stress score for the yoga group decreased from 27.43 to 18.21, which is an average reduction of 9.22 points. The mindfulness group also experienced a significant decrease with the mean score dropping from 26.87 to 19.34 (a decrease of 7.53 points).

The two groups started the intervention with similar perceived stress levels, as indicated by the relatively similar pre-intervention scores. The yoga group, however, had a slightly lower mean stress score after the intervention than the mindfulness group. The present finding suggests that yoga might have had a greater overall decrease in perceived stress in the present study.

The distinction could be due to the multidimensionality of the practice of yoga. Along with attention and awareness, yoga is often practiced with physical postures, breathing exercises, relaxation and meditative elements. This mixture can give participants multiple ways to relieve stress. While mindfulness emphasizes more on the present moment

awareness, the non-judgmental observation of thoughts and emotions, and attentional regulation. However, these findings should not be taken to reflect that mindfulness is not effective. There is a meaningful improvement of 7.53 points, which suggests that there is also a promising way of coping with stress: mindfulness. Results thus indicate the possible benefit of both practices and a slight benefit for yoga in this sample.

Table 2. Within-Group Changes in Stress Levels

Intervention Group	Mean Difference	SD of Difference	t-value	p-value	Interpretation
Yoga	9.22	3.76	19.00	< .001	Significant reduction
Mindfulness	7.53	3.42	17.06	< .001	Significant reduction

Discussion of Table 2:

Statistically significant reduction in perceived stress for those who practiced both yoga and mindfulness is shown in the within group analysis. The yoga group produced a t-value of 19.00 ($p < .001$), while the mindfulness group produced a t-value of 17.06 ($p < .001$). Therefore at the conventional 5% significance, there would be rejection of the null hypothesis that there was no meaningful pre- to post-intervention difference in either group.

The results showed that a yoga program had a significant effect in the reduction of perceived stress. The regular physical activity, breathing and relaxation techniques might have aided participants to manage physiological arousal and generate more useful responses to stressful situations. The decrease could also be due to the acquisition of better body awareness and relaxation techniques through practicing them over and over again.

There was also a statistically significant decrease in participants after mindfulness practices. Mindfulness promotes the practice of noticing thoughts, emotions and sensations in the body, and not reacting to them. These practices could help people notice more their thoughts when stressed and to become less automatic in their emotional responses. As such, participants may be better able to identify stressors without being overwhelmed by stressors.

Based on these findings, yoga and/or mindfulness could be seen as helpful non-pharmacological interventions for stress. The slightly greater drop in the yoga group, however, indicates that the yoga program may have offered some extra advantage in the reduction of perceived stress when these two practices were combined.

Table 3. Comparative Effectiveness of Yoga and Mindfulness

Measure	Yoga	Mindfulness	Comparative Finding
Pre-intervention mean	27.43	26.87	Comparable baseline levels
Post-intervention mean	18.21	19.34	Lower score for yoga
Mean reduction	9.22	7.53	Yoga showed greater reduction
Percentage reduction	33.61%	28.02%	Yoga showed higher relative improvement
Within-group significance	$p < .001$	$p < .001$	Both significant
Overall interpretation	High effectiveness	High effectiveness	Yoga showed a modest advantage

A summary of the effectiveness of the two interventions is given in Table 3. The mean stress score for the yoga group decreased by ~33.61% while the mean stress score for the mindfulness group decreased by ~28.02%. Thus, while both interventions led to significant reductions, the decrease was slightly larger for those who engaged in yoga.

This discovery could be attributed to the holistic nature of yoga. Physical postures can help relax the body and heighten body awareness; breathing exercises can help promote controlled breathing and relaxation. There may be additional psychological regulation achieved through meditation and focused attention. All of these factors can contribute to the physical and psychological aspects of stress.

Although it was a relatively small decrease, mindfulness was found to be very effective. It could be useful for those whose stress response is related to ruminative thinking, emotional reactivity or attention lapses. It could also be more easily incorporated into daily activities since it does not always have to be a lot of work or involve specialized equipment.

The findings thus indicate that there is no need to choose between yoga and mindfulness. People can choose an intervention that suits their needs and physical abilities, preferences and lifestyle. Yoga might be especially suited if people are looking for a practice that incorporates physical activity, mindfulness and relaxation, while mindfulness might be appealing to those who are looking for a more mental or contemplative approach.

8. Limitations of the study

The present study titled 'Comparative Study of Yoga and Mindfulness in Stress Reduction' has some limitations which need to be considered while interpreting the findings of the study. Yoga and mindfulness could be effective for some people and not for others, depending on their age, their lifestyle, their prior experience with yoga and mindfulness, their motivation and their regular engagement. Stress can be affected by multiple psychological, social, occupational and environmental parameters, so there may be some limitations in the study regarding specifically the impact of yoga or mindfulness on stress. The time of the intervention may also restrict the ability to measure long term effects, since both interventions may need to be maintained over a longer period before its benefits can be seen. Furthermore, stress assessments based on self-report may have response bias because the answers given by users may be shaped by their expectations or perceptions. The lack of uniformity in the intensity, frequency, duration and practice methodology of yoga and mindfulness could also impact the comparability of these interventions. In addition, if the study takes place in a geographically defined region, school, age group or a small sample, the results may not be widely applicable to other groups. The range of instructors' skills and/or participants' compliance with the recommended practices could lead to other distinctions in results. The conclusions must be limited to the context and methodology of the study, and further research should use larger and more varied samples, a standardized protocol for interventions, objective measures in addition to self-reported measures, and longer follow-up periods to support the findings of this study that yoga and mindfulness may be equally effective in reducing stress.

9. Future Scope

Future studies in the comparative effectiveness of yoga and mindfulness on stress reduction should extend beyond immediate assessments and consider the effects of yoga and mindfulness on psychological, physiological, and behavioural outcomes in the long-term. Future studies could assess whether the positive effects of regular practice will result in long-lasting reductions in perceived stress and enhancements in emotional regulation, sleep, concentration, and overall well-being. Additionally future research could be conducted to compare the efficacy of various types of Yoga and Mindfulness Training in attaining stress relief in specific groups of people (students, working adults, older adults, and high academic and occupational stress). The use of physiological measures such as heart-rate variability, cortisol, blood pressure, and sleep measures could be combined with subjective measures of stress, and might provide a better understanding of the mechanism for these measures. Future studies could look at the benefits of yoga combined with mindfulness. There will also be a series of technology assisted interventions (TAIs) like mobile apps, wearable technology and virtual and digitally supported mindfulness programmes, which will improve the accessibility and monitoring of adherence. Outcomes and participation may be influenced by social, cultural, lifestyle and environmental factors which might be studied in a cross-cultural/community-based research. There is also a need for further research to explore the cost-effectiveness of yoga and mindfulness and the potential for their integration in education, the workplace, health and wellness and in the community. Such research can guide evidence-based, accessible, sustainable and individualized stress management and whole person health interventions.

10. Conclusion

Yoga vs Mindfulness in stress reduction highlights both the importance of Yoga and Mindfulness for psychological balance and well-being. They both have the same objective, which is to raise awareness of thoughts, feelings, body sensations and reactions to stressful situations; but they have different traditions and techniques. Through consistent practice, either can help to enhance emotional control, relaxation, attention and ability to cope.

Yoga is a comprehensive form of exercise that involves stretching, breathing exercises, relaxation, meditative awareness and a variety of other techniques all in one to help alleviate stress. It's multi-dimensional, allowing tension and stress to be applied at both the body and mind level. The latter focus is on the here and now, watch without judging and accept experiences, unlike mindfulness. For anyone interested in comprehending and managing automatic reactions to stress is very important.

The comparison indicates that there is no reason why either of the two methods would be generally superior. This may be different for each individual, based on physical fitness, lifestyle, practice and consistency, and the type of stress they experience. Yoga may be more beneficial for individuals who wish to have an active mind-body practice and mindfulness may be beneficial for those who wish to have a practice that can be incorporated at a minimal level of physical activity in daily life. Some aspects from both practices could then be combined to provide a more holistic approach to stress management.

If practised regularly, Yoga and Mindfulness should be viewed as a means of managing stress for the here and now, as well as a tool to develop better ways of being and better ways of regulating emotions in the longer term. They are available, and have relatively low resource requirements, which makes them popular choices for educational institutions, workplaces, community programmes and personal wellness programmes. However, in more severe or prolonged situations they should be utilized together and not as alternatives to professional help.

The future studies could include examining long-term effects, differences among age groups, gender differences, different frequencies and durations of Yoga practice, and effectiveness of the Yoga–Mindfulness combined intervention. More standardized research designs and objective and self-reported measures, could be used to further clarify the greater benefits of each approach for whom and how. Hence, Yoga and Mindfulness have both proven useful and complementary to develop sustainable stress reduction and holistic health regimens.

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