

Effectiveness of heartfulness meditation on cognitive and autonomic functions in women with premenstrual syndrome



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ABSTRACT

Background: Heartfulness meditation is heart-based meditation that helps to balance the mental status. The relaxation offered by meditation is so valuable as it not only improves quality but also improves the quantity of life. However, there is a requirement for the long-term practice of these meditations to receive their effects. The relaxation offered by meditation is very promising that it causes improvement in cognitive functions and sleep patterns. **Aims and Objectives:** The present study was undertaken to observe the effectiveness of heartfulness meditation on cognitive and autonomic functions in women with premenstrual syndrome (PMS). **Materials and Methods:** The present study was an experimental study. A total of forty females with PMS were part of the study. After recording the baseline values in the pre-menstrual period, the participants were trained in heartfulness meditation for weekdays by an expert. Later, they were asked to practice the heartfulness meditation daily for half an hour for 8 weeks at the meditation center of the college. After 8 weeks of practice of the heartfulness meditation, post-intervention values were recorded. Cognitive parameters were assessed using the spatial and verbal memory tests. Blood pressure and pulse rate were assessed using a diamond digital sphygmomanometer. **Results:** There was a significant improvement in spatial memory, and verbal memory scores followed by meditation. There was a significant decrease in systolic and diastolic blood pressure and pulse rate followed by the intervention. **Conclusion:** The study results in support earlier studies as there was a significant improvement in the cognitive scores and a decrease in the autonomic parameters in the participants followed by the practice of the heartfulness meditation. Further detailed studies are recommended to support the incorporation of heartfulness meditation into the routine day lifestyle.

Key words: Heartfulness meditation; Stress; Anxiety; Cognition; Autonomic parameters

INTRODUCTION

Premenstrual syndrome (PMS) is the most common problem faced by females during their reproductive age.¹ The symptoms of the PMS may be mild to severe. The exact cause for the PMS is not clear but it was thought that stress factor plays a key role in increasing the symptoms of PMS.² There is no treatment available for the same except for some home remedies and pharmacological therapies.³ However, it is known that pharmacological

therapies are associated with side effects.^{4,5} Hence, there is a need for alternative therapies with fewer side effects. It was well known that meditation is an effective tool in the management of stress and pain. One such meditation is heartfulness meditation.⁶ Heartfulness meditation is heart-based meditation that helps to balance the mental status.⁷ The relaxation offered by meditation is so valuable as it not only improves quality but also improves the quantity of life.⁸ However, there is a requirement for the long-term practice of these meditations to receive their effects. The

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relaxation offered by meditation is very promising that it causes improvement in cognitive functions and sleep patterns. Although it was known that meditation is quite effective in the management of PMS, the studies related to this field are sparse. Hence, the present study was undertaken to observe the effectiveness of mindfulness meditation on cognitive and autonomic functions in women with PMS.

Aims and objectives

The present study was undertaken to observe the effectiveness of mindfulness meditation on cognitive and autonomic functions in women with PMS.

MATERIALS AND METHODS

The present study was an experimental study. A total of forty females with the PMS were part of the study and they acted as self-controls. The baseline values were recorded in the pre-menstrual period, and then, the participants were trained in mindfulness meditation for weekdays by an expert. Then, they were asked to practice the mindfulness meditation daily for half an hour for 8 weeks at the meditation center of the college. After 8 weeks of practice of the mindfulness meditation, post-intervention values were recorded. The study was conducted under the supervision of a female physician. A total of forty females within the age group of 18–26 years were selected for the study. Those who have regular menstrual cycles and the PMS and are willing to participate in the study and not using any alternative therapies or meditations were selected for the study. Those practicing other alternative therapies and with severe complications were excluded from the study.

Heartfulness meditation

All the participants were given training on heartfulness meditation for a weekday under the supervision of an expert trainer. The meditation comprises four phases. Phase one comprises creating the environment, phase two comprises relaxation, phase three is meditation, and phase four is documentation. Then, they were asked to practice the heartfulness meditation daily for half an hour for 8 weeks at the meditation center of the college. After 8 weeks of practice of the heartfulness meditation, post-intervention values were recorded.⁸

Assessment of cognitive parameters

Cognitive parameters were assessed using the spatial and verbal memory test. This test consists of showing the participants 10 slides of pictures and numbers accordingly for 1 min time. After that, 1 min is rest time where the participants will be kept busy solving some mathematical problem. After 1 min of rest, the participants were asked

to recall the pictures and numbers shown earlier. Every correct answer will be given a score of one. The total score represents the spatial and verbal memory of the participants.⁹

Assessment of the autonomic parameters

Blood pressure and pulse rate were assessed using a diamond digital sphygmomanometer. The recording was done from the right hand of the participants.

Ethical considerations

The study protocol was approved by the ethical committee of the institute (EC 12-39 dated March 06, 2017). All the study procedures were as per the guidelines of the ICMR. Confidentiality of the data was maintained.

Statistical analysis

Data were analyzed using SPSS 20.0 version. A student t-test was applied to observe the significance of the difference. A probability value of <0.05 was considered as statistically significant.

RESULTS

Demographic data were presented in Table 1. There was a significant improvement in the spatial and verbal memory scores followed by meditation (Table 2). There was a significant decrease in systolic, diastolic pressure blood pressure, and pulse rate followed by the intervention (Table 3).

DISCUSSION

Heartfulness meditation is a meditation not only offers complete relaxation but also improves the quality of life.¹⁰ Earlier studies reported multiple benefits of heartfulness meditation.^{11,12} Daaji was the key person who preached the heartfulness meditation and its methods of practice and its benefits to the whole world. Although meditation is easy to

Table 1: Demographic data of the participants

Parameter	Mean±SEM
Age (years)	22±0.47
Height (cm)	154±5.69
Weight (kg)	52±2.85

Data were expressed as mean and SEM

Table 2: Cognitive parameters before and after the meditation

Parameter	Before meditation	After 8 weeks of meditation	P-value
Spatial memory	5±0.32	7±0.47	0.0008***
Verbal memory	5±0.16	8±0.32	<0.0001***

Data were expressed as mean and SEM. ***P<0.001 is significant

Table 3: Autonomic parameters before and after the meditation

Parameter	Before meditation	After 8 weeks of meditation	P-value
Systolic blood pressure (mmHg)	130±2.21	118±1.90	<0.0001***
Diastolic blood pressure (mmHg)	84±1.90	76±0.95	0.0003
Pulse rate (beats/min)	92±1.26	82±1.26	<0.0001***

Data were expressed as mean and SEM. ***P<0.001 is significant

practice, long-term practice is a must to obtain enormous relaxation. It is a passive meditation technique.¹⁵ There was a significant improvement in the spatial and verbal memory scores followed by the meditation. There was a significant decrease in systolic and diastolic blood pressure and pulse rate followed by the intervention. Earlier studies reported that there is a drastic improvement in the cognitive functions of the participants who practice meditation on regular basis.¹⁴ A positive modulation was observed in the EEG waves followed by the practice of heartfulness meditation.¹⁵ There is an increase in the alpha and delta activities followed by the heartfulness meditation.¹⁵ Further long-term practice of meditation causes sympathovagal balance in the individuals so that it regulates their autonomic functions more precisely.^{16,17} All of the physiological parameters such as pulse rate, blood pressure, and heart rate variability were perfectly controlled in the long-term practitioners.¹⁸ Heartfulness meditation increases calmness and increases tolerance to anger and stress.¹⁹ Another study reported that the autonomic parameters were well controlled followed by the meditation.²⁰ It also improved the empathy of college students.¹² Earlier studies concluded that there was a significant improvement in the relaxation effects in all the age groups of the participants.²⁰ The present study agrees with the earlier studies as we have observed significant improvement in cognitive functions as well as autonomic functions. The study recommends including heartfulness meditation in the routine day lifestyle.

Limitations of the study

The study sample size is small. Hence, the results may not be generalized.

CONCLUSION

The study results in support earlier studies as there was a significant improvement in the cognitive scores and a decrease in the autonomic parameters in the participants followed by the practice of the heartfulness meditation. Further detailed studies are recommended to support the incorporation of heartfulness meditation into the routine day lifestyle.

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