

# Beneficial effects of heart fullness meditation on depression, anxiety, stress and cognition in school children of rural area of Telangana

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## ABSTRACT

Meditation is known to be a conscious mental process tends to induce certain integrated physiological changes further leading to the relaxation of mind and body. Mental stress, anxiety, depression are the common silent sufferings in the instrumental world faced today not only in adults but also in school going children. In the present scenario meditation is used as a clinical tool in various areas of mental and physical health improvisations and also as a curator for the emotional and disease sufferings. In this study we made an attempt to know the effects of meditation on depression, anxiety and stress levels before and after meditation and to also study the cognitive functions before and after meditation. The study was conducted on 160 apparently healthy participants, male (n=80) and female (n=80) studying class 6<sup>th</sup> to class 10<sup>th</sup> who were not undergoing any medical treatment. The students were randomly distributed into four groups, control male (n=40), control female (n=40) group, meditation male (n=40), meditation female (n=40) groups. The students were allowed to practice meditation in sitting posture, under the supervision of the expert at 6:30 am in the morning for 35 minutes for a period of 90 days. Subjects were analyzed based on the data before and after therapy. Depression, anxiety, and stress levels were assessed by DASS 42 and perceived stress scale. Spatial and verbal memory test was used to assess cognition. We found a profound decrease in the levels of depression, anxiety and stress in all the subjects' pre- meditation and post- meditation with and significant improvement in spatial and verbal memory. Further studies based on biochemical parameters may show more accurate and explorative results. Further one can also study the effect of meditation on other various parameters of the body and further experimenting with the variations noted with different types of meditation correlating its effects on health could be promising.

**KEY WORDS:** heart fullness, meditation, depression, anxiety, stress, cognition.

## 1. INTRODUCTION

Meditation is known to be a conscious mental process tends to induce certain integrated physiological changes further leading to the relaxation of mind and body. In ancient period meditation was the tool for relaxation, discipline and for mental health too. But later it was thought to be just a religious practice. The present day awareness and importance of yoga and meditation had dragged the interest of many researches and scientists to know the beneficial effects of meditation on health. Mental stress, anxiety, depression are the common silent sufferings in the instrumental world faced not only in adults but also in school going children. Changing life style, lack of communication, mechanical living and many such reasons are leading to mental and physical stress and may have its impact on memory too. Indian Puranas (ancient riting) had elaborated the importance of meditation and emphasized that meditation increases positive emotions, compassion, and immune function, ability to focus and control emotions. It helps in decreasing anxiety, stress, pain, loneliness and depression. Mindfulness is the concern and a tertiary prevention palliative treatment for stress, anxiety, depression and pain (Boyle and Levin, 2008). Mindfulness meditation has a merit as an independent intervention to treat the nonclinical symptoms of emotional and cognitive hindrances (Ospina, 2009). The present study was aimed to provide preliminary evidence for beneficial effects of heartfulness meditation. To assess depression, anxiety and stress levels before and after meditation and to assess cognitive functions before and after meditation.

## 2. MATERIALS AND METHODS

Our study was a cross sectional, experimental and qualitative study. It was conducted on 160 male (n=80) and female (n=80) healthy school going kids studying class 6<sup>th</sup> to class 10<sup>th</sup>. The participants were randomly selected with their consent approval form, institutional ethical committee and we ensured that no participant was under any medical treatment. Further the subjects were randomly sub-grouped into four groups. (i) Control male (n=40), (ii) control female (n=40) group, (iii) meditation male (n=40) and (iv) Meditation female (n=40) groups. We used a self-administrated questionnaire as a means of assessing the levels of depression, anxiety and stress. Clinically diagnosed

severe depression subjects were excluded from the study. The subjects with willful participation were allowed for the practice of meditation and after recording baseline values from all the groups. The students in meditation groups were trained for meditation by the expert in mindfulness meditation for three days. From fourth day students started practicing by their own under the supervision of the expert at 6:30 am in the morning for 35 minutes for 90 days. Meditation was performed in sitting posture and accommodated in the same place every day to create conducive atmosphere, relaxation and immediate drive of concentration to meditate. Post values were collected after 90 days. Depression, anxiety, and stress levels were assessed by DASS 42 and perceived stress scale. Spatial and verbal memory test was used to assess cognition. Data was analyzed by SPSS 20.0. Student t test was used to compare the significance of difference. P value less than 0.05 was considered as significant.

### 3. RESULTS

We compared the values of before and after meditation in all the four sub-groups. Our study showed significant effects of meditation on depression ( $p= 0.0006^{***}$ ), anxiety ( $0.0254^*$ ), stress ( $p= 0.0259^*$ ), spatial memory ( $p= 0.0018^{**}$ ) and verbal memory ( $p= <0.0001^{***}$ ) in male meditation group (Table.1) when compared with control male group shown in table.2.

The effects of meditation in female group showed much better improvement in the scores when compared to the male meditation group. Wherein the female meditation group showed a profound decrease in the levels of depression, anxiety, stress and improved cognitive abilities (spatial and verbal memory) with ( $p= <0.0001^{***}$ ).

### DISCUSSION

Meditation is not concentration, but it helps to develop concentration. It's a technique to turn one's attention towards the heart and experience the inner peace (Fredrickson, 2008). Meditation is now being believed to be a tool to increase the energy levels, work productivity, better emotional control and anger management. A study conducted by Schreiner (2008), on various levels of depression, anxiety and stress had stated a notable improvement in all the subjects after 10 weeks of mindfulness meditation. Our study also showed a profound decrease in the levels of depression, anxiety and stress in all the students who were under the practice of meditation. We also noticed a significant improvement in their cognitive functions too. In this context we noticed that the improvement was more in female meditation group when compared to the male meditation group. This may include various reasons like time to settle down and concentrate, relaxation and their attention could be wavered. Due to certain limitations in the time period we concluded the study within 90days. This period was enough to observe the significant positive improvement in all the subjects with practice of meditation. With this information we assume that the effects of meditation could be more beneficial if the time period was prolonged. Meditation is the simplest, cost effective and safe home based method to improvise the physical and mental status of an individual. By increasing the awareness about meditation and emphasizing the importance of meditation in our daily routine may help us to tackle issues of social stigma and also may act as a means to reaching out to such individuals. Hence we suggest that regular practice of meditation for both adults and children, either early morning or after dawn may release the stress busters and may also improve the cognitive skills in every living being.

**Table.1. Parameters before and after the meditation in meditation male group**

Parameter	Before	Meditation (n=40)	After	Meditation (n=40)	P Value
Depression		15.50±4.14		9.30±2.31	0.0006***
Anxiety		10.86±1.95		7.29±3.15	0.0254*
Stress		17.00±4.60		10.50±3.99	0.0259*
Spatial Memory		6.86±1.77		8.42±1.91	0.0018**
Verbal memory		4.23±1.48		6.52±1.67	<0.0001***

**Table.2. Parameters before and after the meditation in control male group**

Parameter	Before	Meditation(n=40)	After	Meditation (n=40)	P Value
Depression		13.83±5.17		14.44±4.26	0.566
Anxiety		11.26±2.21		12.04±1.72	0.0821
Stress		16.55±2.71		16.82±2.23	0.6279
Spatial Memory		6.15±2.10		6.94±1.67	0.0663
Verbal memory		3.95±2.13		4.62±1.85	0.1371

**Table.3. Parameters before and after the meditation in meditation female group**

Parameter	Before Meditation(n=40)	After Meditation (n=40)	P Value
Depression	17.17±2.35	11.23±2.87	<0.0001***
Anxiety	11.55±3.17	8.26±3.48	<0.0001***
Stress	17.82±2.66	7.49±2.11	<0.0001***
Spatial Memory	5.61±1.28	7.72±1.79	<0.0001***
Verbal memory	5.22±1.51	8.71±1.16	<0.0001***

**Table.4. Parameters before and after the meditation in control female group**

Parameter	Before Meditation(n=40)	After Meditation(n=40)	P Value
Depression	16.56±3.1	16.42±2.73	0.8308
Anxiety	12.24±2.47	12.59±2.88	0.5613
Stress	18.11±1.67	17.49±1.41	0.0769
Spatial Memory	6.26±1.55	6.71±1.21	0.1518
Verbal memory	4.79±1.83	4.91±2.21	0.7921

#### 4. CONCLUSION

Our study provides preliminary evidence for the beneficial effects of heart fullness meditation. We recommend further detailed studies, with higher sample size and involving many centers to recommend the practice of heart fullness meditation in routine life style.

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