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RESEARCH ARTICLE

ANAPANASATI MEDITATION TECHNIQUE FOR EFFECTIVE REDUCTION IN STRESS, ANXIETY & DEPRESSION: AN EXPERIMENTAL STUDY

Dr. Ashish Ubhale and Dr. Swati Raje

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Abstract

Stress is an integral part of human life and it can increase depression and anxiety which can hamper an individual's personal life, relationship or work satisfaction. To counter the issue of stress, anxiety and depression there are various pharmacological and nonpharmacological coping methods. As an intervention, the participants were taught Anapanasati meditation (brief mindfulness meditation) for 10 minutes daily for duration of 4 weeks (5 days a week). Self rating Perceived stress scale (PSS) and DASS-42 were administered before the beginning and at the end of the course. Analysis showed that the number of people who did not have depression, anxiety or stress increased significantly after the four weeks session of Anapana meditation. We conclude that even a very short span of 10 minutes of daily anapana meditation session can significantly and positively lower the intensity of depression, anxiety and stress.

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Introduction:-

According to World Health Organization (WHO), depression is the most common mental disorder in the world amongst the physical and mental illnesses (1). It is associated with low mood, loss of interest, worthlessness, disturbance in biofunctions, decreased concentration in work and decreased energy. Anxiety is another most common mental illness which is associated with fear and uneasiness with palpitations and restlessness. In general population, anxiety and depression have a prevalence of around 10 -20% (1-4).

Stress is an integral part of human life and is perhaps one of the most common issues in modern societies (1, 5). Stress can increase depression and anxiety, impairing individual relationships and may reduce job satisfaction and even lead to suicidal ideations (6).

It was found that the stress, anxiety and depression were increased during the pandemic of Covid-19 in health care workers. Of the 29 studies, 21 papers reported the prevalence of depression, 23 papers reported prevalence of anxiety and 9 have reported prevalence of stress. The prevalence of depression was 24.3%, anxiety was 25.8%, and stress was 45% amongst the hospital staff caring for Covid-19 patients (6).

Another online survey was conducted in April 2020 amongst health care professionals who were involved with Covid-19 patients and suspects. The researchers found the prevalence for high level stress was 3.7%, depressive symptoms requiring treatment and anxiety symptoms requiring further evaluation were 11.4% and 17.7%

respectively (7). The health related consequences of stress in hospital workers and associated costs of absenteeism and high turnover have increased the need for programs targeting stress in this population (8).

To counter the above rising issue of stress, anxiety and depression, there are various ways of coping-pharmacological as well as non-pharmacological. Pharmacological methods of reduction of above stated problems includes antianxiety and antidepressant medications. The non-pharmacological coping methods include psychotherapy, meditation, yoga etc.

As a clinical intervention, Mindfulness meditation has been demonstrated to produce beneficial effects on mental and physical states, especially in terms of emotional improvement and recovery from affect related psychopathology (9-12). Mindfulness meditation has been proven to promote wellbeing and emotional balance (13, 14). Instead of attempting to change emotional experiences, meditation practice trains the individual to notice and observe emotions simply as they are and to accept emotional reactions as they arise (15). Mindfulness meditation improves pain and depression, symptoms and quality of life which was concluded by Laura Hilton and Suzanne Hempel et al in 2017 (16).

Mindfulness meditation is a form of self-regulatory exercise of mind and body (17). The mindfulness meditation has its roots in the Vipassana meditation (Insight meditation). Anapanasati (Brief mindfulness meditation) is the primary step of the Vipassana meditation. Vipassana Meditation was rediscovered by Gautama, the Buddha and is taught in teacher student fashion, which was reintroduced in India in early 70s by Mr. S.N. Goenka.

Anapanasati meditation is one of the mindfulness techniques which is not much studied in short term. Keeping this in mind a single arm prospective cohort study was planned to compare effects on the intensities and grades of depression, anxiety and stress of the healthcare workers in a tertiary care center before and after a short term Anapanasati meditation session.

Materials and Methods:-

Health care workers in the Physiotherapy College in rural tertiary care hospital were enrolled after their consent for the study. Anapana meditation sessions were carried out in a specified hall daily for 10 minutes for 4 weeks (5 days a week) under observation of a trained instructor. Stress, anxiety and depression levels were measured before the course and at the end of 4 weeks with Perceived stress scale (PSS)(18) and Depression, Anxiety, stress scale (DASS-42)(19). Study participants were given a demonstration about the Anapana technique prior to the beginning of the course and explained about the procedure. The study was approved by the institutional ethics committee. A written and informed consent was obtained from the participants.

The participants were asked to sit on the floor with folded legs with their eyes closed. The participants who had difficulty sitting on floor were asked to sit on chair or stool. They were asked to concentrate on the inhalation and exhalation of their breath and follow a set of instructions given in the background. This session was followed for 10 minutes daily under observation at a specified time and place in group.

Results:-

Total 25 employees of a tertiary care hospital enrolled and completed the 4 weeks course of Anapana meditation sessions.

It was observed that the scores of depression, anxiety and stress ranged between 0-26, 0-25 and 3-34 before the session. Table I shows number of people in different categories of depression, anxiety and stress as per DASS-42 scale before and after the session.

Table 1:- Distribution of population with respect to categories of depression, anxiety and stress before and after Anapana session.

Category	Before			After		
	Depression	Anxiety	Stress	Depression	Anxiety	Stress
Normal	14(56%)	14(56%)	12(48%)	20(80%)	20(80%)	20(80%)
Mild	7(28%)	3(12%)	2(8%)	2(8%)	4(16%)	3(12%)
Moderate	1(4%)	3(12%)	7	3(12%)	0	2(8%)

Severe	3(12%)	4(16%)	3(12%)	0	1(4%)	0
Extremely Severe	0	1(4%)	1(4%)	0	0	0
Total	25	25	25	25	25	25

Majority of the participants did not have stress anxiety or depression before the session. However there were 3 (12%) cases of severe depression and stress and 4(16%) cases of severe anxiety. One case of extremely severe anxiety and extremely severe stress each was also noted before the session.

It was observed that the number of people who did not have depression, anxiety or stress increased significantly after the four weeks session of Anapana. The difference was statistically significant for stress where the percentage of people who did not have stress increased from 48% to 80% ($Z= 2.5, p= 0.0175$).

Similarly there was only 1 case severe anxiety as against 4 cases before the session and no case of severe depression, anxiety and stress after the session.

Further analysis was done to see reduction in intensity of depression, anxiety and stress in each individual (table 2)

Table 2:- Reduction in scores of depression, anxiety and stress.

	Reduction in depression	Reduction in anxiety	Reduction in stress
Mean± sd	40.43 ± 23.60	42.82 ± 20.85	30.85 ± 22.04
Z	2.484	3.677	4.034
p	0.013	0.00023	0.000048

Post test showed that the score of depression reduced from nil to 84.6% with mean reduction was 40.4% with sd of 23.59%. Similarly reduction in anxiety was from 0% to 100% with mean reduction of 42.8% with sd of 20.8% and reduction in stress was from 0 to 97% with mean reduction of 33.85% with sd of 30%. Wilcoxon signed rank test for paired data showed that there was significant reduction after the session.

Discussion:-

Meditation has been developed in eastern cultures and has a documented history of several thousand years and refined with specific intention for lay persons to regularly attain a state of mental peace and tranquility (20). Authentic meditation enables one to focus on the present moment rather than dwell on the unchangeable past or undetermined future. It is this state of equipoise that is said to be therapeutic both psychologically and physically, which distinguishes meditation from simple relaxation, physical rest or sleep (20).

Psychological stress is associated with activation of the sympathetic component of the autonomic nervous system, which in its extreme, cause the fight or flight response. Meditation and any form of relaxation acts to reduce the sympathetic activation by reducing the release of catecholamines and other stress hormones such as cortisol and promoting increased parasympathetic activity which in turn slows the heart rate and improves the flow of blood to the viscera and away from periphery (20). Meditation is seen by a number of researchers as potentially one of the most effective forms of stress reduction (21).

It was seen that providing hospital staff with multiple techniques addressing commonly encountered work stressors impacts positively on the health and wellbeing and significantly reduced stress in the hospital staff (8).

Pradhan and Kumar (2016) in their study “Effect of Vipassana Meditation on mindfulness and life satisfaction of employees” reported importance of workplace spirituality. It was confirmed that regular practice strengthens effectiveness of meditation. This indicates that Vipassana meditation is an effective intervention to enhance mindfulness and fosters life satisfaction in employees (22). Similarly, Flook et al.(2003) found in their study which was conducted on school teachers that mindfulness based stress reduction course significantly reduced the psychological symptoms and burnout in school teachers (23). Amy Lam (2014) in her PhD dissertation study on the effects of 5 minute mindfulness meditational practice on mental health care professionals found significant decrease in their stress levels with improved mindfulness levels (24). In our study we found that after the 4 weeks brief meditation sessions, the number of participants with stress was decreased. Before the sessions began, 48% of the participants showed no stress and at the end of 4 weeks the percentage of normalcy increased to 80%.

In another study 'The effect of mindfulness meditation training on biological acute stress responses in generalized anxiety disorder' done by Hoge et al. (2017) found mindfulness based stress reduction courses were helpful in decreasing symptom severity in diagnosed cases of Generalized Anxiety Disorder (GAD) (11).

Miller et al. (1995) in their 3 year follow up study concluded that an intensive but time limited group stressreduction intervention based on mindfulness meditation can have long term beneficial effects in the treatment of people diagnosed with anxiety disorders (25).

Similarly, Wu et al. (2021) in their study conducted on students with suicidal ideations who were allocated to Brief Mindfulness Meditation (BMM) for a period of 1 month showed significant decrease in suicidal ideations and stress. They also implicated brief mindfulness meditation as an effective suicide prevention strategy (26).

Sivaramappa et al. (2019) in their two different studies found that regular Anapanasati meditation practice for six months reduced anxiety and depression levels in their subjects (27, 28). Similarly, in our study we found that the number of people suffering with severe depression and anxiety decreased drastically.

Conclusion:-

Present study proves that Anapanasati meditation session for at least 10 minutes daily for a period of 4 weeks was effective significantly and positively to decrease the intensity of depression, anxiety and stress.

Implications

Anapanasati meditation is a very brief mindfulness meditation technique which can be practiced by everybody, where no special sitting place or arrangements are required. It can be very useful in decreasing stress, anxiety & depression in doctors and which will overall decrease the burden on the institute.

Need for further study

This study was only limited to medical professionals. It can be extended to people working in other fields with large sample size.

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