

Osho Dynamic Meditation's Effect on Serum Cortisol Level

ANUJ BANSAL¹, ASHISH MITTAL², VIKAS SETH³

ABSTRACT

Introduction: Dynamic meditation is one of the most popular active meditation, introduced by an Indian mystic Osho in 1970. This one hour meditation consists of five stages: Deep fast chaotic breathing, catharsis, using a mantra "Hoo", silence, and dancing. A previous study observed that Osho dynamic meditation causes decrease in several psychopathological variables such as aggressive behaviour, anxiety and depression. However, it is not objectively established that the dynamic meditation has an anti-stress effect.

Aim: To find out the effect of Osho dynamic meditation on the serum cortisol levels (cortisol is an indicator of stress) and therefore to observe whether it has any anti-stress effect.

Materials and Methods: An experimental study was planned doing the dynamic meditation empty stomach in morning at 6 to 7 am every day for 21 days from 1st March 2015 to 21st March 2015 at Lucknow. Twenty healthy volunteers between 20 to 50 years (14 males and 6 females) participated in the study. Serum cortisol level was estimated from the blood samples collected in the morning one day prior (baseline) and post-meditation on

the 21st day of the study. The difference between mean cortisol levels of the baseline and post-meditation groups were tested for significance by applying the paired t-test.

Results: Sixteen volunteers out of the 20 completed the study while four dropped out due to their health and personal reasons. The serum cortisol levels were decreased in all the 16 participants on 21st day as compared to the baseline levels and the decline in the mean cortisol level was highly significant ($p < 0.001$).

Conclusion: The results of the study showed a significant reduction in plasma cortisol levels when the participants were tested after 21 days of meditation; it can be concluded that the Osho dynamic meditation produces anti-stress effects. The mechanism of action could primarily be attributed to the release of repressed emotions and psychological inhibitions and traumas. Thus, dynamic meditation could be recommended for the amelioration of stress and stress related physical and mental disorders. More clinical studies should be done on dynamic meditation to prove its efficacy and become an approved therapy in hospitals.

Keywords: Catharsis, Meditative therapy, Psychotherapy, Relaxation, Stress

INTRODUCTION

About Osho: Osho (11 December 1931 – 19 January 1990) is known for his revolutionary meditation techniques that are designed to first release the accumulated stresses of body and mind, so that it is then easier to experience inner silence and thought-free relaxation in daily life [1]. One such meditation is the dynamic meditation which he developed in 1970, which has become one of the most popular meditations since then. Osho's biography is available at several sources on internet [2].

Osho's books are published by over 200 publishers worldwide and in over 60 languages. These books are not written by him but are transcribed from audio and video recordings of his spontaneous talks to international audiences. Osho has been described by the Sunday Times in London as one of the "1000 Makers of the 20th Century" and Sunday Mid-Day (India) has selected Osho as one of ten people – along with Gandhi, Nehru and Buddha – who have changed the destiny of India. Osho's vision is to create a new man that he has referred to as "Zorba the Buddha", capable both of enjoying the earthy pleasures of a Zorba the Greek and the silent serenity of Gautama the Buddha [1].

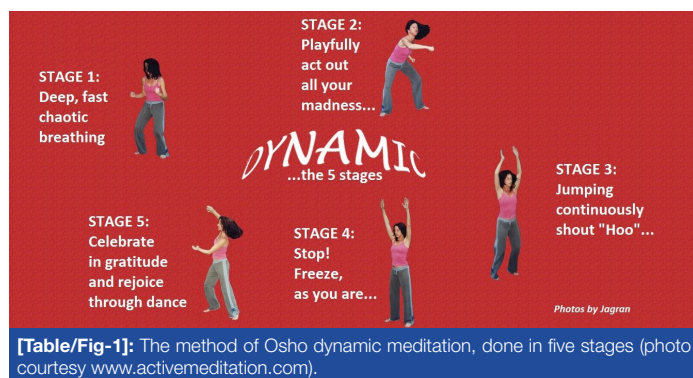
About meditation: J. Krishnamurti says meditation is a state of "choiceless awareness". Perez-de Albeniz and Holmes have described meditation as relaxation, altered states of awareness, suspension of logical thought and maintenance of self-observing attitude [3].

In the East, Buddhist meditation such as Vipassana, Zen, Chinese Qi Gong and Yoga, have long been practiced [4], whereas

meditation practices in the West generally include mind-body techniques such as relaxation response, mindfulness meditation, and paced respiration. Mindfulness meditation attempts to create greater awareness and insight in the practitioner [5]. Many techniques are surprisingly very similar irrespective of the tradition such as sitting in a comfortable position with eyes closed repeating a word or short phrase silently to one's self awareness of one's breathing, relaxing one's muscles from foot to head, accepting all thoughts, feelings, and memories without judgment, and being in the present moment [6].

According to Osho, the essence of meditation is just witnessing the body, mind and feelings without judgment [7]. He further adds, the modern man, of eastern or western origin has changed so much that new methods are needed. Chaotic methods are required because the modern mind is restless and chaotic. One of these technique is Osho Dynamic Meditation.

About dynamic meditation: Osho Dynamic Meditation is a 60 minute formatted meditation technique of 5 stages, first of which is fast, deep and chaotic breathing for 10 minutes, followed by 10 minutes of catharsis, 10 minutes of jumping and shouting a mantra "hoo", 15 minutes of silence, and finally 15 minutes of celebration through dance [8] [Table/Fig-1]. Each stage is demarked by music which has been specifically made for this meditation. However, it is an individual experience so one should remain oblivious of others and keep the eyes closed, preferably using a blindfold [9]. Osho says while doing the meditation, remain a witness, observe what is happening as if you are just a spectator, as if the whole thing is happening to somebody else [10].



[Table/Fig-1]: The method of Osho dynamic meditation, done in five stages (photo courtesy www.activemeditation.com).

The dynamic meditation is Osho's most popular active meditation and is best done at sunrise. It can be done in a group or alone, but the energy will be more powerful if it is done with others [11]. *Dynamic meditation* as a term is a contradiction. *Dynamic* means effort, much activity and meditation means silence, no effort, no activity. In a way it is a dialectical meditation. The process allows meditation to emerge through active movement. In this meditation chaos is expressed (dynamic movement/activity) prior to feeling relaxed (meditation/inactivity). Once the junk is thrown out, meditation is easy.

About serum cortisol level: Under normal circumstances, body maintains or regulates the normal cortisol levels. But under the conditions of more stress, the body secretes more cortisol. Cortisol is frequently referred to as the "stress hormone" because it is also secreted in higher levels during the body's fight or flight response to stress [12]. It is also responsible for several stress-related changes in the body. Studies have been done to find relation between cortisol and metabolic syndrome [13]. The studies also showed that morning cortisol levels are significantly correlated with the symptoms of metabolic syndrome, such as obesity, high blood pressure and a poor lipid profile [14].

Cortisol is released in response to Hypothalamic-Pituitary Adreno cortical axis (HPA) and catecholamines are released by the Sympathetic Adrenal Medullary (SAM) system. These two hormones help to cope with any form of stress. However, a prolonged and continuous stress will interfere these functions and leads to increased risk for physical and mental disorder [15].

It is reported that the patients with metabolic syndrome show hyperactivity of HPA axis that leads to a state of hypercortisolism which may be due to chronic stress, contributing to the development of insulin resistance, Type 2 diabetes, visceral fat and obesity [16]. In conditions involving pain, anxiety, fright or acute tissue damage, many metabolic and endocrine changes occur and among these a rise in the levels of blood cortisol is one of the most important physiological effects [17]. Since animals respond to a stressor by increasing their glucocorticoid or cortisol levels, there has been much interest in measuring these hormones [18]. Serum cortisol levels have been used as an index of stress in a wide range of studies [19] and have been taken as a biochemical stress marker [20].

About researches in meditation: Although meditation has been practiced for centuries, it is only recently that the effects of meditation have been studied more widely within the scientific community. One reason for the difficulty in researching meditation is that there are as many unique descriptions of meditation as there are individuals. Besides these difficulties, there are also challenges in the methodology of research in meditation [21].

Studies have shown that meditation in its differing traditions, approaches, and techniques produces positive benefits such as greater patience, increased comfort with life's uncertainties, a non-judgmental attitude, trust in one's inner nature, and recognition of one's personal responsibilities, which also includes increased physical vigour, happiness, positive thinking, and self-confidence as desirable effects of meditation. Also, a study found positive

benefits of meditation in the counselling work environment. She stated that Buddhist meditations allowed therapists to listen better, be more open and be attentive to clients [4].

However, some studies noted that meditation may have adverse consequences such as decreased motivation, boredom, pain, confusion, and disorientation, depression, judgmental attitude, and addiction to meditation [3]. Moreover, it is reported that there are certain meditations such as Zen and other transcendental meditations, may not be suitable for inexperienced practitioners [22]. One of the ways to determine whether meditation is suitable for an individual is to identify his inherent traits such as, predominance of anxiety traits that induce meditation. A study showed that individuals with lower trait anxiety characteristics are more disposed to meditation with internalized attention in comparison to individuals with higher trait anxiety that are more disposed to relaxation [23]. Hence, a specific form of meditation may be conducive to a specific type of an individual.

Osho, however, claims that dynamic meditation can be done by all individuals [24]. This meditation is developed for the contemporary man who is repressed and carry psychological burden. It is of immense help to unburden the repressions through catharsis, as a first cleansing step followed by relaxation. In this context, Avni Vyas has conducted a research to investigate the effects of a 7-Day Osho Dynamic Meditation. He observed significant decrease in several psychopathological variables such as anxious-depressive syndrome, somatic complaints, aggressive behaviours and depression [25]. According to Osho, dynamic meditation is especially effective in the amelioration of insomnia [26], depression, transforming anger to compassion [27] and minimization of violence [28].

To find out whether Osho Dynamic Meditation reduces stress in people, this study was planned to observe the effects of 21 day participation in Osho Dynamic Meditation with serum cortisol level (stress marker) taken prior to the onset of the study (baseline) and at the end of the 21 days of meditation.

MATERIALS AND METHODS

An experimental study was planned, doing the dynamic meditation empty stomach in the morning 6 to 7 am every day for 21 days at a meditation centre, centrally located in Lucknow. Study time period was for 21 days from 1st March, 2015 to 21st March, 2015. This meditation has been recommended to be done for 21 days for optimum effect.

Participants were those who volunteered themselves after understanding the meditation and the study. Twenty healthy volunteers (14 male and 6 female), all from Lucknow, participated in the study. The inclusion criteria were the age between 20 to 50 years, being physically fit (as the process involves physical activity), not undergoing any medical treatment and being able to participate for 21 consecutive days, each day from 6:00 – 7:00 AM. The exclusion criteria were any medical conditions and complications including cardiac disorders, diabetes, hypertension, pregnancy and psychiatric problems and participants with any significant drug intake and the ones who were already practicing meditation or relaxation exercises.

The consent was taken from each of the participant. The participants were explained the method of the meditation – first stage of fast, deep and chaotic breathing; second stage of cathartic expression of whatsoever comes up like laughter, pain, tears, anger, etc., third stage of jumping up and shouting the word "hoo", next stage of simply freezing on the spot in silence, and finally celebrating with dance [8]. The correct way of doing each of the five stage was demonstrated also and the participants were encouraged to ask any questions pertaining to that.

Serum cortisol level was estimated from the blood samples collected in the morning one day prior (baseline) and on the 21st day of the study (post meditation). Differences between the

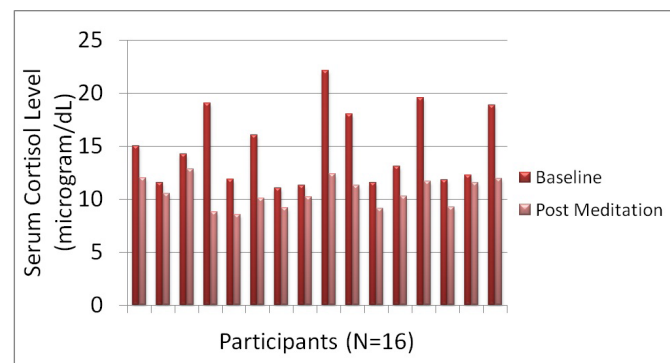
means of baseline and the post meditation groups were tested for significance by applying the paired t-test.

RESULTS

Sixteen volunteers out of the 20 completed the study. There were four drop outs- two because of cough and cold, one had to go out of station and one left because of personal reasons. The serum cortisol levels were decreased in the blood samples of all the 16 volunteers on 21st day as compared to the baseline levels, i.e., a day before starting the dynamic meditation [Table/Fig-2,3].

S.N.	Serum Cortisol Level (microgram/dL) One day before starting the dynamic meditation (Baseline)	Serum Cortisol Level (microgram/dL) After 21 days of the dynamic meditation
1.	14.99	12.01
2.	11.52	10.49
3.	14.27	12.8
4.	19.05	8.76
5.	11.89	8.5
6.	16.06	10.08
7.	11.05	9.16
8.	11.26	10.21
9.	22.1	12.4
10.	18.05	11.28
11.	11.56	9.1
12.	13.1	10.29
13.	19.58	11.68
14.	11.78	9.26
15.	12.28	11.57
16	18.86	11.91

[Table/Fig-2]: Serum cortisol levels: One day before starting the dynamic meditation (Baseline) and after 21 days of the dynamic meditation.



[Table/Fig-3]: Baseline (1st day before the start of dynamic meditation) and Post meditation (after 21 days of the dynamic meditation) serum cortisol levels of the participants (N=16).

Group	Baseline Group	Post-Meditation Group
Mean	14.8375000	10.5937500
SD	3.6314200	1.3856100
SEM	0.9078550	0.3464025
N	16	16

[Table/Fig-4]: The mean serum cortisol level, standard deviation (SD), standard error of the mean (SEM) and the number of participants (N) in the baseline group and the post meditation group.

In the baseline group (a day before the start of dynamic meditation), the mean serum cortisol level was 14.8375 and the standard deviation was 3.63142 with a standard error of 0.9079 while in the post-meditation group (after 21 days of the dynamic meditation) the mean serum cortisol level was 10.59375 and the standard deviation was 1.38561 with a standard error of 0.3464 [Table/Fig-4].

Difference between the mean cortisol level of the baseline group and the post meditation group was analysed by the paired t-test and it was found to be highly significant ($p=0.00029$).

DISCUSSION

As the results show significant decline in the mean cortisol level, the study indicates a reduction in the stress of the participants who completed the 21 day practice of Osho dynamic meditation.

The stress buster effect of the dynamic meditation could be attributed to its five stages. The first stage of deep, fast and chaotic breathing causes a state of hyperventilation and hyper-oxygenation and acts as an energy booster. A repressed man or woman cannot take deep breaths. His breath cannot go deep down to his navel as it is shallow. Also, the rhythm of breathing is deeply associated with our thinking pattern. The deep and especially the chaotic breathing breaks the old ingrained pattern of thoughts and surfaces up the pent-up emotions which are allowed to be released easily in the next stage.

The second stage of catharsis appears to be the most important reason behind the anti-stress effects of dynamic meditation as it aims to give a taste of inner silence by releasing the repressed emotions, psychological inhibitions and traumas. It has been reported that the emotional expression like crying (as in the dynamic meditation) helps to reduce stress and is a self-soothing behaviour [29]. Crying influences well-being through the elimination, via tears, of stress hormones (e.g., cortisol) and toxic substances from the blood [30]. In a test of this hypothesis, a study measured the levels of salivary cortisol in women before and after watching an emotional movie. The levels of this stress hormone indeed decreased more in women who reported more intensive crying [31]. Currently, a significant majority of psychotherapists still actively encourage their clients to cry [32]. Osho has included crying as an integral part in one of his meditative therapy group called the "Mystic Rose Therapy" [8].

Catharsis in dynamic meditation not only involves crying but also one is free to express whatever comes from within such as expressing anger by beating the cushions, shouting, jumping and laughing etc. Laughter has also been proved to have a variety of positive effects on health including reduction in stress and stress hormones e.g., cortisol [33].

An important previous study, to investigate the effects of a 7-Day Osho Dynamic Meditation, demonstrated that the dynamic meditation had significant effects for many clinical (personal) and corporate variables (in the work space) [25]. The author observed significant reduction in several clinical variables such as anxious-depressive syndrome, somatic complaints, aggressive behaviours, depression, trait-anger, and an increase in defensive self-enhancement scores. In the corporate variables, there was a significant reduction of emotional exhaustion, role overload, psychological strain, physical strain, and a significant increase in rational/cognitive coping ability. So the study showed that Osho Dynamic Meditation can be used as a psychotherapeutic intervention for a multitude of clinical and corporate issues.

Stress produced by often unpredictable and unavoidable circumstances of daily life is the primary culprit robbing individuals and families of interior peace and well-being. A strong correlation exists between physical illness and stress produced by emotional and psychological problems [6]. A study pointed out that in the United States more than one third of workers describe their jobs as "often" or "always" stressful [34]. Many corporations offer their employees a variety of stress management programs, a component of which is meditation. Meditations are increasingly included in the psychotherapy and management of mental illness and such interventions are now being incorporated in cognitive behaviour therapy [12].

Different types of meditations and yoga have been reported to manage stress, increase coping skills, reduce depression, anxiety, and increase perceived self-efficacy of caregivers for people with dementia [35]. Some workers found the effects of meditation in

lowering stress levels, heart rate, blood pressure and even staving off heart disease, relieving stress related physical conditions such as irritable bowel syndrome, decreasing criminal behaviour in juvenile offenders, helping women overcome eating disorders and enhancing the well-being of cancer treatment patients [6].

LIMITATION

The limitations of the study were that it was performed on normal healthy volunteers and the number of participants was less. The study should also be performed on stressed people such as those having family disturbed relations, work related stress and those having psychological problems. So more studies should be done on specific stress affected groups and involving larger number of people to further substantiate the stress buster effect of dynamic meditation.

CONCLUSION

In the present study, significant reductions in plasma cortisol levels (stress marker) occurred when participants were tested after 21 days of dynamic meditation. This suggests that Osho dynamic meditation produces anti-stress effects.

Accordingly, the dynamic meditation is an appropriate candidate for integrative stress management options and related research. The mechanism of action of this meditation could, at least in part, be attributed to the release of repressed emotions such as crying which has already been documented to reduce the stress and stress hormone cortisol.

Therefore, it can be concluded that a regular practice of dynamic meditation could be recommended as a healing intervention for the amelioration of stress and stress related physical and mental disorders. More clinical studies should be done on dynamic meditation to prove its efficacy and become an approved therapy in hospitals.

ACKNOWLEDGEMENTS

The author wish to thank Dr. Sabya Sachi Sarkar, the managing director of Sarkar diagnostics in Lucknow for extending all help and co-operation in getting the laboratory tests done at the subsidized rates.

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PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Physiology, Rama Medical College and Research Centre, Hapur, Uttar Pradesh, India.
2. Associate Professor, Department of Anaesthesia, TSM Medical College, Lucknow, Uttar Pradesh, India.
3. Professor, Department of Pharmacology, TSM Medical College, Lucknow, Uttar Pradesh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Vikas Seth,
D-2/526, Sector-F, Jankipuram, Lucknow, Uttar Pradesh, India.
E-mail: oshocamp@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Aug 13, 2016**
Date of Peer Review: **Sep 12, 2016**
Date of Acceptance: **Sep 27, 2016**
Date of Publishing: **Nov 01, 2016**