DOI: 10.7860/JCDR/2018/36926.12246

Letter to Editor

Others Section

Correspondence: Osho Dynamic Meditation's Effect on Serum Cortisol Level

HAN SUELMANN

Dear Editor,

Bansal A et al., examined the effect of Osho's dynamic meditation by studying cortisol levels [1]. They found reduced cortisol levels after 21 days of exercise, and conclude that the exercise "produces anti-stress effects" and attributed the effect "primarily" to "the release of repressed emotions and psychological inhibitions and traumas". However, the interpretation of their results is problematic for several reasons.

1. The exact time of day of the cortisol measurements is not clear. Because cortisol levels vary greatly over the course of the day, this precludes the attribution of the reduction in cortisol levels to the exercise. Details regarding the exact timing of measurements would be necessary to attribute any effect on cortisol levels to the meditation.

Furthermore, even if measurements were taken at the same time of day, exercising (and thus rising) early in the morning (starting the meditation at 6 AM) may have shifted the participants' circadian rhythms, placing the measurement at a later point in the circadian cycle. This could account for a considerable difference in cortisol levels, as these tend to decrease during the day [2].

2. Post-test measurements where done after the last (i.e., the 21st) meditation. The elapsed time between meditation and measurement was not specified, but the authors do tell us that the last meditation and the post-meditation measurement were done on the same day. Therefore, there is no way to distinguish between short-term effects (possibly lasting only hours or even shorter) and effects having a more lasting influence. Any observed effect may just as well be the immediate effect of the one exercise just preceding it, as the accumulated effect of three weeks of exercising. For an anti-stress effect to have any potency as "a healing intervention for the amelioration of stress and stress-related physical and mental disorders" (as claimed), it should last long enough to produce these benefits. The study at hand does not show that they do.

3. The meditation consists of five stages. All participants took part in all five stages, so there is no way to distinguish between the effects of different stages. Therefore, the data does not support the attribution of any effect to any specific aspect of the meditation, and the author's statement that such an effect "could primarily be attributed to the release of repressed emotions and psychological inhibitions and traumas" is unwarranted.

4. The relationship between chaotic breathing and breaking "the old ingrained pattern of thoughts" that is proposed in the "Discussion", does not follow from the results. The authors do not present any other support for this claim.

REFERENCES

[1] Bansal A, Mittal A, Seth V. Osho dynamic meditation's effect on serum cortisol level. J Clin Diagn Res. 2017;10(11):05-08.
[2] Weitzman ED, Fukushima D, Nogeire C, Roffwarg H, Gallagher TF, Hellman L. Twenty-four hour pattern of the episodic secretion of cortisol in normal subjects. J Clin Endocr Metab. 1971;33(1):14-22.

PARTICULARS OF CONTRIBUTORS:
1. Department of Life Sciences and Technology, Van Hall Larenstein University of Applied Sciences, Leeuwarden, n/a, Netherlands.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Han Suelmann,
Van Hall Larenstein, Postbus 1528, 8901 BV Leeuwarden, n/a, Netherlands.
E-mail: han.suelmann@hvhl.nl

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **May 21, 2018**
Date of Peer Review: **Jul 05, 2018**
Date of Acceptance: **Jul 09, 2018**
Date of Publishing: **Nov 01, 2018**

AUTHOR RESPONSE

Firstly, I would like to thank for the letter written in response to the article "Osho dynamic meditation's effect on serum cortisol level." published in the Journal of Clinical and Diagnostic Research in 2017.

Response to question 1: Yes, cortisol levels vary greatly over the course of the day. There is a possibility that exercising (and thus rising) early in the morning (starting the meditation at 6 AM) may have shifted the participant's circadian rhythms, placing the measurement at a later point in the circadian cycle. In the present study, serum cortisol level was estimated from the blood samples collected in the morning between 8-9 AM, one-day prior (baseline) and post-meditation on the 21st day of the study. Serum cortisol levels have been used as an index of stress in a wide range of studies and have been taken as a biochemical stress marker [1,2].

Response to question 2: The post-test measurements were done after the last (i.e., the 21st) meditation. The meditation time was 6-7 AM and samples were taken between 8-9 AM (The baseline measurements were taken one day prior to the start of meditations between 8-9 AM). Yes, since the last meditation and the post-meditation measurements were done on the same day, with the present study we can not infer whether the anti-stress effects are the short-term or long term.

Response to question 3: Yes, the dynamic meditation consists of five stages and all participants took part in all five stages, so there is no way to distinguish between the effects of different stages. In the discussion part of the present paper, authors have discussed that the stress buster effect of the dynamic meditation could be attributed to (any or all) of its five stages. However, 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 [3]. Crying influences well-being through the elimination, via tears, of stress hormones (e.g., cortisol) and toxic substances from the blood

[4]. 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 [5].

Response to question 4: "The chaotic breathing breaks the old ingrained pattern of thoughts" is neither claimed nor concluded from the paper but is discussed as a possibility (Accessed from http://www.osho.com/iosho/imeditate). It has been observed that various patterns of breathing are associated with different thoughts and emotions, for instance, diaphragmatic breathing could improve sustained attention, affect, and cortisol levels [6]. Several psychological studies have revealed breathing practice to be an effective non-pharmacological intervention for emotion enhancement [7] including a reduction in anxiety, depression, and stress [8,9]. A one-day breathing exercise was found to relieve the emotional exhaustion and depersonalisation induced by job burnout [10]. A 30-session intervention with a daily duration of five minutes can significantly decrease the anxiety of pregnant women experiencing preterm labour [11]. Moreover, similar effects on anxiety were observed in a three-day intervention study, where breathing practices were performed three times a day [12]. Further evidence from a randomised controlled trial suggested that a seven days intensive yoga course that included various breathing exercises reduced anxiety and depression in patients with chronic low back pain [13]. Supportive evidences have also come from different yoga programs [14-16]. At present, breathing practice is widely applied in clinical treatments for mental conditions, such as post-traumatic stress disorder and other stress-related emotional disorders [17].

REFERENCES

[1] Sheriff MJ, Krebs CJ, Boonstra R. Assessing stress in animal populations: Do fecal and plasma glucocorticoids tell the same story? General and Comparative Endocrinology. 2010;166:614-19.

[2] Jameel MK, Joshi AR, Dawane J, Padwal M, Joshi AR, Pandit VA, Melinkeri RR. Effect of various physical stress models on serum cortisol level in wistar rats. Journal of Clinical and Diagnostic Research. 2014;8(3):181-83.

[3] Gracanin A, Bylsma LM, Vingerhoets AJJM. Is crying a self-soothing behaviour? Front Psychol. 2014;5:502.

[4] Frey WH. Crying: The mystery of tears. 1985. Minneapolis, MN: Winston Press.

[5] Vingerhoets AJJM, Kirschbaum C. Crying, mood and cortisol. Paper Presented at the annual meeting of the American psychosomatic society, Santa Fe, NM 1997 (abstracted in Psychosomatic medicine, 59 92-93).

[6] Ma X, Yue ZQ, Gong ZQ, Zhang H, Duan NY, Shi YT, et al. The effect of diaphragmatic breathing on attention, negative affect and stress in healthy adults. Front Psychol. 2017;8:874. (PMCID: PMC5455070 PMID: 28626434)

[7] Stromberg SE, Russell ME, Carlson CR. Diaphragmatic breathing and its effectiveness for the management of motion sickness. Aerosp Med Hum Perform. 2015;86(5):452-57.

[8] Brown RP, Gerbarg PL. Sudarshan Kriya Yogic breathing in the treatment of stress, anxiety, and depression. Part II-clinical applications and guidelines. J Altern Complement Med. 2005;11(4):711-17.

[9] Dhawan A, Chopra A, Jain R, Yadav D, Vedamurthachar. Effectiveness of yogic breathing intervention on quality of life of opioid dependent users. Int J Yoga. 2015;8(2):144-47.

[10] Salyers MP, Hudson C, Morse G, Rollins AL, Monroe-DeVita M, Wilson C, et al. BREATHE: a pilot study of a one-day retreat to reduce burnout among mental health professionals. Psychiatr Serv. 2011;62(2):214-17.

[11] Chang SB, Kim HS, Ko YH, Bae CH, An SE. Effects of abdominal breathing on anxiety, blood pressure, peripheral skin temperature and saturation oxygen of pregnant women in preterm labor. Korean J Women Health Nurs. 2009;15:32-42.

[12] Yu WJ, Song JE. Effects of abdominal breathing on state anxiety, stress, and tocolytic dosage for pregnant women in preterm labor. J Korean Acad Nurs. 2010;40(3):442-52.

[13] Tekur P, Nagarathna R, Chametcha S, Hankey A, Nagendra HR. A comprehensive yoga programs improves pain, anxiety and depression in chronic low back pain patients more than exercise: an RCT. Complement Ther Med. 2012;20(3):107-18.

[14] Benson T. Timeless Healing: The Power and Biology of Belief. 1996. New York, NY: Scribner.

[15] Telles S, Reddy SK, Nagendra HR. Oxygen consumption and respiration following two yoga relaxation techniques. Appl Psychophysiol Biofeedback. 2000;25(4):221-27.

[16] Oakley S, Evans E. The role of yoga: breathing, meditation and optimal fetal positioning. Pract Midwife. 2014;17(5):30-32.

[17] Descilo T, Vedamurtachar A, Gerbarg PL, Nagaraja D, Gangadhar BN, Damodaran B, et al. Effects of a yoga breathe intervention alone and in combination with an exposure therapy for post-traumatic stress disorder and depression in survivors of the 2004 South-East Asia tsunami. Acta Psychiatr Scand. 2010;121(4):289-300.

PARTICULARS OF CONTRIBUTORS:
1. Professor, Department of Pharmacology, TSM Medical College, Lucknow, Uttar Pradesh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Vikas Seth,
Professor, Department of Pharmacology, TSM Medical College, Lucknow-226008, Uttar Pradesh, India.
E-mail: oshocamp@gmail.com