



Clinical Research

Well-being at workplace through mindfulness: Influence of Yoga practice on positive affect and aggression

Umesh Dwivedi, Sony Kumari, K. B. Akhilesh, H. R. Nagendra

Department of Yoga and Management Studies, Swami Vivekananda Yoga Anusandhana Samsthana University, Bengaluru, Karnataka, India

Abstract

Introduction: Mindfulness is about being aware of internal and external stimuli by witnessing the act in a nonjudgmental manner. Earlier researches suggest that positive affectivity (PA) is negatively related to negative affectivity, aggression, and counterproductive work behavior (CWB). **Aim:** The present study examined the effect of mindfulness developed through Yoga practices on aggression and PA among working professionals involved in CWB. **Materials and Methods:** A pre-test, post-test randomized controlled design was used with a study sample of Yoga group ($n = 80$) and control group ($n = 80$) for a duration of 10 weeks. Yoga module that included *Asanas*, *Pranayama*, meditation, and *Yogic* theories were taught to the Yoga group. Mild to moderate physical exercises and management theories were taught to the control group. Measurements of aggression and PA scores were taken at the baseline and postintervention for assessment. **Results:** At the baseline, there was no significant difference in the variable scores between both the groups. Postintervention results revealed that Yoga group showed statistically significant ($P < 0.001$) reduction in aggression and significant ($P < 0.001$) enhancement in PA in comparison to the control group. **Conclusions:** When compared with the control group at the end of the intervention, the Yoga group scores were significantly lower for aggression and higher for PA.

Key words: Aggression, counterproductive work behavior, positive affectivity, Yoga

Introduction

Mindfulness is enhanced awareness of present experiences and reality, while being totally attentive at the same time.^[1] Mindfulness plays an important role in detaching self from unwanted habits and counterproductive work behavior (CWB) and it could be important in dealing with behavioral regulation which is associated with well-being.^[2] Medical science has turned its focus on mindfulness-based intervention for improvement in behavioral and psychological functioning. CWB consists of volitional acts that harm or intend to harm organizations and their stakeholders.^[3] The present study aimed to evaluate the effect of mindfulness developed through Yoga practices on aggression and positive affectivity (PA) among working professionals who are involved in CWB.

PA reveals the degree, to which an individual feels energetic, enthusiastic, attentive, active, and alive.^[4] PA has been linked with work-life enrichment, job satisfaction, social support, and effective coping strategies.^[5-8] PA is also positively associated with citizenship behavior.^[9] People with high PA have been found to be more mindful and they are able to regulate their affective experiences in a better way by generating and maintaining positive emotions.^[10]

Act of aggressive and hostile behaviors has long been common at the workplace and it can lead to social, physical, mental, and occupational damages. Mindfulness is known to lower ego-involvement and it plays an important role of aggression mitigation.^[11] Study related to substance use among men

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Dwivedi U, Kumari S, Akhilesh KB, Nagendra HR. Well-being at workplace through mindfulness: Influence of Yoga practice on positive affect and aggression. *Ayu* 2015;36:375-9.

Address for correspondence: Mr. Umesh Dwivedi, Research Scholar, Department of Yoga and Management Studies, S-VYASA University, 19, Eknath Bhavan, Gavipuram Circle, Kempe Gowda Nagar, Bengaluru - 560 019, Karnataka, India. E-mail: umeshd909@gmail.com

showed that lower trait mindfulness was associated with higher level of aggression traits such as physical, verbal, and aggressive attitude.^[12]

Yoga is known for its effect on body and psyche. *Yoga* sessions have proven to be beneficial in enhancing PA and decreasing negative affect.^[13] *Yoga* improved psychological well-being and mood among prisoners resulting in a positive effect on their aggressive behaviors.^[14] In comparison to the normal people, prisoners usually have higher rates of negative affect, aggression, drug and alcohol abuse, and antisocial behavior.

Thus, it can be said that personality and temperament of an employee at the workplace can influence perceived stress and work engagement. *Yoga* improves attention and this quality can be helpful for an individual to remain focused in the present moment.^[15] Once mind develops clarity, calmness, and focused approach through *Yoga* practices, staff members may be able to take charge of internal environment in terms of emotional stability and also of the external environment in terms of reacting to different stimuli and controlling aggression.

Materials and Methods

This randomized, double-blind study was approved by Swami Vivekananda *Yoga* Anusandhana Samsthana Institutional Ethics Committee, Bengaluru (ref. no. RES/IEC-SVYASA/35/2014; dt. 09/10/2014).

Participants were recruited from a private enterprise in Engineering Department of information technology sector in Pune. Adequate background information about the nature of the study was provided to participants and they were allowed to participate after they signed written informed consent form. CWB checklist (CWB-C) and other questionnaires were administered with the help of an independent psychologist who was not involved in the subject allocation or supervision of the classes. Conducting research on CWB represents significant challenges because of the negative and even illegal nature of these acts. In case of CWB, the participants are usually expected to rate themselves low on CWB scale. Since many of them were hesitant and apprehensive about the “self-perceived” consequences of their rating on CWB, they were assured of confidentiality of the information and their queries of specific questionnaires were also resolved in a detailed manner during rating the scale to allow them to be honest in their responses.

The enrolled subjects were randomized to either *Yoga* group or control (waitlisted) group. Randomization was done using a computer-based random generator by an independent supervisor who was not involved in the study assessments. In total, one hundred and sixty employees (total males = 88, total females = 72) were randomly selected and allocated into two groups (*Yoga* and control) having eighty participants per group. An official permission from the Institutional Research Ethical Committee was also taken before the commencement of the trial.

Inclusion criteria

- Employees (male/female) volitionally involved in CWB
- Less than 60 years of age.

Exclusion criteria

- Employees inadvertently involved in CWB
- Under medication or pregnant ladies
- History of any major surgery or contraindication.

Study design and schedule

Only individuals who were currently working and employed were permitted to take part in this intervention. Participants who fulfilled the inclusion and exclusion criteria and who willingly consented to participate in the study were allocated randomly into *Yoga* group and control group. After the baseline assessments, participants who were randomized to *Yoga* group received the *Yogic* theory lecture followed by *Yoga*-based intervention. The control group participants received management lectures followed by mild to moderate physical exercises and normal breathing practices. Venue of practice was arranged within the organization’s campus so that maximum attendance can be ensured. Demonstrations were given by the instructor to make sure participants understand the subtleties of the practices. Both groups practiced their all sessions for 1 h daily, 5 days a week for 10 weeks under the supervision of an independent qualified instructor. The confidentiality of the information found from the respondents was assured and informed consents of the participants were obtained. Groupings and schedule are as follows:

Yoga group

- Theory and postures (35 min): *Yogic* theory on *Rajayoga*, *Bhaktiyoga*, *Karmayoga* *Jnanayoga*, and *Satvik* diet. *Asanas* covered were *Suryanamaskara* (sun salutations), *Trikonasana* (triangle pose), *Virabhadrasana* (warrior pose), *Parsvakonasana* (sides angle pose), *Vrikshasana* (tree pose), *Ardha Matsyendrasana* (half twist pose), and *Bhujangasana* (cobra pose)
- Breathing (15 min): *Bhastrika* (bellows breathing), *Kapalabhati* (skull shining breathing), *Anuloma-Viloma* (alternate nostril breathing), and *Bhramari* (bee breathing)
- Meditation (10 min): *Dhyana* and *Yoganidra*.

Control group

- Theory and physical activity (35 min): Theory on project management. Physical activities covered were spot jogging, loosening exercises, strengthening exercise, wrist movement and rotation, neck movement and rotation, head movements and rotations
- Breathing (15 min): Normal slow breathing
- Rest (10 min): Resting.

Measures

Counterproductive workplace behavior

The CWB-C^[16] was used that contains 45 item CWB-C, covering behavioral reactions of an individual. This scale contains two subscales in such a way that scoring is possible on all items or as two subscales. These subscales are classified into CWB for individual and the organization. Responses of the participants were collected on a 5-point Likert scale ranging from “never” to “every day.” For this study, the internal consistency with the present sample was 0.868.

Aggression

Buss and Perry’s^[17] aggression questionnaire was used to measure trait aggressiveness. There are four distinct behavioral

subtraits and can be represented by individual subscale. These subscales are physical and verbal aggression, anger, and hostility. Responses of the participants were collected on a 5-point Likert scale ranging from “Extremely uncharacteristic of me” to “Extremely characteristic of me.” Alpha for the aggression scale in this study was 0.866.

Positive affectivity

The 10-item scale from Watson *et al.*'s^[4] positive and negative affect schedule was used to measure PA. This scale consists of words that define positive emotions (e.g. determined, attentive, and active). Participants were asked to indicate the degree to which they normally feel each emotion, with response options ranging from 1 (very slightly or not at all) to 5 (extremely). High scores indicate high levels of PA. The internal consistency for the PA scale in this study was 0.865 for baseline scores.

Statistical analysis

Data analysis was performed using SPSS software (IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.). Change score comparisons of aggression and PA over the assessment sessions in the two groups were tested using repeated-measure analysis of variance (RMANOVA). Statistical significance was fixed at $P < 0.05$.

Results

Sociodemographic profiles of *Yoga* and control group are shown in Table 1. *Yoga* group participants were more educated compared to the control group ($P = 0.045$).

Table 1: Baseline sociodemographic data of the study participants

Variables	Yoga group (n=80)	Control group (n=80)	P
Age (MD±SD) (years)	28.29±5.21	27.20±4.14	0.309
Tenure (MD±SD) (years)	4.84±4.23	4.03±3.69	0.421
Education (MD±SD) (years)	16.18±0.78	15.94±0.49	0.045*
Job profile			
Managers	9	5	0.253
Team leads	16	11	
Team members	55	64	
Food habits			
Mixed	53	43	0.107
Vegetarian	27	37	
Male	46	42	0.525
Female	34	38	

Statistical significance: * $P < 0.05$. MD: Mean difference, SD: Standard deviation

Table 2: Comparisons of pre- and post-test scores of aggression and positive affectivity between the yoga and control group

Variables	Time	MD±SD (n=80)		Significance		
		Yoga group	Control group	F	df	P
Aggression	Baseline	69.83±14.36	68.45±13.57	0.387	1,158	0.535
	10-week	60.16±13.63	64.50±13.76	82.177	1,158	<0.001*
PA	Baseline	28.26±4.48	27.84±4.19	0.384	1,158	0.536
	10-week	35.91±4.49	32.05±4.22	68.040	1,158	<0.001*

Statistical significance: * $P < 0.001$. MD: Mean difference, SD: Standard deviation, PA: Positive affectivity

Pre- to post-test comparisons in the current study revealed that there was no significant difference in the variable scores between the *Yoga* and control groups at the baseline. This showed that the sample in both the groups was comparable at the same variable score level during initiation of the study. RMANOVA was conducted to assess variable scores across the groups over the period of time. The results of the RMANOVA showed that there was a statistically significant ($P < 0.001$) reduction in aggression and enhancement in PA among the participants in the *Yoga* group as compared with the control group following intervention [Table 2]. Moreover, partial η^2 found in the intervention was 0.34 in the case of aggression and 0.30 in the case of PA, indicated a large effect size.

Discussion

The present study evaluated the effect of awareness and mindfulness developed through *Yoga* on reducing aggression and enhancing PA in the working professionals who were involved in CWB. *Yoga* group practiced postures, breathing techniques, and meditation along with *Yogic* lectures. Control group practiced loosening stretches, normal breathing, and resting activities, respectively, along with management lectures. The results showed that 10-week intervention of *Yoga* resulted in a significant reduction in aggression and increase in PA among a randomized group of employees.

In an earlier research, it is reported that integrated *Yoga* practices can increase PA within 1 week of *Yoga* intervention.^[13] The present study supported a similar effect of *Yoga* in the enhancement of PA by *Yoga* practices and thus current study is consistent or fit in with previously published knowledge of the effect of *Yoga* on PA.

In comparison to the control group, participants in the *Yoga* group showed a significant improvement from the baseline performance in aggression and results of the present study are consistent with earlier researches on the effect of *Yoga* in reducing aggression.^[14]

Since control group was also given intervention to add strength to the study, which might have further reduced the overall difference in the scores of both the groups, though results found are still statistically significant. In both aggression and PA, confidence interval does not include 0 (zero); therefore, the conclusion is that (at the 0.05 level of significance), there is a statistically significant difference in the population means. Moreover, since there is no overlap of 95% confidence intervals, there is evidence that *Yoga* group has shown significant change as compared to the control group. Effect size found was also large in both the variables.

Moreover, it is also observed that participants who were more consistent and regular showed better response as compared to the ones who were less consistent.

Probable mode of action

Different postures and breathing techniques show differences in physiological and psychological results such as decreased negative affectivity, increased PA, and improved vital capacity.^[13,18] Under physical or mental stress, the neurobiological mechanism is activated, but if stress is chronic, then this mechanism becomes dysfunctional leading to psychosocial functioning decline such as deteriorating coping behaviors however *Yoga* has a positive impact on the executive function of the prefrontal cortex involved in self-regulating coping behaviors.^[19] Positive improvement in the disorders of affect regulation is seen through meditation techniques because meditation has shown relief of stress on emotional resilience and mood regulation and the neurobiological evidence for the upregulation of underlying frontolimbic neural networks that mediate affect regulation.^[20]

Yoga practice optimizes sympathetic hormones such as cortisol and catecholamine by means of reducing metabolic rate and enhancing parasympathetic activity.^[21] Expansion of chest in all backbend postures may leverage deep breathing and possibly linked with improvement in the body's sympathetic responses to stressful stimuli. *Yoga* has the potential to control negative behavior by modulating psychoneuroendocrine and immune mechanism to restore balanced mind and body.^[22]

The practice of *Asana*, *Pranayama*, and meditation leads to the tranquility of the mind, lowered irritability, increased attentiveness, feelings of relaxation, and a sense of well-being.^[23]

Moreover, these practices are proven to be helpful in sleep quality, total number of hours of slept, and feeling of being relaxed in the morning.^[24] Postures may be more somatically activating which may affect emotional states. Meditation also encourages an individual to accept the situation as it is and helps developing awareness to remain detached without getting mentally involved.^[25]

Limitations and directions for future research

The current study contained several notable limitations that may have affected the results. This study was limited in that data with self-reported dependent measures were used. Practice sessions were conducted in the office premises which might have caused a psychological impact on the dedication and self-reported attention problem of the employees. Few people take a longer time to respond to true benefits of *Yoga* and these differences would likely have been reduced if the duration of entire intervention would have been longer. Despite these limitations, the present study findings suggest that *Yoga* may offer a safe and beneficial intervention for employees toward psychological and physical health.

More research is needed to establish the true directionality of the relationships between the variables explored in this study. Future studies could implement the longitudinal type of research to get detailed and refined conclusions on the benefits of *Yoga* among working professionals.

Conclusions

Organizations can utilize the potential of *Yoga* to create a foundation for larger cost-effective preventive measures in combating and controlling aggression and CWBs at the workplace assertively. Findings encourage the practice of *Yoga* in the work setting to develop well-being by reducing hostile behaviors and creating a positive environment. The strength of *Yoga* is that it can be used as a self-management technique where an individual can practice it anywhere. In brief, the present study has shown that *Yoga* group has shown statistically significant positive response for aggression and PA in comparison to the control group.

Acknowledgment

The authors acknowledge the support of SVYASA, Bengaluru, for allowing us to conduct the present study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Brown KW, Ryan RM. The benefits of being present: Mindfulness and its role in psychological well-being. *J Pers Soc Psychol* 2003;84:822-48.
2. Deci EL, Ryan RM. The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behaviour. *Psychol Inq* 2000;11:227-68.
3. Cohen T, Panter A, Turan N. Predicting counterproductive work behavior from guilt proneness. *J Bus Ethics* 2012;114:45-53.
4. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: The PANAS scales. *J Pers Soc Psychol* 1988;54:1063-70.
5. Tement S, Korunka C. Does trait affectivity predict work-to-family conflict and enrichment beyond job characteristics? *J Psychol* 2013;147:197-216.
6. Bowling N, Hendricks E, Wagner S. Positive and negative affectivity and facet satisfaction: A meta-analysis. *J Bus Psychol* 2008;23:115-25.
7. Green M, Decourville N, Sadava S. Positive affect, negative affect, stress, and social support as mediators of the forgiveness-health relationship. *J Soc Psychol* 2012;152:288-307.
8. Judge T, Thoresen C, Pucik V, Welbourne T. Managerial coping with organizational change: A dispositional perspective. *J Appl Psychol* 1999;84:107-22.
9. Borman WC, Penner LA, Allen TD, Motowidlo SJ. Personality predictors of citizenship performance. *Int J Select Assess* 2001;9:52-69.
10. Giluk T. Mindfulness, big five personality, and affect: A meta-analysis. *Pers Individ Dif* 2009;47:805-11.
11. Heppner WL, Kernis MH, Lakey CE, Campbell WK, Goldman BM, Davis PJ, et al. Mindfulness as a means of reducing aggressive behavior: Dispositional and situational evidence. *Aggress Behav* 2008;34:486-96.
12. Shorey RC, Anderson S, Stuart GL. The relation between trait mindfulness and aggression in men seeking residential substance use treatment. *J Interpers Violence* 2015;30:1633-50.
13. Narasimhan L, Nagarathna R, Nagendra H. Effect of integrated yogic practices on positive and negative emotions in healthy adults. *Int J Yoga* 2011;4:13-9.
14. Bilderbeck AC, Farias M, Brazil IA, Jakobowitz S, Wikholm C. Participation in a 10-week course of yoga improves behavioural control and decreases psychological distress in a prison population. *J Psychiatr Res* 2013;47:1438-45.
15. Sheela, Nagendra HR, Ganpat TS. Efficacy of Yoga for sustained attention in university students. *Ayu* 2013;34:270-2.

16. Spector P, Fox S, Penney L, Bruursema K, Goh A, Kessler S. The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *J Vocat Behav* 2006;68:446-60.
17. Buss AH, Perry M. The aggression questionnaire. *J Pers Soc Psychol* 1992;63:452-9.
18. Birkel DA, Edgren L. Hatha yoga: Improved vital capacity of college students. *Altern Ther Health Med* 2000;6:55-63.
19. Kinser PA, Goehler LE, Taylor AG. How might yoga help depression? A neurobiological perspective. *Explore (NY)* 2012;8:118-26.
20. Rubia K. The neurobiology of Meditation and its clinical effectiveness in psychiatric disorders. *Biol Psychol* 2009;82:1-11.
21. Sengupta P. Health Impacts of Yoga and Pranayama: A State-of-the-Art Review. *Int J Prev Med* 2012;3:444-58.
22. Singh VP, Khandelwal B, Sherpa NT. Psycho-neuro-endocrine-immune mechanisms of action of yoga in type II diabetes. *Anc Sci Life* 2015;35:12-7.
23. Arora S, Bhattacharjee J. Modulation of immune responses in stress by Yoga. *Int J Yoga* 2008;1:45-55.
24. Manjunath NK, Telles S. Influence of yoga and ayurveda on self-rated sleep in a geriatric population. *Indian J Med Res* 2005;121:683-90.
25. Marlatt GA. Buddhist philosophy and the treatment of addictive behavior. *Cogn Behav Pract* 2002;9:44-50.

हिन्दी सारांश

चेतना द्वारा कार्य स्थल पर स्वास्थ्य व मंगल योग उपचार का सकारात्मकता और आवेग पर प्रभाव

उमेश द्विवेदी, सोनी कुमारी, के.बी. अखिलेश, एच.आर. नागेन्द्र

आंतरिक एवं बाह्य उत्तेजनाओं को साक्षीरूप द्वारा अनिर्णायक एवं सजगरूप से देखना ही चेतना है। पूर्व प्रयोगों ने यह सिद्ध किया है कि सकारात्मकता का विपरीत संबंध नकारात्मकता, आवेग एवं अनुत्पादक कार्य व्यवहार से है। योग एक शारीरिक और मानसिक प्रक्रिया है जो आसन, प्राणायाम व ध्यान द्वारा एकाग्रता एवं चेतना को निर्मित करती है। चेतना व्यक्ति की भावना, शरीर व मानस पर कार्य करती है। यह अध्ययन १६० कर्मचारियों पर किया गया जिसमें ८० योग वर्ग एवं ८० नियंत्रण वर्ग के कर्मचारी थे। योग वर्ग को योग क्रिया एवं योग सिद्धांत का अभ्यास कराया गया और नियंत्रण वर्ग को मध्यम शारीरिक व्यायाम एवं प्रबंधन सिद्धांत का अभ्यास कराया गया। इस अध्ययन द्वारा यह निष्कर्ष पाया गया कि योग वर्ग नियंत्रण वर्ग की तुलना में लाभप्रद सिद्ध हुआ और योग वर्ग ने सकारात्मकता एवं आवेग पर प्रभावशाली परिणाम दिखाये।