Effect of Yoga Practices in Reducing Aggression and Counterproductive Work Behavior : A Randomized Controlled Trial

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Abstract

Counterproductive work behavior (CWB) in the workplace can take numerous forms, starting from difficult personality traits that harm team cohesion to damaging property that undermines an organization's financial well-being. Aggression has been consistently shown to correlate with incidents of CWB and also mediates the relationship between CWB and its predictors. Yoga is a mind and body practice with a goal of unifying emotional, psychological, and physical selves. Findings of yoga research recommend that yoga based techniques may be helpful for working professionals in moving and managing feelings of anger and frustration. The present study examined the effect of yoga on working professionals in reducing aggression and counterproductive work behavior. A pretest-post test research design of 10-week duration was used for two cohorts, randomized into a yoga group and a control group with 80 subjects in each group. The yoga group practiced asanas, pranayama, meditation, and yogic theory lectures. Mild to moderate physical exercises and management lectures were taught to the control group. The data was analyzed using SPSS, and the results revealed that the yoga group showed statistically significant reduction ($p < 0.001$) in aggression and counterproductive work behaviors in comparison to the control group. The paper contributes by introducing a cost-effective way to prevent heavy losses organizations are incurring due to counterproductive work behaviors. The results also suggested that having regular yoga sessions at a workplace can result in happier home lives and increased productivity.

Keywords : **aggression, counterproductive work behavior, negative affectivity, stress, yoga**

JEL Classification : C91, D23, J28, K42, L20, M00

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Counterproductive work behavior (CWB) or deviant behavior is defined as voluntary behavior that violates significant organizational norms and in so doing, threatens the well-being of an organization, its members, or both (Robinson & Bennett, 1995). CWB has been defined by means of many known models,

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including the frustration-aggression model (Fox & Spector, 1999), workplace aggression (Douglas & Martinko, 2001; Neuman & Baron, 1998), workplace incivility (Cortina, Magley, Williams, & Langhout, 2001), antisocial behaviors (Robinson & O'Leary-Kelly, 1998), and bullying (Rayner, 1997). Demographic variables have also been linked to counterproductive work behaviors. Age has been found to negatively correlate with workplace aggression (Neuman & Baron, 1998) and counterproductive work behaviors (Berry, Ones, & Sackett, 2007).The effects of CWB in the organization have managerial, sociological, psychological, and economic implications (Vardi & Weitz, 2002).

Managing CWB is a major concern of any organization. CWB poses challenges for managers and managements of organizations in many ways. There exist situational and individual antecedents that cause CWB in a workplace. Situational antecedents can include organizational injustice (Greenberg & Barling, 1999; Riasudeen & Narayanan, 2014) ; organizational policies, norms, and culture (Folger & Skarlicki, 1998) ; aggression driven by organizations (O'Leary-Kelly, Griffin, & Glew, 1996) ; and job stressors (Fox, Spector, & Miles, 2001; Walia & Narang, 2015). Personality traits of individuals such as negativity influence these behaviors (Kuldeep & Bakshi, 2015 ; Shah & Talati, 2013). Interpersonal conflicts and job dissatisfaction have a significant positive correlation with CWB such as sabotage, interpersonal aggression, hostility and complaints, and intention to quit (Chen & Spector, 1992; Muralidharan, Venkatram, & Krishnaveni, 2015). Ability to manage or reduce CWB can certainly ensure seamless management of resources and projects.

Relationship Between Aggression and CWB

Aggression at the workplace has been studied in many frameworks. Aggression can be defined by the extent to which individuals are inclined to hostile cognitions and angry emotions (Buss & Perry, 1992). The same study found that stress has been linked to aggression as both an antecedent and outcome. It may be possible that employees who are sensitive to stressors on the job may undergo burnout (e.g., Vinita, 2010) and relive stress in behaving aggressively and also in other counterproductive behaviors.

It was found that employees having perceived unfairness (Baron, Neuman, & Geddes, 1999) or perceived injustice (Barclay, Skarlicki, & Pugh, 2005) will end up having more workplace aggression. Individuals with a strong tendency to attribute hostile intent have a higher incidence of workplace aggression than those with a weaker tendency to make hostile attributions, and individuals with low self-control are unable to effectively manage their frustrations and reactions (Douglas & Martinko, 2001). Such individuals lose their self-consciousness by reacting impulsively or aggressively to situations which can provoke them.

O'Connor, Archer, and Wu (2001) demonstrated that trait aggression was related to an aggressive response in a provoking scenario and that an aggressive response was related to aggressive feelings (i.e., anger, frustration, and irritation). Similarly, environmental factors have also been found to predict some counterproductive workplace behaviors such as aggression, and it is caused when employees observe a low level of procedural justice (Dietz, Robinson, Folger, Baron, & Schulz, 2003).

As counterproductive work behaviors can be observed as particular occurrences of impulsive behaviors (Marcus & Schuler, 2004), we expect aggression to be positively related to counterproductive work behavior.

Main Effect of Gender on CWB

Men have been found to engage in more verbal and physical aggression than women, though there is a tendency of women to engage in slightly more indirect aggression (Archer, 2004). Men are found to get engaged in more workplace aggression than women (Baron et al., 1999; Khatri & Kupersmidt, 2003). Spector and Zhou (2013) found gender as a moderator of several predictors and CWB relationships.

Main Effect of Yoga on Aggression and CWB

Yoga is one of the most commonly practiced mind - body approaches, with many practitioners practicing it, and it develops resiliency factors, such as self-awareness (Taylor, 2003). Earlier studies with yoga have been investigated as potential practices for reducing stress (Grossman, Niemann, Schmidt, & Walach, 2003), depression (Carlson & Garland, 2005) , anxiety, for improving several spheres of cognition (Sharma, Gupta, Das, Mondal, Goswami, & Kumar, 2014) and for enhancing quality of life by physical and mental well being.

An Oxford University study suggested that yoga can improve psychological well-being and mood among prisoners and may also result in having an effect on their impulsive behavior (Bilderbeck, Farias, Brazil, Jakobowitz, & Wikholm, 2013). They found that prisoners after a 10-week yoga course stated about improvement in mood, reduction in stress, and they were better at a task that needed control on behavior than those who did not take part in yoga. A similar study was conducted in India by Khodaskar and Khodaskar (2015) to examine the effects of yoga on deviant aggression, anxiety, and impulsiveness. This study reported significant results towards psychological benefits in terms of having better control on emotional factors such as anger, anxiety, and leading a positive life inside the prison environment. Prisoners normally have higher rates of mental health problems than the general population of people, and elevated levels of aggression, personal grief, drug and alcohol abuse, and antisocial behavior are recorded among prisoners. Therefore, yoga practices may have beneficial effects as a stand-alone solution for reduction of aggression and its consequences in terms of CWB.

Stress and aggression are associated with elevated sympathetic nervous system activity (Miller & Ditto, 1991). Maximum changes in autonomic variables and the breath rate occurred during the stage of effortless meditation, and such changes bring down sympathetic activity (Telles, Raghavendra, Naveen, Manjunath, Kumar, & Subramanya, 2013). Guided meditation is helpful in deceasing oxygen consumption and increasing in breath volume along with reduction in sympathetic activity (Vempati & Telles, 2002). Moreover, verbal aggressiveness was found to have decreased in the yoga group with a non-significant increase in the physical exercise group in the study conducted by Deshpande, Nagendra, and Raghuram (2008).

Self-control of an individual is a conscious effort towards taking control of impulses, reactive behaviors, desires in order to achieve best results (Hagger, Wood, Stiff, & Chatzisarantis, 2010). Earlier studies have demonstrated that self-control failures can cause aggression, but enhancing self-control can decrease aggression (DeWall, Finkel, & Denson, 2011).

Mindfulness and self-control practices like yoga encourage individuals to be aware and accept their aggression linked with negative thoughts and emotions simply as a transitory state rather than reacting in response to it. People with self-control capacity should be able to refrain from reacting on impulsive aggression by means of their capabilities of manipulating or altering emotions linked with aggression.

Yoga provides both physiological and psychological benefits including: improved memory and attention (Sahasi, 1984); improved function on measures of attention (Peck, Kehle, Bray, & Theodore, 2005); reduced psychological distress & perceived stress and enhanced well-being (Sivarethinamohan, 2008); improved emotional intelligence and emotional competence (Kumari, Hankey, & Nagendra, 2013); increased positive moods and decreased negative moods (Shapiro & Cline, 2008); and reduced job burnout among managers (Adhia, Nagendra, & Mahadevan, 2010).

The results of previous studies demonstrated that yoga practices and meditation techniques may represent an effective management strategy for organizations in reducing aggressive behavior and CWB.

Methodology

Participants : Employees from a private firm participated in the study. In total, 160 employees (total men = 88, total women = 72) were randomly selected and allocated into two groups of equal size (80 participants in each).

Table 1. Baseline Characteristics of the Study Participants

Demographic Information	Yoga Group (*n* = 80)	Control Group (*n* = 80)
Mean age *(SD)* (years)	28.29 (5.21)	27.20 (4.14)
Mean tenure *(SD)*	4.84 (4.23)	4.03 (3.69)
Male	46	42
Female	34	38

These groups were Yoga Group and Physical Exercise Group. The inclusion criteria were (a) working professionals (male/female) involved intentionally in CWB, (b) less than 60 years of age, and (c) mentally and physically not disabled.

The Table 1 depicts the demographic data of the respondents. The mean age of the sample for the yoga group is 28.29 (*SD* = 5.21) years and for the control group, it is 27.20 (*SD* = 4.14) years. Gender distribution for the yoga group was 46 men and 34 women ; wherein, 42 men and 38 women were present in the control group (physical exercise group).

Measures

(1) Counterproductive Work Behavior : The Counterproductive Workplace Behaviour Checklist (CWB-C) (Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006) was used that contains a 45 item CWB-C covering behavioral reactions of an individual. This scale contains two sub - scales such that scoring is possible on all items or as two sub - scales. These sub - scales are classified into CWB for an individual and an 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 is .87 for baseline scores.

(2) Aggression: Buss and Perry's Aggression Questionnaire (Buss & Perry, 1992) was used to measures the trait - aggressiveness. There are four distinct behavioral sub-traits and can be represented by an individual sub-scale. These sub- scales 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 is 0.87.

(3) Procedure: Only individuals who were currently working and employed were permitted to take part in this intervention. The respondents were administered the questionnaires with the help of an investigator. Participants who fulfilled the inclusion and exclusion criteria and who willingly consented to participate in the study were allocated randomly into the yoga group and control group.

The yoga group practiced a yoga module that included asanas, pranayama, meditation, and yoga literature as a theory session. The control group participants practiced mild to moderate physical exercises and were given management theory sessions. Both groups had their session for 1 hour daily, five days a week for 10 weeks. The confidentiality of the information found from the respondents was assured and informed consents of the participants were obtained.

Data Analysis and Results

Data analysis was performed using SPSS. The statistical tests used were paired samples *t*- test for the comparison of baseline and post comparison scores. ANCOVA was used for change score comparison of the two groups keeping baseline data as covariate. The relationship between variables was investigated using Pearson's

Table 2. Inter- Correlation Matrix

	Variables	1	2	3	4	5
1.	Gender	--				
2.	Age (years)	.25**	--			
3.	Tenure (years)	.23**	.97**	--		
4.	Aggression	.16*	-.25**	-.24**	--	
5.	CWB	.34**	-.25**	-.27**	.23**	--

Note: (0 = female, 1 = male). *N* = 160
Statistical significance: *p < .05; **p < .01; ***p < .001

Table 3. Results of Aggression and CWB after the Intervention in Both Groups

Variables	Groups	Baseline		Post-Intervention		Paired *'t'* test	ANCOVA
		Mean	*SD*	*Mean*	*SD*	*t*	*F*
Aggression	Yoga	69.83	14.36	60.16	13.63	19.49***	82.81***
	Control	68.45	13.57	64.50	13.76	10.16***	
CWB	Yoga	73.91	10.16	62.76	10.12	22.51***	83.44***
	Control	72.61	8.81	67.20	9.59	14.38***	

Statistical significance: *p < .05; **p < .01; ***p < .001; *N* = 80

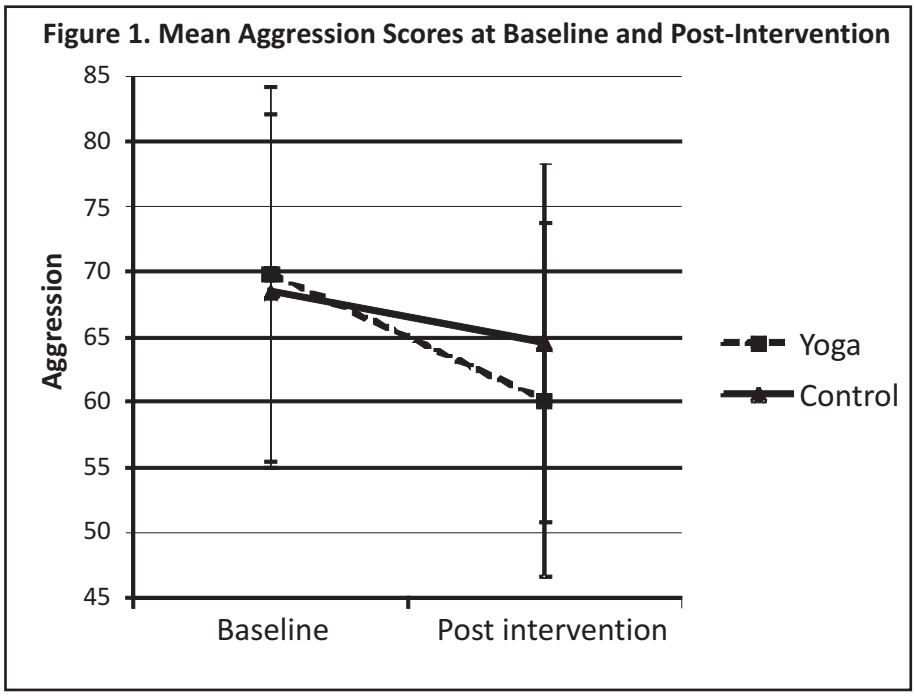
correlation.The relationship between demographic variables, aggression, and CWB was investigated using Pearson's correlation coefficient by taking baseline scores of both the groups (see Table 2).

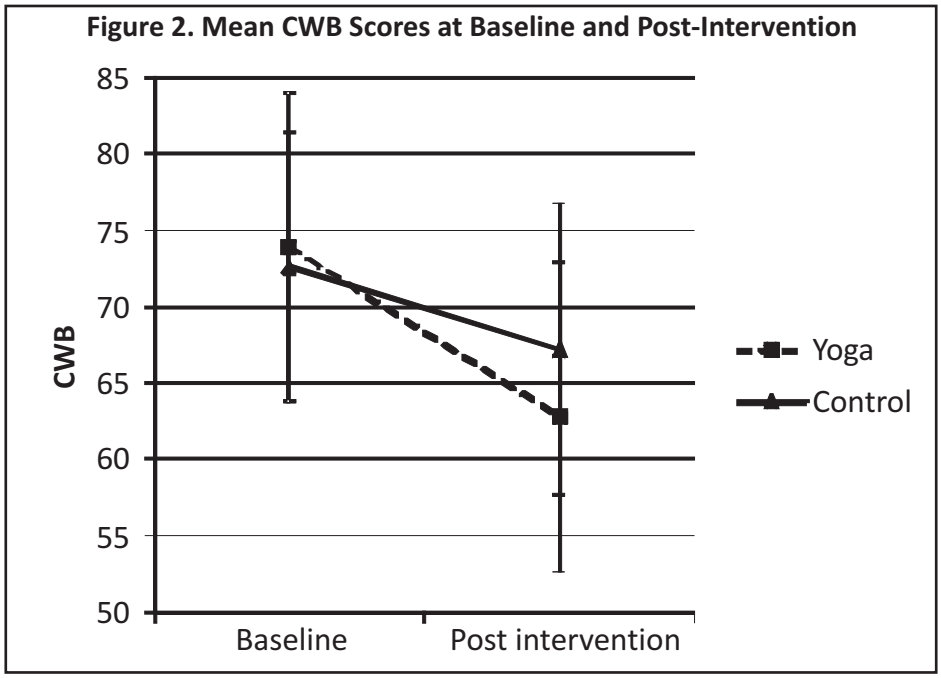
The analysis reveals that there is a strong positive correlation between the two variables, r = .23, n = 160, p < .001 (two tailed), with high levels of aggression associated with high levels of perceived CWB. Gender correlation also shows that gender is significantly related to aggression and CWB measures.

A paired-samples *t*-test was conducted to evaluate the impact of the intervention on aggression (see Table 3). It can be observed that there is a statistically significant decrease in aggression scores of the yoga group from before intervention (M = 69.83, SD = 14.36) to after intervention (M = 60.16, SD = 13.63), t (79) = 19.49, p < .001 (two tailed). The mean decrease in aggression scores is 9.67. The Eta squared statistic is 0.83, indicating a large effect size. For the control group, there is a statistically significant decrease in aggression scores of yoga group from before intervention (M = 68.45, SD = 13.57) to after intervention (M = 64.50, SD = 13.76), t (79) = 10.16, p< .001 (two tailed) (see Figure 1). The mean decrease in aggression scores is 3.95, which is quite less than what it is for the yoga group. The Eta squared statistic (0.57) indicates a large effect size, but less than what it is for the yoga group.

Similar reducing effects are seen in case of CWB (see Figure 2). There is a statistically significant decrease in CWB scores for the yoga group from before intervention (M = 73.91, SD = 10.16) to after intervention (M = 62.76, SD = 10.12), t (79) = 22.51, p < .001 (two tailed). The mean decrease in CWB scores is 11.15. The Eta squared statistic (0.87) indicates a large effect size. For the control group, the scores decrease from before intervention (M = 72.61, SD = 8.81) to after intervention (M = 67.20, SD = 9.59), t (79) = 14.38, p < .001 (two tailed). The mean decrease in CWB scores is 5.41, which is quite less than what it is for the yoga group. The Eta squared statistic (0.72) indicates a large effect size, but less than what it is for the yoga group.

The effectiveness of two different interventions was compared by conducting a one-way between groups analysis of covariance. Participants' baseline scores administration of aggression and CWB were used as the covariate in the current analysis. Preliminary checks were conducted to avoid any violation of the assumptions of normality, linearity, homogeneity of regression slopes, and homogeneity of variances. After adjusting for





baseline scores, we observe a significant difference between the yoga and control groups on post-intervention scores on the aggression, F (1, 157) = 82.81, p < .001, partial Eta squared = 0.35. There is also a significant difference between the yoga group and control group on post-intervention scores after controlling for baseline scores on the CWB, F (1, 157) = 83.44, p < .001, partial Eta squared = 0.35.

Discussion

The general intent of this study is to measure the effect of yoga in reducing aggression and counterproductive

work behaviors (CWB) of working professionals. The results show that 10 week intervention of yoga resulted in significant reductions in aggression and counterproductive work behavior among a randomized group of working professionals. Aggression is found to be positively correlated with CWB in the present study. These results are in line with the results of earlier studies - that persons who reported elevated levels of aggression were more likely to report counterproductive work behaviors (Michael & Bowling, 2012; Spector, 2010).

The present study demonstrates that yoga can be an effective tool to control aggression, and the results of the present study are consistent with the results obtained by Deshpande et al. (2008) and Bilderbeck et al. (2013), who also observed that yoga was effective in reducing aggression.

Implications and Conclusion

Managements of organizations can utilize the potential of yoga to create a foundation for larger cost-effective preventive measures in combating and controlling CWB at the workplace assertively. This will help managements to develop and reinforce a positive workplace environment at the same time. Positive perception of employees can help managements to facilitate effectiveness and efficiency in the organization to ensure organizational integrity and reliability of employees. This could result in the twin benefits of substantial savings for organizations by reducing CWB and health improvements for employees by reducing aggression. Strength of yoga is that it can be used as a self-management technique where an individual does not need to go to a hospital or a therapist. In summary, the present study has shown the effectiveness of yoga that managements of organizations can adopt in reducing aggression and CWB to achieve organizational goals and objectives efficiently.

Limitations of the Study and Scope for Further Research

The current study contains a few notable limitations that may have affected the results. This study is limited in the sense that data with self-reported dependent measures were used. Sessions in the current study were conducted in the office premises, which may have caused psychological impact on the dedication of employees. Employees involved in the intervention were from the same organization and influence of the common working place may have impacted in self-reported attention problem. Certain set of populations may be less sensitive to yoga, and they may require different levels of explanation while taking instructions. Similarly, few people take longer time to respond to the true benefits of yoga, and these differences would likely have been reduced if the duration of entire intervention was longer. Despite these limitations, the present study's findings suggest that yoga may offer a safe, beneficial intervention for employees towards mental and physical health.

Future studies could implement a longitudinal type of research to get detailed and refined conclusions on the benefits of yoga. More research in terms of large sample size and taking employees from different organizations is needed to establish the true directionality of the relationships between the variables explored in this study. It should be noted that most of the studies related to CWB have been undertaken by Western scholars. Only few studies on CWB were conducted by Asian researchers. Therefore, more empirical evidence on the effect of yoga on CWB needs further investigations, especially in the Asian context.

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