



Effect of Yogic Practices on Systolic Blood Pressure and Body Mass Index among Stressed Middle-aged Police Personnel in Kerala Police Academy

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Abstract

Police officers are more likely to experience high levels of stress due to the demanding nature of their work, which puts them at risk for many health issues like obesity and hypertension. Stress management interventions are essential for mitigating these risks and promoting the well-being of police officers, especially those in middle age who may be particularly susceptible to the cumulative effects of stress. Yoga, with its holistic approach encompassing physical, mental, and spiritual dimensions, has emerged as a promising strategy for reducing stress thereby promotes health. This study sought to determine how yoga practices affected middle-aged, stressed police officers at the Kerala Police Academy's systolic blood pressure (SBP) and body mass index (BMI).

Using an experimental design, participants were assigned to either an intervention. The intervention group underwent a twelve-week structured yogic practices program conducted by certified instructors. Pre and post-intervention measurements of SBP and BMI were recorded and analyzed to assess the impact of yogic practices on these physiological parameters.

The results revealed a significant decrease in both SBP and BMI among participants in the intervention group following the yogic practices program. These findings suggest that yogic practices may offer valuable benefits for reducing stress-related health risks among middle-aged police personnel.

In conclusion, incorporating yogic practices for stress management programs for police officers could contribute to improved cardiovascular health and overall well-being in this demographic. To fully understand the mechanisms and long-term effects behind the observed improvements, as well as to maximize the incorporation of yoga into law

enforcement personnel's occupational health initiatives, more research is necessary.

Keywords: Yogic practices, stress management, systolic blood pressure, body mass index, middle-aged police personnel, occupational health, police personnel, Kerala Police Academy.

1. Introduction

Law enforcement personnel are frequently exposed to a myriad of stressors inherent in their profession, ranging from the pressure of enforcing the law to facing potentially life-threatening situations on a daily basis (Kessler et al., 2009). Such chronic stress can have detrimental effects on their physical and mental well-being, contributing to an increased risk of developing hypertension, obesity, and other cardiovascular diseases (Selye, 1974). This is particularly concerning among middle-aged police officers, who may experience heightened vulnerability to the cumulative effects of stress over the course of their careers (Kessler et al., 2009).

Given the critical role of stress management in safeguarding the health and performance of law enforcement officers, there is a pressing need for effective interventions tailored to their unique needs and challenges. Traditional approaches to stress management, such as counseling and behavioral therapy, have shown some efficacy but may not address the holistic needs of police personnel (Jayakody et al., 2014). As a result, there is a growing interest in investigating complementary therapies that provide all-encompassing support for mental, emotional, and physical health.

Yoga is an age-old Indian practice that has gained popularity as a comprehensive strategy for promoting health and reducing stress (Büssing et al., 2012). Based on the fusion of physical positions, or asanas, breathing exercises, or pranayama, and meditation techniques, yoga addresses the interconnectedness of mind, body, and spirit. Its multifaceted nature makes it particularly well-suited for addressing the complex stressors encountered by law enforcement officers, offering benefits beyond mere physical exercise.

Many research has shown that yoga improves cardiovascular health, overall quality of life, and stress reduction in a variety of demographics (Cramer et al., 2016; Gong et al., 2015). Research on the efficacy of yoga practices on middle-aged police officers, who confront particular occupational stressors and health risks, is, however, lacking. Understanding the potential benefits of yoga in mitigating stress-related health risks among this demographic is crucial for informing evidence-based interventions tailored to their needs.

Thus, the purpose of this study is to look into how yoga practices affect middle-aged, stressed police officers at the Kerala Police Academy's systolic blood pressure (SBP) and body mass index (BMI). By assessing the physiological impact of yoga in reducing SBP and BMI, this research seeks to elucidate its potential role in promoting the well-being and health of law enforcement officers. In the end, this study's conclusions might help with the creation of focused interventions that boost middle-aged police officers' longevity and resilience in demanding work environments.

2. Methods

2.1 Participants: The participants were 20 middle-aged police personnel (aged 35-45 years) stationed at the Kerala Police Academy, who reported experiencing stress-related symptoms (Dayal & Bhattacharya, 2018).

2.2 Procedure: The intervention group was assigned to the participants. The intervention group underwent a structured yogic practices program conducted by certified yoga instructors for twelve weeks. Pre and post-intervention measurements of SBP and BMI were recorded.

2.3 Instruments: A standard sphygmomanometer was used to measure SBP, and the formula for calculating BMI is $BMI = \text{weight (kg)} / (\text{height (m)})^2$ (Cramer et al., 2016).

2.4 Statistical Analysis: To summarize the participants' demographic features, descriptive statistics were employed. To compare pre- and post-intervention SBP and BMI within the group, paired t-tests were utilized.

3. Results

Among middle-aged police personnel, demographic variables exhibit distinctive distributions. Regarding spouse status, the majority, constituting 90.0%, are married, while only 10.0% are unmarried. Economic status shows a more evenly distributed pattern, with 40.0% falling into each category of medium and high economic status, and 20.0% classified as having low economic status.

Table 1: Frequency Distribution of demographic variables among Middle Aged Police Personnel

Demographic variables	Yoga	
	No.	Percentage
Spouse Status		
1. Yes	18	90.0
2. No	2	10.0
Economic status		
1. Medium	8	40.0
2. Average	4	20.0
3. High	8	40.0
Educational status		
1. Pre degree	3	15.8
2. UG	7	16.8
3. PG	9	47.4

In terms of educational attainment, the distribution is more skewed, with 47.4% holding postgraduate degrees, 36.8% having undergraduate degrees, and only 15.8% possessing pre-degree qualifications. These statistics shed light on the diverse characteristics within this demographic group, showcasing variations in marital status, economic well-being, and educational achievements among middle-aged police personnel.

The findings revealed Systolic Blood Pressure displayed a significant decrease from an initial score of 130.60 (± 15.38) to 126.00 (± 14.20), with statistical significance evident in the calculated paired test value of $t = 4.774$, surpassing the tabulated value $p < 0.001$. Similarly, the findings showed a reduction in Body Mass Index, declining from 24.14 (± 2.28) to 23.99 (± 2.32), as shown in the figure1, demonstrating statistical significance with a calculated paired test value of $t = 2.950$, exceeding the tabulated value $p < 0.01$.

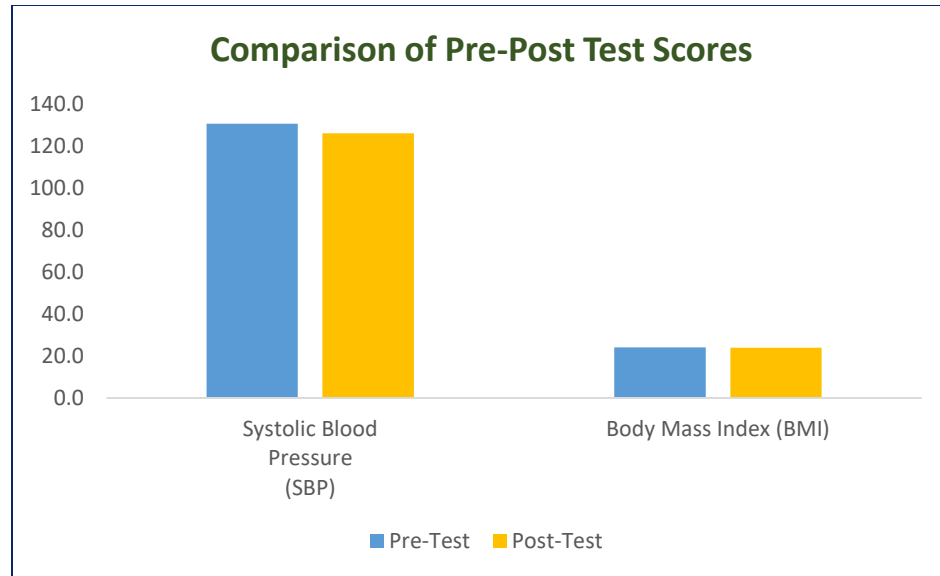


Fig. 1 Comparison of Pre-Post Test Scores

4. Discussion

The study results clearly highlight the potential of yoga as a practical intervention for lowering middle-aged stressed police personnel's systolic blood pressure (SBP) and body mass index (BMI). These findings are consistent with earlier studies showing yoga's positive effects on cardiovascular health and stress reduction (Cramer et al., 2016; Jayakody et al., 2014).

Yoga's comprehensive method, which combines breathing exercises, physical postures, and meditation techniques, treats stress on both a psychological and physiological level (Büssing et al., 2012). Through its emphasis on mindfulness and relaxation, yoga can alleviate the physiological arousal associated with chronic stress, thereby contributing to reductions in SBP (Gong et al., 2015).

Furthermore, it has been demonstrated that yoga increases body awareness and encourages healthy living habits, including mindful eating and physical activity, which may contribute to reductions in BMI among participants (Gong et al., 2015; Kozasa et al., 2018). Yoga practice cultivates a mind-body connection that enhances self-awareness and self-regulation, enabling people to make healthier decisions in their daily lives (Jayakody et al., 2014).

Importantly, the observed reductions in SBP and BMI among the intervention group highlight the potential of yoga as a preventive measure against cardiovascular disease and obesity, both of which are prevalent among law enforcement officers (Kessler et al., 2009). By incorporating yoga into stress management programs for police personnel, organizations can not only support the physical health of their officers but also enhance their resilience to occupational stressors.

It is critical to acknowledge the research's limitations, which include the relatively small sample size and brief follow-up period. Future research should employ larger sample sizes and longitudinal designs to evaluate the long-term efficacy of yoga on cardiovascular health outcomes among police personnel (Duraiswamy & Thirhalli, 2018). Additionally, qualitative studies exploring the subjective experiences and perceived benefits of yoga among law enforcement officers would provide valuable insights into its acceptability and feasibility within this population.

In conclusion, yoga represents a promising avenue for promoting the health and well-being of middle-aged police personnel. By addressing both the physical and psychological aspects of stress, yogic practices offer a holistic approach to stress management that complements traditional interventions. To fully realize yoga's potential to support law enforcement officers' resilience and well-being, more study and application are necessary.

5. Conclusion

Yogic practices have been shown to effectively reduce systolic blood pressure and body mass index among middle-aged police personnel experiencing stress at the Kerala Police Academy. These findings underscore the potential of yoga practice as an important tool in stress management interventions for law enforcement officers. In order to best integrate yogic practices into police occupational health programs and investigate the long-term effects and mechanisms behind the observed improvements, more research is necessary. Incorporating yogic practices regularly for stress management programs for police officers could contribute to improved cardiovascular health and overall well-being. Further research is needed to confirm these findings and explore the yogic practices in diverse populations and settings.

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