

Title: Metabolic Syndrome: Addressing Health Risks Among Police Officers

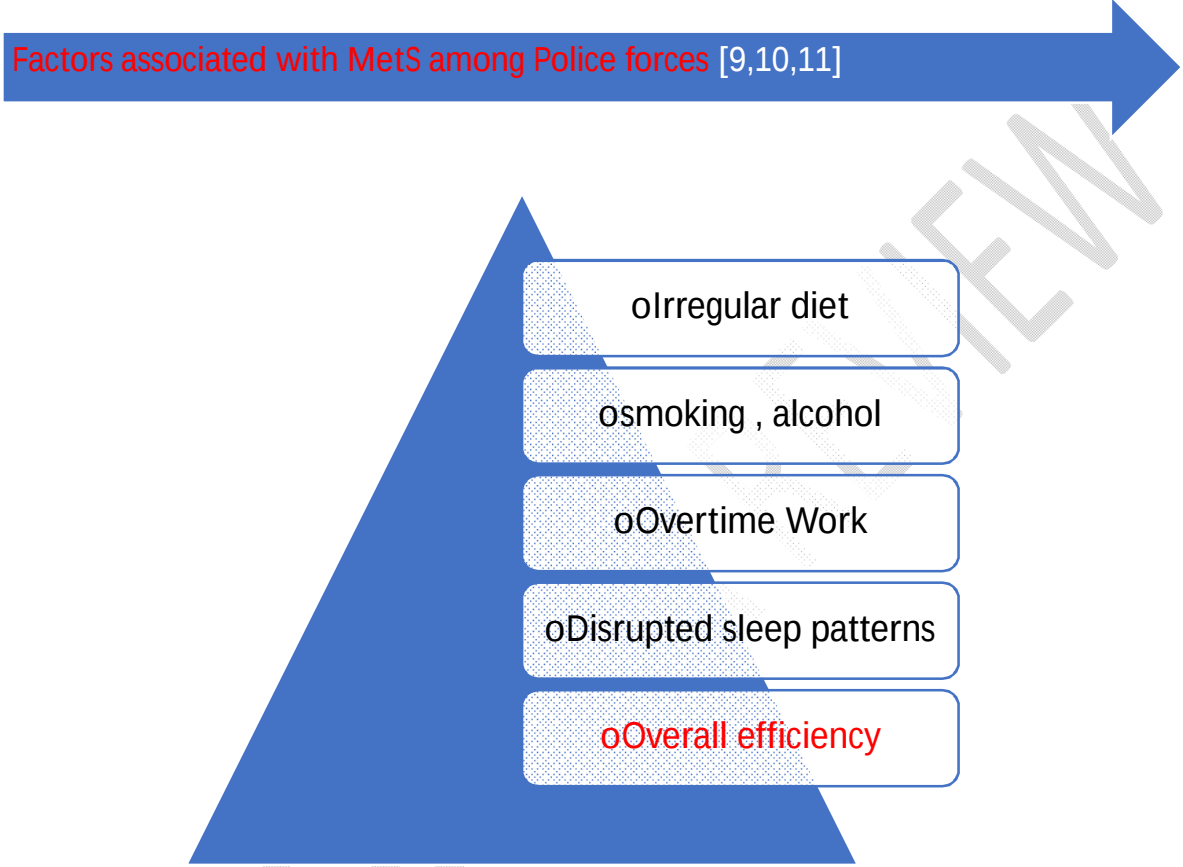
Abstract:

Lifestyle factors and stress have indeed been linked to the development of Metabolic syndrome (MetS). The transition towards industrialization often brings about changes in people's economy and lifestyle, which can contribute to the increased prevalence of noncommunicable diseases such as Cardiovascular disease (CVD) and MetS-related conditions like diabetes mellitus. The prevalence of MetS can vary significantly across different geographic regions. Studies have shown an increasing incidence rate of MetS among certain populations, such as police forces. It is well documented that police officers constitute a unique occupational group that is at heightened risk for developing MetS. Various factors contribute to this increased risk. Additionally, there is a lack of comprehensive documentation on the health status of police officers, and health surveillance efforts for this group are frequently restricted. This chapter will give a review of the prevalence of MetS among police forces, shedding light on the specific incidence rates and factors contributing to the development of MetS within this group.

Introduction: Police departments play a vital role in maintaining security and stability within society. As a unique professional group, they are often exposed to workplace violence, which can have direct and indirect impacts on their health. Studies have indicated that currently employed police personnel exhibit factors like MetS, cigarette smoking, and a lifestyle. [1,2] The findings from recent prospective population-based studies underscore the importance of identifying MetS as it can pinpoint individuals at high risk who may not be determined based on conventional risk factors. [3] Additionally, research has shown a significant increase in healthcare expenditure for individuals with MetS, [4] which coupled with indirect health issues like injuries, can contribute to heightened stress levels among police officers and potentially impact their job satisfaction. [5] MetS varies globally, with rates ranging from 8% in India to 24% in the USA among men aged 20-25 and older. Even within the same ethnic population, variations in MetS prevalence and its components [6,7] may arise as a result of

urbanization and socioeconomic factors. A significant number of Asian Indians have been identified as a high-risk population for diabetes and cardiovascular diseases. [8] Research indicates that male police officers tend to have a higher prevalence of hypertriglyceridemia, while female officers exhibit a higher rate of hypertension. [12]

Factors associated with MetS among Police forces [9,10,11]



The above figure is also supported by Tharker et al. and Ganesh et al. [13,14] who reported a prevalence of smoking at 21.6% and alcohol consumption at 50.3% among police forces, respectively. Studies have noted that high rates of alcohol addiction and smoking habits within this occupational group, are often attributed to the significant work pressure they face. [15]

Review: Some studies have highlighted occupational stressors and a reduced cortisol response to a high protein meal challenge as potential factors associated with MetS in police. Moreover, depression, a common consequence of stress, has been linked to

MetS in this population. Psychological trauma related to witnessing or experiencing violence is also considered a significant factor contributing to MetS.[16] Police officers experience increased morbidity rates as compared to other populations. CVD reported a higher prevalence almost double that of others.[2] Research revealed that law enforcement officer is associated with **elevated levels of C-reactive protein**, BMI, and systolic blood pressure, compared to others. [17] Studies conducted in India have also reported similar findings, albeit limited in number.[13]

Studies assessing the prevalence of MetS in different regions of India have yielded diverse results, likely influenced by the ethnic and lifestyle diversity present. The lack of a standardized criterion for diagnosing Metabolic Syndrome presents a challenge when comparing research findings. In a specific study, the modified NCEP ATP III criterion was employed, known for its reliability in predicting negative cardiovascular outcomes.[18] Prevalence rates vary from 8% in rural males to 25%-40% in urban males. [19] In the Chennai Urban Population Study (CUPS), [20] MetS defined by the European Group of Insulin Resistance (EGIR) was 11.2%. However, as per IDF criteria, 57% was observed in Chennai police officers. It is worth noting that the prevalence calculated using the IDF criteria may be higher than that using the NCEP criteria due to the lower cut-off for fasting glucose [21].

The accumulation of abdominal fat, leading to obesity, is a significant factor in the advancement of MetS. Asian Indians, in particular, are more prone to developing central obesity.[6,22] Only six percent of policemen with hypertensive measurements were aware of their condition. High levels of unhealthy lipids in the blood were also a concerning factor, potentially linked to obesity.[22] The hypertriglyceridemia was observed to be higher among police officers compared to the general population.[23]

The common belief that police personnel are consistently physically fit may not always hold. While they may demonstrate remarkable fitness during the selection process, this level of fitness is often not maintained afterward, as evidenced by low levels of engagement in regular exercise and increased alcohol consumption. These poor lifestyle choices can contribute to the risk factors associated with Metabolic Syndrome.

The development of these habits can be attributed to job stress and low levels of job satisfaction.

Conclusion: Police forces are at a heightened risk for a higher occurrence and prevalence of CVDs and MetS due to the demands and stressors associated with their profession. Unfortunately, individuals selected for their exceptional physical fitness upon entry into the profession often struggle to maintain it, leading to the development of preventable lifestyle diseases. Implementing health education programs and screening is essential for maintaining the health and well-being of police officers and incorporating lifestyle changes, addiction management, and stress relief techniques into health-related activities is important for enhancing overall well-being and lowering the likelihood of developing conditions like MetS. There is a need for strategies for prevention and management to encourage healthier lifestyles within the police community.

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