

# Potential Impact and Perspective of Shift Work on Fitness of Security Guards: A Review

Shivangi Singh, U. V. Kiran\*, Padmini Pandey

## ABSTRACT

At present, almost all the institutions either government or private sector require security guards. Sometimes, they need to be work in adverse conditions such as extreme hot, cold, pollutions, narrow workplaces, steady body position, unbalanced prolonged working hours, shift work, underpaid, and uncertainty. These guards provide services in fixed and rotatory shift work system based on the organization requirement or needs. This occupation involves a stress on physical and mental health which directly affects the fitness as of allied with vocal and physical aggression. It affects social and family life, sleep disorders, gastrointestinal diseases, metabolic system disorders, endothelial dysfunction, musculoskeletal disorders, circadian rhythms, diabetes, accident possibility, etc. Few of the symptoms are temporary or associated to particular stage of time, but most of the stress affects for longer period or even for life. Hence, these issues should be taken seriously and need to be plan the shift schedules and their working conditions as both shift work and security guards are equally demanding and important.

**Keywords:** Fitness, Health, Impact, Security guards, Shift work

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## INTRODUCTION

The security service is basically reliant on the functions includes prevention of crime that has to be fulfil by the security guards.<sup>[1]</sup> They are well dressed in special uniforms, badges (issued by authority), equipped with armaments, and provide services in both government and private sectors.<sup>[2]</sup> Security guards protect persons, society, assets, resources, property, information, reputation, currency transfer, public gatherings, valuable consignments, cargos, and organizations.<sup>[3]</sup> Security service associates principally do the defensive effort although they are aware of all probable crises to respond in an appropriate way to avoid undesirable consequences.<sup>[4]</sup> This also requires a continuous vigilance and instant response.

Mostly these guards work in unfavorable environmental conditions (extreme hot, cold, and pollutions) narrow workplaces, immovable body position, unbalanced extended working hours, shift work, underpaid, and insecurity (contract basis).<sup>[5-7]</sup> The prerequisite of security guard job falls basically on their capability to operate around the timepiece, which is separated by the rotated shifts works and required to meet the demands set by the administrator.<sup>[8]</sup> This profession involves a stress on physical and mental health because of exposure to vocal and physical aggression (the use of physical force) with high accountability for their movements so as to guard the people and their lives.<sup>[9-14]</sup> Shift work with security guards occupations has negative consequences on sleep, social and family life and circadian rhythms, etc.<sup>[15-17]</sup> Therefore, potential impact and prospective of shift work on fitness of security guards are discussed in this review.

## FIXED DAY VERSUS ROTATING SHIFT WORKS

Shift works may be defined as the arrangement of working hours using more than 2 groups of workers so as to extend the time of work operation.<sup>[18]</sup> Shift work has been characterized as an infrequent or asymmetrical work schedules beyond the normal working hours.<sup>[19]</sup> In addition to this, it is generally experienced in fixed and rotatory shift works in today's world.

Department of Human Development and Family Studies, School of Home Science, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India.

**Corresponding Author:** U.V. Kiran, Department of Human Development and Family Studies, School of Home Science, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India. E-mail: druvkiran@gmail.com

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In fixed shift works, groups of security guards work in a fixed day shift, afternoon shift, and night shift. However, rotatory shift schedule represents a group of guards may work on a day shift in the 1<sup>st</sup> week, rotates on afternoon shift in the next week, night shift in the 3<sup>rd</sup> week, and return to the day shift the subsequent week. Fixed shifts have some advantages such as ease in scheduling family events, doctor appointments, daily care, and opportunities to attend the college, may hold second jobs and can participate in community activities. However, guards working in rotatory shifts face some physical and health problems because of less stability and frequently changes in the lifestyle patterns. It has been reported that there is lower risk of accident rate and high performance with lesser effort as compared to the rotating shift workers.<sup>[20]</sup>

## IMPACT OF SHIFT WORKS ON SECURITY GUARDS

It is clear that profession of security guards includes well-being, social, and health problems as of working in the shifts, especially rotatory and night shifts.<sup>[12]</sup> It is associated with social and family life, sleep disorders, gastrointestinal diseases, metabolic system disorders, circadian rhythms, diabetes, accident possibility, etc.<sup>[21]</sup> Few of the symptoms are temporary or associated to particular stage

of shift works only that may disappear on holidays or on long hour's gap. Shift work also affects and raises the activity of the sympathetic nervous system causes greater arterial stiffness and endothelial dysfunction.<sup>[22,23]</sup> Most of the health and socioeconomic issues increasingly ignored that creates problem in life satisfaction, and job performance. Hence, these issues should be taken serious as both shift work and security guards are equally demanding and important. The impacts of shifts on security guards are elaborated below:

## SOCIOECONOMIC ISSUES

The personnel's workings in shifts have lower/poorer personal, family, and social life satisfaction than the fixed day workers. There is a significant negative association between shift work and the social and family life of workers.<sup>[24]</sup> Especially night shift work had significantly negative effects on the quality of life which is assumed to be affected by shift work system.<sup>[25]</sup>

The security guards working under shifts may face socioeconomic issues, which is disturbed by 46%. Some security personnel face behavioral changes, met disagreement, and broken marriages.<sup>[26]</sup> Females also do security jobs and sometimes, possess high occupational stress as compare to male security guards.<sup>[2]</sup> In addition to this, shift work has an impact on disturbed family lives, religious gatherings, and limited working conditions, leads to decrease in job performances of security guards.<sup>[27]</sup>

## HEALTH ISSUES

Some of the research work on fitness issues related to shift work among security guards is tabulated in Table 1. Shift work possess both long (cardiovascular diseases, gastrointestinal problems, etc.) and short (sleeping, circadian rhythm, performance, etc.) term effects on fitness.<sup>[28]</sup> Shift working on night or rotatory basis may disturb the quality and quantity of sleep that cause sleepiness and disturbed sleep.<sup>[29]</sup>

The most alarming situations are restlessness, tiredness, exhaustion, injury, chronic diseases, circadian rhythm disruption, etc.<sup>[30-32]</sup> Sleeping disorder, fatigue, stress, and eating disorder are the most common problems which are confined by the 52%, 22%, 15%, and 11% of the security guards, respectively.<sup>[26]</sup> Working after disturbed sleeping can cause tiredness leads to difficulty in working and prone to errors and accidents.<sup>[33]</sup> Gastrointestinal disorders are more prominent in shift works compare to day shifts.<sup>[34]</sup> In a study, it was observed that the musculoskeletal disorder is the most common illness in the security guards followed by tiredness and sleep disorders.<sup>[35]</sup>

Working under night shift, there is a significant rise in the cortisol level and difference in cardiovascular parameters of security

personnel's.<sup>[41]</sup> Security guards face frequent accidents that lead to be burn out, post-traumatic stress disorders impulsivity, aggressiveness, etc.<sup>[14]</sup> Due to the pressure and stress, large numbers of security personnel are smokers that cause high secondary impairment and diseases.<sup>[36]</sup> It is also observed that the levels of fasting glucose, total cholesterol, and blood pressure are not significantly higher in the over weighted guards.<sup>[42]</sup> A graphical representation is given that gives clear picture about the increased diastolic blood pressure and body mass index (BMI) with control [Graph 1]. However, higher level of overall alleged stress and BMI (overweight and obesity) is significant interpreters of the hypertension,<sup>[43]</sup> In recent study, it is noticed that the night shift work is probably "carcinogenic to humans" and activates the specific tumor-promoting signaling pathways in cancer cells.<sup>[44,45]</sup> In addition to this, rotating night shift workers may cause related prostate cancer risk and risk of breast cancer in women aged 35–54.<sup>[46]</sup>

## RELATIONSHIP BETWEEN SHIFT WORK AND RELATED FITNESS COMPLICATIONS

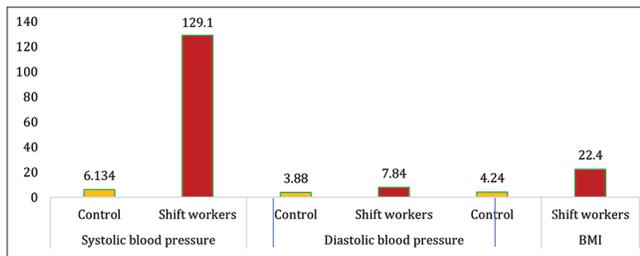
There is a significant relationship between the shift work and health issues. The frequency of gastric ulcers is reported higher under shift systems than daytime workers. In a study, it is compiled that the musculoskeletal symptoms such as shoulder and low back pain were higher among shift workers than the working in fixed day workers.

Age, BMI, and smoking status are positively correlated with the almost all health risks and work disability. Age reflected in a positive correlation with BMI and smoking status, whereas smoking status mirrored significantly negative correlation with BMI, total onychomycosis severity index score, and in most of the health dangers and related work disability parameters indicating synergistic effects of smoking and stress on fitness issues. A study on gastrointestinal disorders concluded that the shift works significantly affect the disorder including increased appetite and peptic ulcer.<sup>[48]</sup> In addition to this, the coefficients of determination for smokers predicted higher for the most of the health risk factors than the non-smokers. Likewise, significant relationship was observed ( $P = 0.001$ ) between working in shift system and sleep disorders, blood pressure, circadian rhythms disruption, chronic fatigue, etc.<sup>[49,50]</sup> Regarding dissatisfaction from family and social life, there is a significant difference between the shift workers compared to the control group one. It has been reported that the rates of blood pressure (diastolic/systolic), cardiovascular diseases, and gastrointestinal were disturbed for shift workers than the day workers. A significant relationship was also revealed between social life disorders and age, gastrointestinal disturbance and working

**Table 1:** Fitness issues and its level in security guards working under shift works

S. No.	Fitness parameters	Level	Sources
1.	Diabetes, total cholesterol, dyslipidemia, hypertension	Increased	[36]
2.	HDL cholesterol	Decreased	[36], [37]
3.	BMI, systolic and diastolic blood pressure	Increased	[5]
4.	Tiredness, headache	Increased	[27]
5.	Systolic blood pressure	Increased	[23]
6.	Abdominal obesity, triglycerides, blood pressure and type 2 diabetes, and cardiovascular diseases	Increased	[37]
7.	Menstrual pains, miscarriage, impaired fetal development	Increased	[38]
8.	Uptake of nutrients (vitamins and minerals)	Decreased	[39]
9.	Musculoskeletal disorder	Increased	[40]
10.	Fatigue, sleeping, and eating disorder	Increased	[26]

BMI: Body mass index, HDL: High-density lipoprotein



**Graph 1:** Comparison regarding diastolic blood pressure and body mass index with control among security guards (Source: Zamanian *et al.*<sup>[47]</sup>)

experience, cardiovascular disorders and age, musculoskeletal disorders, and age that implies that the shift work is a risk factor and matter of concern.

## PROSPECTIVE OF SHIFT WORK

The security guards are primarily doing the job for saving the properties (living or non-living form) and perform functions according to the need of owners. Nowadays, doing work in shifts (rotatory, night shifts, etc.) are more popular and is high stress-oriented job consequently affects the fitness. In spite of high stress in shift works, almost all the institutions are employing the security guards in shifts as of some following reasons:

- Ease in accessing the security personnel's in terms of extent of working time.
- More liberty and choice for taking leave from the service for few hours.
- There is an opportunity for managing the workforces, particularly expenses.
- It reduces the job stress up to some extent in comparison to fixed working hours.
- Generating more economic action for round-the-clock shift group on festivals/holidays.
- The prospect for giving more training passages among target groups,
- Security guards have more freedom to choose their working hours voluntarily results in high rate of job satisfaction.

## ALLEVIATION OF ISSUES

The safety, health, and wellness of workers including security guards are most important aspects, but are impartially low in priority in the developing countries in comparison to others. Due to intensive and dangerous work, this becomes challenging to the workers and face stresses such as anxiety, depression, nervousness, poor job performance, social relations, and health fitness.<sup>[51]</sup> Based on research findings, some of the important points are mentioned below to mitigate the issues:<sup>[52]</sup>

- By reducing the working hours of security guards working in shifts workers can increase the higher levels of family gratification.
- Need to be design the shift work system.
- Limit the night shifts and avoid fast moving rotation in the shifts, especially night shifts.
- The duration of the shifts should be determined by examining the psychophysical demand.
- Provide and utilize the acceptable days off to relieve the security personnel.
- Electronic roster may be created to shuffle the all members

systematically to make a fair distribution of security guards in shifts works.

In a study found that those participants have high conscientiousness and may manage time and energy more efficiently in comparison to others.<sup>[53]</sup> Individuals may be selected according to their suitability and interest as his/her behavior and personality may also be a predictor of job satisfaction, mood/attitude, and behaviors.<sup>[54]</sup> However, there is not a complete solution to reduce the impact of shifts on security guard's health and fitness till now, so need to be research and study more to minimize the issues at a threshold level precisely.

## CONCLUSION

Both, security guard and shifts, are equally valuable for efficient work and high productivity. However, shift work is a risk factor and has negative effects on fitness and family life satisfaction. The frequency of blood pressure, sleep disorders, cardiovascular diseases, and gastrointestinal problems are muscular pain are higher in security guards working in shifts. Therefore, it is necessary to take in consideration more precisely toward shift workers and their fitness problems. To eradicate these complications, there is a need to be more investigation and identify the effects of shift work on security guards from different aspects and its enumerable factors should be exercised. Designing better working schedule, space and hours along with the public awareness of the issues particularly among the employers can minimize the effects of shift work on security guard health.

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