

# Psychosocial work environment in Graveyard shift: cross sectional survey using COPSOQ

Shweta Satish Devare Phadke<sup>1</sup>, Monica Newand Dulani<sup>2</sup>

<sup>1</sup>Associate Professor, <sup>2</sup>Intern, School of Physiotherapy, D.Y.Patil University, Sector 7, Nerul, Navi Mumbai-400706, Maharashtra, India. Email id – shweta.phadke@gmail.com

**Abstract:** With rapidly changing workplaces, unique occupational health hazards are emerging. Traditional industrial health concerns were related more in the physical health domain. Emerging new occupations particularly in Information Technology (IT) and IT enabled Services (ITES), pose a host of new health challenges particularly those related to mental and social health. The 'Copenhagen psychosocial questionnaire' (COPSOQ) medium version was used to assess psychosocial problems in work environment faced by these workers. A community based cross-sectional survey study was conducted. The assessment reveals that these people working in graveyard shift have a high quantitative and cognitive demand due to precision required during their work. Considerable role conflicts and absence of role clarity are also present. Measures such as physical workouts, stress reduction program and group therapy can be recommended.

## 1 Introduction

The term "rotational shiftwork" or graveyard shift work covers a wide variety of work schedules and implies that shifts rotate or change according to a set schedule. These shifts can be either continuous, running 24 hours per day, 7 days per week, or semi-continuous, running 2 or 3 shifts per day with or without weekends. Workers take turns working on all shifts that are part of a particular system. According to the International Labour Organisation<sup>1</sup>, shift work is defined as: 'A method of work organization under which groups or crews of workers succeed each other at the same workstations to perform the same operations, each crew working a certain schedule or shift so that the undertaking can operate longer than the stipulated weekly hours for any worker. Often the term is used when more than one work period is scheduled in a workday or when most of the working hours fall outside the standard work-day, such as evening, night or weekend shifts'. The definition of rotational shift work in this document does not include fixed shifts like straight nights, straight afternoons or straight days and, generally, fixed shifts are not discussed here. However, workers on fixed night shifts and workers on rotational shift work schedules have much in common due to the constantly changing schedules, night work and potential disruption to family and social lives. The length of a shift can vary between 8 and 12 hours. Many workers find that shift work disrupts their family and personal life and leads to health problems including chronic fatigue and gastrointestinal disorders. On the other hand, some workers prefer shift work because it usually allows for more free time. In this study, psychosocial factors of work environment in graveyard shift workers evaluated.



## 2 Methodology

A community based cross-sectional survey study was conducted, after approval of D.Y.Patil University ethics committee. TATA COMMUNICATION SERVICES employees in Powai and Thane Yantra Park voluntarily participated. COPSOQ medium version anonymously filled

Table 1- Gender Distribution

MALE	FEMALE
68%	32%

Inference – Male dominating field.

Table 2 - Work Duration

12 Hour SHIFT	10 Hour SHIFT	9 Hour SHIFT
1.2%	26.41%	36.57%

Inference – maximum working hours are between 9- 10.

Table 3 - Frequency of shift rotation

6MONTHLY	MONTHLY	WEEKLY	NEVER
11%	43%	41%	5%

Table 4 - Demands

Demands	Normative value	data value
Quantitative	46.8	49.07
Emotional	37.8	40.65

Inference – high demands in terms of emotions and quantity of work.

Table 5 – Workplace factors

Factor	Normative value	Sample value
Developmental scope	72.4	59.64
Commitment at work- place	57.1	63.8
Meaning of work	77.7	64.13
Quality of leadership	55.55	55.94
Influence at work	55.4	56.37
Predictability	60.4	63.37
Role clarity	75.7	70.61
Role conflicts	37.3	59.02
Feedback at work	39.2	53.43

Inference – feedback system strong but still role conflicts present.

Table 6 - General health

NORMAL	SAMPLE
80.9	36.3

Inference – poor perception of general health.

Table 7 - Social support

NORMAL	SAMPLE
68.3	62.7

Inference – not satisfied with social support.

Table 8 – conflict and bullying at work

Parameters	In percentage
Conflicts and bullying	3.17%
Balance between work and Private life	52.87 %

Inference – most positive finding is no conflicts and bullying.

in the physical presence of investigator. Apparently healthy aged between 20 to 40 years, Minimum 1 year exposure to graveyard shift included in statistics calculation. Descriptive Statistical analysis used in the form of average and percentage.

#### 4 Discussion

A total of 63 subjects were considered, which were healthy young individuals in the age group of 20 to 40 years, working for the range of 9 to 12 hours. Addictions like smoking and alcohol consumption present in 60% of them. Graveyard shift workers exposed to night shift, as well as frequent rotations in shifts. Thus as soon as their body tries to adjust to the new anti-physiological schedule, it gets changed again. The body is controlled by an internal clock found in the supra chiasmic nucleus in the hypothalamus gland in the brain. This area of the brain generates the circadian rhythms that regulate processes in the body such as temperature control, hormone production, alertness and sleep. These circadian rhythms run over a 24-hour period and are affected by exposure to light. Many of the processes that are active in our body during the day slow down at night in preparation for sleep. At the same time the sleep hormone melatonin is released from the brain, which lowers alertness and increases the desire to sleep. Our body is designed to sleep at night. Working at night inevitably causes sleep deprivation and fatigue.

Also, when the shift finishes and the worker goes home to sleep during day, they are battling the body clock. Sleep is further hampered by the noise of everyday life: telephone calls, traffic, children playing, road works etc. Many subjects complained that it was harder to get enough sleep. Most night workers sleep for less time and have sleep of worse quality than those who work regular hours. If you sleep for less than eight or nine hours a night you gradually build up sleep debt. This is cumulative, so the more miss, the more sleep will eventually need.

A high quantitative demand noted may be because their workload is of an extent that they have to work overtime frequently. High cognitive demand due to precision required during work as mistake can cause huge losses to company and they have to face demotion for the same. They are very much committed to their work. Due to the monotonous nature of work, they feel less job satisfaction.

Lack of growth and developmental opportunities noted. Social support at work is deficient. According to them their general and mental health are not satisfactory. The quality of leadership is good. And most positive finding is near absence of bullying and violence at work place.

#### 5 Conclusion

Significant quantitative and emotional demands at work. Considerable role conflicts are present. Doubts on role clarity. There is good commitment at workplace, quality of leadership and feedback at work. There are minimal reports of bullying and violence at work. Measures such as work site health promotion program on physical activity, stress reduction can improve occupational health of these workers.



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