Shift Work and Depression

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1. Introduction

Social expectations, is one of the reasons for shift work for access to certain services around the clock. Surprisingly, in India, very meager work has been done in shift workers from chronobiological point of view. Thus, work schedules and work load factors need to be examined in combination to obtain a realistic picture of the effects of shift work and health.

Work of this nature is of considerable significance to India, especially because the number of shift workers is likely to go up and if shift work posed a threat to health of the workers it would become a problem of national importance. In India, the adversaries being faced by the shift workers have not received much attention from the researchers and required a systematic documentation of the studies on the impacts of the altered biological rhythms on the health, social and domestic well being of the workers, along with the public safety. In view of this dearth, the present study is contemplated and focuses on the Railway shift workers, perhaps the largest group under a single employer in India. Unfortunately, so far a proper strategy could not be evolved. It is also surprising that a consensus has yet to be reached among workers in this field concerning the identification and use of proper chronobiologic index/indices to ascertain individual shift workers tolerance.

Today shift work has become a routine feature in industries, hospitals and many other essential sectors (Gupta et al, 1997). Desynchronization of circadian rhythms attributed to shift work may lead to several clinical complications. It may produce disastrous chronopharmacologic effects such as impaired metabolism and impaired responsiveness to medications. Various studies (Schor 199; Tarumi et al, 1992; Harrington 1994; Morimoto, 1994; Maruyama et al, 1995; Maruyama and Morimoto 1996; Spurgeon et al, 1997; Sparks et al, 1997) have reported that long hours of work are one of the possible risk factors which may cause health defects in employees working in varying shift schedules more likely to suffer major depression than those without insomnia. There is extensive evidence that shift work including night work, increases the risk of developing psychological and physiological health problems.
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(Andlauer 1960; Koller 1983; Bohle and Tilley 1989; Scott et al, 1997). Akerstedt and Folkard, (1997) found that alertness deficits for instance are caused not only by the length of a shift but also by working hours shifting within the circadian phase indicated that, shiftwork that involves night shifts strongly influences the psychology and psychophysiology of the individuals. Thereby several other physical and mental stresses follow and make them vulnerable. In view of the above, this paper entitled “Shift work and Depression” has been contemplated to identify the different types of stress associated with the shift work and understand the impacts on health of the shift staff.

2. Methodology
The study followed “Syndrome Approach” to realize the objectives of the study, by adopting a combination of the methods of obtaining data on the study respondents. The focus of the study being the health problems associated with the shift work, sampling was carried out by selecting the employees. The Standard Shift Work Index developed by the Shift work Research Team MRC/ERSC Social and Applied Psychology Unit was used in the present study with few modifications to suit the local conditions. Results obtained were analyzed statistically wherever necessary.

3. Results
The sample population was stratified in to four Age Groups (AG), with an interval of 10 years. The employees were divided into : (1) Loco Pilots (LP); (2) Train Guards(GD), who travel along with the train; (3) Train Ticket Examiners (TTE), (4) Office Staff(OS), and (5) Technicians(TN). Symptoms of the health problems related to the disturbance of biological clock were considered as Stress problem categories like (a) Sleeplessness; (b) Stress; (c) Anxiety; (d) Anger; (e) Depression; and (f) Mental perturbations. Stress and Mental health affected individuals among the shift workers were identified based on their own ratings and respondents, on their own perception rated each of the symptom on a 4-point scale.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Employee Type</th>
<th>AG-1</th>
<th></th>
<th>AG-2</th>
<th></th>
<th>AG-3</th>
<th></th>
<th>AG-4</th>
<th></th>
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<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
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<td>%</td>
<td>N</td>
<td>%</td>
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<td>%</td>
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<td>41.18</td>
<td>15</td>
<td>44.12</td>
<td>4</td>
<td>11.76</td>
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<td>2</td>
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<td>5</td>
</tr>
<tr>
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<tr>
<td>4</td>
<td>OS</td>
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<tr>
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<td>TN</td>
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<td>50.70</td>
<td>24</td>
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<td>9</td>
<td>12.68</td>
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<td>2.82</td>
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3.1 Incidence of Depression Stress
The incidence of Depression stress was found in 23.67% of the total respondents or 49.65% of the respondents identified as affected by the stress. Of the total affected, 28.17% were women and 71.83% were males.

Among the affected women, 90% were in the AG-1 and 10% were in AG-2, while none were in AG-3 and AG-4 groups. Among the affected Men, 35.29% were in AG-1; 43.14% were in AG-2; 17.65% were in AG-3 and 3.92% were in AG-4. The mean incidence of depression was at 22.64%; mean incidence for Anxiety was at 13.91%; and the mean incidences for mental stress and anger were at 3.15% and 1.03%, respectively. It is alarming that 84.62% of the affected by Anxiety stress; and 84.5% of the affected by Depression stress were in the AG1 and AG2 groups, while all the affected by mental stress were in the AG1 group. It is important to note that 67.83% of the stress affected had more than one type of stress symptoms. Of the total affected, 47.89% were LPs, 25.35% were OSs, 12.68% were TNs, and 7.04% each were in GDs and TTEs. However, among the each employee type, a majority of the affected were in the lower age groups: Among the TTEs and OSs all the affected were in the first two age groups; while in LPs, about 85.3% were in AG-1 and AG-2 groups, while among the TNs 44.45%, 22.22% and 33.33% of the affected were in AG-1, AG-2 and AG-3, respectively. However, among the affected belonging to AG-4 group, incidence among GDs, was high.

Fig. 1: Incidence of Depression Stress among different Age- Sex groups

Fig. 2: Distribution of the Stress affected among different Employee types.
4. Discussion
Keeping in view of the high incidences of the specific health problems especially in the lower age groups (between 20 and 40 years); and among the employee types like Loco Pilots, Train Guards, and Technicians (like track staff and signal controllers) the study recommends that the night shift be limited to 4 hrs duration, and the ideal break up can be as follows:

- Day Shift 1: 0600 to 1400 hrs;
- Night Shift 1: 2200 to 0200 hrs;
- Day Shift 2: 1400 to 2200 hrs;
- Night Shift 2: 0200 to 0400 hrs.

Further, it is essential that an ideal rotation of the shifts be adopted so as to reduce the sleeplessness and fatigue among the shift workers, ideally limiting the total work hours to less than 50hrs/week and night shift hours to less than 8hrs/week. Thus, the intensity of the stress reduces and the physical ability to cope up increases.

5. Acknowledgement
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References


