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Comparative Study on Systolic Blood Pressure and Diastolic Blood Pressure among Day Workers and Night Shift Workers

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Abstract; *Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, reduced muscle activity and inhibition of nearly all voluntary muscles. MATERIALS AND METHODS; 200 night shift women workers(working hours from 10 pm to 6 am for more than 2 years) with age 30-40 years of age who were cleaning the roads taken as study group and 200 day shift women workers (working hours from 8am to 4 pm for more than 2 years) with age 30-40 years of age who were working in the medical college taken as control group. Systolic blood pressure and diastolic blood pressures were recorded in sitting position with mercury sphygmomanometer. This study was conducted on 200 day workers and 200 shift workers. There is statistically significant rise in systolic and diastolic blood pressure levels in night shift women workers than day workers.*

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I. Introduction

Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, reduced muscle activity and inhibition of nearly all voluntary muscles [1] and reduced interactions with surroundings[2]. During sleep, most of the body's systems are in an anabolic state, helping to restore the immune, nervous, skeletal, and muscular systems; these are vital processes that maintain mood, memory, and cognitive function, and play a large role in the function of the endocrine and immune systems.[3] .The internal circadian clock promotes sleep daily at night. The amount of sleep a person needs depends on many factors, including age. In general most adults need 7 to 9 hours a night for the best amount of sleep, although some people may need as few as 6 hours or as many as 10 hours of sleep each day. Long-term night shift work is associated with an increased risk of certain cancers, as well as metabolic problems, heart disease, ulcers, gastrointestinal problems and obesity. Insufficient sleep has been shown to change metabolism and appetite, and studies have shown that night shift workers have higher levels of triglycerides than day workers. Night shifts are more common in doctors, nurses , drivers, manual labourers , factory workers and software engineers.

Aim of the study; In this study an attempt has been made to study the effects of night shift on systolic blood pressure and diastolic blood pressure. MATERIALS AND METHODS; 200 night shift women workers (working hours from 10 pm to 6 am for more than 2 years) with 30-40 years of age who were cleaning the roads taken as study group and 200 day shift workers (working hours from 8am to 4 pm for more than 2 years) with 30-40 years of age who were working in the medical college taken as control group. Prior consent was taken from all the participants and their history of hypertension and other cardiac diseases were noted and those who were with history of hypertension and cardiac problems excluded from the study. Systolic blood pressure and diastolic blood pressures were recorded in sitting position with mercury sphygmomanometer and tabulated. Statistical analysis done by using students t-test. RESULTS ; This study was conducted on 200 day workers and 200 shift workers. There is statistically significant rise in systolic and diastolic blood pressure levels in night shift women workers than day workers.

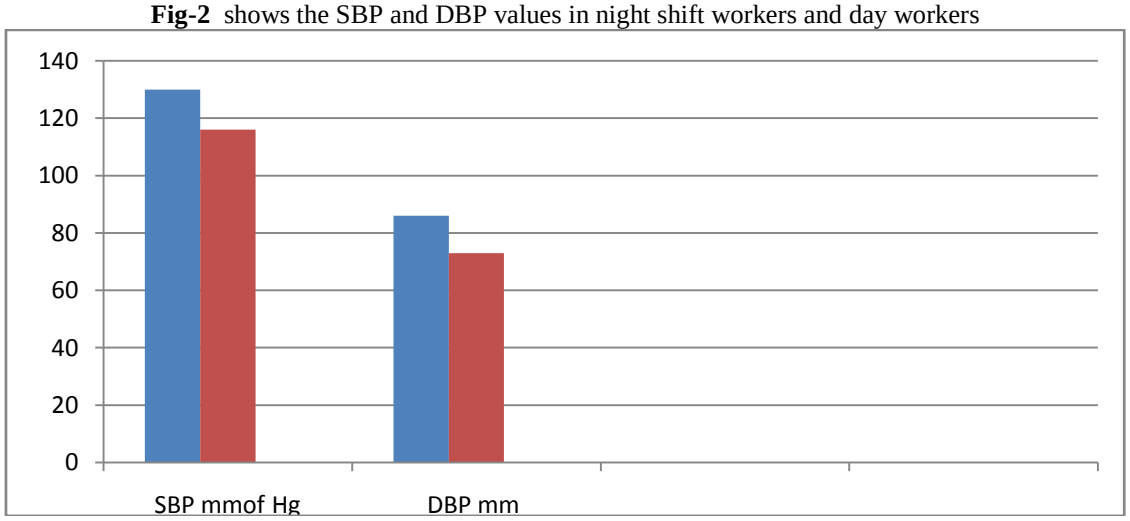
II. Statistical Analysis

For statistical comparison unpaired student's t test was used. P value < 0.05 was considered as statistically significant.

Fig-1 shows the SBP and DBP values in night shift workers and day workers

	NIGHT SHIFT WORKERS	DAY WORKERS	p- value
SBP	130 ±11.67	116 ± 8.54	0.052
DBP	86 ± 7.06	73 ± 7.64	0.05

Fig-2 shows the SBP and DBP values in night shift workers and day workers



In the present study night shift workers had a higher chance of hypertension than day workers. According to a report of the National Commission on Sleep Disorder Research, 30 million adults and teenagers in the United States are chronically sleep deprived. A 9-year follow-up study found that individuals sleeping fewer than 6 h each night experienced poorer health and had a 70% higher mortality rate than those who slept 7 or 8 h each night. This association remains significant even after controlling for age, gender, race, physical health, smoking history, physical activity, alcohol consumption and social support.[4] .

Past researchers have studied extensively on night shift effect on blood pressure[5,6] and agreed that there was a relationship between night shift and hypertension[7,8,9,10].CONCLUSION; there is a positive correlation between high systolic blood pressure and diastolic blood pressures among night shift workers when compared to day workers .

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