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Alcohol Consumption among Day workers and Shift workers in Visakhapatnam

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Abstract

The in-hand research has been carried out to assess and compare the extent of alcohol consumption among day and shift workers in Visakhapatnam. The research was conducted on a sample of 70 software engineers, in the age group of 22-33 years in Bhubaneswar, Orissa. Alcohol habits also appear to vary between day workers and shift workers. The alcohol consumption was also found to be high in case of shift workers than the day workers, but association was found to be non-significant. The dietary information was assessed by 24 hour recall method using a set of pre standardized vessels. More shift workers were found to consume alcohol, number of alcohol consumers and frequency of consumption increased after joining the job. Majority of shift workers were found to drink once in a week. Shift workers have reported higher levels of alcohol consumption, frequency of heavy drinking, and proportion of alcohol-related problems. So, the impact of shift work on people's daily health habits and adverse health outcomes should be well understood.

Keywords: Alcohol Consumption, Day workers, Shift workers.

Introduction

Life style reflects both work and leisure behaviour patterns like individual's basic activities, attitudes, interests etc. It also includes the daily health habits measured in terms of exercise, smoking or alcohol consumption, sleeping habits, family and social activities. Shift work involves hours of employment during non-standard or alternative hours, and for Saturday and Sundays, i.e., work outside of typical day schedule of 8 am to 5 pm from Monday-Friday (Presser, 2003). Shift work may be of 8 hours in duration, which includes working on morning, evening and night shift. The duration of a shift could also be of 12 hours with one day shift and the night shift. Shift work can be organised around fixed or rotating patterns. If fixed, the employee works, in the evenings or nights on a continuing basis. In rotating shift, the employee may work alternately between day, evening and night shifts. On-call shift is a special form of shift work, where in case of emergency; the particular group of workers are called for their duties. Split shift is the shift where the workers work for four hours in the morning and four hours in the evening. The most wide spread shift system is of eight hours, commonly morning, evening and night shifts. Human body's "biological" clock helps in maintaining complex internal functions throughout a 24-hour day. A number of physiological functions show distinct rhythmic changes in the course of a 24 hour period, known as circadian rhythms. Increase in physical and social availability of alcohol increases the rate of consumption and alcohol related problems. Physical availability refers to the extent to which there is access to alcohol or cost associated with it. Social availability refers to the degree of normative support for drinking within one's social environment. Though, it is now a days a common problem very few studies are available in this field, which are given below. Smart *et al.* (1979) made an effort to know the relationship between drinking problems and shift work, in 993 persons in Durban, Toronto. The study showed the highest levels of alcohol related problems and symptoms in shift workers. Hermansson *et al.* (2003) in their study investigated, whether there is any difference between permanent day and shift workers in high risk alcohol consumption, in Sweden. Out of 990 employees (day, two shift and three shift workers) 194 (20%) were positive. There

was no significant difference in the screening results between the day and shift workers but more subjects from two shift work schedule (odds ratio = 0.5, 95% confidence interval = 0.3–0.9) screened positive. Thus higher alcohol consumption was reported by two shift workers group. Uetani *et al.* (2006) conducted a study to clarify the influence of shift work and other factors on serum Uric Acid (UA) levels in Japanese workers. For the study 15,871 workers of the telecommunication company were taken. Results clarified that in males shift work, BMI, consumption of alcohol and little consumption of vegetables were positively associated with the development of increased serum UA (≥ 8 mg/dl in males, ≥ 6 mg/dl in females). In case of females, age, BMI and smoking were positively associated with the development of increased serum UA. In addition, shift workers also have more adverse life style behaviours, such as higher tendency to smoke and drink alcohol. These daily habits (diet, exercise, smoking and alcohol consumption) and their immediate consequences (e.g obesity) are the fundamental cause of chronic diseases. An unhealthy diet often leads to overweight which leads to Circulatory diseases, Diabetes mellitus and various forms of cancers. Lack of exercise is closely associated with food related ill health and obesity. Cigarette smoking has been identified as a classical risk factor for coronary heart disease. Alcohol consumption levels and drinking patterns seem to vary between different industries and workplaces and there may be differences in alcohol use between different work environments within the same branch of industry. Information on alcohol consumption viz., age at which started drinking alcohol, frequency of drinking: daily, once a week, occasionally, reason behind alcohol consumption, quantity consumed, brand preferred, snacks preferred with alcohol, any health problem due to alcohol consumption was collected. This might be due to the fact that, all the software engineers work for more than 10- 12 hours a day and in different time schedules. Majority were found to live in rented rooms along with the heterogeneous shift workers. Due to their nature of job, lack of time for preparation of healthy nutritious foods and because of better economic conditions they went for processed food or foods outside home more often. It indirectly showed an association of income with the consumption of processed foods or fast food. The study also pointed out that the changes in life style among the shift workers in terms of increased smoking and alcohol consumption. The ultimate findings suggested that, higher payment of shift workers lead to changes in daily health habits (as measured by diet, BMI, smoking and alcohol consumption) and the ultimately ending in overweight. The study was on par with the study conducted by Popkin *et al.* (2001), who showed an effect of economic transition on diet, nutritional status and diet related non-communicable diseases in China and India. More numbers of night shift workers were found to smoke 32-47 cigarettes and consume more than 1400ml of alcohol per week. The present investigation has detailed about the nutritional status, life style and general health of the shift workers in terms of anthropometric measurements, nutrient intake

general health and other components like smoking habits, alcohol consumption, exercise habits, sleep pattern and social life *etc.* The salient results of the investigation are discussed in this chapter. With the alcohol consumption pattern more number of shift workers (61.7%) were consuming alcohol than permanent day workers (25%). Out of 61.7 per cent shift workers, 26.4 per cent had started consuming alcohol after joining the job and also the quantity of consumption of alcohol increased in both the groups. Majority of shift workers (47.1%) and only 5.6 percent day workers reported to consume alcohol weekly. This result was on par with the study conducted by Smart *et al.* (1979) who also pointed out that alcohol drinking was more prevalent in shift workers than day worker. Regarding the type of alcohol mostly consumed were beer, whisky, rum, wine, Russian vodka, scotch and gin *etc.* The particular brands which were preferred by the software engineers were Bacardi, Absolute for rum, Jack Daniel and Signature for whisky, Absolute and Bacardi for Russian vodka, Kingfisher and Foster for beer *etc.* Along with alcohol the commonly preferred snacks were kurkure, chips, fried cashew nut, peanut, salad and non-vegetarian items like chicken pakoda, boiled egg and tandoori chicken. The study also pointed out that among the three shift workers number of alcohol consumers and the quantity of consumption was low in morning and evening shift workers. It might be due to the reason that, going to restaurant or pubs tends to occur in the evenings. However these two shift workers often reluctant to attain such activities due to their work schedules, where they have to work early in the morning, any high alcohol intake in the previous night will affect their work efficiency.

Methodology

The study was carried out at various software industries in Visakhapatnam. The purpose of the present investigation was to assess the health status of shift workers in comparison to permanent day workers.

Participants

A total of 70 software engineers, in the age group of 22-33 years were selected for the study, with 36 members in control group (permanent day workers) and 34 members in study group (shift workers). The study was conducted in five software industries in Bhubaneswar, Orissa. All the subjects were male workers as there were no female workers working in shifts due to safety reasons. All the shift workers followed an 8 hour irregular rotating work schedule namely morning, evening and night shift. Permanent day workers were the workers of typical day schedule who work for 8 hours. The first step included sample selection and then, rapport was formed with the subjects.

Result and Discussion

Once the data was obtained, it was coded, tabulated and analyzed, keeping in mind the objectives of the study. Appropriate statistical tools were used to draw meaningful inferences.

Table1: Alcohol consumption pattern of the subjects

Particulars	Categories	Day Workers (N=36)		Shift Workers (N=34)	
		Frequency	Percentage	Frequency	percentage
Alcohol habit	Alcohol consumer	9	25	21	61.7

	Non-consumer	27	75	13	38.2
Age of starting (Years)	<21	5	13.8	2	5.8
	21-24	3	8.3	10	29.4
	>24	1	2.7	9	26.4
Quantity (ml/wk)	Earlier				
	< 420	6	16.6	5	14.7
	420 -1200	2	5.5	2	5.8
	>1200	1	2.7	0	-
	Total	9	25	7	20.5
	At present				
	<540	6	16.6	5	14.7
540- 1400	2	5.5	3	8.8	
>1400	1	2.7	13	38.2	
Total	9	25	21	61.7	
Frequency of consumption	Once in a week	2	5.6	16	47.1
	More than once a week	3	8.3	3	8.8
	Fortnightly	4	11.1	2	5.9
Reason for consumption	Enjoyment	9	25	21	61.8
	Release tension	0	0	0	0
	Release tiredness	0	0	0	0



Fig.1: Alcohol consumers and Non-consumers



Fig.4: Alcohol consumption per week after joining job (in milliliters)

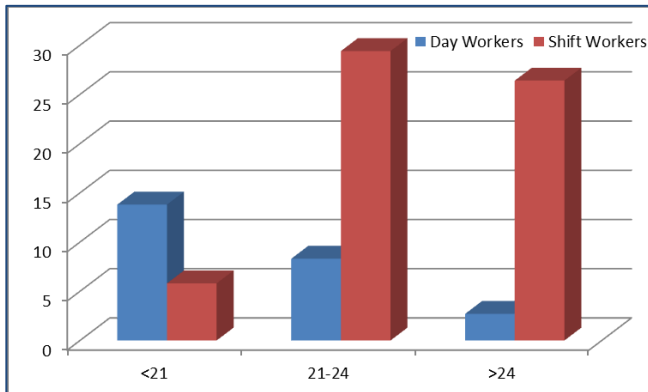


Fig.2: Alcohol consumers by Age

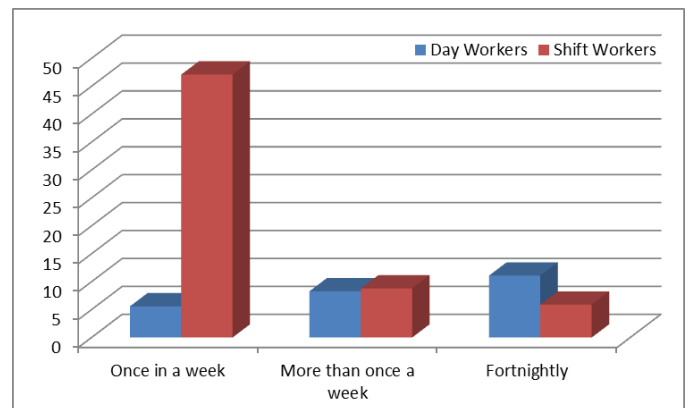


Fig.5: Alcohol consumption by frequency of intake

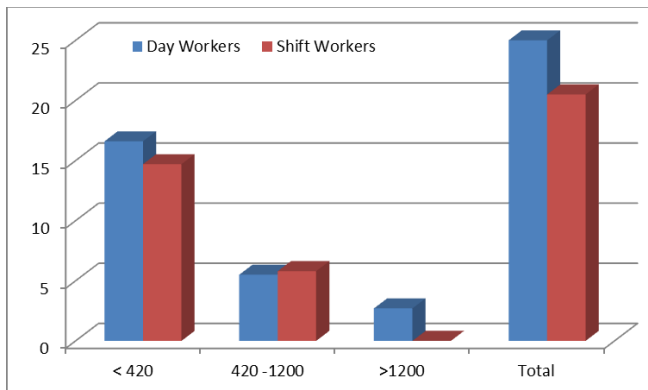


Fig.3: Alcohol consumption per week before joining job (in milliliters)

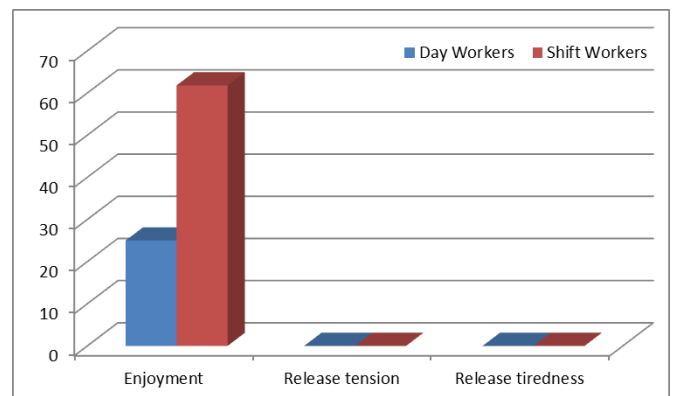


Fig.6: Alcohol consumption by purpose

Conclusion

Among the day workers 25 per cent subjects consumed alcohol, whereas more than half the shift workers (61.7%) consumed alcohol regularly. Thirteen per cent day workers started consuming alcohol before 21 years, whereas in case of shift workers 5.8 per cent subjects were there in this category. But 29.4 per cent shift workers started consuming alcohol between the age of 21 to 24 years, while in day workers there were only 8.3 per cent subjects in this age range. After the age of 24 years 26.4 per cent shift workers and 2.7 per cent day worker started alcohol consumption. Twenty five per cent day workers and 20.5 per cent shift workers were reported that they were taking alcohol before joining the job. The percentage of subjects consuming alcohol remained same in day workers but in shift workers it increased to 61.7 per cent after taking up the job and the quantity of alcohol intake increased in both the group. Sixteen per cent, 5.5 per cent, 2.7 per cent day workers were found to consume less than 420 ml, 420 to 1200 ml and more than 1200 ml respectively in a week. In case of shift workers 14.7 per cent and 5.8 per cent were found to consume less than 420 ml, 420 ml to 1200ml alcohol respectively and there was no shift worker in the third group (more than 1200 ml). After joining the job, 16.6 per cent, 5.5 per cent and 2.7 per cent day workers were classified as per the quantity of alcohol consumption into less than 540 ml, 540 ml to 1400 ml and more than 1400 ml group respectively. In case of shift workers 14.7 per cent, 8.8 per cent and 38.2 per cent were reported to consume less than 540 ml, 540 ml to 1400 ml and more than 1400 ml group respectively. In control group 5.6 per cent workers were found to drink once a week followed by 8.3 per cent drinking more than once a week and 11.1 per cent workers drinking once in fortnight. In case of shift workers 47.11 per cent, consuming once a week, followed by 8.8 per cent of subjects consuming more than once a week and 2 subjects consuming fortnightly.

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