

# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## Shift Medical Workers in Medical College and Hospitals.

A Vaithialingam<sup>1\*</sup>, S Rajasekaran<sup>2</sup>, T Mohana Lakshmi<sup>3</sup>, and E Prabhakar Reddy<sup>4</sup>.

<sup>1</sup>Department of Orthopaedics, Sri Lakshmi Narayana Institute of Medical Sciences, (Affiliated to Bharath University, Chennai), Pondicherry, India.

<sup>2</sup>Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences, (Affiliated to Bharath University, Chennai), Pondicherry, India.

<sup>3</sup>Department of Microbiology, Sri Lakshmi Narayana Institute of Medical Sciences, (Affiliated to Bharath University, Chennai), Pondicherry, India.

<sup>4</sup>Department of Biochemistry and Central Laboratory, Sri Lakshmi Narayana Institute of Medical Sciences, (Affiliated to Bharath University, Chennai), Pondicherry, India.

### ABSTRACT

Shift workers in Medical field usually applies to fixed work at night roster work of specific shift pattern. Increasing of the patients at night times 12 working hours it shows an association between jobs train and psychological job characteristics and 8hrs who are all employees of medical field 8 working hours per day increasing demand for services both as extended those employed traditionally known as white colour occupation like doctor, nurses, technicians. Comparison of non-medical day time workers with the medical field shift workers normal biological social diurnal rhythms cause health problems cause shift medical workers. The study was conducted in paramedical staff and doctors a study population was taken up of the consent form total 60 subjects age ranged from 20 to 45 years were 8 hours working job people were 30 another 30 subjects were working job in the hospital. Results of study will provide useful information for the prevention of lipid disorders in the medical shift workers. To conclude our study suggested that only raised levels of Triglycerides, Cholesterol might be the primary risk factor for the CVD in Indian population capacity with women, men are having high risk in hospital and medical setup, there is no much risk was observed comparing with other setups like industries and companies. our analysis indicates a possible associated between a psychologically demanding job and an unfavourable lipid profile in Indian male workers in medical setup. The logical basis for the applications to atherosclerotic lipid is weak. In medical job workers are very low risk capacity comparing with industrial job workers. Workers and intelligence are a part of Daily life and more so of fast faced corporate a mental stress is directly related with alteration of serum lipid profile.

**Key words:** Shift workers, Lipid profile, Cardiovascular Disease

*\*Corresponding author*

## INTRODUCTION

Shift workers in medical field usually applies to fixed work at night roster work of specific shift pattern.[1] the increasing of the patients at night times 12 working hours it shows an association between jobs train and psychological job characteristics and 8hrs who are all employees of medical field 8 working hours per day increasing demand for services both as extended those employed traditionally known as white colour occupation like doctor, nurses, technicians.[1] comparison of non medical day time workers with the medical field shift workers normal biological social diurnal rhythms cause health problems cause shift medical workers.[2-6]

Disturbances circadian rhythm increases and decreases in daily activity when the medical field workers working at night and sleeping during day these circadian rhythms moves above even after weeks of night work, no complete adjustment rhythms are made so working in irregular hours including night duty work, shift duty work has been found association with higher level of lipid. So, the higher concentration of any of these lipids leads greater risk of coronary arteries and other hand HDL appear to have inverse relation to the risk of cardiac heart diseases. Low levels of HDL concentration lead the risk of cardiac heart diseases. [7]

So, these may be predict onset of cardiovascular diseases who are all the employees of medical colleges( paramedical staff nurses, technicians and doctors) with a combination of high psychological job demand and low control over there job train (or) at risk of developing illness.[8-9] so, these illness may leads to stress related health outcome.

Metabolic disorders unfavourable lipid profile might be one of the mediators.[3-4] The evidence on the association between jobs train and atherogenic lipid profile is fair from definite previous studies showed that there was a significant correlation between the ration of job demand to influence over the job and lipid levels. so, the best of our knowledge these study attempts the association between medical job workers and atherogenic lipid profile the present study was undertaken to evaluate the changes the serum lipid profile in medical field workers i.e 8 hours working staff and 12 hours night working medical job workers and to compare with male and female.

Shift work involves to a delay a employees, extending the period of production beyond the conventional 8 hr working days. It applied to fixed work ay right,roster work and specific shift patterns. Evidence has been accumulating that adverse psychosocial job characteristics may predict the asset of cardiovascular diseases.

## MATERIALS AND METHODS

The study was conducted in sri Lakshmi narayana institute of medical sciences paramedical staff and doctors a study population was taken up of the consent form total 60 subjects age ranged from 20 to 50 years were 8 hours working job people another 30 subjects were working job in the hospital. 4ml blood samples were collected after overnight fasting, before 3 days they did not taken any non vegetarian, ice creams, cigarette smoking, estimation of the serum lipid profile and measured by seimens fully automated analyser

collected samples at 2000 rpm per 20 min centrifuged after the centrifugation separated serum was collected and stored for further analysis data were expressed as mean  $\pm$  SE of mean  $P < 0.05$  shown significant. The total statistics were done SPSS 16 version.

## RESULTS

Our results of study will provide useful information for the prevention of lipid disorders in the medical shift workers.

**Table 1: Mean  $\pm$  SEM of age, weight, height and (Body mass index)BMI.**

Groups(n)	Age(yrs)	Height	Weight	BMI kg/sqm
Study(30)	33.91 $\pm$ 8.99	158.36 $\pm$ 8.13	59.00 $\pm$ 9.98	22.69 $\pm$ 3.31
Control(30)	32.01 $\pm$ 9.01 $\pm$ 9.25	158.16 $\pm$ 6.01	58.02 $\pm$ 8.04	22.37 $\pm$ 2.47

**Table 2: Mean  $\pm$  SEM value of Lipid profile of controls and high risk stress employees.**

Investigations	Employer M $\pm$ SE(30)	Control M $\pm$ SE(30)
Cholesterol	200.06 $\pm$ 40.23	168.47 $\pm$ 42.34
Tgl	206.33 $\pm$ 40.67	126.86 $\pm$ 48.46
HDL	46.40 $\pm$ 4.86	52.8 $\pm$ 12.6

**Table 3: Mean  $\pm$  SEM value of Lipid profile of male and female patients.**

Investigations	M $\pm$ SE(male)	M $\pm$ SE (female)
Cholesterol	212.7 $\pm$ 37.8	206.62 $\pm$ 40.21
Tgl	208.2 $\pm$ 36.6	197.68 $\pm$ 42.36
HDL	53.6 $\pm$ 11.4	68.3 $\pm$ 18.6

## DISCUSSION

Our results found elevated serum triglycerides as part of lipid metabolism. High levels of triglycerides is directly associated with increase risk for heart diseases people with elevated levels of triglycerides almost invariable risk factors for heart diseases such as diabetes mellitus high blood pressure obesity life style etc. on therefore it is possible to sort out with triglycerides posses and independent risk factor due to changes in life style, various amount of stress.

Such as muscle tension, tiredness, twitching, irritability and fuzzy thinking can be symptoms of stress during stressful events the body switching fuel sources to more easily burned carbohydrates instead of lipids most of the stress in modern life style relates to the brain activity rather than physical activity. So, due to the altered levels of lipid profile in our study. There is a great variation cholesterol and triglycerides values in our study values usually affected by food habits life style races social environment and status of the work. In the status of work in medical population abnormal levels cholesterol and triglycerides are leads to cardiovascular disease or manifested due to the accumulation of fat in endothelial spaces of arteries.

The abnormal levels of cholesterol and triglycerides seen in some other clinical conditions such as hypothyroidism and obesity ,Work stress and negligence are a part of

daily life and more so of past faced corporate life previous studies shown that at mental stress is directly related with significant alteration of serum lipid profile [1]

To best of my knowledge our study is the 1<sup>st</sup> Indian study Indian medical job worker studies with a high stress job profile ( day duty 8 hours, night duty 12 hours).

Most of studies focussed directly with lipid profile and hyper tension or metabolic syndrome[2,10]. In our study almost 60% of the people is having a high triglycerides levels, this because of high stress.[11-17]

Increased Cholesterol and Triglycerides in employees comparing with control group. Cholesterol and Triglycerides also increased in male working employees comparing with female employees. So in our study we found that comparing with controls all the employees were highly increased cholesterol and triglyceride levels. Particularly triglycerides were highly increased and cholesterol were moderately increased. In this workers male and female there is no, much increasing of cholesterol comparing with triglycerides but both were moderately increased in the male patients comparing with female. Stress caused increased triglycerides levels and to study in the blood stream longer and suggested one of the reason can be linked with cardiac heart diseases. These study recommends to screen the lipid profile levels in the medical workers and how are all working in the high risk stress and awareness.

### CONCLUSION

To conclude our study suggested that only raised levels of Triglycerides, Cholesterol might be the primary risk factor for the CVD in Indian population capacity with women, men are having high risk in hospital and medical setup, there is no much risk was observed comparing with other setups like industries and companies. In other papers they discussed high risk where observed in industries shift workers. Comparing with industries our medical workers risk is minimal. However in our analysis indicates a possible associated between a psychologically demanding job and an unfavourable lipid profile in Indian male workers in medical setup. The logical basis for the applications to atherosclerotic lipid is weak.

In medical job workers are very low risk capacity with industrial job workers. Workers and intelligence are a part of Daily life and more so of fast faced corporate a mental stress is directly related with alteration of serum lipid profile.

### REFERENCES

- [1] Bachen EA, Muldoon MF, Matthews KA, Manuck SB. Psychosom Med 2002;64:587-94.
- [2] Berrimah IE, Mohaimed AR, Midhat F, Al-Shobili HA. Int J Health Sci 2009;3(2): 133-142.
- [3] Lands WEM. Harpers review of Biochemistry, 20<sup>th</sup> edition. N.Engl.J.Med 1985; 313:1615-1616.
- [4] Dr. Md Abedur Rahaman, Lecturer, Department of Physiology, Dhaka medical college, Dhaka, Bangladesh.

- [5] Dimsadle JE, Herd JA. Psychosom Med 1982;44:413-30.
- [6] Niaura R, Stoney CM, Hebert PN. Biol Psychol 1992;34:1-43.
- [7] Glueck CJ, Heiss G, Morrison JA, Khoury P, Moore M. Circulation 1981;64:48-56.
- [8] Boggild H, Knutson A. Scand J Work Environ Health 1999;25:85-99.
- [9] Karasek R, Theorell, T. Healthy work: stress, productivity, and the reconstruction of working life. Basic Books, New York 1990.
- [10] Frasson EI, Alfredsson LS, de Faire UH, Knutson A, Westerholm PJ. Scand J Public Health 2003; 31(5): 324-33.
- [11] Alterman T, Shekelle RB, Vernon SW, Burau KD. Decision latitude, Am J Epidemiol 1994;139:620-7.
- [12] Greenlund KJ, Liu K, Knox S, McCreath H, Dyer AR, Gardin J. Soc Sci Med 1995;41:717-23.
- [13] Ishizaki M, Tsuritani I, Noborisaka Y, Yamada Y, Tabata M, Nakagawa H. Int Arch Occup Environ Health 1996;68:315-20.
- [14] Kawakami N, Haratani T, Araki S. Int Arch Occup Environ Health 1998;71:429-32.
- [15] Netterstrom B, Kristensen TS, Damsgaard MT, Oslen O, Sjol A. Br J Ind Med 1991;48:684-9.
- [16] Pieper C, LaCroix AZ, Karasek RA. Am J Epidemiol 1989;483-94.
- [17] Orth-Gomer K. Psychosom Med 1983; 45: 407-15.