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### Original Article

## Effect Of Chronic Work Stress In Nursing Staff

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#### ABSTRACT

Stress is a fundamental inevitable experience of modern work. The role of nursing is associated with multiple and conflicting demands imposed by nurse supervisors, managers, medical and administrative staff. Study comprised of 30 Nurses working at tertiary care centre for more than 10 years.

Apart from questionnaire study, biochemical and physiological investigations were carried out contrast to non-working female of identical age group for appraisal of cardiovascular risk factors in nurses. Pragmatic deranged lipid profile with raised Total Cholesterol, Triglyceride level noted in nurses showed risk of CVD. Corresponding Body mass index, blood pressure, were also noted to be higher than the non-working female. Study investigation data made apparent that nurses are more towards occupational stress induced cardiovascular risk.

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### 1. Introduction

Selye(1) a pioneer of stress research points out that stress is a mediational process in which stressors trigger, an attempt at adaptation of or resolution, that result in individual distress, if the organism is unsuccessful in satisfying the demand. Stress responding occurs at physiological, behavioral and cognitive level(2). Recent occupational health data indicate that 40-50 percent of the working population is exposed to hazardous conditions in the work place. Between 68 million to 157 million new cases of occupational diseases arise as a consequence of various types of work related exposures. Work place stress is associated with many health problems(3,4)

Nursing is by its very nature, a stressful occupation. Every day the nurse confronts stark suffering, grief and death as few other people do. Many Nursing tasks are mundane and unrewarding, many are by normal standards distasteful and disgusting, other are often degrading, some are simply frightening. Nursing was chosen as one of the occupations on which the ILO has commissioned a manual on stress prevention.

Study investigated job related stress affecting lipoprotein status and may be risk factor for Cardiovascular risk in nurses at tertiary care centre.

### 2. Materials and Methods:

Randomized study was carried out in 150 Nursing Staff of tertiary care centre. Fifty non working females age 30 - 45 years were accounted as Control group

#### Inclusion criteria:

Nurses working since last 10 years or more at hospital

#### Exclusion criteria:

1. Nurses suffering from any cardio respiratory disorder
2. Nurses suffering from known autonomic and endocrinal dysfunction.

30 nurses fulfilled exclusion & inclusion criteria and were enrolled for the study.

Apart from questionnaire, biochemical and physiological parameters were analyzed. Biochemical parameters included estimation of Fasting Blood Sugar(GOD POD method) and

lipid profile. 12 hour fasting sample were collected and serum was separated immediately .All values were expressed in mean±SD. Student t test was performed for evaluation between the groups.

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### 3. OBSERVATION

Work stress is a major risk factor for cardiovascular disease. Work - related stress generally distracts from the quality of nurses working lives, increases minor psychiatric morbidity(5,6,7) and may contribute to some forms of physical illness with particular reference to musculoskeletal, depression, anxiety ,cardiovascular and autonomic dysfunction. (8,9,10,11). In present study marked difference in lipid profile (mean value)observed between Nurses and nonworking women. Although differences in Triglyceride (TG) ,low density lipoprotein (LDL ) and very low density lipoprotein (VLDL) were not statistically significant between Nurses and nonworking women. Differences in Total cholesterol (Chol), High density lipoprotein (HDL) were statistically significant. There may be several potential mechanisms through which stress can affect cardiac health, and IHD that produces clinically significant changes relatively late in life is considered as a multifactorial disease by many authors.

Atanu Saha et al.(12) did a study to evaluate effect of work stress on cardiovascular risk factors in police official. They found that police group had a higher mean of biochemical parameters. Although difference in age heart rate , LDL ,VLDL were not statistically significant between police group and non police group. Difference of mean variable total cholesterol (Chol) ,Triglyceride (TG), High density lipoprotein (HDL)were statistically significant. Only a few studies about relation of daily stress and hassles, like work stress or job strain and atherosclerosis, have been conducted so far. Most of studies were carried out on participants of middle age, usually over 40, stem from the lack of techniques for assessing sub-clinical stages of IHD, such as atherosclerotic process. present study may help as a baseline for future researcher scholars who want to do further work or review our findings. Mechanisms that contribute to initiate, develop and speed up atherogenesis in humans may underlie associations of atherogenic changes in lipids, haemodynamic, hormonal and other risk factors due to routine stress and hassles of 'stressful-real-life' events, occurring from time to time in life.

**Table - 2. Biochemical Parameters In Study Population**

Biochemical Parameters n = 30	Control Group n = 30	Study group Nurses n = 30	"t" value
Fasting Blood Sugar (mg/dl)	90.2±11.59	84.3±9.91	NS
Total Cholesterol (mg/dl)	147.3±14.05	175.13±31.19	2.26 <0.05
Triglycerides (mg/dl)	117.17±32.68	135.03±24.64	NS
LDL (mg/dl)	80.03±21.75	120.96±38.55	NS
VLDL (mg/dl)	23.77±5.87	26.6±5.10	NS
HDL (mg/dl)	44.9±7.78	27.2±12.89	2.09 <0.05

### PATTERN OF HYPERLIPIDEMIA

Biochemical Parameter (values in mg/dl)	Control n = 30		NW Group n = 30	
	No.	%	No.	%
<b>Cholesterol</b>				
Desirable (<200)	30	100	22	73.3
Borderline (200-240)	-	-	7	23.3
High risk (>240)	-	-	1	3.3
<b>Triglyceride</b>				
Normal Fasting (<154)	27	90	25	83
Border line (154-206)	3	10	5	17
High risk (>206)	-	-	-	-
<b>LDL</b>				
Desirable(≤130)	30	100	19	63
Borderline(130-160)	-	-	6	20
High Risk(>160)	-	-	5	17
<b>HDL</b>				
Normal value female(40-65)	24	80	07	23
Expected value(<39)	6	20	23	77

### 4. CONCLUSION

From this study it has been revealed that atherogenic changes in levels of blood lipids and lipoproteins occurred, and the alterations were found in association with cardiovascular activity in healthy Nurses due to routine mental stress (anxiety task) during real life stressful situation. Further work may evaluate with specific details, especially exact mechanisms of lipid alteration and consequences of such variations, e.g. ,possible role in atherogenesis from earlier stages. It is suggested that prolong study period may be conducted not only on blood lipids but also on other biological risk factors like interleukins, haemodynamics and psychological factors related to socio-environmental problems, especially genetically based psychological factors in young age group.

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