

# **RESEARCH ARTICLE**

# A CORRELATIONAL STUDY BETWEEN STRESS AND HEALTH RISK BEHAVIOR AMONG STAFF NURSES AT SELECTED HOSPITAL OF DEHRADUN, INDIA

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#### Abstract

..... Introduction: Stress is a potential cause of concern in staff nurses and is associated with health risk behavior which is actions or practice of an individual that have potential of causing ill health disability or death to the individual or society at large. Aim of this study was to find out the relationship between stress and health risk behavior among staff nurses at selected hospital of Dehradun.

Methodology: A quantitative research approach was used to assess the stress and health risk behavior. The correlational research design was selected. Non probability convenience sampling technique was used and sample size was 100. The study was conducted at Shri Mahant Indiresh Hospital, Patel Nagar Dehradun. The research tool consisted of Perceived Stress Scale and National Health Risk Behavior Survey Scale. The collected data was analyzed and interpreted by using descriptive and inferential statistics.

Result: There was 88% moderate level of stress and 4% high level of stress found in participants and 15% high level of health risk behavior. There was a negative correlation found between stress and health risk behavior.No association was found between study variables and socio demographic variables.

**Conclusion:** The study concludes that there is moderate level of stress and high level of health risk behavior and there is no correlation found between stress and health risk behavior and there is also no association found between demographic variables.

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# Introduction:-

Stress has been dubbed the 'Health epidemics of the 21st century' by WHO.<sup>1</sup> It is a widespread phenomenon all around for human life span. Life constantly subjects us to pressure. It is the way human beings react both physically & mentally to changes events and situations in their lives.<sup>2</sup> Stress is a biological term which refers to the consequences of the failure of a human body to respond appropriately to emotional or physical threats to the organism, whether actual or imagined it includes a state of alarm.<sup>3</sup>

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Occupational stress is an important factor that causes physical and psychological complication in the employee and thereby decreases the productivity of organization and job satisfaction of employees. Nursing is generally perceived as demanding profession along with the increased demand and progress in the nursing profession, stress among the nurses has also increased for nurses and the hospital job stress is very expensive as it results in decrease productivity and increased attrition rate.<sup>4</sup>

Major life changes, job dissatisfaction, chronic illness or injury, emotional problems (depression, anxiety, anger, grief, guilt, low self-esteem), heavy job workload or too much responsibility, long working hours, facing discrimination or harassment at work, traumatic events are the main causes of stress in adults which later on turn into occupational stress, when the requirement of the job do not match the capability, resources or needs of the workers.

Stress and health risk behavior also increases an individual's risk for chronic disease like increased blood pressure, rapid heart rate, back pain, headaches, inability to concentrate, and confusion, immunosuppression and chronic pain, psychological disorders like poor work performance, higher absentees, less work productivity. Other adverse health effects include cardiovascular diseases, gastrointestinal diseases, diabetes, weak immune system, and increased risk of occupational injury. These are also disease indicators linked with health death rate of healthcare workers.<sup>5</sup>

Health risk behavior can have adverse effects on health and wellbeing and over all development. This includes behaviors that cause immediate physical injury as well as behaviors with cumulative negative effects. It may prevent them from future success and development. Causes of health risk behaviors include inadequate information and skill, poor access to education and health services, unsupportive social environment and exploitation. It is essential to identify risks so that modification can be initiated before any damage.<sup>6</sup>

Risk behavior also affects them from participating in typical experiences for their age, it also significantly impacts the lives of individuals and those around them. It is essential that parents, educators and concerned adults become aware of the prevalence of these behaviors.<sup>7</sup> and identifying and incorporating prevention and health promotion of health care workers early in order to avoid problems in adult life. These behavior in individuals are the most important social & health issues that can affect society and family.<sup>8</sup> Stress and health risk behaviors can have long lasting negative effects throughout an individual life, and causes major economic and social burden to society.<sup>9</sup>

Nursing has been identified as an occupation that has levels of stress. Job stress brought about hazardous impacts not only on nurses health but also on their abilities to cope with job demands. Infact occupational stress has been cited as a significant health problem, work stress in nursing was first assessed by Menzies who identified four sources of anxiety among nurses: patient care, decision making, taking responsibility and change.<sup>10</sup>

The direct link between stress and health risk has often been attributed to biological functions allosteric load due to over activation of the hypothalamic, pituitary adrenal axis. When people experience everyday stress, to relieve that stress individuals engage in either healthy behavior like exercise, meditation, yoga and adequate diet or unhealthy behavior such as tobacco smoking, using drugs, alcohol consumption, low physical activity, eating junk food. Stress has been indirectly linked to nurse's health through the experience of stress being associated with greater engagement in negative health behaviours.<sup>11</sup> Thus, this study aimed at finding out stress and health risk behavior among nurses which have an impact on their physical health.<sup>12</sup>

# **Materials and Methods:-**

# **Study Setting:**

The study was conducted at Shri Mahant Indiresh Hospital Patel Nagar, Dehradun. This setting was selected because of availability of sample and they may be true representative of study population.

# **Study Population:**

The population comprised staff nurses at selected setting.

# Sample:

The samples were staff nurses of Shri Mahant Indiresh Hospital who fulfilled the selection criteria.

### Sampling technique and sample size:

Sampling technique used in this study was non probability convenient Sampling Technique and sample size was 100.

### Criteria for sample selection:

The sampling frame structured includes the following criteria.

### Inclusion criteria:

- 1. Staff nurses of the selected hospital of Dehradun.
- 2. Staff nurses who were available during the data collection period.
- 3. Staff nurses with access to the internet.
- 4. Staff nurses who were willing to participate.

### **Exclusion criteria:**

- 1. Staff nurses who were not available during the period of data collection.
- 2. Staff nurses who were not willing to participate in the study

A perceived stress scale and national health risk behavior survey scale were selected to assess the stress and health risk behavior in staff nurses. The tools were developed to elicit the response from subjects in English.

### **Perceived Stress Scales:-**

This consists of 10 questions to evaluate the stress in staff nurses in the selected area. The valid items of question were related to feelings and thoughts and perceived stress in a certain way in their life both in personal and professional life.

The total number of questions was 10. Each question consists of five independent responses. For each response score will be as follows:

0-Never, 1-Almost never, 2-Sometimes, 3-Fairly often, 4-Very often

Scoring interpretation was classified into three levels based on scores as follows:-

The maximum score is 40 and the minimum score 0. Questions 4,5, 7, and 8 were reverse scored. On these questions, scoring was changed as follows: 0=4, 1=3, 2=2, 3=1,4=0. The total score of each subject interpreted as follows:  $^{13}$ 

0-13 = Low stress 14-26 = Moderate Stress 27-40 = Severe stress

#### National Health Risk Behaviour Survey:

This consists of 28 questions to evaluate the health risk behavior. The valid items of question are injury related behaviors, tobacco use, dietary pattern, physical health, exercise pattern, alcohol and drug use, intellectual wellness, occupational and mental wellness.<sup>14</sup>

The total number of questions is 28. Each question answered Yes and No independent responses.

#### Scoring

For questions 1 and 12-28, the response 'yes' was scored with 1 point. Questions 2 to 11 were reverse-scored and the response 'no' was scored with 1 point. After getting the total score, the interpretation for health risk was made as follows:

0-9 = High risk 10-18 = Moderate risk 19-28 = Low risk

# **Data collection procedure:**

Prior to data collection, the permission was obtained from the Principal SGRRIM &HS, College of Nursing Patel Nagar Dehradun. The sample was collected by non probability convenient sampling technique. The investigator gave self-introduction telephonically and the purpose of the study and the subject's willingness to participate in the study was ascertained. The method of data collection technique was self-administrative on stress and health risk behavior. The data was collected online through Google form application. Before starting the data collection, confidentiality was assured to participants and Informed consent was obtained. The data collection online survey form was sent to the participants and they were requested to complete the questions and submit it timely. The main online survey took approximately 3 days. During the conduction of the study there was no problem encountered and subjects were co-operative to conduct the study.

Ethical consideration was obtained from the research ethical committee of Faculty of Nursing (SGRRIMHS) and informed consent was taken from every participant.

The statistical analysis was done using Statistical Package for the Social Sciences (SPSS for Windows, Version 16.0. Chicago, SPSS Inc.). Descriptive statistics were calculated for all variables in terms of means and standard deviations for continuous variables and number/percentages for categorical variables. The association of demographic variables with stress levels and health risk was done using Chi-square test. Pearson's correlation analysis was used to evaluate correlations between continuous variables. The level of significance for the present study was fixed at a p-value of less than 0.05.

# **Results:-**

The Table 1shows socio-demographic description of the study participants. There were a total of 100 participants out of which 75% were females and 25% males. Majority of the subjects had a B.Sc.Nursing degree (49%). Most of the participants were Hindu (78%), followed by Christians (10%), Muslims (7%) and Sikh (4%).

Majority (69%) of subjects were living in a nuclear family, were single (81%), were working in general ward (45%), and had 0-5 years of experience (97%)

S. NO	Demographic variables	Frequency (f)	Percentage (%)
1.	Gender		
	Male	25	25%
	Female	75	75%
2.	Education		
	GNM	33	33%
	B.Sc. Nursing	49	49%
	PB BSc. Nursing	18	18%
3.	Religion		
	Hindu	78	78%
	Muslim	7	7%
	Sikh	4	4%
	Christian	10	10%
	Others	1	1%
4.	Type of family		
	Nuclear	69	69%
	Joint	30	30%
	Extended	1	1%
5.	Marital status		
	Single	81	81%
	Married	19	19%
	Divorced	0	0%
	Widowed	0	0%
6.	Work setting		
	General/ medical ward	45	45%

# Table 1:- Participants' socio-demographic characteristics.

	Surgical ward	14	14%
	ICU	32	32%
	Emergency	9	9%
7.	Work Experience 0-5 years	97	97%
	11-15 years	1	1%
	16-20 years	1	1%
	More than 20 years	0	0%

# **Stress Levels:**

Out of a total of 100 participants, 88 participants had moderate stress, 8 participants had low stress and 4 participants reported high stress. The mean PSS score of study population was  $19.31 \pm 4.104$ 

# Health Risk Behaviour Pattern:

A total of 85 participants had low risk behavior and 15 participants had moderate health risk behavior. There were no participants who reported high health risk behavior. The mean NHRBS Score of study participants was  $22.07 \pm 3.412$ .

# Association between demographic variables and Stress Levels:

A Chi-square test for association was conducted between selected demographic variables (gender, education, religion, family type, marital status, work setting and work experience) and stress level in this sample of staff nurses. The analysis showed that there was no statistically significant association of stress with any of the demographic variables (p>0.05) (Table 2).

S.N	Demographic	Stress Level (Frequency)			df	Chi	p-value
	variables	Low Stress	Moderate Stress	High Stress		square $\chi^2$	
1.	Gender						
	Male	1	22	2	2	2.000	0.368
	Female	7	66	2			
2.	Education						
	GNM	2	30	1	4	5.507	0.239
	BSc.	3	45	1			
	PB BSc.	3	13	2			
3.	Religion						
	Hindu	8	67	3			
	Muslim	0	7	0	8	3.880	0.868
	Sikh	0	4	0			
	Christian	0	9	1			
	Others	0	1	0			
4.	Type of family						
	Nuclear	5	60	4			
	Joint	3	27	0	4	2.115	0.715
	Extended	0	1	0			
5.	Marital Status						
	Single	5	72	4			
	Married	3	16	0	2	2.756	0.252
	Divorced	0	0	0			
	Widowed	0	0	0			
6.	Work Setting						
	General/Medical	3	41	1			
	Surgical	1	11	2	6	7.096	0.312
	ICU	3	29	0			

# Table 2:- Association between stress levels with participants' socio-demographic characteristics.

	Emergency	1	7	1			
7.	Work Experience						
	0-5 Years	8	85	4			
	6-10 Years	0	1	0	8	0.422	0.999
	11-15 Years	0	1	0			
	16-20 Years	0	0	0			
	More than 20 Years	0	1	0			

(d f= degrees of freedom) (p>0.05)

# Association between demographic variables and Health Risk:

A Chi-square test for association was conducted between selected demographic variables (gender, education, religion, family type, marital status, work setting and work experience) and health risk behavior in this sample of staff nurses. The analysis showed that there was no statistically significant association between any of the demographic variables and health risk behavior (p>0.05) (Table 3).

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S.N	Demographic variables	Health Risk Behaviour (Frequency)		df	Chi square $\chi^2$	p-value
		Low Risk	Moderate Risk			
1.	Gender					
	Male	22	3	1	0.235	0.628
	Female	63	12			
2.	Education					
	GNM	26	7			
	BSc.	44	5	2	1.922	0.383
	PB BSc.	15	3			
3.	Religion					
	Hindu	66	12			
	Muslim	7	0	4	7.813	0.099
	Sikh	4	0			
	Christian	8	2			
	Others	0	1			
4.	Type of family					
	Nuclear	56	13			
	Joint	28	2	2	2.609	0.271
	Extended	1	0			
5.	Marital Status					
	Single	68	13			
	Married	17	2	6	0.368	0.544
	Divorced	0	0			
	Widowed	0	0			
6.	Work Setting					
	General/Medical	37	8			
	Surgical	11	3	3	1.627	0.653
	ICU	29	3			
	Emergency	8	1			
7.	Work Experience					
	0-5 Years	82	15			
	6-10 Years	1	0	4	0.546	0.909
	11-15 Years	1	0			
	16-20 Years	0	0			
	More than 20 Years	1	0			

(d f= degrees of freedom) (p>0.05)

# Correlation between stress and health risk behaviour:

Correlation between the two variables was done using Pearson's correlation test which showed that there was a statistically significant moderately negative correlation between stress and health risk (r = -0.452, p<0.001).

# **Discussion:-**

The present study was conducted among 100 staff nurses to evaluate stress and health risk behaviour and to assess whether a correlation exists between stress and health risk.

Majority of the study participants (88%) in this study reported a moderate level of stress. A previous study from Delhi-NCR found that 60% female nurses had high levels of stress and 58% male nurses had low levels of stress.<sup>15</sup>In the present study, 85% of the study participants reported low-risk health behaviour and 15% study participants reported moderate health risk behaviour. Similar findings have been reported in a sample of staff nurses in Kenya, where health risk behaviour was found to be below expectation.<sup>16</sup> Other studies have reported a moderate stress level among staff nurses.<sup>17-19</sup>

A significant correlation was observed between stress and health risk behaviour in this study. Similar findings were observed by Algren et al in a study conducted on 511 staff nurses in Denmark. In this study, perceived stress scale was significantly associated with higher odds of health risk behavior, including a low intake of fruit or vegetable daily smoking, physical inactivity and co-occurrence of health risk behaviors.<sup>20</sup> Other studies also found a significant correlation between stress and health risk behavior.<sup>2122</sup>

# **Conclusion:-**

In the study, there is moderate level of stress and low level of health risk behaviour found in staff nurses. There is negative correlation found between stress and health risk behaviour among staff nurses. There is no association between stress and health risk behavior with selected demographic variables.

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