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Research Article

### ASSESSMENT OF PERCEIVED LEVEL OF STRESS AND ITS ASSOCIATED RISK FACTORS AMONG NURSES WORKING AT DHQ HOSPITAL, VEHARI PAKISTAN

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**Abstract:**

**Background:** Stress is a dynamic response reciprocating between the person and the environment. Nursing is an occupation with a collection of circumstances leading to stress. Work-related stress (occupational stress) can bring hazardous consequences to a person's physical, mental and social status, which directly and indirectly affecting their standard and work optimization. Hence, an attempt has been made with an aim to ascertain perceived level of stress among staff nurses in District Headquarters Hospital Vehari.

**Methodology:** The descriptive cross-sectional study was conducted among 100 staff nurses selected from DHQ Hospital Vehari, using multistage sampling technique. Study duration was 6-months period with a response rate of 100%. A well drafted questionnaire was designed to assess stress using Perceived Level of Stress (PLOS) and Expanded Nursing Stress Scale (ENSS). Results: A cross-sectional study consisted of 100 staff nurses. Majority of the participants (93 [93.0%]) had diploma and 90 (90.0%) nurses worked on day shift. Nearly 55 (55.0%) had a moderate perceived level of stress 50 (50%) had moderate occupational stress. Significant positive correlation ( $r = 0.144$ ,  $P < 0.001$ ) between ENSS and PSS.

**Conclusion:** A positive correlation was found between perceived stress and occupational stress among staff nurses of DHQ Hospital Vehari. This shows that those with general stress also have occupational stress.

**Keywords:** Nurses, occupational stress, perceived stress

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**INTRODUCTION:**

Stress is a dynamic response reciprocating between the person and the environment. The term stress has continuously been re examined in the context of pathophysiology, is nevertheless a well-proven and contributing factor in etiology and prognosis of many inflammatory diseases. Selye defined stress as “response state of organism to energies acting collectively on body which, if excessive, i.e., straining the capacity of yielding processes beyond their limits, succumb to exhaustion and death.”[1] Socioeconomic factor, occupation portfolio, daily schedule, competitive work environment, emotional trauma, etc., have led to increased level of stress in the modern lifestyle.[2] Stress may act alone or in combination and may exert effects at different stages of the life course. There have been multiple mechanisms advocated to bridge pathogenic properties associated with stress including:[3]

- A direct activation of psychosocial stress involving the central and autonomic nervous system
- An indirect role of psychosocial stress through behavioral adaptations

Stress may affect at risk health habits such as smoking,[4] alcohol consumption, neglect of oral hygiene, or poor compliance with dental care.[3,5] This influences not only the decrease of the frequency as well as the quality of the orodental hygiene but also the impending use of tobacco products, changes in food habits,[6] or binge eating, especially a high-fat diet which then can lead to immune suppression through increased cortisol production,[3] leading to a deterioration of the general health. Stress, depression, and anxiety are not yet confirmed as absolute risk conditions but have been identified in some observational studies[7-11] as potential factors that may affect disease. The potential negative influence of stress on medical health in general and on specific diseases, in particular, has been subject of extensive research. The stresses evaluated in this study were perceived stress and occupational stress measured by Perceived Level of Stress ( PLOS) and Expanded Nursing Stress Scale (ENSS), respectively.

Occupational stress was assessed because according to the WHO report, “Raising Awareness of Stress at Work in Developing Countries” in 2007,[12] and it is one of the most common forms of stress in developing countries as the socioeconomic states, social inequalities, and overpopulation forces employees to work based on job availability without a choice. People with different jobs encountered different types and

quantities of stress. Selye indicated that nursing is one of the most stressful professions.[6] Nursing is an occupation with a constellation of circumstances leading to stress.[13] Nurses were selected for the study because nursing is an occupation with a constellation of circumstances leading to stress. Stress affecting nurses across the globe has been convincingly documented in many literatures.[14-17] Nurses in India are overburdened as the nurse-to-patient ratio is low (1:2250).[18] They are responsible – along with other health-care professionals – for the treatment, safety, and recovery of acutely or chronically ill, injured, health maintenance, treatment of life-threatening emergencies, and medical and nursing research. Nurses do not only assume the role of caregivers but are also administrators and supervisors of patients. These multiple work roles contribute to the significant amount of occupation-related stress among nursing staff, particularly those working at the bottom of the hierarchy such as staff nurses and nursing sisters, who end up sharing most of the work burden. Shift duties, time pressures, lack of respect from patients, doctors as well as hospital administrators, inadequate staffing levels, interpersonal relationships, death of patient, and a low pay scale significantly add to their stress levels.[19] These factors are intrinsic to nursing and are compounded by environmental factors such as difficult patients and their families, relationships with physicians, low institutional commitment to nursing, and the delivery of poor quality care.[13] Research has shown that nursing is a high-risk occupation in respect of stress-related diseases.[20] Hence study had assessed the stress among nurses by using Expanded Nursing Stress Scale [ENSS][21] and Perceived Level of Stress scale [PLOS].[22] Stress-related studies were less among different occupations in Vehari City Hence, an initiative had been taken to ascertain perceived level of stress among staff nurses in DHQ Hospital Vehari.

**Research Methodology:**

Descriptive, cross-sectional study was undertaken to ascertain the perceived level of stress among staff nurses in DHQ Hospital Vehari.

**Duration of study:**

This cross-sectional study was undertaken over a period of 6 months among the staff nurses in DHQ Hospital Vehari. Sample size for the study was scientifically determined based on the data obtained from a recently published scientific article[13]. Study population was selected on the basis of multistage sampling technique. Moreover, for the selection of

nurses from the hospital, the attendance register was used. Confidentiality and privacy of all the volunteers was ensured. Informed consent and prior written permission was taken from the hospital administration for undertaking this study.

$n$  = Total Sample size required

$N_i$  = Number of nurses in each stratum

The range of PSS and ENSS scores was divided into stratified quartiles to develop an ordinal scale.[24-26]

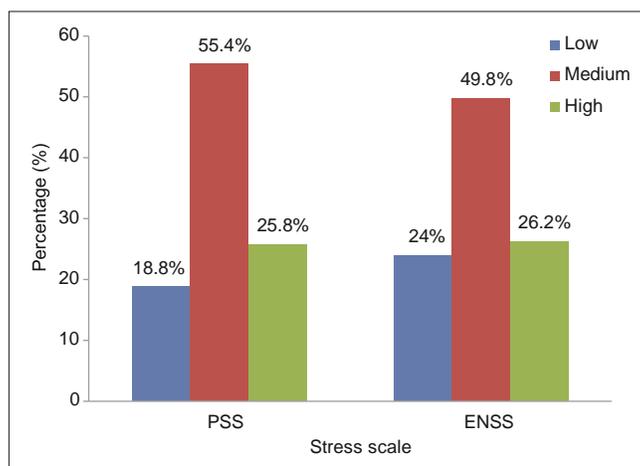
The stress score was stratified into low stress (first quartile), moderate stress (second and third quartiles),

and high stress (fourth quartile). Probability levels at  $P < 0.05$  were considered statistically significant.

### RESULTS:

The study was conducted to ascertain the perceived level of stress among the staff nurses DHQ Hospital Vehari. A total of 100 nurses were included in the study among that 93% were females and 7% were male staff nurses. Regarding marital status, 67% ( $n = 67$ ) were married and 33% (33) were single. Table 1 shows demographic details of the study population.

<b>Table 1: Distribution of study subjects according to their qualifications, working shifts and length of shift, patient assignment, and years of experience n(%)</b>	
<b>Qualification</b>	
Diploma	93
Degree.	5
Post Graduate.	2
<b>Shift</b>	
Morning.	91
Evening.	3
Night.	6
<b>Length of Shift (h)</b>	
6	70
8	8
12	22
<b>Patient Assignment</b>	
1-3	7
4-6	16
>6	77
<b>Work Experience</b>	
<1	10
1-10	54
11-20	24
21-30	9
>30	3
<b>Gender</b>	
Male	7
Female	93
<b>Marital Status</b>	
Single	33
Married	67



	PSS score, mean±SD	F	P	Inference
Nursing qualifications				
Diploma	19.74±4.1	0.283	0.754	NS
Degree	19.70±5.8			
Postgraduate	22.00±1.4			
Shift most often worked				
Day	19.67±4.3	2.060	0.129	NS
Evening	19.00±2.5			
Night	21.15±4.2			
Usual length of shift (h)				
8	20.27±4.2	6.701	0.000	HS
10	18.71±3.1			
12	18.61±4.3			
>12	17.21±4.9			
Average patient assignment				
1-3	21.00±5.1	6.408	0.002	S
4-6	20.94±2.9			
>6	19.38±4.3			
Work experience (years)				
<1	19.42±4.5	1.013	0.400	NS
1-10	19.90±3.9			
11-20	19.89±3.8			
21-30	18.68±6.4			
>30	20.33±1.82			

**Table 2: Mean Perceived Stress Scale scores and standard deviations according to the nursing qualifications, usual shift most often worked.**

Majority of the participants 93 (93.0%) had diploma, 90 (90.0%) nurses worked on day shift, 70 (70.0%) worked shift for 8 h, 77 (77.0%) had patient assignment of more than six patients, and 55 (55.0%)

had work experience of 1–10 years [Table 3]. Graph 1 shows majority of the participants (55) [55.0%] had a moderate level of perceived stress and 50 (50%) had moderate occupational stress. Table 4 shows a

significant positive correlation ( $r = 0.144, P < 0.001$ ) between ENSS and PLOS. There is a correlation between occupational stress and general stress.

Table 2 shows that mean PSS scores of participants with average patient assignment of 1–3 ( $21.00 \pm 5.1$ ) were statistically significant where no statistically significant difference between PSS score and nursing qualification, usual shift most often worked, usual length of shift, and their years of experience.

Table 2 also shows statistically significant difference between ENSS score and years of experience. Participants with <1 year of experience had the highest mean ENSS score of  $126.04 \pm 18.1$ .

### DISCUSSION:

PLOS scale was used to assess the perceived stress as it is a global appraisal scale Cohen et al., designed to measure the degree to which individuals found their lives to be unpredictable, uncontrollable, and overloading. A significant positive correlation ( $r = 0.091, P < 0.05$ ) was found between the total scores of ENSS scores and the PSS scores. When taken as categorical variable, it remained statistically significant ( $r = 0.144, P < 0.05$ ). It indicates that the increase in the score of one scale also results in the increase in the other. Similar findings were found in a study conducted by Purcell et al.[27] In our study, the mean score on the occupational stress was lower in the older age group of more than 56 years of age. This indicates that older nurses had significantly lesser occupational stress and better coping mechanisms. finding is in line with the study conducted by Purcell et al.[27] and Shen et al.[28] This might have occurred since they are not skillful in coping than the mean stress score on the nursing stress scale was not significantly different between the males ( $122.85 \pm 13.17$ ) and the females ( $123.24 \pm 21.44$ ). This finding is consistent with a study conducted by Watson et al.[17] and ALnems.[29] No differences were observed on occupational stress and perceived stress by marital status. This finding of our study is consistent with the studies conducted by Sveinsdóttir et al.,[30] Bhatia et al.,[14] and Sharifah et al.[31]

However, contrary results were found in a study conducted by Shen et al. [28] were the separated/divorced nurses had higher stress compared to those who were married or single. Perceived stress was not significantly associated with socioeconomic status which was found in other study.[31] In our study, the occupational stress score statistically significant difference ( $P < 0.001$ ) with age groups and

years of experience. Occupational stress showed no significant difference with the level of education. There existed a significant difference between the scores of the occupational stress and the years of experience with lesser score among the nurses who had experienced more than 30 years.

### CONCLUSION:

Nurses had a moderate level of occupational and perceived stress. The study assessed significant positive correlation was found between the total scores of ENSS scores and the PSS scores. It indicates that the increase in the score of one scale also results in the increase in the other. The limitation of the study is that it should have been done with comparison group or association with stress-related disease. Further studies with a longitudinal approach relating stress and major oral disease should be conducted to establish a causal relationship between potential stress factors and any stress-related diseases. Studies using biochemistry markers, psychological assessment, and multiple measurements of variables should be considered to clarify the role of psychosocial factors and their mechanisms of action.

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