



RESEARCH ARTICLE

Stress, Stress Reactions, Job Stressors and Coping among Nurses Working in Intensive Care Units and General Wards of a Tertiary Care Hospital: A Comparative Study

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ABSTRACT

Literature has presented nursing as a stressful profession. The present study was conducted to compare stress level and job stressors operating in two different units, i.e. intensive care units (ICU) and general wards of a tertiary care hospital of North India. This is a cross-sectional study involving 285 nurses (general wards = 176; ICU = 109). The nurses were selected conveniently. Demographic profile sheet, modified workplace stress scale (WSS), workplace stress symptom scale (WSSS) and coping checklist (CCL) of Rao, Subbakrishna and Prabhu (1989) was used in the study. Findings of the study revealed moderate to high stress level among general wards and ICU nurses with young female nurses experiencing more stress. Further, workload, role ambiguity and lesser social support accounted for significant amount stress among nurses working on both the units while external factors, such as physical environment and resources hardly contributed to stress. It was also found that the ICU nurses experienced stress more in the form of exhaustion (11.9%); irritation (11.9%) and reduced self-confidence (0.9%) than those working in general wards. However, the nurses on both the units use distraction, positive coping, problem-solving and religious strategies to manage and handle their stress. The findings of the study give insight into stress and stressors related to job which can be buffered using various stress management strategies by the nurse managers.

Keywords: Coping, Job stressors, Nurses, Stress.

How to cite this article: Saini R, Kaur S, Das K. Stress, Stress Reactions, Job Stressors and Coping among Nurses Working in Intensive Care Units and General Wards of a Tertiary Care Hospital: A Comparative Study. *J Postgrad Med Edu Res* 2016; 50(1):9-17.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Work plays an important part in the individual's life. Apart from being a regular source of income, opportunities for

personal growth, social recognition and social esteem, specific aspects of work environment and work content play an important role in occupational stress processes. As defined in the literature, a job stressor is an antecedent condition within one's job or the organization that requires an adaptive response on the part of the employee.² But, if the employee could not adapt to the stressor, the various adverse responses can be categorized as psychological (i.e. burnout) and physical complaints; attitudinal (i.e. job satisfaction) and behavioral (i.e. absenteeism and turnover). Thus, occupational stress affects nurse's health and well-being and increases absenteeism and turnover which have an impact on the quality of care provided to the patients.

Numerous research studies have tried to identify various stressors operational in the work environment which are contributing to the job stress among nurses. These can be categorized as intrinsic factors inherent in nursing, such as work overload, physical environment, work hours, and shift work, and organizational and managerial factors, such as role ambiguity and role conflict, role overload and responsibility.¹⁻⁵ Research studies have documented inadequate working conditions,⁶ involvement with death and dying, uncertainty, role conflicts, fulfilling others' expectations for the role of the nurse⁷ as other indicators of stress. A recent review by Mc Vicar⁸ identified workload, professional conflict and the emotional burden of caring, pay and shift working as the main sources of job stress in the nursing profession.

Many studies on stress in nursing have tried to identify determinants of stress and the effect of stress on nurses' health and well-being. However, these research studies¹⁻⁸ are carried out in variety of settings, such as mental health units, oncology wards, intensive care units (ICUs), elderly care units and acute care units. Since these units have different operating factors in the work environment contributing to varied levels of stress among nurses, the complete understanding of these factors help in planning varied management strategies to manage stress among health professionals who are responsible

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for providing quality care to patients. The present study was conducted in a tertiary care hospital of North India. The hospital caters to large number of population and has multiple specialized units, ICUs and general units to take care of patients with numerous medical and surgical problems. A high patient load, shortage of staff, scarcity of resources, high demands put on nurses and lack of control results in increased workload of nurses. Moreover, nursing being a feminine occupation, most of the household chores are also taken care of by the nurses which further add to their overall workload. An increased workload is a strong determinant of stress among health professionals which reduces the quality of care being provided to the patients. Thus, in the present study, an effort was made to identify job stressors operating in the medical-surgical units and ICUs of the tertiary care hospital of North India. An analysis of the stress experienced by nurses and their reactions to stress was also done. The findings will be used to make specific recommendations to manage stress among nurses.

MATERIALS AND METHODS

The present study was conducted at Postgraduate Institute of Medical Education and Research, Chandigarh. The study included various units in the hospital, such as ICUs and general wards.

The general wards included in the study were female and male medical wards and female and male surgical wards. These units admitted patients suffering from conditions, such as diabetes mellitus, liver diseases, pneumonia and other respiratory problems, acute renal failure, acute gastroenteritis; gall stone disease, hernia, intestinal obstruction, etc. The ICUs included in the study were coronary care unit (CCU), respiratory ICU, liver ICU, cardiothoracic and vascular surgery ICU and pediatric ICU. These units are highly specialized and equipped with latest monitors, ventilators, transport ventilators, defibrillators, infusion pumps, etc. and admit critically-ill patients with conditions, such as congestive heart failure, coronary artery disease, acute respiratory distress syndrome, hepatic failure and pediatric conditions, such as meningitis, congenital heart defects, sepsis, leukemias, etc. These patients require continuous observation, monitoring and critical care on the part of physicians and nurses.

The study included all the nurses working in the above said units. Following total enumeration technique, total 285 nurses (General wards = 176; ICUs = 109) were included in the study. Nurses on earned leave, maternity leave, ex-India leave, child care leave or absent from the unit and who did not give their consent to participate in

the study were excluded from the study. The tools used for data collection were as follows:

- *Demographic profile sheet*: It included items regarding personal and professional attributes of the study subjects, such as name, age, gender, marital status, number of children, educational qualifications, work experience, work pattern, satisfaction with salary, etc.
- *Modified workplace stress scale (WSS)*: Workplace stress scale, adapted from The Marlin Company, North Haven and the American Institute of Stress, New York⁹ was modified. Around 17 more items under various domains were added through relevant literature search to meet the needs of the present study and used to assess stress level of nurses. It contained 25 items under the domain of job challenge, workload, social support, role ambiguity, job autonomy, inter-personal relations, performance appraisal, job insecurity and goal clarity. These items were rated on 5-point scale, i.e. never, rarely, sometimes, often and very often. Validity of the tool was assessed by seeking opinions from the experts in nursing and administration. The suggestions from experts were discussed among co-authors and appropriate modifications were done. The Cronbach alpha (α) was calculated for 25 subjects and among 25 items of WSS using Statistical Package for the Social Sciences (SPSS) and it came out to be 0.68.
- *Modified work stress symptom scale (WSSS)*: The WSSS by K Bjorkqvist and K Osterman of Abo Akademi University (1992) was adopted and modified after relevant literature search. It was used to assess the physical and psychological symptoms experienced by the nurses due to stress. These symptoms were rated on 5-point scale from 0 to 5, i.e. never, seldom, occasionally, often, very often. The scale gives the frequency of symptoms experienced by nurses during the last 12 months. Validity of the tool was assessed by seeking opinion from experts in nursing and administration. The suggestions from experts were incorporated and relevant modifications were done. The Cronbach alpha (α) was calculated for 25 subjects and among 10 items of WSSS using SPSS and came out to be 0.85.
- *Coping checklist (CCL)*: The CCL of Rao, Subbkrishna and Prabhu (1989)¹⁰ was used in the study. It is a comprehensive list of 70 items which has been grouped under nine categories: (i) positive cognitive, (ii) negative cognitive, (iii) problem-solving, (iv) distraction, (v) magical thinking, (vi) avoidance, (vii) religious, (viii) Help-seeking, (ix) external attribution. It is a broad version of behavioral, emotional and cognitive responses that may be used to handle stress. Items are scored dichotomously (Yes/No)



indicative of the presence or absence of a particular coping behavior. The coping strategy which reduces stress was rated 1 and which does not reduce stress was rated 0. The validity of the scale was established through expert opinion in the field of nursing and psychiatry. The Cronbach alpha (α) was calculated for 25 subjects among 70 items of CCL using SPSS and came out to be 0.87.

The pilot study was conducted in the main ICU of the hospital to assess the feasibility and to calculate the reliability of the tools. The setting used in the pilot study was excluded from the main study. Ethical considerations were taken into account and permission was sought from ethics review committee of PGIMER. Anonymity and confidentiality of the subjects were maintained during the study. They were given full autonomy to withdraw from the study at any time. After taking an informed verbal consent, the nurses were asked about the feasible time for the interview. Majority of the nurses agreed for the interview after their duty gets off, however, few of them had given time during their duty hours whenever they were free to the investigator. The interview was conducted in the retiring room of the nurses in their respective areas or wards. Due care was given not to disturb the working routine and patient care. Information regarding their demographic profile was collected and the subjects were interviewed regarding the presence of stressful conditions, stress, physical and psychological symptoms experienced and the coping strategies using the selected instruments. The interview took around 30 minutes. The data collection period extended up to 2 months. The data were then transferred into SPSS 15.0 and were analyzed using descriptive and inferential statistics.

RESULTS

A total of 285 nurses were enrolled under the study, out of which 176 nurses were enrolled in the wards and 109 nurses were in ICUs. Nurses working on both the units were comparable as per their demographic profile.

In the wards, the mean age of participants was 34.38 ± 8.4 years. Forty percent (40.3%) of nurses were above 35 years and having more than two children (40.9%). Around 80% of nurses were female, married (77.3%) and living in a nuclear family (79%). Sixty percent of nurses were living with their family, outside the hospital campus (69%), within 5 km of distance (63.9%) and used their own vehicle (53.4%) to come to the hospital. Among professional attributes, 64% were possessing general nursing and midwifery as their professional qualification and 72% of them were sister grade-II. While around 47% of them had total working experience in ward of more than 5 years, only 13% had less than 1 year of working

experience in ward. Around 70% of them had experience of less than 1 year of working in an ICU. Almost all the nurses (90.3%) were doing day and night shift duties and were satisfied with their salaries (89.2%) (Tables 1 and 2).

In ICUs, the mean age of participants was 33.01 ± 9.712 years. Around 68% of nurses were below age group of 35 years and married. Thirty-three percent of nurses had more than two children while 22% had single child. Most of the nurses (90.8%) were female, living in nuclear family (78%) outside the hospital (71.6%) within a distance of 5 km (66.1%). Around 50% of nurses used their own vehicle to come to workplace. About half of the nurses (53.2%) possessed general nursing and midwifery as their professional qualification. Most of the nurses were designated as Sister Grade-II (68.8%) and worked on day and night shifts (93.6%) and were satisfied with their salaries (84.4%). Few nurses were having less than 1 year of work experience in ward (19.3%) and in an ICU (23.9%) (Tables 1 and 2).

Table 1: Sociodemographic characteristics of nurses as per their personal attributes (n = 285)

Sociodemographic variables	Ward n (%)	ICU n (%)
<i>Age (years)</i>		
≤35	105 (59.7)	74 (67.9)
≥35	71 (40.3)	35 (32.1)
<i>Gender</i>		
Male	37 (21.0)	10 (9.2)
Female	139 (79)	99 (90.8)
<i>Marital status</i>		
Married	136 (77.3)	73 (67.0)
Single	40 (22.7)	36 (33.0)
<i>Type of family</i>		
Nuclear	139 (79.0)	85 (78.0)
Joint	37 (21.0)	24 (22.0)
<i>Total no. of children</i>		
0	61 (34.7)	47 (43.1)
1	43 (24.4)	24 (22.0)
>2	72 (40.9)	38 (32.9)
<i>Residential status</i>		
Hostel	33 (18.8)	28 (25.7)
With family	107 (60.8)	67 (61.5)
Paying guest	18 (10.2)	8 (7.3)
Others	18 (10.2)	6 (5.5)
<i>Residence in hospital</i>		
Yes	55 (31.3)	31 (28.4)
No	121 (68.8)	78 (71.6)
<i>Distance from workplace</i>		
Up to 5 km	112 (63.6)	72 (66.1)
5–10 km	35 (19.9)	21 (19.3)
> 10 km	29 (16.5)	16 (14.7)
<i>Mode of conveyance</i>		
Walking distance	46 (26.1)	29 (26.6)
Public transport	26 (14.8)	21 (19.3)
Hospital transport	10 (5.7)	4 (3.7)
Own vehicle	94 (53.4)	55 (50.5)

Table 2: Sociodemographic characteristics of nurses as per their professional attributes (n = 285)

Sociodemographic variables	Ward n (%)	ICU n (%)
<i>Educational qualification</i>		
GNM	113 (64.2)	58 (53.2)
Others	63 (35.8)	51 (46.8)
<i>Designation</i>		
Sister grade-I	50 (28.4)	34 (31.2)
Sister grade-II	126 (71.6)	75 (68.8)
<i>Total experience in ward (years)</i>		
< 1	23 (13.1)	52 (47.7)
1–5	70 (39.8)	36 (33.0)
> 5	83 (47.2)	21 (19.3)
<i>Total experience in ICU (years)</i>		
< 1	122 (69.3)	26 (23.9)
1–5	35 (19.9)	44 (40.4)
> 5	19 (10.8)	39 (35.8)
<i>Work pattern</i>		
Day shift	17 (9.7)	7 (6.5)
Night shift	159 (90.3)	102 (93.6)
<i>Mean annual income</i>		
Enough for living	157 (89.2)	92 (84.4)
Not enough for living	19 (10.8)	17 (15.6)

Stress Level among Nurses

The mean stress scores as obtained by nurses in each of wards and ICUs on modified WSS was categorized based on percentiles into three categories as low stress (below 33th percentile), moderate stress (between 33th and 66th percentiles) and high stress (more than 66th percentiles). Findings revealed that none of the nurses in wards and ICUs had low stress levels. It was also found that moderate stress level was prevalent more among ICU nurses (57.8%) while high stress was present among nurses working on wards (54.5%), the results being statistically significant ($p < 0.05$) (Table 3).

Association of Severity of Stress with Demographic Characteristics of Nurses

Chi-square test was applied to assess the association of severity of stress as per the demographic characteristics of nurses. The results depicted that younger nurses (<35 years) experienced high stress (67.7 and 97.8%) while nurses aged >35 years experienced moderate levels of stress (50 and 54%) in both wards and ICUs respectively,

Table 3: Stress as experienced by nurses in wards and ICUs as per WSS scale (n = 285)

Stress	Wards n (%)	ICUs n (%)	χ^2 test, p-value
Low	—	—	—
Moderate	80 (45.5)	63 (57.8)	4.102, df = 1
High	96 (54.5)	46 (42.2)	p = 0.04*
Total	176	109	

* $p < 0.05$: significant

the results being statistically significant ($p < 0.05$). It was also found that among the nurses working in wards, stress was significantly more among female nurses (Moderate stress = 86.3%, high stress = 72.9%) as compared to their male counterparts. Also, nurses living within a 5 km of distance from hospital experienced high stress (66.7%) than nurses who came from far off distance. When same attributes were compared with the nurses in the ICUs, though they experienced high stress, the results are not significant ($p > 0.05$) (Tables 4 and 5).

While type of family, educational qualification, work pattern and mean annual income were among the attributes not significantly associated with stress level among nurses in both wards and ICUs, findings revealed that high stress was present among ICU nurses who were single (58.7%), with no children (65.2%), living in a hostel (45.7%) or with family (39.1%) outside the hospital (58.7%) and used to walk to reach the workplace (41.3%). Further, nurses who were and designated as Sister Grade-II (91.3%) and possessed less than 5 years of work experience in wards (63%) and in ICUs (50%) also experienced high stress levels, the results being statistically significant ($p < 0.05$). However, when similar attributes were compared among nurses working in wards, though high stress was experienced by married nurses (77.1%) living with family (59.4%) residing outside the hospital (66.7%) designated as Sister Grade-II (74%) had less than 5 years of work experience in wards (41.7%) and in an ICU (68.8%), the results were being statistically insignificant ($p > 0.05$) (Tables 4 and 5).

Predictors of Stress

Stepwise regression analysis was done of the variables as per modified WSS (Table 6). At each step in the model, a variable was entered and total change in the total stress was observed. Results showed that among various variables, job challenge accounted maximum of variance in total stress (43.2 and 46.2%) followed by workload (20.4 and 21%) among ward and ICU nurses respectively. However, social support leads to 15.9% of variance followed by role ambiguity (5.3%) among ward nurses. But in ICU nurses, role ambiguity lead to 10.9% of variance followed by variance due to social support (9.9%). Among the variables accounted least variance to the total stress were job insecurity (1.1 and 1.2%) and goal clarity (0.9 and 0.3%) in both ward and ICU nurses respectively. Further, it was observed that almost all the variables had significantly contributed toward total stress levels in wards and ICUs, external factors in the surroundings did not accounted for any variance in the total stress levels, results being statistically significant ($p < 0.05$).



Table 4: Association of severity of stress with demographic characteristics of nurses working in general wards (n = 176)

Sociodemographic variables	n (%)	Stress		χ^2 test, p-value
		Moderate n (%)	Severe n (%)	
Age (years)				
≥35	105 (59.7)	40 (50.0)	65 (67.7)	5.686, df = 1
≤35	71 (40.3)	40 (50.0)	31 (32.3)	0.02
Gender				
Male	37 (21.0)	11 (13.8)	26 (27.1)	4.672, df = 1
Female	139 (79)	69 (86.3)	70 (72.9)	0.03
Marital status				
Married	136 (77.3)	62 (77.5)	74 (77.1)	0.004, df = 1
Single	40 (22.7)	18 (22.5)	22 (22.9)	0.95
Type of family				
Nuclear	139 (79.0)	63 (78.8)	76 (79.2)	0.005, df = 1
Joint	37 (21.0)	17 (21.3)	20 (20.8)	0.95
Total no. of children				
0	61 (34.7)	24 (30.0)	37 (38.5)	2.700, df = 2
1	43 (24.4)	18 (22.5)	25 (26.0)	0.26
>2	72 (40.9)	38 (47.5)	34 (35.4)	
Residential status				
Hostel	33 (18.8)	14 (17.5)	19 (19.8)	2.000, df = 3
With family	107 (60.8)	50 (62.5)	57 (59.4)	0.57
Paying guest	18 (10.2)	6 (7.5)	12 (12.5)	
Others	18 (10.2)	10 (12.5)	8 (8.3)	
Residence within campus				
Yes	55 (31.3)	23 (28.8)	32 (33.3)	0.427, df = 1
No	121 (68.8)	57 (71.3)	64 (66.7)	0.51
Distance from workplace				
Upto 5 km	112 (63.6)	48 (60.0)	64 (66.7)	11.583, df = 2
5–10 km	35 (19.9)	11 (13.8)	24 (25.0)	0.00
> 10 km	29 (16.5)	21 (26.3)	8 (8.3)	
Mode of conveyance				
Walking distance	46 (26.1)	20 (25.0)	26 (27.1)	0.890, df = 3
Public transport	26 (14.8)	10 (12.5)	16 (16.7)	0.83
Hospital transport	10 (5.7)	5 (6.3)	5 (5.2)	
Own vehicle	94 (53.4)	45 (56.3)	49 (51.0)	
Educational qualification				
GNM	113 (64.2)	50 (62.5)	63 (65.6)	0.185, df = 1
Others*	63 (35.8)	30 (37.5)	33 (34.4)	0.67
Designation				
Sister grade-I	50 (28.4)	25 (31.3)	25 (26.0)	0.582, df = 1
Sister grade-II	126 (71.6)	55 (68.8)	71 (74.0)	p = 0.45
Total experience in ward (years)				
< 1	23 (13.1)	8 (10.8)	15 (15.6)	2.134, df = 2
1–5	70 (39.8)	30 (37.5)	40 (41.7)	p = 0.34
>5	83 (47.2)	42 (52.5)	41 (42.7)	
Total experience in ICU (years)				
< 1	122 (69.3)	56 (70.0)	66 (68.8)	2.171, df = 2
1–5	35 (19.9)	13 (16.3)	22 (22.9)	p = 0.34
>5	19 (10.8)	11 (13.7)	8 (8.3)	
Work pattern				
Day shift	17 (9.7)	10 (8.85)	7 (11.11)	0.237, df = 1
Night shift	159 (90.3)	103 (91.15)	56 (88.89)	p = 0.63
Mean annual income				
Enough for living	157 (89.2)	66 (82.5)	77 (80.2)	0.150, df = 1
Not enough for living	19 (10.8)	14 (17.5)	19 (19.8)	0.70

*Others: BSc, MSc, PhD

Table 5: Association of severity of stress with demographic characteristics of nurses working in ICUs (n = 109)

Sociodemographic variables	n (%)	Stress		χ^2 test, p-value
		Moderate n (%)	Severe n (%)	
Age (years)				
≤35	74 (67.9)	29 (46.0)	45 (97.8)	32.718, df = 1
≥35	35 (32.1)	34 (54.0)	1 (2.2)	0.00
Gender				
Male	10 (9.2)	3 (4.8)	7 (15.2)	3.448, df = 1
Female	99 (90.8)	60 (95.2)	39 (84.8)	0.06
Marital status				
Married	73 (67.0)	54 (85.7)	19 (41.3)	23.706, df = 1
Single	36 (33.0)	9 (14.3)	27 (58.7)	0.00
Type of family				
Nuclear	85 (78.0)	48 (76.2)	37 (80.4)	0.279, df = 1
Joint	24 (22.0)	15 (23.8)	9 (19.6)	0.60
Total no. of children				
0	47 (43.1)	17 (27.0)	30 (65.2)	25.243, df = 2
1	24 (22.0)	12 (19.0)	12 (26.1)	0.00
>2	38 (32.9)	34 (54.0)	4 (8.7)	
Residential status				
Hostel	28 (25.7)	7 (11.1)	21 (45.7)	23.941, df = 3
With family	67 (61.5)	49 (77.8)	18 (39.1)	0.00
Paying guest	8 (7.3)	2 (3.2)	6 (13.0)	
Others	6 (5.5)	5 (7.9)	1 (2.2)	
Residence within campus				
Yes	31 (28.4)	12 (19.0)	19 (41.3)	6.471, df = 1
No	78 (71.6)	51 (81.0)	27 (58.7)	0.01
Distance from workplace				
Up to 5 km	72 (66.1)	39 (61.9)	33 (71.7)	2.334, df = 2
5–10 km	21 (19.3)	12 (19.0)	9 (19.6)	0.31
> 10 km	16 (14.7)	12 (19.0)	4 (8.7)	
Mode of conveyance				
Walking distance	29 (26.6)	10 (15.9)	19 (41.3)	14.152, df = 3
Public transport	21 (19.3)	10 (15.9)	11 (23.9)	0.00
Hospital transport	4 (3.7)	4 (6.3)	0	
Own vehicle	55 (50.5)	39 (61.9)	16 (34.8)	
Educational qualification				
GNM	58 (53.2)	38 (60.3)	20 (43.5)	3.028, df = 1
Others*	51 (46.8)	25 (39.7)	26 (56.5)	0.08
Designation				
Sister grade-I	34 (31.2)	30 (47.9)	4 (8.7)	16.998, df = 1
Sister grade-II	75 (68.8)	33 (52.4)	42 (91.3)	0.00
Total experience in ward (years)				
< 1	52 (47.7)	23 (36.5)	29 (63.0)	7.997, df = 2
1–5	36 (33.0)	24 (38.1)	12 (26.1)	0.02
>5	21 (19.3)	16 (25.4)	5 (10.9)	
Total experience in ICU (years)				
< 1	26 (23.9)	6 (9.5)	20 (43.5)	33.721, df = 2
1–5	44 (40.4)	21 (33.3)	23 (50.0)	0.00
>5	39 (35.8)	36 (57.1)	3 (6.5)	
Work pattern				
Day shift	7 (6.5)	5 (8.12)	2 (4.17)	0.210, df = 1
Night shift	102 (93.6)	56 (91.88)	46 (95.83)	p = 0.65
Mean annual income				
Enough for living	92 (84.4)	46 (73.0)	36 (78.3)	0.392, df = 1
Not enough for living	17 (15.6)	17 (27.0)	10 (21.7)	0.53

*Others: BSc, MSc, PhD

Table 6: Predictors of stress **as per WSS

Independent variables	ICUs/Wards				
	R ^{2a}	Adjusted R ^{2b}	R ² Change	F Change	p*
Job challenge	0.462/0.432	0.457/0.428	0.462/0.432	92.049/132.212	0.000*
Workload	0.673/0.636	0.667/0.631	0.210/0.204	68.126/96.782	0.000*
Social support	0.772/0.795	0.766/0.791	0.099/0.159	45.870/133.647	0.000*
Role ambiguity	0.881/0.848	0.876/0.844	0.109/0.053	94.917/59.514	0.000*
Job autonomy	0.917/0.894	0.913/0.891	0.036/0.046	44.542/73.498	0.000*
Interpersonal relations	0.953/0.937	0.950/0.935	0.036/0.044	76.974/117.653	0.000*
Performance appraisal	0.981/0.975	0.980/0.974	0.028/0.038	151.373/256.709	0.000*
Job insecurity	0.993/0.986	0.993/0.985	0.012/0.011	178.681/126.848	0.000*
Goal clarity	0.996/0.995	0.996/0.995	0.003/0.009	64.359/344.423	0.000*

*Significant at p<0.05; **Stress as dependent variable; ^aPercentage variance in dependent variable as explained by independent variable; ^bAdjusted for number of independent variables

Stress Symptoms Experienced by Nurses as Per WSSS

As per WSSS, it was observed that nurses working in wards often experienced insomnia (5.1%), difficulty in concentration (4%), feeling of indifference toward anything (2.8%) and nervousness (1.1%) in the last 12 months as compared to their counterparts in ICU, the results being statistically insignificant (p>0.05). It was also observed that exhaustion (11.9%), irritation (11.9%) and reduced self-confidence (0.9%) were significantly experienced more often by ICU nurses than nurses working in wards (p<0.05). Further, though ICU nurses occasionally experienced weariness and febleness (12.8%), depression (8.3%) and reduced work performance (9.2%) but when compared to ward nurses, the results were statistically insignificant (p>0.05) (Table 7).

Coping among Nurses

The mean percentage score obtained by nurses under various domains of CCL were depicted in Table 8. It was

found that the highest mean percentage score was obtained under the domain of distraction by ward nurses (23.031 ± 6.354) and on positive coping by ICU nurses (24.381 ± 6.280) followed by problem-solving (wards = 17.719 ± 5.097; ICUs = 19.578 ± 5.276) and religious coping strategies (wards = 11.307 ± 4.875; ICUs = 9.317 ± 4.345). Further, the least mean percentage score was obtained on the domain of external attribution (wards = 1.150 ± 1.672; ICUs = 0.973 ± 1.724) followed by negative coping strategies (wards = 3.191 ± 2.449; ICUs = 2.841 ± 2.767).

DISCUSSION

Nursing by profession is subject to lot of stress. Literature has documented numerous studies which reported various personal, organization and managerial factors contributing to stress which puts adverse effects on the physical and mental of nurses. The present study had made an attempt to compare the stress level among nurses working in two different units, i.e. wards and ICU of a

Table 7: Stress symptoms as experienced by nurses as per stress symptom scale (n = 285)

Symptoms		Never n (%)	Seldom n (%)	Occasionally n (%)	Often n (%)	Very often n (%)	χ ² test, p-value
Exhaustion	Ward	58 (33.0)	36 (20.5)	58 (33.0)	18 (10.2)	6 (3.4)	14.921, df = 4, p = 0.01
	ICU	16 (14.7)	38 (34.9)	36 (33.0)	13 (11.9)	6 (5.5)	
Difficult to concentrate	Ward	83 (47.2)	46 (26.1)	38 (21.6)	7 (4.0)	2 (1.1)	3.649, df = 4, p = 0.46
	ICU	64 (58.7)	23 (21.1)	18 (16.5)	3 (2.8)	1 (0.9)	
Weariness and febleness	Ward	89 (50.6)	37 (21.0)	36 (20.5)	11 (6.3)	3 (1.7)	3.225, df = 4, p = 0.52
	ICU	59 (54.1)	27 (24.8)	14 (12.8)	8 (7.3)	1 (0.9)	
Insomnia	Ward	109 (61.9)	31 (17.6)	27 (15.3)	9 (5.1)	0	6.023, df = 3, p = 0.11
	ICU	80 (73.4)	17 (15.6)	7 (6.4)	5 (4.6)	0	
Nervousness	Ward	106 (60.2)	39 (22.2)	28 (15.9)	2 (1.1)	1 (0.6)	3.714, df = 4, p = 0.45
	ICU	70 (64.2)	28 (25.7)	9 (8.3)	1 (0.9)	1 (0.9)	
Irritation	Ward	72 (40.9)	45 (25.6)	48 (27.3)	7 (4.0)	4 (2.3)	20.221, df = 4, p = 0.00
	ICU	57 (52.3)	28 (25.7)	9 (8.3)	13 (11.9)	2 (1.8)	
Depression	Ward	123 (69.9)	33 (18.8)	17 (9.7)	3 (1.7)	0	4.059, df = 4, p = 0.40
	ICU	72 (66.1)	23 (21.1)	9 (8.3)	3 (2.8)	2 (1.8)	
Indifference toward anything	Ward	117 (66.5)	31 (17.6)	21 (11.9)	5 (2.8)	2 (1.1)	4.276, df = 4, p = 0.37
	ICU	74 (67.9)	25 (22.9)	9 (8.3)	1 (0.9)	0	
Reduced work performance	Ward	104 (59.1)	47 (26.7)	22 (12.5)	2 (1.1)	1 (0.6)	1.187, df = 4, p = 0.88
	ICU	64 (58.7)	32 (29.4)	10 (9.2)	2 (1.8)	1 (0.9)	
Reduced self-confidence	Ward	125 (71.0)	32 (18.2)	18 (10.2)	1 (0.6)	0	9.878, df = 4, p = 0.04
	ICU	76 (69.7)	27 (24.8)	3 (2.8)	1 (0.9)	2 (1.8)	

Table 8: Response rates of nurses on coping checklist (n = 285)

Symptom		Mean percentage	Standard deviation
Positive coping	Wards	21.86	5.01
	ICU	24.38	6.28
Negative coping	Wards	3.19	2.45
	ICU	2.84	2.77
Problem solving	Wards	17.72	5.10
	ICU	19.58	5.28
Distraction	Wards	23.03	6.35
	ICU	20.66	6.82
Magical thinking	Wards	7.54	3.18
	ICU	7.87	2.91
Avoidance	Wards	6.19	3.16
	ICU	6.78	4.38
Religious	Wards	11.31	4.88
	ICU	9.32	4.35
Help-seeking	Wards	8.02	2.59
	ICU	7.60	3.39
External attribution	Wards	1.15	1.67
	ICU	0.97	1.72

tertiary care hospital of North India. Results revealed significant amount of stress among nurses working in both the units (Moderate stress = 57.8% among ICU nurses; high stress = 54.5% among ward nurses). A similar study conducted by Theme Filha et al¹¹ among 134 health professionals revealed high strain among 70% of the workers.

Further, non-parametric analysis of the results revealed significant amount of stress among young female nurses (<35 years) working in both the units. The findings are consistent with the Garrosa et al¹² study which revealed young age as significant predictor of burnout among nurses. However, in the current study, none of the nurses on both the units experienced stress due to work pattern, income, the education they possess and the kind of family they lived in. It is also found that the ICU nurses who are designated as Sister Grade II, are young, single and have no children and used to walk to reach their workplace experienced more stress than their counterparts in wards. This may be probably because young unmarried nurses working at bedside are given more complex patient assignments coupled with the new and changing technology.

Among various job stressors, workload, role ambiguity and lesser social support accounted for significant amount stress among nurses working on both the units while external factors, such as physical environment and resources hardly contributed to stress. The findings are inconsistent with the findings from a similar study conducted by Kelly and Cross¹³ among intensive care and medical-surgical ward registered nurses which revealed ward nurses perceiving environmental factors as more stressful. In an another study of occupational stress by

McGrath et al¹⁴ among large sample of Northern Ireland nurses reported too little time to perform duties to the patient satisfaction and rationing of scarce services or resources as common stressors causing moderate to high stress levels. A study conducted by Robinson et al¹⁵ among 314 nurses working at large metropolitan cities also revealed high work pressure, low work involvement and lesser supervisor support are strong predictors of emotional exhaustion.

In the present study, the ICU nurses experienced stress more in the form of exhaustion (11.9%); irritation (11.9%) and reduced self-confidence (0.9%) that those working in wards. However, the nurses on both the units use distraction, positive coping, problem-solving and religious strategies to manage and handle their stress. A survey of role stress, coping and health by EML Chang et al¹⁶ among New South Wales, Australia and New Zealand also revealed problem-solving as the most frequently used coping strategy among nurses working in both the regions.

The limitations of the present study are its small sample size and neglect of the personality traits of the nurses. Moreover, the present study does not study the complex environmental factors, different managerial styles and varied type of technology operating in two units which may play a significant role in the level of stress experienced by nurses. Yet the study provides a complete picture of the stress, stress reactions and job stressors operating in two different units. The nurse managers may initiate stress management strategies based on the findings of the present study, such as the identified significant job-stressors, i.e. workload, role ambiguity and lesser social support to modify and eliminate these stress factors. Some of the recommended strategies are improving nurse-patient ratio, recruiting more nurses, clearly defined goals and objectives, specifying job descriptions, providing autonomy in decision-making, maintaining organizational culture and encouraging team concept, organizing in-service education programs, providing opportunities for professional growth and organizing recreational activities for the nurses apart from adequate supply of physical resources required for the patient care. An effort toward reducing stress among nurses has a positive impact on the organizational climate and the quality of care delivered by nurses to the patients.

REFERENCES

1. Kahn R, Wolfe D, Quinn R, Snoek J. Organizational stress: studies in role conflict and ambiguity. New York: John Wiley; 1964.
2. Cooper C. Theories of organizational stress. New York: Oxford University Press; 1987.
3. Narayanan L, Menon S, Spector P. Stress in the workplace: a comparison of gender and occupations. *J Organ Behav* 1999; 20(3):63-73.



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4. Cooper C, Kelly M. Stress among crane operators. *J Occup Med* 1984;26(8):575-578.
5. Sutherland V, Cooper C. *Understanding stress*. London: Chapman and Hall; 1986.
6. World Health Organization, International Council of Nurses, Royal College of Nursing UK, 2003. *International Nurse Mobility: Trends and Policy Implications*. Internet (retrieved 07.11.2004): Available at: http://www.icn.ch/PR22_03.htm
7. Marshall J. *Stress among nurses*. Chichester, England: John Wiley; 1980. p. 19-57.
8. McVicar A. Workplace stress in nursing: a literature review. *J Adv Nur* 2003;44(6):633-642.
9. Marlin Company, North Haven, CT and The American Institute of Stress, Yonkers, NY Directions. *The Workplace Stress Scale*. Available at: <http://americaninstituteofstress.org/wp-content/uploads/2011/08/2001Attitude-in-the-Workplace-Harris.pdf> [last accessed on March 26, 2010].
10. Rao K, Subbakrishna DK, Prabhu GG. Development of coping checklist: a preliminary report. *Ind J Psychiatry* 1989;31(2):128-133.
11. Theme Filha MM, Costa MAS, Guilam MCR. Occupational stress and self-rated health among nurses. *Rev Latino-Am Enfermagem* 2013 Mar-Apr;21(2):475-483.
12. Garrosa E, Jimenez B, Liang Y, Gobzalez JL. The relationship between sociodemographic variables, job stressors, burnout and hardy personality in nurses: an exploratory study. *Int J Nurs Stud* 2008;45(3):418-427.
13. Kelly JG, Cross DG. Stress, coping behaviours and recommendations for intensive care and medical surgical ward registered nurses. *Res Nurs Health* 1985;8(4):321-328.
14. McGrath A, Reid N, Boore J. Occupational stress in nursing. *Int J Nurs Stud* 2003;40(5):555-565.
15. Robinson SE, Roth SL, Keim J, Levenson M, Flentje JR, Bashor K. Nurse burnout: work related and demographic factors as culprits. *Res Nurs Health* 1991;14(3):223-228.
16. Chang EML, Bidewell JW, Huntington AD, Daly J, Johnson A, Wilson H, et al. A survey of role stress, coping and health in Australian and New Zealand hospital nurses. *Int J Nurs Stud* 2007;44(8):1354-1362.