

Sources of stress in high performance healthcare organization: A study comparing intensive care and general ward nurses

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A B S T R A C T

Objective: To compare stressors of nurses working in intensive care units and general wards of a high-performance health care organization.

Methodology: A comparative cross-sectional survey was conducted. Using stratified random sampling, 121 intensive care and 121 general ward nurses, cumulatively 242 were offered to participate in the study. IRB and EC approvals were obtained. A self-administered questionnaire with structured responses was used for data collection. The data were analyzed for descriptive and inferential statistics in SPSS 23.

Results: The study participants were predominantly 152(62.8%) female; 182(75.2%) having diploma in nursing and 169(69.8%) RN-I; 38(31.4%) intensive care and 35(28.9%) general ward nurse who were performing 12-hours shift duty; 50(41.3%) intensive care and 65(51.2%) general ward nurses were dissatisfied with their salary. The average patients assigned to intensive care nurse were two and six to a general ward nurse. Independent t-test and ANOVA revealed significant difference of stressors in intensive versus general ward nurses, gender, working hours, satisfaction with salary, professional qualification, experience and shift work (P-Value <0.05). Common stressors were unclear demands, pressured to work long hours, not having control at workplace and being not able to talk to line managers about something that has upset or annoyed them at workplace.

Conclusion: The general ward nurses face more stressors than intensive care units' nurses. Workplace stressors could compromise healthy working environment and patient safety whereas favorable environment could increase job satisfaction, staff productivity, and quality of care. Workplace-oriented stress management strategies must be adopted.

Keywords: Stress, nurses, intensive care, general ward

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Introduction

Nurses have been described as an occupational group at high risk of job stress due to demanding situations that they commonly face in the provision of routine nursing care.¹ A systematic review investigated stress among nurses from 1981-2011 and found stress in all of the included studies.² High patient acuity, heavy workload, and patient deaths contribute to the work-related stress.³ As a result work dissatisfaction, cardiovascular, digestive and musculoskeletal disorders

were found among intensive care units (ICU) nurses.⁴ High levels of stress result in staff burnout and turnover, which adversely affect the patient care.¹ The work environment of intensive care units and general wards (GW) is different. The routine work of ICU nurses is considered complex as compared to GW nurses.

It is therefore presumed that work diversity and environmental characteristics could affect working staff differently. For instance, typically ICUs and emergency

departments are loaded with healthcare technology to facilitate patient care, but they also increase sensory load. An emergency department nurse reported 742 adverse events over a period of one-month.⁵ Many nurses avoid working in such departments due to the mentioned consequences. Therefore, to retain and attract, many health care organizations offer special allowance to critical care department nurses. Some studies reveal that nurses who work with critical care patients are more predisposed to stress as compared to other areas of the hospital.⁶ While, a Malaysian study reported more stress among GW as compared to other department nurses.⁷ The implications of stress sources are reported as decreased job satisfaction,⁸ increased turnover rate, absenteeism,⁹ burnout,² compromised patient safety and work environment.¹⁰

High performance organizations demand high expectations but also offer favorable benefits to their employees. Therefore, stress and stressors among nurses may be different. These organizations are not studied well in this regard. Moreover, stress is studied well but sources of stress are not given much attention. Identifying source of stress is a cornerstone to stress management. For this purpose, management standards of health and safety executive (HSE) has been used widely.¹¹ This study aims to compare the sources of stress among GW and ICU nurses.

Methodology

A comparative cross-sectional design was adopted to conduct the study. Study was conducted at a private tertiary care hospital, which is situated in the Islamabad, Pakistan. A structured questionnaire was adopted and HSE¹¹ management standards was used for data collection. The Cronbach's alpha of the questionnaire in this study was 0.79. The tool contains of 35 items divided into seven subscales related to primary work-related sources of stress; demand, control, manager's support, peer support, relationship, role and change. Responses were measured in terms of frequency and agreement on a Likert scale. The frequency scale (1=never to 5=always) was used for item 01-23 and agreement scale (1=strongly disagree to 5=strongly agree) 24-35. The score was reversed for item 3, 5, 6, 9, 12, 14, 16, 18, 20, 21, 22 and 34 (5=never to 1=always while 5=strongly disagree and

1=strongly agree). Data was collected through a self-administered technique. Data collection was completed in October 2016. Stratified random sampling was done from ICU and GW nurses. We used following formula to calculate the sample size.

$$N = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2(p_1(1 - p_1) + p_2(1 - p_2))}{(p_1 - p_2)^2}$$

Confidence interval of 95% at alpha; power of 99% at beta; P1 i.e. GW was taken 60% and P2 83.9% i.e. ICU from previous studies. The calculated sample for each group was 121 and cumulatively 242. Permission from institutional review board and ethics committee was obtained (IRB Reference # 526-375-2015). The written informed consent was taken from the study participants. Their participation in the study was entirely voluntarily. Data was coded and collected anonymously. Questionnaires were screened for errors and omissions. The data was entered in SPSS Version 23.0 for analysis. Descriptive statistics were obtained for demographic variables. Independent t-test and one-way ANOVA was applied to measure differences among subscales and their items. The p-value of <0.05 was taken as significant.

Results

Study participants comprises of predominantly female nurses. Comparatively, higher percentage of male nurses was working in ICU than GW. Among the sample, most nurses were diploma in nursing (DN) qualified whereas Bachelor of Science in Nursing (BSN) preferred to work in ICUs. Overall, 73 (30.2%) nurses were performing 12 hours' duty shift which was more common among ICUs. Most of the nurses had less than three years of experience and number of nurses decreased with gradual increase of experience. Salary satisfaction was higher among ICU nurses. Approximately half of the participated nurses showed dissatisfaction with their salary. Average patients assigned to ICU nurse were two and six to GW nurses (Table 1).

Table 1: Demographic characteristics of intensive care unit and medical, surgical nurses participated in the study

Demographic Variables		Area		Total
		ICU (121)	General Ward (121)	242
		f (%)	f (%)	f (%)
Gender	Male	52 (43)	38 (31.4)	90 (37.2)
	Female	69 (57)	83 (68.6)	152 (62.8)
Professional Qualification	DN	83 (68.6)	99 (81.8)	182 (75.2)
	BSN	25 (20.7)	19 (15.7)	44 (18.2)
	Post-RN BSN	13 (10.7)	3 (2.5)	16 (6.6)
Working Hours	08 hours	83 (68.6)	86 (71.1)	169 (69.8)
	12 hours	38 (31.4)	35 (28.9)	73 (30.2)
Experience	< 3 Yr.	81 (66.9)	88 (72.7)	169 (69.8)
	3.1 – 6 Yr.	33 (27.3)	21 (17.4)	76 (22.3)
	6.1 – 10 Yr.	4 (3.3)	7 (5.7)	11 (4.6)
	> 10 Yr.	3 (2.5)	5 (4.1)	8 (3.3)
Salary	Satisfied	71 (58.7)	59 (48.8)	130 (53.7)
	Dissatisfied	50 (41.3)	62 (51.2)	112 (46.3)
Nurse Patient Ratio	Mean	2.21		6.13
	Minimum	1		1
	Maximum	6		10

Cumulatively, the nurses in GW showed a higher mean score. The role subscale received the highest mean score which contributed to the higher mean score among GW nurses. The relationship subscale was rated lowest among the questionnaire's subscale and the mean score of GW nurses was higher. The mean score of GW nurses was high in control, demand and relationship subscale as well. Whereas ICU nurses had high score in peer support, change and managerial support subscale of the questionnaire as shown in Figure 1.

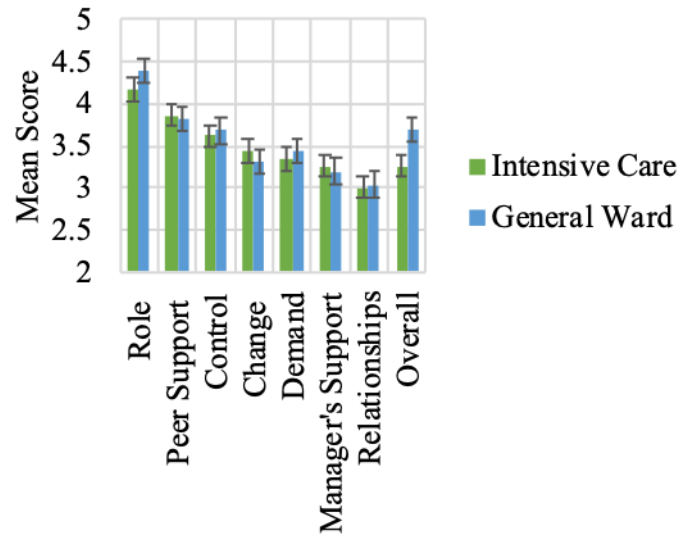


Figure 1: Comparison of intensive care and general ward nurses by questionnaire subscales

Table 2: Evaluation of stressors by workplace (ICU/GW), gender, work hours, salary, professional qualification, and experience

Sr.	Statements	Mean	SD	ICU/GW	Gender	Work Hrs.	Salary	Professional Qualification	Experience
1	I am clear what is expected of me at work	4.20	1.07	.251	.808	.052	.822	.534	.091
2	I can decide when to take a break	3.45	1.33	.012*	.347	.105	.014*	.115	.191
3	Different groups at work demand things from me	3.44	1.08	.061	.617	.716	.575	.087	.467
4	I know how to go about getting my job done	4.30	0.96	.160	.524	.159	.520	.306	.410
5	I am subject to personal harassment	2.75	1.43	.391	.056	.450	.764	.013*	.657
6	I have unachievable deadlines	2.84	1.39	.478	.602	.305	.394	.500	.695
7	If work gets difficult, my colleagues will help me	3.95	1.17	.269	.490	.036*	.398	.501	.162
8	I am given supportive feedback on the work I do	3.72	1.27	.287	.103	.676	.641	.111	.034*
9	I have to work very intensively	4.36	0.82	.134	.967	.969	.806	.020*	.009*
10	I am confident on my work speed	4.58	0.77	.001*	.829	.865	.271	.363	.525
11	I am clear what my duties and	4.56	0.87	.078	.692	.047*	.904	.741	.488

	responsibilities are								
12	I have to neglect some tasks	2.97	1.46	.585	.005*	.010*	.746	.003*	.087
13	I am clear about the goals and objectives	4.29	1.00	.760	.592	.073	.154	.878	.704
14	There is friction or anger between colleagues	3.02	1.23	.195	.348	.934	.607	.018*	.156
15	I have a choice in deciding how I do my work	3.44	1.32	0.547	.474	.925	.009*	.101	.590
16	I am unable to take sufficient breaks	3.35	1.28	0.178	.032*	.316	.532	.544	.316
17	I understand my work fits with organizational goals	4.11	0.97	0.568	.049*	.043*	.009*	.530	.350
18	I am pressured to work long hours	3.14	1.32	0.056	.125	.944	.859	.444	.257
19	I have a choice in deciding what I do at work	3.28	1.25	0.084	.320	.600	.079	.431	.507
20	I have to work very fast	3.99	1.09	0.866	.318	.068	.076	.190	.057
21	I am subject to bullying at work	3.06	1.27	.018*	.339	.307	.213	.134	.686
22	I have unrealistic time pressures	3.14	1.32	0.112	.024*	.538	.878	.143	.462
23	I can rely on line manager to help me with work problem	3.20	1.40	0.336	.785	.714	.003*	.143	.853
24	The way I work is acceptable	3.83	1.09	0.499	.784	.005*	.014*	.644	.886
25	I have some say over the way I work	4.04	1.02	0.116	.471	.005*	.596	.111	.480
26	I have sufficient opportunities to question management	3.03	1.46	.034*	.976	.275	.012*	.223	.700
27	I receive the respect I deserve from my colleagues	3.76	1.20	.240	.322	.004*	.014*	.638	.656
28	Staff are always consulted about change at work	3.47	1.23	.881	.778	.001*	.036*	.837	.018*
29	I can talk to my line manager about something that has upset or annoyed me about work	3.16	1.38	.894	.775	.208	.725	.310	.661
30	My working time can be flexible	3.15	1.32	.225	.439	.089	.544	.785	.327
31	My colleagues listen to my work-related problems	3.85	1.02	.904	.088	.026*	.034*	.522	.769
32	When changes are made at work, I am clear how they will work out in practice	3.74	1.07	.002*	.718	.015*	.325	.412	.205
33	I am supported	3.19	1.28	.737	.363	.566	.188	.028*	.253

	through emotionally demanding work								
34	Relationships at work are strained	3.30	1.37	.001*	.425	.462	.655	.376	.711
35	My line manager encourages me at work	2.94	1.57	.639	.852	.022*	.002*	.676	.013*
	Overall	3.47	1.30	.012*	.215	.004*	.664	.001*	.685
Cronbach Alpha = 0.79									

* p-Value <0.05

An independent t-test was applied on workplace (ICU and GW), gender, working hours and salary while ANOVA on professional qualification, experience and shift work. All nurses were clear about the goals and objectives for their respective departments. They were primarily stressed due to ambiguity of demands by members of healthcare team at the workplace. They were pressured to work long hours and did not have control at workplace. They were not able to engage with their line managers about something that has upset or annoyed them in the workplace.

ICU and GW nurses revealed their difference with regard to decision on taking a break, confidence on work speed, experience of bullying at workplace, opportunity to question manager about work, informed changes at the workplace and they also reported strained relationship at work (p<0.05). Male nurses reported that they have to neglect some tasks due to work overload. They were unable to take sufficient breaks and have unrealistic time pressures as compared to their female counterparts (p<0.05). Nurses performing usual working hours i.e. eight hours reported changes at work are communicated. Subsequently, they also have to neglect some tasks at their workplace. Their colleagues listened to problems, offer help at the times of difficulty and respected them. While nurses performing 12 hours working shift accentuated that they were consulted and have a 'voice' at the workplace (p<0.05).

Nurses who were satisfied with their remuneration reported that they understand how their work fit into the overall aim of the organization and receive respect. They reported sufficient control at workplace i.e. taking breaks, way of work, and decision making. Their colleagues listened and responded to their problems; manger helped them out with a work problem as compared to the nurses

who were dissatisfied. While, dissatisfied nurses felt discouraged and they were not able to question their manager about change of routine and policies at workplace ($p < 0.05$). Nurses with BSN degree reported that they have to neglect some tasks because they have too much to do at their workplace. They felt supported in highly emotionally and work demanding situations. This group of nurses experienced friction or anger between nurses with regard to diploma and degree qualifications. Nurses also reported personal harassment in the form of unkind words or behavior ($p < 0.05$).

More experienced nurses reported that they were always consulted and involved in decision making process as compared to less experienced ones. While, less experienced nurses were given more supportive feedback for performance improvement. Intensity of work was one the stressor among less experienced nurses ($p < 0.05$). Determinants of stress varied among nurses who were performing shift i.e. morning, evening and night duty. Their colleagues were willing to listen to their work-related problems. They were clear about work expectations therefore they know how to get their job done ($p < 0.05$) as shown in Table 2.

Discussion

This study findings illuminate that GW nurses experienced more stressors than ICU nurses. The mentioned study findings are inconsistent with study¹² reporting comparatively higher level of stress among ICU nurses. Most studies^{6,13,14} found comparatively higher level of stress among ICU nurses, while a study⁷ reported higher stress among GW nurses than other units' nurses.

More or less, both ICU and GW nurses informed stress which confirms with a systematic review spanned over 30 years.² Generally, nurses were clear about expectations and responsibilities. Role clarity is important to design and organize patient care activities. On the other hand, role ambiguity creates confusion and a barrier to role performance. The direct link of role ambiguity was found with burnout and staff absenteeism.¹⁵ This link was established in current study when nurses pointed out 'ambiguity in demands from different groups at workplace'. A common stressor for nurses was pressured to work long hours. A Chinese study¹⁶ report long shift work as the highest source of stress. Long working hours

cause exhaustion and decrease ability respond promptly in critical situations; negatively impact emotional health of nurse and patient care. Nurses reported lack of control to plan patient and unit management activities. It could produce a sense of powerlessness leading to source of stress. However, an authority to plan patient and management activities would boost confidence and a buffer for stress. The nurses' control over nursing practice is associated with job satisfaction, healthy work environment and improved patient outcomes. It also increases confidence of the nurse to make patient care decision i.e. valued and linked with patient safety.¹⁷ Lack of managerial support and coordination was also highlighted as major source of stress. Lack of managerial support is linked with burnout while encouragement, engagement at work improves staff retention. The nurse manager's role in staff motivation, encouragement, dignity and respect is also emphasized.¹⁸

Findings revealed that critical care nurses could decide when to take break and had opportunity to question manager about workplace activities as compared to GW nurses. Perhaps, critical care nurses were more organized and managed their time well and their manager was readily available to support and solve problems. While GW nurses were confident on their pace of performing patient care activities irrespective they experienced bullying and strenuous relationships at workplace. GW nurses were more informed about changes at their respective working units. Finding of more stress among GW nurses is inconsistent with a study done by Ganz and colleagues¹⁹ which reported alarming percentage of bullying among ICU nurses. The cost of bullying to the organization is very high in terms of nursing shortage, turnover and, absenteeism, adverse events, quality of care and patient safety.¹⁰ Strained relationship among nurses could deteriorate the working relationship and is a source of stress. The work overload is associated with negative patient outcomes²⁰ in many studies. This workload is reflected in nurse patient ratio; ICU nurses were mostly assigned two patients and few times six. A retrospective study²¹ highlighted that increased nurse patient ratio from one-to-one in ICU, increased the mortality rate. Henceforth, patient survival is linked with appropriate staffing.

Male nurses reported that they have to neglect some tasks due to work overload. They were unable to take sufficient breaks and have unrealistic time pressures as compared to their female counterparts. This difference maybe that male nurses experienced lack of support and had more assignments than their female colleagues in the study²² highlighted intra-disciplinary hierarchies and mutual non-supportiveness in nursing. Working under unrealistic time pressures decrease staff performance²³ and compromise patient safety.

Nurses performing usual working hours i.e. eight hours were well informed about workplace routines and policy changes. They have to neglect some tasks at their workplace. Perhaps they were not ready and prepared to cope with changes. Maybe nurses working 12 hours had more time to complete tasks. Colleagues of eight working hours listened to each other problems and offered help to their colleagues, offered help at the time of difficulty and for this reason experienced more respectful relationship. Stressors were significantly higher among ICU nurses who worked long hours which affirms the findings that long working hours cause physical and emotional exhaustion¹⁶ effecting working relationships negatively. Nursing literature highly regards peers support and respectful collegial relationships. The mediating role of peers to reduce stress and increased job satisfaction is highlighted.²⁴

High performance health care organization demands their staff to work effectively and offer satisfying remunerations. Many nurses were dissatisfied with their salary and felt strained relationship with their managers. Studies have shown lack of congruence between demanding work and lack of salary as a source of stress.²⁵

There were two groups pertinent to professional qualification; nurses having DN and BSN. GW nurses with BSN degree reported that they have to neglect some tasks because they have too much to do at their respective units. DN experience intense clinical work during their training. Perhaps for this reason, they cope well with demanding situations and experience less stress. This group experienced friction or anger between nurses having different qualification. Nurses also reported harassment in the form of unkind words or behavior. Harassment is illegitimate and damaging for working

relationship. As a result, patient pay the cost due to lack of quality care.¹⁰

Less experienced nurses reported more stressors as compared to more experienced ones. Intensity of work was the main stressor among less experienced nurses though often received supportive feedback. Studies have shown younger and less experienced nurses were more predisposed to stress.²⁶ Maybe they were not competent enough to take on the role in a high performance nursing environment.

There were more nurses with DN than BSN and female with lesser experience. Therefore, result would be more significant for the greater population. Results should be cautiously generalized, since the study was from one private institute. A multicenter study focusing specific nursing sample could help understand common sources of stress.

Conclusion

In conclusion, GW nurses experienced more stressors than ICU nurses. BSN qualified nurses reported high stressors. The common stressors among GW and ICU nurses were identified including role ambiguity, unclear demands, pressure to work long working, not having control at workplace, lack of communication with nurse manager and upsetting events at the workplace. The BSN nurses highlighted harassment in the form of unkind words, lack of emotional support and friction among colleagues while DN reported intense work routine as significant stressors. GW nurses reported bullying; unable to complete tasks, eight hours duty shift whereas and ICU nurses experienced unachievable deadlines and male nurses as difficult colleagues' significant workplace stressors. On the other hand, collegial support was highlighted as buffering agent against stress. There is heavy price for unmanaged stress in the form of adverse events, increased turnover, compromised quality and safety. Therefore, workplace-oriented stress management strategies focusing stressors are recommended.

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