Determination of Job Stress among Nurses in Cardiac Surgical Intensive Care Units in Baghdad City

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الخلاصـــة:

الهدف: تهدف الدراسة إلى تحديد مصادر ومستوى الكرب النفسي الناتج من محيط العمل لدى الممرضات/الممرضين العاملين في وحدات العناية القلبية الجراحية المركزة في مستشفيات بغداد، وكذلك إيجاد العلاقة بين الكرب النفسي وبعض المتغيرات مثل العمر، الجنس، المستوى الثقافي، الحالة الاجتماعية، عدد سنوات الخبرة في العناية القلبية الجراحية المركزة.

المنهجيّـة: دراسة وصفية تحليلية أجريت على الممرضات/الممرضين العاملين في وحدات العناية القلبية الجراحية المركزة في مستشفيات بغداد وقد اختيرت عيّنة الدراسة بصورة عمدية من ٦٠ ممرضة وممرض ومن ثلاث مستشفيات لجراحة القلب في بغداد (مستشفى ابن البيطار لجراحة القلب، مستشفى ابن النفيس لأمراض القلب والأوعية الدمويّة، المركز العراقي لأمراض القلب) للمُدّة من الأول من آذار ٢٠٠٦ ولغاية السادس من نيسان ٢٠٠٦. صُمّمت الاستمارة الاستبيانية لتتكون من محورين؛ المحور الأول يتعلق بالمعلومات الديموغرافية للعيّنة، والمحور الثاني يتعلق بمصادر الكرب الناتج من محيط العمل ويحتوي على ٢٨ فقرة تصف الكرب الجسمي والنفسي لعيّنة الدراسة.

النتائـــج: أشارت نتائج الدراسة بأنّ أغلب عيّنة الدراسة كانت من الإناث وأعمارهن تتراوح بين (٣٠-٣٩) سنة ومعظمهم من خريجي الدراسة الجامعية، من غير المتزوجين، مدّة عملهم في وحدات العناية القلبية الجراحية المركزة تتراوح من (٦-١٠) سنة، وأشارت النتائج أيضاً بأنّ جميع الممرضات والممرضين العاملين في وحدات العناية القلبية الجراحية المركزة يعانون من مستوى عالٍ من الكرب وأنّ الكرب الجسمي هو الأعلى مستوى (٧٠,١٥%).

التوصيات: أوصت الدراسة بتطبيق برامج تأهيلية لمساعدة الممرضات/الممرضين على كيفيّة التعامل والسيطرة على الكرب النفسي الناتج عن العمل وإعطائهم الفرصة لمواجهة التحديات الجديدة في العمل والحياة بصورة عامة.

Abstract:

Objective: The study aimed to determine the sources and level of job stress experienced by nurses who were working in intensive care units, and to find-out the relationship between work-related stress and some variables such as age, gender, educational level, marital status, and years of experience in cardiac surgical intensive care unit.

Methodology: A descriptive study was conducted on nurses working in the cardiosurgical intensive care units in Baghdad hospitals. The study sample was selected purposively and consisted of (60) nurses who were working in cardiosurgical intensive care units in Baghdad city (Ibn Al-Betar Hospital for Cardiac Surgery, Ibn Al-Nafis Hospital for Cardiovascular Diseases, and the Iraqi Center for Heart Diseases) for the period of February 1st 2006 to April 6th 2006. Interview technique was employed and each interview took approximately 20-30 minuets when the nurse filled the questionnaire. A questionnaire was designed by the investigators which consisted of two parts, first part is concerned with the demographic characteristics of the sample and the second one is concerned with the environmental stressors, and it contains (28) items that describes the physical and psychological stressors .

Results: The results of the study revealed that most of the sample was female, their ages ranged from (30-39) years, university graduates, single, duration working in cardiosurgical intensive care units for (6-10) years. Also, the results revealed that nurses in cardiac surgical intensive care units suffering from severe level of stress in the areas of physical and psychological, and the physical stressors had more severity.

Recommendations: The recommends that stress management programs should be employed to assist cardiosurgical intensive care units nurses to deal with job stress and providing training opportunity for them is a vital process to meet the new challenges.

Key words: Job Stress, Intensive Care Unit

Introduction:

Stress is a universal experience and a component in all our life. Selye in1956 defines stress as a result of any demand upon the body [1]. A certain capacity of stress is required to live and enjoy life; however when person are under stress and do not deal with it properly, it

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causes wear and tear on our bodies leading to physical and psychological problems because the body prepare for fight or flight response [2].Stress at work is now a major occupational health problem and it was recognized worldwide as a real challenge to workers' health of their organizations due to the exposure to physical, chemical and biological hazards [3].

The World Health Organization (2005) reported that there was more than 50% of nurses today complain from stress at the workplace, and there is a perception that nurses in intensive care units face unusually highest level of stress, particularly related to work-related environment [4].

Therefore, it is important to understand how work-associated stressors effect nurses. The present study aims to determine those stressors which might be experienced by nurses and to identify the level of stress which faced by nurses at cardiosurgical intensive care units.

Methodology:

A descriptive study was conducted among nurses in cardiac surgical intensive care units in Baghdad hospitals. The study sample was selected purposively and consisted of (60) nurses who were working in cardiosurgical intensive care units in Baghdad City (Ibn Al-Bitar Hospital for Cardiac Surgery, Ibn Al-Nafis Hospital for Cardiovascular Diseases, and the Iraqi Center for Heart Diseases) for the period of February 1st 2006 to April 6th 2006. interview technique was employed and each interview took approximately (20-30) minuets when the nurse filled the questionnaire.

A questionnaire was constructed by the investigators based on the extensive review of the related literature and the nursing stress scales [5,6]. It consisted of two parts, first part is concerned with the demographic characteristics of sample and the second one is concerned with the environmental stressors, and it contains (28) items that describe the physical and psychological stressors. These items were rated according to three level of Lickert rating scale (never 1, sometimes 2, and always 3). The severity of stress is measured by relative sufficiency (RS) distributed as the following:

Level of Scores

Scores (Never r= 1, Sometimes = 2, and Always = 3)

No severity: (RS< 33.33) %
Mild :(33.33-49.99%)
Moderate: (50.00-66.66%).
Severe: (66.67 – 100.00%).

The validity of questionnaire was determined through a panel of (21) experts in the field of psychiatry. A pilot study was carried out on (10) nurses who are working in cardiosurgical intensive care units to measure the reliability of the questionnaire, test and retest reliability technique of two weeks interval was used to find-out the correlation between the two tests. Alpha correlation coefficient was (r=0.87) for the job environmental stressors. Date were collected from nurses in change room by using the interview process. Appropriate statistical measures were employed such as (frequency, percentage, mean, mean of score, standard deviation, and relative sufficiency).

Results:

Table 1. Distribution of the sample according to their demographic characteristics

Nurses' characteristics	Frequency	Percentage
A-Gender		
Female	32	53.3
Male	28	46.7
Total	60	100.0
B-Age		
20-29	9	15.0
30-39	40	66.7
40-49	11	18.3
Total	60	100.0
C-Marital status		
Single	38	63.3
Married	22	36.7
Total	60	100.0
D-Educational level		
Secondary	11	18.3
Diploma	21	35.0
Bachelor	28	46.7
Total	60	100.0
E-Years of experience in ICU		
1-5	17	28.3
6-10	22	36.7
11-15	13	21.7
16-20	5	8.3
21-25	2	3.3
26-30	1	1.7
Total	**60**	**100.0**

This table shows the sociodemographic characteristic of the ICU nurses, it indicates that 53.3% of the sample was female, and 46.7% was male, the highest frequent age group was of age (30-39) years (66.7%) at mean (34.333), and most of sample was single (63.3%). With regard to their educational level, most of the sample has Bachelor degree (46.7%). Also, this table shows that (36.7%) of the sample has 6-10 years of experience in ICU.

Table 2. Distribution of the sample according to their physical stressors

List	Response / Physical stressors	Mild		Moderate		Severe		MS	SD	RS	Severity
		F	%	F	%	F	%				
1	Lifting of heavy patient.	16	26.7	24	40.0	20	33.3	2.07	.78	69.00	Severe
2	Constant noise of monitors & equipment.	11	18.3	37	61.7	12	20.0	2.02	.62	67.34	Severe
3	Sudden noise of monitors alarms.	14	23.3	32	53.3	14	23.3	2.00	.69	66.67	Severe
4	Lights on 24 hours.	17	283	28	46.7	15	25.	1.97	.74	65.67	Moderate
5	Exposure to infectious diseases.	10	16.7	12	20.0	38	63.3	2.47	.77	82.34	Severe
6	Poor ventilation.	21	35.0	27	45.0	12	20.0	1.85	.73	61.67	Moderate
7	Overcrowding.	24	40.0	24	40.0	12	20.0	1.80	.75	60.00	Moderate
8	Exposure to radiation.	8	13.3	28	46.7	24	40.0	2.27	.69	75.67	Severe
9	Having to work through break.	28	46.7	22	36.7	10	16.7	1.70	.74	56.67	Moderate
10	Frequent night duty.	6	10.0	16	26.7	38	63.3	2.53	.68	84.34	Severe
11	Lack of staff.	5	8.3	6	10.0	49	81.7	2.73	.61	91.00	Severe
12	Malfunctioning of important equipment	19	31.7	33	55.7	8	13.3	1.82	.65	66.67	Severe
13	Work overload.	16	26.7	22	36.7	22	36.7	2.10	.80	70.00	Severe
14	Lack of need supplies.	15	25.0	21	35.0	24	40.0	2.15	.80	71.67	Severe
Total								2.10	.172	70.15	Severe

F=frequency, MS= mean of scores, RS= relative sufficiency, SD= standard deviation, %= percent

This table shows the mean of score (MS), and the relative sufficiency (RS) of the sample in the area of physical stressors. They ranged from severe level of stress including (10) items (1, 2, 3, 5, 8, 10, 11, 12, 13, and 14) RS: range from (91.0-66.67) % to moderate level of stress (4) items (4, 6, 7, and 9) RS: range from (65.67-56.67) %.

The result of this area of stress reached the severe level of stress RS: (70.15%), and the item (Lack of staff) had the more severity level of stress RS: (91.00%).

Table 3. Distribution of Sample according to their Psychological stressors

List	Response / Psychological stressors	Mild		Moderate		Severe		MS	SD	RS	Severity
		F	%	F	%	F	%				
1	Watching a pt. suffer from pain.	6	8.3	9	15.0	45	76.7	2.68	.08	89.34	Severe
2	Performing procedures that pt. experiences as painful.	8	13.3	15	25.0	37	61.7	2.48	.09	82.67	Severe
3	Feeling inadequately prepared to help with the emotional needs of a pt. & family	10	16.7	37	61.7	13	21.7	2.05	.08	68.34	Severe
4	Having to deal with violent pt's.	41	68	12	20.0	7	11.7	1.43	.09	47.67	Mild
5	Feeling helpless in the case of pt. who fails to improve.	2	3.3	17	28.3	41	68.3	2.65	.07	88.34	Severe
6	Rejected by pt.	37	61.7	19	31.7	4	6.7	1.45	.08	48.34	Mild
7	Being blamed for anything that goes wrong.	34	56.7	18	30.0	8	13.3	1.57	.09	52.34	Moderate
8	Patient and his family making un reasonable demands.	27	45.0	22	36.7	11	18.3	1.73	.10	57.67	Moderate
9	Fear of making mistakes during my duties.	9	15.0	6	10.0	45	75.0	2.60	.10	86.67	Severe
10	Lack of availability of physicians.	19	31.7	22	36.7	19	31.7	2.00	.10	66.67	Severe
11	In confidence in my experience and skills.	13	21.7	26	43.3	21	35.0	2.13	.10	71.00	Severe
12	Having to deal with the death of the pt.	11	18.3	12	20.0	37	61.7	2.43	.10	81.00	Severe
13	Unpredictable staffing and scheduling.	38	63.3	14	33.3	8	13.3	1.50	.09	50.00	Moderate
14	Lack of opportunity to talk openly with other personnel about problems in the working setting.	40	66.7	16	26.7	4	6.7	1.40	.08	46.67	Mild
Total								2.00	.25	66.94	Severe

F=frequency, MS= mean of scores, RS= relative sufficiency, SD= standard deviation, %= percent

Table (3) shows that the mean of score (MS), and the relative sufficiency (RS) of the sample in the area of psychological stressors. They ranged from severe level of stress including (8) items (1, 2, 3, 5, 9, 10, 11, and 12) RS: range from (89.34-66.67%); the moderate level of stress including (3) items (7, 8, and 13) to mild level of stress including (3) items (4, 6, and 14) RS: range from (48.67-46.67%).

The result of this area of stress, reached also the severe level of stress RS: (66.94%) and item (Watching patient suffer from pain) had the more severity level of stress, RS: (89.67%).

Table 4. The relationship between the demographic characteristic of the sample and the physical and psychological stressors in the work environment

Stressors / Variables	Physical Stressors						Total	Psychological stressors						Total
	Mild		Moderate		Severe			Mild		Moderate		Severe		
	F	%	F	%	F	%		F	%	F	%	F	%	
Gender														
Female	27	45.0	5	8.3	0	0	32	0	0.0	31	51.7	1	1.7	32
Male	27	54.0	1	1.7	0	0	28	2	3.3	25	41.7	1	1.7	28
Total	54	90.0	6	10.0	0	0	60	2	3.3	56	93.3	2	3.3	60
CS=							S. (0.131)							NS (0.303)
Age														
20-29	9	15.0	0	0.0	0	0	9	0	0.0	9	15.0	0	0.0	9
30-39	34	56.7	6	10.0	0	0	40	2	3.3	37	61.7	1	1.7	40
40-49	11	18.3	0	0.0	0	0	11	0	0.0	10	16.7	1	1.7	11
Total	54	90.0	6	10.0	0	0	60	2	3.3	56	93.3	2	3.3	60
CS							S (0.189)							NS (0.639)
Marital Status														
Single	34	56.7	4	6.7	0	0	38	0	0.0	37	61.7	1	1.7	38
Married	20	33.3	2	3.3	0	0	22	2	3.3	19	31.7	1	1.7	22
Total	54	90.0	6	10.0	0	0	60	2	3.3	56	93.3	2	3.3	60
CS							NS (0.616)							S (0.150)
Years of experience in ICU														
1-5	0	0	16	26.7	1	1.7	17	1	1.7	15	25.0	1	1.7	17
6-10	0	0	19	31.7	3	5.0	22	1	1.7	21	35.0	0	0.0	22
11-15	0	0	12	20.0	1	1.7	13	0	0.0	12	20.0	1	1.7	13
16-20	0	0	4	6.7	1	1.7	5	0	0.0	5	8.3	0	0.0	5
21-25	0	0	2	3.3	0	0.0	2	0	0.0	2	3.3	0	0.0	2
26-30	0	0	1	1.7	0	0.0	1	0	0.0	1	1.7	0	0.0	1
Total	0	0	54	90.0	6	10.0	60	2	3.3	56	93.3	2	3.3	60
CS							NS (0.900)							NS (0.974)

CS=Comparative significance, F=frequency, NS= non significant, S.=significant, %=percent

Table (4) indicates that there was a significant relationship between physical stressors and gender at p-value= (0.131), and between physical stressors and Age at p-value= (0.189),

and there was a significant relationship between psychological stressors and marital status at p-value= (0.150).

Discussion:

The result of this study indicates that (53.3%) of the sample was females; and (46.7%) was males, (66.7%) of the sample age ranges from (30 to 39) years at mean (34.333), (63.3%) of nurses was single and (36.7%) are married, (Table 1). This result agrees with the study which stated that the majority of nurses was female [7], and it was found that (77%) of nurses was single, and were in their early to mid-thirties (31-40) years old [8]. Regarding the educational level, the results show that (46.7%) of the sample has bachelor degree, this is consistent with the result of the study which found that the most of the participants was of bachelor degree and indicated that nurses with higher degree experienced more painful feelings when confronted with situations of medical futility [9]. It is also appeared from (Table 1) that the majority years of experience in cardiac intensive care units was (6-10) years (36.7%) which is consistent with the study that reported that the majority of the sample had work experience of (6-10) (26.4%) [10].

The result of the study indicated that physical environmental stressors was at severe level of stress (RS: 70.15) (Table 2) and the item (Lack of staff) was of the most severity (RS: 91%).

It was found that work in cardiosurgical intensive care unit requires heavy lifting, long shift work, charged atmosphere, noisy and filled with the sounds of intricate machinery [11]. Also, it was found that the most important problems in ICU practice is high nursing workload and this may lead to increase medical errors and length of stay, and is one of the most important job stressors among cardiosurgical intensive care unit nurses [12].

It was found that the frequent night duty was considered the highest scoring factors which influence nurses' decision to leave cardiosurgical intensive care unit, because of the in charge role on night duty and poor or inadequate staff believes that working with short-staffed in cardiosurgical intensive care units increases the pressure enormously for cardiac surgical intensive care unit those nurse [13].

While, it was found that determination of some factors of work pressure contributing to increased job stress, overload due to heavy patient assignment, too many patients' needs, and/or too few staff members to meet these needs [14]. It was found that the stressful nature of the critical care environment was the presence of machinery, loud noise, light on 24 hr [15].

Physical design of a workplace can be a factor in triggering stress, poor ventilation, bad lightening, and uncomfortable temperature. Dirtiness and noise can generate stress [16]. This finding is also confirmed by a study which found that many nurses (40% to 60%) are skipping breaks, and staying beyond there (12) hour shifts just to complete their work with patients [17].

It was found that un inadequate staffing and insufficient time to complete nursing tasks were the highest stressors in the nurses' work environment [14].

Nurses are required to work longer hours with fewer resources. This may explain why the turnover rate for nurses increased from 4% to 12%. So, flexibility in work hours provides opportunities for autonomy improvement at work [11].

According to the result of the present study, there were significant relationships between the physical stressors with gender and age. This finding is consistent with the result of a study which reported that sex and age (female, aged "between" 25-35) were always under significant occupational stress, and decreased with increasing age [14].

With regard to psychological environmental stressors, the study shows that there was a severe level of stress in this area (RS: 66.67) and item (Watching a patient suffer from pain) RS: (89.34) had more severity of stress (Table 3).

There is a substantial evidence to indicate that nursing is a stressful occupation which can lead to disruption in psychological status [15].

Also, it was found that there is a positive relationship between job stressors and mood disturbance [16].

A study had identified that the high level of stress in occupational in critical care nurses carries negative emotions, depression, anger, guilt, resentment, helplessness, and powerlessness [17].

Nurses in an area, such as cardiosurgical intensive care unit are likely to be faced with issues like the pain and suffering of patients. Dealing with such issues is central to nursing work, nevertheless the fact that a strength of correlation between patients' care demands and job stress was shown in nursing, is worthy of exploration [18].

It was found that the most frequently identified job stressors in cardiac surgical intensive care unit are those related to patients' suffering from death and job excess, increase exposure to job stressors [9].

It was also found that inadequate preparation was the highest perceived stressor for nurses' working environment. Also, insufficient time to complete nursing tasks [8].

Nurse who felt that she didn't have sufficient skills to feel confident and competent in their role leads to experience anxiety [12].

It was found that direct patients' care was also named as one of major sources of stress for nurses and also lacked skills in managing difficult patients [7].

A study has found that verbal abuse and physical aggression from patients and their relatives were common aspects of nurses distressing at work [13].

According to the findings of the present study, psychological stressors had a significant relationship with marital status (single group) at p-value (0.150).

This result is consistent with the finding of a study which found that married nurses had significantly better coping with stress than nurses who were unmarried, because they receive support and understanding from their spouses [18].

Recommendations:

According to the findings of the present study, the researcher recommends the followings :

1. Supportive services from hospital administration should be created to those groups who are at risk to relieve stress and special rewards for them should be encouraged.
2. Organizational strategies should provide training opportunities for those nurses to meet the new challenges and use problem solving approach.
3. The personality traits or style should be examined for nurses before working in cardiac surgical intensive care unit (ICU).
4. Attention to women over (30) years old and who spent more than (6) years in cardiac surgicointensive care unit (ICU).
5. Research need to be conducted to examine the factors which contribute to the development of such stress and its relationship to job satisfaction, turnover and burn-out for nurses.

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