

Impact of Work Stress on Quality of Nursing Care among Nurses at EL-Minia University Hospitals

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Abstract:

Background: Nursing is a stressful career; occupational stress is a common occurrence in health professions. Job stressors and low job control have been shown to be risk factors for patient safety and lead to poor job performance including reduced quality of nursing care. **This study aimed to** identify the impact of work stress on quality of nursing care among nurses at EL-Minia University Hospitals. The study was developed within descriptive approach, and was carried out at EL-Minia and Suzan Mubarak University Hospitals in EL-Minia Governorate. **Sample & setting:** Subjects of the study were all nurses (158) who worked in all general and critical departments at EL-Minia University Hospitals, three tools were used for data collection: 1- Demographic data sheet 2- Stress scale 3- Quality of nursing care scale. **Results:** The findings of the study showed that Less than two thirds of the studied nurses had moderate level of stress; more than two thirds of the studied nurses had severe level of the stress. The majority of the studied subjects had accomplished fair quality grade while one quarter had accomplish poor quality grade. **Conclusion:** It was concluded that there were an inverse relation between stress level and quality of nursing care. **Recommendations:** organizing stress management program that focuses on different categories of nurses at all hierarchical levels, and organizing a system for continuing education program for nurses.

Key words: Impact, stress, opinion of nurses, quality

Introduction:

The safety and quality of healthcare is of great concern. Hospital administrators, healthcare providers, and healthcare delivery systems all strive to provide safe and quality care for patients in complex environments. However, it has been reported that hospitalized patients are frequently harmed by the care that is intended to facilitate their well-being.^(1,2)

A primary goal of healthcare organizations is to build a safer healthcare system. Attempts to reduce medical errors and other miscues have become paramount to increasing the quality of healthcare and increasing the satisfaction of patients.^(3,4) Trying to discover ways to increase the quality of healthcare has been the primary focus of healthcare literature and research for years.⁽⁵⁾

Workplace stress is having a greater impact on today's workforce.⁽⁶⁾ It is rare that only one source of stress is present. Sources of stress are frequently interrelated and effects are observed due to a variety of sources of stress such as interpersonal conflicts which may be due to organizational and management issues.⁽⁷⁾ Sources of stress for nurses can divide into four areas (Workload, organizational pressures, interpersonal interactions, and professionalism).⁽⁸⁾

Occupational stress is a common occurrence in health professions throughout the world.⁽⁹⁾ The National Health Services (NHS) in the United Kingdom (UK) and in Australia reported that occupational stress occurred among health professionals at higher levels than in

any other comparable profession. This higher level of stress in health service has attributed to the nature of the work of health professionals in which nurses, physicians and hospital administrators are involved in providing help to people experiencing life crises.⁽¹⁰⁾

Occupational stress defined as chronic conditions caused by situation in the workplace that negatively affect an individual's job performance and their overall wellbeing.⁽¹¹⁾ It may be defined as what arises when demand exceed abilities.⁽¹²⁾ Finally, Occupational stress is the harmful physical and emotional responses that occur when the requirements of the job do not match the resources, capabilities and needs of the worker.⁽¹³⁻¹⁵⁾

Lack of productivity due to occupational stress and its related effects, including staff conflicts, recruitment and retention problems, burnout, absenteeism, rapid turn-over, and lack of job satisfaction, has been reported to cause significant monetary costs. The [NHS] reported that organizations spend as much as \$75 billion a year on stress-related outcomes including physical injuries at work and absenteeism; while the World Health Organization estimates the cost of stress and stress-related problems to organizations to be in excess of \$150 billion annually.⁽¹⁶⁾

Job stressors (causes of stress) and low job control have shown to be risk factors for patient safety and lead to poor job performance including reduced quality of nursing care.⁽¹⁷⁾ Work stressor experienced by health care staff have been found to adversely affect job performance and negatively impact the quality of care given to patients and long term care residents.⁽¹⁸⁾ Improved nursing staff competence and work satisfaction and decreased

work stress would be reflected in improved quality of care ratings.⁽¹⁹⁻²¹⁾

In Egypt, many studies have investigated stress such as Mohamed et al.,⁽²²⁾ who concluded that nurses in the Children's University Hospital at Elshatby confronted with a multitude of stressful clinical situations. The most intense and frequent stress was associated with death and dying, followed by uncertainty about treatment, conflict with other nurses, and workload. Also nurses are confronted with multiple stress factors which are: personal, interpersonal relationship, health care system, occupational and environment stress factors.

Aim of the study:

The present study aimed to identify the impact of work stress on quality of nursing care among nurses at EL-Minia University Hospitals (EL-Minia and Suzan Mubarak University Hospitals).

Research questions:

Is there an inverse relation between nurses work stress and quality of nursing care?

Significance of the study:

During clinical training of the nursing students in EL-Minia University Hospitals, the researcher observed that there are high job demands, lack of supportive work relationships, shortage of equipment and supplies, and work overload among nurses which may lead to inadequate nursing care activities. Also noticed that nurses are always stressed this make the researcher think to study the effect of those factors on quality of nursing care.

Subjects and Methods:

Research design:

The study was developed within a descriptive approach.

Setting:

The study was carried out at all medical, surgical departments and intensive care units at two teaching University Hospitals (EL- Minia and Suzan Mubarak University Hospitals)

Subjects:

The subjects of the study included all nurses who were working at all general inpatient, and critical care units at EL-Minia University Hospital (n= 115) and Suzan Mubarak University Hospital (n= 43) with total number (n= 158).

Tools of data collection:

Data for the present study were collected using:

1. **Demographic data sheet included:** Socio-demographic data of the respondent. It includes (name, age, sex, marital status, qualification, years of experience, department, and kind of shifts nurses taken).
2. **Stress scale:** - Was developed by Cassem and Hakett⁽²³⁾ to measure source and frequency of workplace stress, and it was translated into Arabic by the researcher. To identify causes, level frequency of stress. It included 34 questions about stress, divided into the following 7 factors; death and dying (7 items), conflict with Physician (5 items), inadequate preparation (3 items), lack of support (3 items), conflict with other nurses (5 items), workload (6 items), and uncertainty concerning treatment (5 items).

Subjects Responses to each item ranged from 1-4 [never stressful= (1), occasionally stressful= (2), frequently stressful= (3), extremely stressful= (4)]. So the scoring system ranges from 34 to 136 and divided as follows; If the score (34) the level of stress will be considered no stress, and if the

score ranges from (35- 68) the level of stress will be considered mild, if ranges from (69-102) the level of stress will be considered moderate, and if ranges from (103-136) the level of stress will be considered severe.

3. **Quality of nursing care observation checklist:** This tool was developed by the researcher based on Lewis et al.,⁽²⁴⁾ to measure quality of nursing care provided by nurses. It includes 18 sub items divided into 4 main items; nursing care (6 sub items), communication (7 sub items), surrounding environment (3 sub items), and safety (2 sub items).

The items of the checklist were checked either done scored "1" and not done scored "0". The total scoring system ranges from 0 to 18. If the score ranges from (0- 6) the level of quality will be considered poor, and if the score ranges from (7- 12) the level of quality will be considered fair, and if ranges from (13-18) the level of quality be considered high.

Filed work:

The present study carried out within five months started from 1 July 2011 to 30 November 2011. The researcher met each nurse to explain the purpose of the study and to ask for participation. After obtaining verbal consent, the stress scale handles to participated nurses to be filled. Data was collected through individual interview with each nurse. The time needed for filling the tool of stress scale was about 30 minutes.

For collecting data about the quality of nursing care the researcher using direct observation for nurse performance for three times at morning shift, the researcher calculate the total

score for three observations for every nurse and take the mean.

Pilot study:

A pilot study was carried out on sixteen nurses from the two hospitals before embarking on the field work to find out the difficulties present in questions in order to modify or clarify them, or to omit or add certain questions, and to estimate time needed to fill the forms. Minor modifications were done, and the final form was developed. The results obtained from the pilot study were included in the main sample. The reliability Alpha coefficient of the total stress tool was ($\alpha = 0.79$), and the reliability Alpha coefficient of the total quality of nursing care tool was ($\alpha = 0.90$).

Administrative and ethical considerations:

Formal Approval was obtained through official letters that send to the dean of faculty of nursing and to the managers of the two university hospitals at EL-Minia University explaining the aim of the study. Assured complete confidentiality of obtained information.

Oral agreement was taken from the participants. Confidentiality of obtained data was assured, the purpose, nature, and the aim of the study was explained to all participants before starting data collection.

Statistical design:

The collected data were coded, tabulated, analyzed, and interpreted by using frequency distribution percentages, chi-square test and Fisher's exact test whenever applicable. All data were analyzed by using the Statistical Package for Social Sciences (SPSS-16) software and $P < 0.05$ was used as the definition of statistical significance.

Results:

Table (1): The study included 158 nurses from the two University Hospitals. As evident in the table, about two thirds (66.1%) of the study subject at El-Minia University Hospital, aged between 20-29 years, more than two thirds (68.7%) of them were females, more than half (60.9%) were married, less than two thirds (62.6%) of them had diploma of secondary Nursing school. As regard to Suzan Mubarak University Hospital, the majority of study sample (88.4%) aged between 20-29 years, all of nurses were females (100%), more than half of them were married (55.8%), less than two thirds (60.5%) of them had diploma of secondary Nursing school.

Table (2): As evident in the table, death & dying, work load and uncertainty concerning treatment were considered extremely stressful by most of the nurses of each hospital (63.5%, 58.3% and 48.7 of nurses at El-Minia University Hospital and 65.1%, 60.5% and 46.5% of nurses at Suzan Mubarak University Hospital respectively).

Table (3): Illustrates that the mean score regarding factors of quality of nursing care in El-Minia and Suzan Mubarak University Hospitals. As evident in the table, communication factor was highest mean score among the four factors.

Table (4): As evident in the table, none of the nurses (0.0%) of the study sample who had mild stress having poor quality of nursing care, and half (50.0%) of them who had mild stress having high quality of nursing care, while none of the nurses (0.0%) who had severe stress having high quality of nursing care. These differences were highly statistically significant (p value=0.001).

Table (5): As evident in the table, according to stress level, less than two thirds of the study subjects had moderate stress, and more than one third of the study subjects had severe stress in each Hospital. These differences were not statistically significant (p value=0.451). As regard the quality grade of nursing care, nearly one third (32.2%) of nurses in El-Minia University Hospital had poor quality, versus 7.0% of nurses in Suzan Mubarak University Hospital. Only 1.7% of El-Minia Hospital nurses had high quality facing 16.3% of Suzan Mubarak Hospital nurses. These differences were highly statistically significant (p value=0.001).

Table (6): As evident in the table, regarding El-Minia University Hospital, stress level has negative weak correlation with quality of nursing care, qualifications, years of experience $\{(r = -0.24 \text{ \& } p = 0.01), (r = -0.07 \text{ \& } p = 0.43) (r = -0.04 \text{ \& } p = 0.71)\}$ respectively. The quality of nursing care has negative weak correlation with years of experience ($r = -0.17 \text{ \& } p = 0.07$)

As regard nurses who worked at Suzan Mubarak University Hospital, stress level had negative fair correlation with quality of nursing care, negative weak correlation with qualifications $\{(r = -0.45 \text{ \& } p = 0.002), (r = -0.02 \text{ \& } p = 0.87)\}$ respectively. The quality of nursing care has negative weak correlation with years of experience ($r = -0.03 \text{ \& } p = 0.83$).

Discussion:

In the present study, more than two thirds of study nurses who work in El-Minia University Hospital were females and all nurses who work in Suzan Mubarak University Hospital were females (table, 1). This result might be attributed to that majority of

nurses were graduated from Secondary Nursing School and clinical Institution were females. This is supported by Walling⁽²⁵⁾ who mentioned that while the proportion of men entering the nursing profession has been growing, it remains a female-dominated occupation.

This perspective study shows that, the most common causes of the severe stress from nurse's point of view were death and dying, workload, and uncertainty concerning treatment (table, 2). This result is consistent with Kelly et al.,⁽²⁶⁾ who reported that stress resulting from extra workload, fear of injury and parents pursuing legal action. On the same line McGrath et al.,⁽²⁷⁾ reported that working with difficult patients, nurses' feelings about death and dying, interpersonal conflicts, managing the patients' pain and the presence of the family contribute to occupational stress.

As regards to factors of quality of nursing care in El-Minia and Suzan Mubarak University Hospitals. The present study results shows that, communication factor was highest mean score among the four factors (table, 3). This result is consistent with Hughes,⁽²⁸⁾ who claimed that good communication between staff is a prerequisite for high-quality care. In the same line Moriarty et al.,⁽²⁹⁾, Lintern et al.,⁽³⁰⁾ stated that communications training leads to improvements in the quality of social interactions between staff and older people, this can in turn lead to improvements in older people's quality of life and well-being.

As regards to the impact of work stress on quality of nursing care, the present study results showed that occupational stress adversely affects on quality of nursing care (table, 4). This finding is in agreement with

Hannan et al.,⁽¹⁸⁾ who reported that work stressor experienced by health care staff have found to be adversely affected job performance and negatively impact on the quality of care given to patients, and stated that increased work satisfaction and decreased stress among nurses probably improve quality of care.

Furthermore, Morgan et al.,⁽³¹⁾ Chou et al.,⁽¹⁹⁾ Brodaty et al.,⁽³²⁾ and Lu et al.,⁽³³⁾ clarified that the lack of competence development opportunities among care nursing staff has been associated with both work dissatisfaction, and work stress both of which have been associated with decreased quality of care. Sveinsdottir et al.,⁽¹⁷⁾ clarified that job stressors lead to poor job performance, reduced quality of nursing care, and concerns for patient safety.

As regards to stress level, the present study revealed that severe stress of nurses at Suzan Mubarak University Hospital was higher than at El-Minia University Hospital (table, 5). This might be attributed to younger age of nurses at Suzan Mubarak University Hospital. This finding was consistent with Chang and Hancock,⁽³⁴⁾ who reported that newly qualified nurses, entering the clinical areas for the first time, seem to experience a high level of stress associated with lack of confidence and exposure to unfamiliar circumstances.

The results of the present study showed that high quality of nursing care at Suzan Mubarak University Hospital was higher than at El-Minia University Hospital (table, 5). This might be attributed to the new building and the availability of all equipment in Suzan Mubarak University Hospital. This finding were consistent with Sainfort et al.,⁽³⁵⁾ who stated that a good workplace intervention takes into account the quality of products and

processes, the quality of the working environment, and human outcomes, such as job satisfaction, stress and employee health. Healthy and satisfied staff will, in turn, offer high-quality care which is appreciated by patients.

In the present study, there was a negative correlation between stress level and the quality of nursing care (table, 6). This result is consistent with Sudhaker and Gomes,⁽³⁶⁾ in their study showed that there is close relationship between coping strategies, job quality index variables and the job stress. Improving these variables will help to improve job satisfaction thereby improve quality of nursing care and retention of nurses.

Moreover, Sudhaker & Gomes,⁽³⁶⁾ in their study clarified that there is strong negative relation between Job stress and variables of job quality like time, support and work environment. This indicate that when active coping increases, job stress decreases and improvement in time and support will decrease the Job stress experienced by the nurses. There is a positive relationship between coping strategy and organizational support, and support from the nursing service. Motivation will help to improve the work environment thereby decrease the job stress

Conclusions:

- The most common causes of stress with the nurses who worked at El-Minia and Suzan Mubarak University Hospitals were death, dying, work load, and uncertainty concerning treatment respectively.
- Less than two thirds of the studied sample has moderate level of stress, and more than one third of the studied sample has severe level of the stress in El-Minia and Suzan Mubarak University Hospitals.
- More than two thirds of the studied sample had accomplished fair grade of quality of nursing care and

only (7.0%) of the studied sample had accomplish high score of quality of nursing care.

- Negative correlation between stress level and quality of nursing care in the studied sample at El-Minia and Suzan Mubarak University Hospitals.

Recommendations:

1. Organize a system for continuing nursing education through in-service training programs, to assist nursing personnel to refresh and gain new knowledge, improve their communication skills, and improve their opinion about quality of nursing care.

2. Nurses managers should plan an orientation program to orient nurses about hospital policy, rules, regulations, job description and responsibilities, other's expectation, facilities and equipment and performance evaluation standard, to know their roles and reduce their stress.
3. Periodic evaluations of nursing care, and improve the area need enhancement.

Table (1): Demographic characteristics of nurses by areas in both Universit Hospitals, 2011(n=158)

Demographic characteristics	El- Minia University Hospital (No.=115)						Suzan Mubarak University Hospital (No.=43)					
	General (73)		Critical (42)		Total (115)		General (20)		Critical (23)		Total (43)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Age												
• <20	2	2.7	0	0.0	2	1.7	0	0.0	0	0.0	0	0.0
• 20-29	37	50.7	39	92.8	76	66.1	18	90.0	20	87.0	38	88.4
• 30-39	25	34.2	2	4.8	27	23.5	2	10.0	3	13.0	5	11.6
• 40-49	9	12.4	1	2.4	10	8.7	0	0.0	0	0.0	0	0.0
Sex												
• Male	29	39.7	7	16.7	36	31.3	0	0.0	0	0.0	0	0.0
• Female	44	60.3	35	83.3	79	68.7	20	100	23	100	43	100
Marital status												
• Single	17	23.3	28	66.7	45	39.1	8	40.0	11	47.8	19	44.2
• Married	56	76.7	14	33.3	70	60.9	12	60.0	12	52.2	24	55.8
Qualifications												
• Diploma	59	80.8	13	31.0	72	62.6	17	85.0	9	39.1	26	60.5
• Institute	14	19.2	13	31.0	27	23.5	3	15.0	6	26.1	9	20.9
• Baccalaureat	0	0.0	16	38.0	16	13.9	0	0.0	8	34.8	8	18.6
Years of experience												
• <10	39	54.2	40	95.2	79	69.3	16	80.0	20	87.0	36	83.7
• 10-20	26	36.1	2	4.8	28	24.6	4	20.0	3	13.0	7	16.3
• 20-30	8	9.7	0	0.0	7	6.1	0	0.0	0	0.0	0	0.0

Table (2): Frequency of causes of stress among nurses in El-Minia and Suzan Mubarak University Hospitals, 2011 (n=158)

Frequency of causes of stress	El-Minia		Suzan		Mean \pm SD	
	No =115	%	No.=43	%		
Death and dying	Never	0	0.0	0	0.0	22.2 \pm 3.1
	Occasionally	4	3.5	0	0.0	
	Frequently	38	33.0	15	34.9	
	Extremely	73	63.5	28	65.1	
Conflict with physicians	Never	0	0.0	0	0.0	14.1 \pm 3.3
	Occasionally	19	16.5	5	11.6	
	Frequently	59	51.3	23	53.5	
	Extremely	37	32.2	15	34.9	
Inadequate preparation	Never	4	3.5	1	2.3	7.03 \pm 2.1
	Occasionally	45	39.1	18	41.9	
	Frequently	51	44.3	21	48.8	
	Sever	15	13.1	3	7.0	
Lack of support	Never	7	6.0	3	7.0	7.3 \pm 2.3
	Occasionally	34	29.5	11	25.5	
	Frequently	50	43.6	27	62.8	
	Extremely	24	20.9	2	4.7	
Conflict with other nurses	Never	1	0.9	0	0.0	13.6 \pm 3.9
	Occasionally	25	21.7	5	11.6	
	Frequently	58	50.4	19	44.2	
	Extremely	31	27.0	19	44.2	
Work load	Never	0	0.0	0	0.0	19.01 \pm 3.2
	Occasionally	5	4.3	2	4.7	
	Frequently	43	37.4	15	34.8	
	Extremely	67	58.3	26	60.5	
Uncertainty concerning treatment	Never	0	0.0	0	0.0	15.01 \pm 3.06
	Occasionally	11	9.6	3	7.0	
	Frequently	48	41.7	20	46.5	
	Extremely	56	48.7	20	46.5	

Table (3): Mean score of quality of nursing care factors in El-Minia and Suzan Mubarak University Hospitals, 2011. (n=158)

Factors of quality of nursing care	Mean ± SD
1. Nursing care	2.9 ± 0.98
2. Communication	3.06 ± 1.00
3. Surrounding environment	1.9 ± 0.96
4. Safety	2.9 ± .91

Table (4): Relation between quality grade and stress level in both El-Minia and Suzan Mubarak University Hospitals, 2011 (n=158)

Stress level	Quality grade								Fisher exact	P- value
	Poor		Fair		High		Total			
	No.	%	No.	%	No.	%	No.	%		
▪ No	0	0.0	0	0.0	0	0.0	0	0.0	22.570	0.001**
▪ Mild	0	0.0	2	50.0	2	50.0	4	100		
▪ Moderate	20	20.2	72	72.7	7	7.1	99	100		
▪ Severe	20	36.4	35	63.6	0	0.0	55	100		
Total	40	25.3	109	69.0	9	5.7	158	100		

(**) highly statistically significant at <0.001

Table (5): Comparison between El-Minia and Suzan Mubarak University Hospitals regarding stress level & quality grade, 2011

Hospital Name	Stress level								Quality grade									
	No		Mild		Moderate		Sever		Total		Poor		Fair		High		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
El-Minia	0	0.0	4	3.5	72	62.6	39	33.9	115	100	37	32.2	76	66.1	2	1.7	115	100
Suzan	0	0.0	0	0.0	27	62.8	16	37.2	43	100	3	7.0	33	76.7	7	16.3	43	100
Total	0	0.0	4	2.5	99	62.7	55	34.8	158	100	40	25.3	109	69.0	9	5.7	158	100
Fisher Exact	1.594								19.980									
P value	0.451 NS								0.001**									

(**) highly statistically significant at <0.001

NS= Not significant

Table (6): Correlation matrix of study variables (age, stress level, quality grade qualifications and years of experience) of nurses at El-Minia and Suzan Mubarak University Hospitals, 2011 (n=158)

Variables	El-Minia University Hospital									
	Age		Stress level		Quality grade		Qualifications		Years of experience	
	r	P	R	P	R	P	r	P	R	P
Age			-.14	.14 NS	-.17	.08 NS	-.34	.01*	.84	.01*
Stress level					-.24	.01*	-.07	.43 NS	-.04	.71 NS
Quality grade							.28	.002**	-.17	.07 NS
Qualifications									-.32	.001**
Suzan Mubarak University Hospital										
Age			.02	.89 NS	.24	.12 NS	.01	.996 NS	.50	.001**
Stress level					-.45	.002**	-.02	.87 NS	.20	.19 NS
Quality grade							.06	.71 NS	-.03	.83 NS
Qualifications									-.03	.87 NS

(*) statistically significant at <0.05 (**) highly statistically significant at <0.001 NS= Not significant

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