STRESS AMONG HOSPITAL NURSING STAFF ITS CAUSES AND EFFECTS

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Abstract:

Background: Occupational stress has been associated with low job satisfaction, poor quality of work performance, organizational inefficiency, high staff turnover, sickness absenteeism, and increased costs of health care. **A*im* of the study**: was to investigate the causes and effects of stress among hospital staff nurses in different hospitals in Zagazig city. **Subjects and Methods: Research Design:** A cross sectional analytical design used in the study. **Setting:** El-Ahrar Zagazig General Hospital this affiliated to Ministry of Health hospitals, General surgery hospital and medicine hospital these affiliated to Zagazig university hospitals, and El- Mabara hospital this affiliated to Health insurance hospitals. **Subjects:** 551 nurse and 511 patients from all study hospitals. **Tools of data collection:** Two tools were used to collect data. The first was an interview questionnaire sheet to assess the causes of stress among hospital staff nurses. The second tool was questionnaire to measure the effect of stress on nurses' turnover, health status, and patient satisfaction. **The results** of present study revealed that all nursing staffs in the three hospitals were under stressors. The highest total mean score of stress present in MOH, followed by university hospital and lastly health insurance hospital, 48.8% of the staff nurses scored high effect of the stress on their physical health and the remaining scored moderate effect of the stress (46.8%), the patients in different hospitals were moderately satisfied from nursing care provided to them. **Conclusion:** Most of study nurse were working under moderate level of stress. Also the stress effected moderately in their turnover and general health, but this stress not effect on patient satisfaction from nursing care provided to them. **Recommendation:** Stress management program should conducted to all nurses to know how to deal with the stress, further study in other place to asses stress among nurses its causes and effect.

Key words: Stress, Causes, Effects, Turnover, patient satisfaction

Introduction:

The nursing profession is known to be stressful throughout the world and has detrimental effects on the physical and psychological well-being of an individual, Stress is an important psychological concept that can affect health, well-being and job performance in negative dimensions [1]. It is important to recognize that stress is a state, not an illness, which may be experienced as a result of an exposure to a wide range of work demands and in turn can contribute to an equally wide range of outcomes, which may concern the employee's health and be an illness or an injury, or changes in his/her behavior and lifestyle [2].

Professional stress can also be defined as a "pattern of emotional, cognitive, behavioral and physiological reactions to adverse and harmful aspects of work content, work organization and the working environment" [3]. Several factors have been identified in relation to stress in acute care settings: workload; organizational support; social support; autonomy; relationships with colleagues; communication; and rewards; Working environment; Role

characteristics; infectious diseases; and organizational factors [4]

There are certain signs and symptoms that reflect the existence of stress. Relevant literature classifies stress symptoms into physiological, emotional, behavioral and Cognitive. Physiological symptoms include the increase in blood pressure, breathing rate, heart beating rate, and sweating. Yet, if the stress is unbroken certain unpleasant and dangerous results such as heart attacks, increased cholesterol level, and ulcers may appear [5].

The effects of work-related stress are low job satisfaction, high turnover, and poor patient outcomes, resulting in large numbers of nurses leaving the profession entirely [6-7]. Severe distress has been linked to staff absenteeism and even ill-health [8]. Moreover, increased job stress and less teamwork resulted in lower job satisfaction and a higher anticipated turnover [9].

Significance of the study:

Zagazig hospitals include a large number of nurses working in the different departments. those nurses face many stressors and the quality of health care can be extremely influenced by the stressed health staff. So, this study will be beneficial to know the magnitude of work related stress among our nurses, the most important risk factors leading to this problem and will be a baseline data for further study.

Aim of the study:

The aim of the current study was to investigate the causes of stress among nurses and the effect of work related stress on nurses turnover, general health and patient satisfaction from nursing care provided to them in different hospitals in Zagazig city.

Research questions:

1. What is the magnitude of work related stress among nurses at Zagazig hospitals?

2. Is there a difference in the level of work related stress among nurses at different hospitals?

3. What are the causes of work related stress?

4. What is the effect of work related stress on turnover, general health of nurses and patient satisfaction?

Research hypothesis

High level of stress among hospital nurses would result in poor quality of performance, deterioration of health, increase turnover among nursing staff, and decreased patient satisfaction from nursing care provided to them.

Subjects and Methods

Research design:
A cross sectional analytical study was utilized in this study.

Study Setting
The present study was conducted at three hospitals with different administrative set up. El-Ahrar Zagazig General Hospital, this affiliated to Ministry of Health hospitals, General surgery hospital and medicine hospital these affiliated to Zagazig university hospitals, and El- Mabara hospital this affiliated to Health insurance hospitals.

Study Subjects:
A convenience sample was of 551 nurses and 511 patients from all study hospitals. The inclusion criteria were

Tools of data collection

Data collection was done through the use of the following tools:

Tool I: An interview Questionnaire:

An Interviewing questionnaire was designed to investigate the causes of stress among hospital staff nurses in different hospitals in Zagazig. It was divided into two parts:

- **Demographic data about the nursing staff such as** (sex, age, qualification, years of experience, residence, department name, hospital name, hospital administration).
- **The Stressors criteria items:**

The Stressors criteria items consist of (64) criteria, these were divided into (3) main category were related to:

- **The first** stressors were related to hospital rules and regulations.
- **The second** stressors were related to the working environment.
- **The third stressors** were related to socio-economic stressors

Tool II: Questionnaire to measure the effect of stress

Turnover among hospital nurse, Nurse's general health, and patient's satisfaction. The questionnaire is formed of four parts.

Part one: Included personal data such age, sex, years of experience, hospital name, hospital administration, department name, and educational qualification

The second part: Is concerned with the effect of stress on turnover it contains data about frequency of turnover among the hospital staff nurse. It was developed by Lyons, (1971). And adopted by the researcher.

The third part: constructed to collect data about effects of stress on nurse's general health, it was developed by Al kahtany, (2007) & Mesalam, (2007) and adopted by the researcher it was divided into two parts; physical and psychological effects.

The responses of the participants were measured on a five-point Likert scale rating from "strongly agree, agree neutral, disagree, and strongly disagree" scored as 5, 4, 3, 2 and 1. Total score was 27 points.

The Fourth part: constructed to collect data about effects of high and moderate stress among hospital staff nurses on patient satisfaction. The patient satisfaction scale developed by **Gaber, (1990) and Hussny, (1995)** to assess patient's satisfaction with the actual nursing care being provided. It consisted of two main parts.

1-The personal Data:

It included patient's name, department, sex, age, length of stay, marital status, occupation and education.

2-Care provide to the patient:

It included 4 main parts: Care provided to patient which is assessed in terms of:

A) Received direct patient care

Composed of (23) question divided into two items.

1- Concerned about physical need. It includes (9) questions related to hygienic care, comfort & safety, and feeding.

2- Related to carrying out nursing procedures. It includes (14) questions related to monitoring vital signs, giving medication, dressing, and Preparation of patient for investigation

B) Other direct activities

It includes (17) questions divided into four main sections

1st concerned about patient's orientation on admission and health education. It includes (6) questions.

2nd concerned about listening to and talking with patients. It includes (7) questions.

3rd section: concerned about keeping privacy for patients. It includes (3) questions.

4th section: concerned about protection of patients from injury. It includes (2) questions.

C) Exchange of information about patients. It includes (3) questions.

D) Equipments and supplies. It includes one question.

E) Environment. It includes (4) questions.

Scoring: each items of care scored as Always =2, Sometimes =1, and Never =0). Total score was 48 points, the patient's score was 75% or more considered highly satisfied, 50 % - < 75% considered moderately satisfied and less than 50% considered low satisfied.

Content Validity:

It was established for face and content validity by a panel of five expertises (Nursing administration) who revised the tools for clarity, relevance, applicability, comprehensiveness, understanding, and ease of implementation and according to their opinion minor modifications were applied.

Field work

It was necessary for the researcher to introduce herself and explain the purpose of the study for subjects included in the study. Data collection was carried out during the period from the beginning of January 2015 to the end of May 2015. The preparatory phase was done by meeting with nurses' manager to clarify the objective of the study and how to fill the tool. Distribution of the questionnaire sheet was done after the end of morning shift in their setting. An interview questionnaire sheet. The time taken for every questionnaire was completed between 20 to 30 minutes for every nursing personnel. Effect of stress. The time taken for every questionnaire was completed between 15 minutes for every nursing personnel. Patient satisfaction questionnaire. The time taken for every questionnaire was completed in about 15 minutes for every patient. But most questionnaires were completed by the researcher because most of the patients were illiterates.

Pilot study

A pilot study was carried out to test the questionnaire feasibility, understandability, and to estimate the time consumed for filling in the forms. The pilot study was carried out on 10% of study sample (nurses and patients). Data collected from the pilot study were reviewed and no modifications to items of the tools so the nurses included in the study sample.

Administrative and ethical considerations:

An official letter was obtained from the Dean of the Faculty of Nursing, Zagazig University, to the Director of El-Ahrar General Hospital, general surgery hospital, medicine hospital and health insurance hospital for permission and cooperation to conduct the study. The top administrator of the hospitals sent a letter to the top director of nursing to facilitate the researcher's work

during data collection. The agreement for participation of the subjects was taken orally after aims of the study were explained to them, they were given an opportunity to refuse or to participate and they were notified that they were assured that the information would utilized confidentially and used for the research purpose only.

Statistical design:

After the collection of data, it was revised, coded and fed to statistical software SPSS version 20. The statistical analysis used T test with alpha error = 0.05. Microsoft office excel software was used to construct the needed graphs. After data coding the following data manipulations were done.

Results:

Table (1): Indicates the mean age of the studied nurses were 25.5±6.2 years in MOH hospital, 36.2±9.3 years in university hospital and 25.3±6.6 years in health insurance hospital.l

As regard original residency 84.7% of the staff nurses worked in MOH from rural compared to 67.0% & 63.9% respectively of the nurses worked in health insurance and university hospital. The nurses worked in ministry of health46.0% of them graduated from technical institution, 39.3% graduated from faculty of nursing and only 14.7% had diploma in nursing. While most of nurses worked in university hospital and insurance hospital had diploma in nursing (83.1% and 78.4% respectively). The mean years of nurse's experience who worked in MOH hospital were 5.1± 5.9 years, compared to 17.8±9.1 years of nurses worked in university hospital and 12.5± 5.3 years worked in health insurance hospital.

Table (2): showed all nursing staff in the three hospitals were under stressors. The highest total mean score of stress present in MOH (74.0 ± 12.7) followed by (68.5± 12.7)at university hospital and lastly health insurance hospital (59.6 ± 13.6). The finding revealed statistically significance difference between total stressors score in different study hospitals (p= 0.001).

The high mean score of stressors present at MOH hospitals which revealed to shift and place regulation (9.0±3.2) followed by socio-economic stressors (7.6±2.4) and lastly financial stressors (7.1±1.9). While the nurses low stress score related to present of sufficient supply in the unit (1.7±1.5) and nurse physician relation (1.6±1.2).

In university hospital the high stress were related to shift and place regulation (8.7±2.8), then related to socio-economic stressors (7.3±1.8) and lastly the stressors of financial regulation (6.6 ±1.9). On other hand the lowest mean stressors were related to lab relation (1.5±1) and physician relation (1.2±0.9). But the highest mean stressors in health insurance hospital related to socio-economic stressors (7.4±2.4) and shifting regulation (6.8±2.4). Meanwhile the lowest mean stressors score related to nurses physician relation and nurses office (1.4±1.7 and 1.6±1.2 respectively.)

Figure (1): Portray 88.6% of the staff nurses suffered from moderate stress level, while only 5.6% had high level of stress

Figure (2): indicated that 40% of the nurses reported they did not exposed to turnover or asked for change, while 36.3%they change work place one time, 15.1% of them two time and 7.8% change their work place three times

Table (3): The table shows that 48.8% of nurses scored high effect of the stress on their physical health and the remaining scored moderate effect of the stress (46.8%).

The results revealed the more than half (54.3%) of the staff nurses scored moderate effect of the stress on psychological health status and 31.0% of them scored low effect.

Figure (3): Portray 62.4% of the staff nurses the stress had moderate effect on their general health, and 26.5% reported the stress highly affect their health.

Table (4): showed 34.5% of the patients at MOH hospital were highly satisfied. Followed by 27.6% at university hospital, and 24.8% at insurance hospital. Meanwhile, 54.5% of them at insurance hospital were moderately satisfied, Followed by 51.9% at university hospital and 48.5% at MOH hospital. Also all the studied patients were moderately satisfied from general nursing services provided by nurses.

Discussion:

Nursing is generally perceived as a demanding profession. Job stress is the harmful emotional and physical reactions resulting from the interactions between the worker and her/his work environment where the demands of the job exceed the worker's capabilities and resources. It is well known that prolonged stress is a precursor of burnout which is considered a major problem for many professions, and nurses are considered to be particularly susceptible. Literature on occupational stress indicates that burnout affects mainly nurses, physicians, social workers and teachers. However, studies concluded that occupational

stressors, lack of professional latitude, and role of problems, predicted nurses' intention to quit their working healthcare organizations Gao et al[, (10)] .

Regarding general characteristics of the studied nurses, The finding of the present study revealed that the mean age of the studied nurses were 25.5±6.2 years in MOH hospital, 36.2±9.3 years in university hospital and 25.3±6.6 years in health insurance hospital the mean years of nurse's experience who worked in MOH hospital were 5.1± 5.9 years, compared to 17.8±9.1 years of nurses worked in university hospital and 12.5± 5.3 years worked in health insurance hospital.. This finding agreed with that of *Shinde & Gulavani,* [(11)] In Krishna Institute of Nursing Sciences, India who mentioned that 54% belong to age group 21 to 30 years and 51% were having less than 5 year of experience. Similar findings were noted in the study by department of maternity and gynaecology nursing, Alexandria University, Egypt where majority samples were younger than 30 years,77% being female with sex and all were (n=148) working as staff nurse.

Regarding mean of all stressors for study nurses in different hospitals. The different types of high mean score of stressors present at MOH hospitals were revealed to shift and place regulation followed by socio-economic stressors and lastly financial stressors. While the nurses low stress score related to present of sufficient supply in the unit and nurse physician relation. These results were incongruent with Dragana [(12)] concluded that nurses from ICUs rated situations involving physical and psychological working environments as the most stressful ones, whereas situations related to

social working environment were described as less stressful. This results not agreed with Nathalie, et al., [13] found to have high levels of psychological stress (64.73%), were the financial dimension came to be the first major stressor (88.43%), while work environment came second as the percentage was (69.20%), political dimension came third (58.03%), fourth the physical dimension as the percentage was (51.37%),and finally the psychological dimension came to take the fifth and the last item stressors (49.68%).

As regard highest mean score of different stressors in university hospital were related to shift and place regulation, then related to socio-economic stressors and lastly the stressors of financial regulation. On other hand the lowest mean stressors were related to lab relation and physician relation. This finding not agreed with that of Kamal, et al., [14] who found that most stressful subscale for nurses at Taeif governmental hospital in Kingdom of Saudi Arebia was dealing with patient and their families as frequently stressful and least stressful subscale was financial regulation.

But the highest mean stressors in health insurance hospital related to socio-economic stressors and shifting regulation. Meanwhile the lowest mean stressors score related to nurses physician relation and nurses office. This finding was consistent with that of Bhatia [15] who reported that the prevalence of occupational stress amongst nurses was 87.4% related to socio-economic stressors such as caring for own children/parents, own work situation and personal responsibilities was found to be the most stressful factor.

Meanwhile, the lowest mean stressors score related to present of sufficient supply in the unit, nurses physician relation and nurses office this is in contrast to the study carried out by Olayinka, et al., [16] whose study found that majority of the nurses identified poor salary, lack of incentives, lack of promotion, nursing difficult patients the main causes of stress. This finding against the view of Stordeur, et al. [17] who attempted to rank stressors in order of severity of impact, the main ones being ranked as: conflict with other nurses/physicians, Job insecurity. Also this finding not supported by the study conducted on occupational stress among Icelandic nurses by Sveinsdottir, et al.,[18]emphasized that work relationships are potential stressors. Their assessment showed that lack of social support from colleagues and superiors and less satisfaction with the head nurses contributed significantly to the appearance of stress.

Results of the present study revealed that the majority of the studied nurses reported moderate level of stress. While only 5.6 % had high stress level. This result agreed with Azizollah, et al., [19] at Delhi hospitals who reported that 44.4% (93 subjects) had low stress level, 55.1% (118 subjects) had moderate stress level, and 0.5% (5 nurses) had `severe stress level. A similar finding was reported by Aly, [20] at Alexandria university hospitals that 37% of the staff nurses were scored as moderately stressed and only one scored high stress. On the same context, in Alexandria University Zaghloul, [21] conducted a study entitled (Developing and Validating a Tool to Assess Nurse Stress) and revealed that the total mean stress score for the sample showed moderate stress. This result is incongruent with that of Hagag, [22]

who reported that the staff nurses in El- Shefaa hospital at Gaza district suffering from high level of job stress. This finding agreed with that of Yehia,[23] who indicated that highly statistically significant difference were found (t = 20.63 & p≤ 0.01) as moderate stress level in relation to total scores of work stress levels for governmental hospital. This finding was according with finding of Andrew,[24] who found that, all governmental health professionals (nurses and hospital managers) agree significantly that they experienced work-stress.

The finding of the current study indicated that nearly half of the staff nurses scored high effect of the stress on their physical health and the remaining scored moderate effect of the stress. Concerning the effect of stress on the psychological health status, the results revealed the more than half of the staff nurses scored moderate effect of the stress on psychological health status and nearly one third of them scored low effect. Generally the stress had moderate effect on staff general health. These results were congruent with Al Hosis, [25] .Nearly half of Saudi nurses were suffering from physical and mental illnesses. Findings also revealed that a highly significant relation between mental problems and working stress and significant relation among working stress, physical problems and marital status. There was highly statistically significant relation between physical problems and mental problems. On the same line Bruziene,[26] who mentioned that nurses, as well as other care providers, are vulnerable to moral stress that can lead to long-term health problems as poor sleeping patterns, poor physical condition and reduced feelings of well-being. Also in the study of the effects of long-term stress on individual physical

and psychological health, researchers found that nurses experienced increased stress in situations of greater workloads and ethical and moral conflicts in the workplace, which resulted in poor perception of overall health (Begat, et al.,[27].

This finding is consistent with the study carried out by Olayinka, et al., [26-27] it was found that the types of stress experienced by majority of the nurses include; headache, Insomnia and fatigue as physical type of stress. This finding agrees with that of Peterson, [28] whose study found that, among nurses examined, 1 in 5 were at risk for stress related health problems; 2 in 5 experienced distress because of too much pressure or mental fatigue at work.

Fatigue is known to lead to error, injury, and carelessness on the part of a nurse at work. Most of them experienced anger, frustration and compulsive behavior as types of emotional stress. Majority of the nurses accepted that lack of concentration, forgetfulness and withdrawal as the most psychological types of stress experienced in the ward. On the same line Kane, [29] who conduct a study on nurses in India to identify the major sources of stress, and finding the incidence of psychosomatic illness related to stress. It revealed that; 60% of the nurses complaining of headache, Acidity affect 62% of the nurses and nearly half of nurses were suffering from back pain, stiffness of shoulder, neck and stomachache.

Regarding distribution of the patients in different hospitals by satisfaction score more than half of patient reported moderately satisfied from nursing provided to them in health insurance and in university hospital and less than half in MOH hospital. Also both in university and

health insurance hospital patients mentioned low level score satisfaction from nursing care in addition to 17.0% in MOH hospital. This Result is incongruent with that of Agosta, [31] at University of Texas who demonstrated overall high levels of patient satisfaction. Also this finding is inconsistent with that of Kinnersley, et al., [30] that demonstrated higher levels of patient satisfaction reported by respondents.

Conclusion:

- Most of the staff nurses work under moderately stress level, and the main causes of the stress were financial, shift &place regulation, relation with colleagues in addition to stressors related to environmental and social.

- The effect of stress on nurse's turnover and their general health were moderately, but stress among hospital nurses no affect their patient satisfaction or general nursing care provided to patients.

Recommendations:

- Nurses should be provided opportunities for learning a multitude of stress management strategies and self-soothing techniques directly applicable to the nursing environment and easily utilizable on the job.

- Nurses' executives should foster the building of relationships within the workplace and create avenue for nurses to relate, vent about stressors, and commune with co-workers through mutual problem solving.

- Conducive environment and job security should be created for nurses in the hospital environment; this fosters a team approach to completing tasks and determining system needs.

- Establishing a mentoring program for new employees, creating a warm and inviting break room that is conducive to socializing is essential, and there should be professional respect among nurses and nurse supervisors.

- Further studies are needed for different issues related to stress in nursing field.

Table (1): General characteristics of the studied nurses (N=551)

Socio demographic data	MOH Hospital (N.150)		University Hospital (N. 313)		Insurance Hospital(N. 88)		MCP
	No	%	No	%	No	%	
Age (years)							
▪ <25	86	57.3	25	8.0	13	14.8	
▪ 25-	42	28.0	61	19.5	30	34.1	
▪ 30-	16	10.7	117	37.4	42	47.7	0.001*
▪ 40-	1	0.7	74	23.6	1	1.1	
▪ 50-60	5	3.3	36	11.5	2	2.3	
▪ X ±S.D	25.5 ±	6.2	36.2 ±	9.3	29.2±	6.6	
Residence							
▪ Rural	127	84.7	200	63.9	59	67.0	0.001*
▪ Urban	23	15.3	113	36.1	29	33.0	
Qualification							
▪ Nursing diplome	22	14.7	260	83.1	69	78.4	
▪ Nursing technical Institute	69	46.0	12	3.8	11	12.5	0.001*
▪ Nursing Bachelor	59	39.3	41	13.1	8	9.1	
Experience (years)							
▪ <10	136	90.7	71	22.7	12	13.6	0.001*
▪ 10-	8	5.3	112	35.8	69	78.4	
▪ 20-40	6	4.0	130	41.5	7	8.0	
▪ X ±S.D	5.1 ±	5.9	17.8 ±	9.1	12.5±	5.3	

MCP: P value based on Mont Carlo Exact probability
* P < 0.05 (significant)
MOH: Ministry of health

Table (2): The mean of all stressors for study nurses in different hospitals

Stressors	MOH Hospital		University Hospital		Insurance Hospital		F	P
	Mean	SD	Mean	SD	Mean	SD		
Financial stressors	7.1	1.9	6.6	1.9	4.7	2.3	42.9	0.001*
Shifting and place regulation	9.0	3.2	8.7	2.8	6.8	2.4	19.2	0.001*
Upgrading (promotion)	2.8	0.8	2.5	1.1	2.4	1.2	4.4	0.012*
Health care and other services	3.8	1.4	4.2	1.0	2.9	1.4	40.3	0.001*
Medical tools & equipment	4.1	2.5	4.2	3.0	2.0	2.0	25.2	0.001*
Consumed tools (cotton)	1.7	1.5	1.7	1.8	1.4	1.7	1.0	0.386
Unit furniture	2.8	1.9	3.0	1.9	2.5	1.9	2.6	0.074
Electricity and water	2.4	1.5	2.0	1.5	2.3	1.4	3.2	0.040*
Unit cleanliness	2.6	1.9	2.4	1.8	1.9	1.8	3.8	0.024*
Nurse staff places	1.8	1.2	1.8	1.3	1.6	1.2	.7	0.493
Unit relations	3.1	1.5	3.2	1.6	2.2	1.4	13.7	0.001*
Relations with colleagues	5.7	1.9	5.6	1.7	5.1	1.6	4.0	0.019*
Relation with physician	1.6	1.2	1.2	0.9	1.2	0.7	7.8	0.001*
Patient related stressors	5.4	2.3	4.8	2.2	3.9	2.7	11.6	0.001*
Pharmacy	1.8	1.1	1.2	0.7	2.0	1.0	42.5	0.001*
Laboratory	2.7	1.2	1.5	1.0	1.9	1.0	63.3	0.001*
Radiology	4.4	1.8	3.3	1.5	3.4	1.5	25.4	0.001*
Other stressors	3.7	1.3	3.3	1.3	3.9	1.2	12.7	0.001*
Enviromental & social stressors	7.6	2.4	7.3	1.8	7.4	2.4	.5	0.578
Overall stressors	74.0	12.7	68.5	12.7	59.6	13.6	35.1	0.001*

F: One Way ANOVA
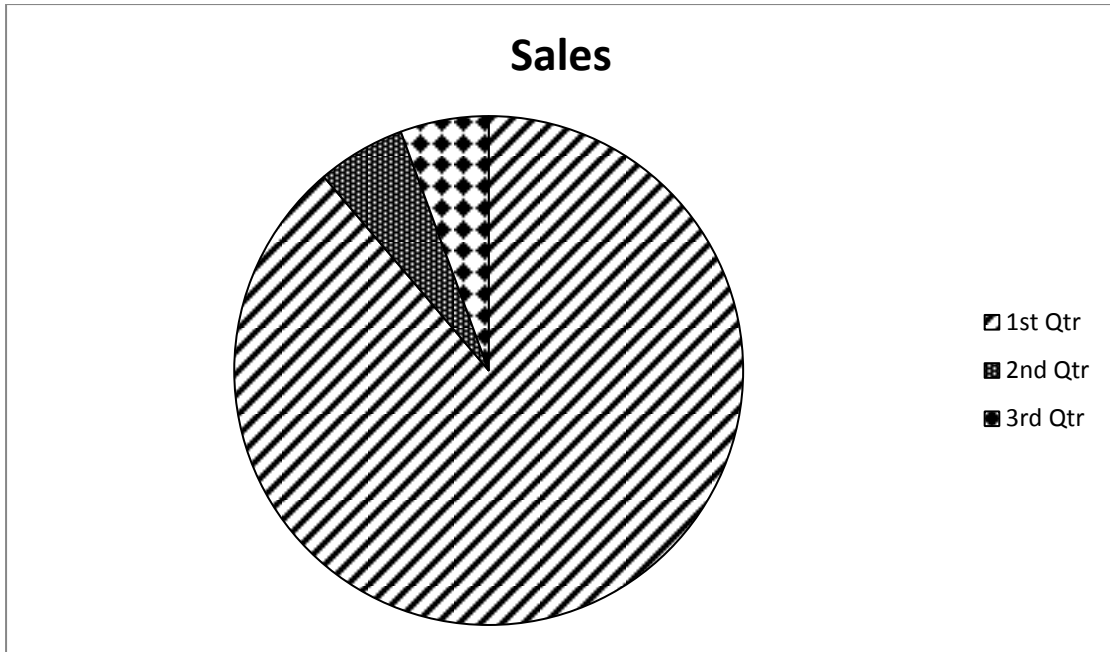* $P < 0.05$ (significant)

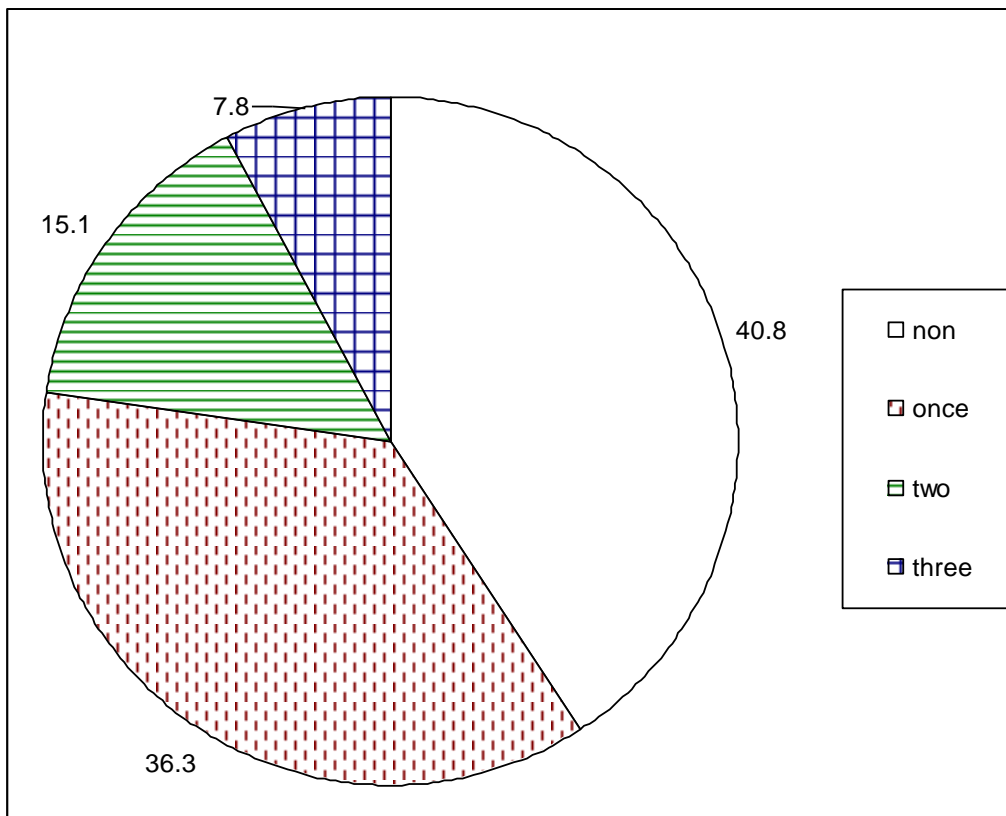**Figure 1: distribution of staff nurses by the stressors score.**

Figure 2: Total turnover among the study nurses

Table (3) Distribution of the staff nurses in different hospital according the effect of stress on their health status N=551

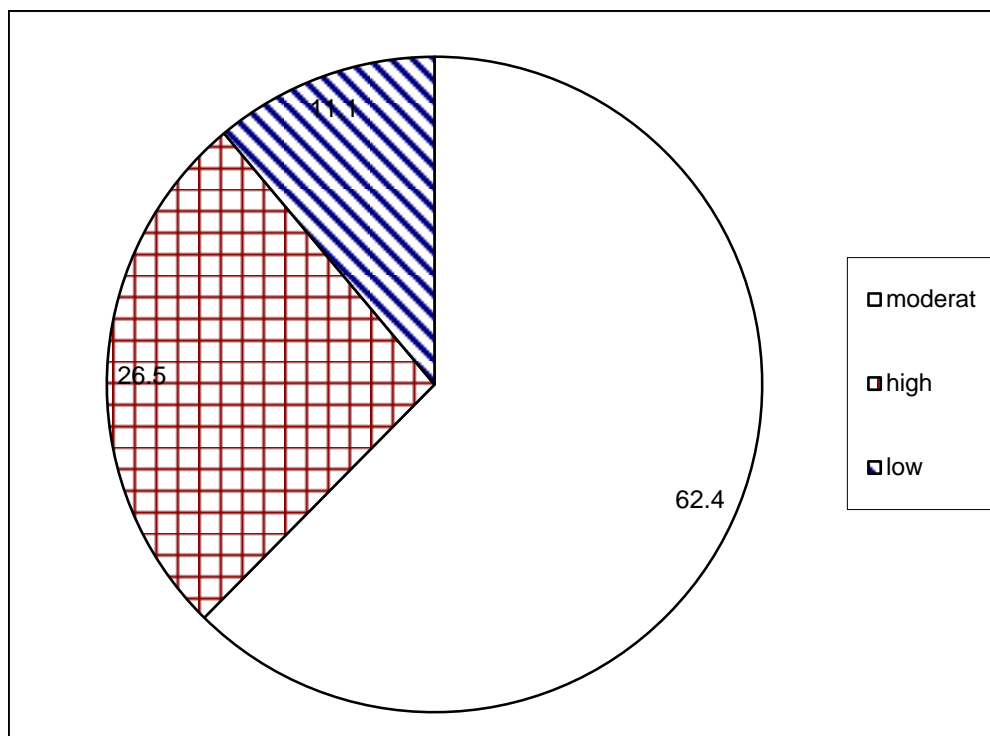| health status data	No	%
Physical status		
▪ Low effect	24	4.4
▪ Moderate effect	258	46.8
▪ High effect	269	48.8
Psychological health status		
▪ Low effect	171	31.0
▪ Moderate effect	299	54.3
▪ High effect	81	14.7

Figure (3): The effect total stress score level on the staff nurses general health

Table (4): Distribution of the patients in different hospitals by satisfaction score N.511

Satisfaction	Hospital						X^2 (P)
	MOH Hospital		University Hospital		Insurance Hospital		
Low	34	17.0	43	20.5	21	20.8	
Moderate	97	48.5	109	51.9	55	54.5	4.0 (0.404)
High	69	34.5	58	27.6	25	24.8	

Moderate   50 %-< 75%   High: Score % ≥ 75   Low: score % < 50%

References:

1- Cavalheiro, A., Moura Junior, D., and Lopes, A. Stress in nurses working in intensive care units, J of Rev Latino-am Enfermagem. 2008; 16(1):29-35.

2- Moustaka, E.,: Sources and effects of work related stress in nursing, Health science journal,(2010), V..4(4): 40- 45.

3- Shinde, M., & Anjum, S. Effectiveness of Demonstration Regarding Feeding of Hemiplegia Patient among Caregivers. International Journal of Science and Research (IJSR), 2014; 3(3), 19-27. Retrieved November 2, 2014, from www.ijsr.net.

4- Bierman, S.M. A possible psychoneurosis immunological basis for recurrent genital herpes simplex. Western Journal of Medicine. Oct; 2009; 139:547-552.

5- Shinde, M., & Mane, S. P. Stressors and the Coping Strategies among Patients Undergoing Hemodialysis. International Journal of Science and Research (IJSR), 2014; 3(2), 266-276.

6- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. JAMA: The Journal of the American Medical Association, 2007; 288(16).

7- Hayes, L. J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Spence Laschinger, H. K., North, N., & Stone, P. W. Nurse Turnover: A literature review. International Journal of Nursing Studies, 2006; 43(2), 237-263.

8- Healy, C., & McKay, M. Identifying sources of stress and job satisfaction in the nursing environment. The Australian Journal of Advanced Nursing: A Quarterly Publication of the Royal Australian Nursing Federation, 2007; 17(2), 30-35.

9- McNeely E. The consequences of job stress for nurses' health: Time for a check-up Nurse Outlook. 2009; 53 (6):291-299.

10- Gao, Y., Pan, B., Sun, W., Wu, H., Wang, J. and Wang, L. Anxiety symptoms among Chinese nurses and the associated factors: a cross sectional study, BMC Psychiatry, 2012; 12:141

11- Shinde, m.,& Gulavani, A. Occupational Stress and Job Satisfaction among Nurses, Krishna Institute of Medical Sciences University's, Krishna Institute of Nursing Sciences Karad 415539, India, International Journal of Science and Research (IJSR). 2014; Volume 3 Issue 4, April 2015 www.ijsr.net

12- Moustaka, E., Constantinidis, T. Sources and effects of Work-related stress in nursing, HEALTH SCIENCE JOURNAL. 2010; VOLUME 4, ISSUE 4, 210-216

13- Nathalie, E., Elie, A., Karine, B., and Nancy, A. High Level of Burnout in Intense visits: Prevalence and Associated 154 Factor, American Journal of Respiratory and Critical Care Medicine. New York: Apri1, 2007; Vol. 175, Is. 7; pg. 686, 7pgs.

14- Kamal, S., Al Dhshan, M., Abu Salameh, K., Abuadas, F., and Hassan, M. The effect of nurses' Perceived Job Related Stressors on Job Satisfaction in Taif Governmental Hospitals in Kingdom of Saudi Arabia, Journal of American Science. 2012; 8(3) 119-125

15- Bahatia, N. Occupational Stress amongst nurses from two tertiary care hospitals in Delhi. Aus Med J 2010; 3(11):41-7.

16- Olayinka, O.A., Osamudiamen, O. S., Ojo, A.A. Occupational stress management among nurses in selected hospital in Benin city, Edo state, Nigeria. Department of Maternal and Child Health Nursing, Faculty of Nursing, Niger Delta University, European Journal of Experimental Biology. 2013; 3(1):473-481. Retrieved May 5, 2015 from www.pelagiaresearchlibrary.com

17- Stordeur, W., et al. Stress management for wellness, 4th edition, International Thomson publishing, Stamford CT. 2001; pp.150-180.

18- Sveinsdottir, H., Biering, P., Ramel, A. Occupational stress, job satisfaction, and working environment among Icelandic nurses: A cross-sectional questionnaire survey International Journal of Nursing Studies. 2006; 43(7):875-89.

19- Azizolla, A., Zama, A., Khaled, O. the relationship between job stress and performance among hospital nurses. World of scienc j, hospitals in Delhi. Aus Med J 2010; 3(11):41-7.

20- Aly, S.A. Stress among Hospital Nursing Staff Its Causes and Effects: Unpublished Doctorate thesis, High Institute of public health, Alexandria University. 1986; pp.120-130.

21- Zaghloul, A. Developing and Validating a Tool to Assess Nurse Stress: Department of Health Administration and Behavioral Sciences High Institute of Public Health, University of Alexandria. 2008; Vol. 83 No. 3 & 4,

22- Hagag, F. organizational Factors causing job Stress, El- Shefaa hospital at Gaza district, Unpublished Master Thesis, Faculty of Nursing, palastine. 2007; P.88.

23- Yehia, H. Stressors among Nursing Staff Working in Intensive Care Unit in Governmental & Non-governmental Hospitals at Makkah Al-Moukarramah, KSA. Faculty of Nursing, Umm Al Qura University, Makkah, KSA. Faculty of Nursing, Cairo University. Egypt, Faculty of Nursing, Menofia University. Egypt, Unpublished Doctorate thesis .2012; pp.200-230.

24- -Andrew, M. Workplace stress in nursing: a literature review Journal of Advanced Nursing, 2003; 44(6):633–642

25- Al Hosis, K.F., Mersal , F.A.,Keshk, L.I. effect of job stress on health of Saudi nurses working I ministry of health hospitals in Quassim region in KSA. 2013; Life scienc J.; 6 (5): 9-16.

26- Bruziene, R. The stress experience of nursing staff in intensive care therapy, School of Health Science, Unpublished Master Thesis, Blekinge Institute of Technology, Karlskrona, Sweden, 2005; pp.149-151

27- Begat, I., Ellefsen, B., & Severinsson, E. Nurses' satisfaction with their work environment and the outcomes of clinical nursing supervision on nurses' experiences of well-being. a Norwegian study. Journal of Nursing Management, 2005; 13(3), 221- 230.

28- -Peterson, M. Stress and coping in nurse managers: Two Decades of research. Nurse Econ. 2004; 24:203-11.

29- Kane, A. A mentals of nursing concepts, process and practice, 7 th edition, Pearson Education Inc, USA, 2009; pp.67.

30- Kinnersley, P., Anderson, E., Parry, K., Clement, J., Archard, L., Turton, P. Randomized controlled trial of nurse practitioner versus general practitioner care for patients requesting "same day" consultations in primary care. British Medical Journal, 2000; 320, 1043-1048

31- Agosta, L. Patient Satisfaction With Nurse Practitioner Delivered Primary Health Care Services , Unpublished Doctorate Thesis, Southeastern Louisiana University, 1983 M. S. N., University of Texas Health Science Center at Houston, August, p.133.