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Occupational Stress and its Management among Nurses at St. Dominic Hospital, Akwatia, Ghana

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Abstract

Background: The prevalence of occupational stress among nurses is an endemic problem. Identifying the causes and its management in any healthcare institution is vital for successful interventions.

Method and material: A purposive sampling technique and a self-administered questionnaire were used to select 73 nurses from the nursing and midwifery department in the Hospital. Descriptive and inferential statistics were used to analyze the data.

Results: The study found out that the major causes of stress identified by the nurses were inadequate motivation (98.6%), inadequate staffing levels (91.8%), handling a large number of patients alone (83.6%), lack of break during shift (82.2%) and nursing difficult patients (71.3%). The major occupational stress management strategies used sometimes were going on break (60%), meditation (51.6%), exercises (64.1%) and relaxation (74.3%). There was significant association between department of work and types of stress experienced (p -value<0.05). There was significant relationship between age and the type of stress experienced (p -value<0.05) for the physical and emotional type of stressors. This study also revealed that there were significant association (p -value<0.05) between years of experience, salary and physical and emotional stressors respectively.

Conclusion: Occupational stress (physical, emotional and psychological) was statistically significantly associated with the department a nurse is. Nurses' executives and hospital management should help create an adequate stress-free work environment for nurses. Nurses should be provided opportunities for learning a multitude of stress management strategies to improve their performance.

Keywords: Occupational stress; Management; Strategies; Nurses; Ghana

Introduction

Stress in nurses is an endemic problem [1]. It contributes to health problems in nurses and decreases their efficiency [1]. 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's health [1]. Occupational stress is of key interest to employers because of the known adverse effects on employee performance, productivity, job satisfaction and health as a whole [2]. Stress basically involves the relationships between individuals and their environment that are considered as challenging or exceeding their resources and jeopardizing their well-being. Stressors are objects and events; stress reactions are responses in the form of physiological (such as rapid heart rate, increased blood pressure) and psychological (e.g. anger, fear), that occur when confronted with a stressor [3]. World Health Organization has observed that stress is a worldwide epidemic because stress has recently been noted to be associated with 90% of visits to physicians [4].

Research for the past years shows that, signs of occupational stress appear to be rising among nurses which has been referred to several factors ranging from downsizing, restructuring, and merging to role boundary and responsibility [5,6]. According to Chapman, occupational stress reduces productivity, increases management pressures and makes people sick in many ways, evidence of which is still increasing [7]. Nurse stress is defined as the emotional and physical reactions resulting from the interactions between the nurse and her/his work environment where the demand of the job exceed capabilities and resources [6]. Work stress is recognized world-wide as a major challenge to workers' health and the healthiness of their organizations [8,9].

The working environment is one of the most important resources of occupational stress [2]. Nurse's environment include an enclosed atmosphere, time, pressures, excessive noise, sudden swings from intense to mundane tasks, no second chance, unpleasant sights and sounds and long standing hours [10]. Nurses are trained to deal with these factors but stress takes a toll when there are additional stressors. Stress is known to cause emotional exhaustion to nurses and this leads to negative feelings toward those in their

care [11], Stress is acknowledged to be one of the main causes of absence from work [12]. Anxiety, frustration, anger and feelings of inadequacy, helplessness or powerlessness are emotions often associated with stress [13]. If these challenges are presented by a nurse, then the routine accomplishments of daily living would be difficult to cope with. Occupational stress in nurses affects their health and increases absenteeism, attrition rate, injury claims, infection rates and errors in treating patient [14]. Effective occupational stress management among nurses is geared towards reducing and controlling nurses' occupational stress and improving coping at work.

Most studies have noted that the cause of stress and its incidence is due to overwork [15]. In the United States, work place stress has doubled since 1985. Approximately one third of all Americans considered job related stress as their greatest source of stress [16]. This is confirmed by a worldwide poll where 82 percent of respondents reported that work related pressure cause them to feel stress on a regular basis and almost one third of respondents experience stress everyday [16]. Lee and Graham [17] stated that poor management is the major cause of stress. There has been increasing recognition of the stress experienced by hospital nursing staff [2]. Studies have demonstrated a great deal about the sources of stress at work, about how to measure it and about the impact on a range of outcome indicators. What is lacking now is research that assesses the management of stress to moderate, minimize or eliminate some of these stressors. This study seeks to fill this gap by accessing occupational stress and management strategies among nurses.

Research Methodology

Study area

The study took place at the Saint Dominic Hospital, Akwatia in the Denkyembour district, Ghana. Denkyembour district is one of the forty-five districts and municipalities created in 2012 with its inauguration on 28th June, 2012. The district is among twenty-six administrative districts and municipalities in the Eastern Region of Ghana. Saint Dominic Hospital was established in 1960 and has served as a District Hospital and a Referral Centre in the Kwaebibirem District of the Eastern Region since 1989. It is also a training centre for house officers, physician assistants and nurses and midwives and other paramedical students. The hospital has a bed capacity of 339 with total staff strength of 454. The hospital is currently the largest faith-based facility in Ghana. The Hospital is a member of Christian Health Association of Ghana (CHAG).

Research design

The study employed a descriptive design. A questionnaire consisting of 42 questions was developed and self-administered. Purposive sampling technique was used to select 73 nurses from the nursing and midwifery department in the Hospital. Descriptive and inferential statistics were used to analyze the data.

Sample size and sampling technique

A total number of 73 respondents were drawn from the total population of 118 registered nurses using purposive sampling techniques from the fourteen departments in the hospital.

Instrument for data collection

Questionnaire was structured in line with occupational stress indicators and applied in the data collection through self-administration. This contains qualitative information on occupational stress and its management among nurses.

Statistical analysis

All data were organized, processed and stored using Microsoft Office Excel 2010 program. Stata 11 for windows was used for the statistical analysis. Variables were mainly categorical. Categorical data were compared to each other using chi – square analysis. Pearson chi - square test (P -values <0.05). was considered statistically significant [18].

Ethical consideration

The study protocol and tools were reviewed and approved by the Ethics Committee of St. Dominic hospital.

Results

Demographic characteristics of study subjects

All the 73 questionnaires administered were correctly completed making a 100% response rate. The respondents comprised of 46 (63%) of professional nurses (Staff Nurse and Nursing Officers) and 27 (37%) of auxiliary nurses (Midwives, Enrolled Nurses and Community Health Nurses). Majority 43 (58.9%) of the respondents were in the age-group of 20 to 29 years followed by 50 to 59 years representing 15 (20.6%). Only 2 (2.7%) were in the age-group 40 to 49 years. Out of the 73 respondents, 65 (89%) were females and 8 (11%) were males. A total of 50 (68.5%) have been practicing for less than 10 years while 8 (11%) and 12 (16.4%) of them had been in practice for 10-20 and 21-30 years respectively. Only 3 participants (4.1%) had been in practice for over 30 years. 37 (50.7%) were married and 36 (49.3%) were single. The Nurses at the hospital earn monthly income according to their rank. 60 (82.2%) said their earnings were not enough while 13 (17.8%) said otherwise (**Table 1**).

Causes of occupational stress

Majority 72 (98.6%) of the nurses identified inadequate motivation, inadequate staffing levels 67 (91.8%), handling a large number of patients alone 61 (83.6%), and lack of break period during shift 60 (82.2%) as cause of occupational stress. Minority of the nurses acknowledged that, frequent night duty 24 (32.9%), working with incompetent staff 29 (39.7%) and

inadequate delegation of responsibilities 29 (39.7%) imposed stress on them (Table 2).

Table 1 Demographic characteristics of study subjects.

Characteristics		Number of Subjects	Proportion (%)
Age-group (Years)	20-29	43	58.9
	30-39	13	17.81
	40-49	2	2.74
	50-59	15	20.55
Sex	Male	8	10.96
	Female	65	89.04
Rank	Staff Nurse	19	26.03
	Senior Staff Nurse	15	20.55
	Nursing Officer	8	10.96
	Senior Nursing Officer	2	2.74
	Enrolled Nurse	5	6.85
	Senior Enrolled Nurse	6	8.22
	Principal Enrolled Nurse	7	9.59
	Community Health Nurse	6	8.22
	Principal Community Health Nurse	3	4.11
	Principal Nursing Officer	2	2.74
Years of experience	Less than 10 years	50	68.49
	10-20 years	8	10.96
	21-30 years	12	16.44
	Above 30 years	3	4.11
Marital status	Single	36	49.32
	Married	37	50.68
Salary	Enough	13	17.81
	Not Enough	60	82.19
Department/ Ward	Male	5	6.85
	Female	12	16.44
	Paediatric	17	23.29
	Surgical	9	12.33
	Maternity	16	21.92
	Public Health/Outreach	9	12.33
	Anaesthetics	5	6.85

Types of occupational stress

The majority of the nurses experienced headache, fatigue and high blood pressure as the most physical types of occupational stress. Headache was the highest 20 (29%), followed by fatigue 16 (23.2%) and high blood pressure 11

(15.9%). 10 (14.5%) of the nurses experienced headache and fatigue together. Few experienced insomnia, headache and ulcer, headache and insomnia together 4 (5.8%). Most 27 (60%) of the nurses experienced frustration as emotional type of stress, followed by anxiety and overreaction 7 (15.6%). Few experienced anxiety 1 (2.2%), overreaction 3 (6.7%) and night terror 3 (4.4%) respectively. Most of the psychological stress experienced among nurses were lack of concentration 13 (35.1%) and forgetfulness 11 (29.7%) respectively whilst few were withdrawal 5 (13.5%) and lack of concentration and memory loss 1 (2.75%). Forgetfulness and lack of concentration together was 7 (18.9%), (Table 3).

Table 2 Causes of occupational stress experienced in the course of work.

Causes of stress	Yes N (%)	No N (%)
Nursing difficult patients	52 (71.23)	21 (28.77)
Inadequate staffing levels	67 (91.78)	6 (8.22)
Harassment from aggressive relatives	47 (64.38)	26 (35.62)
Nursing patients without relatives	46 (63.01)	27 (36.99)
Working with incompetent staff	29 (39.73)	44 (60.27)
Frequent night duty	24 (32.88)	49 (67.12)
Lack of break period during shift	60 (82.19)	13 (17.81)
Handling a large number of patients alone	61 (83.56)	12 (16.44)
Inadequate delegation of responsibilities	29 (39.73)	44 (60.27)
Job insecurity	42 (57.53)	31 (42.47)
Lack of opportunity for growth/promotion	55 (75.34)	18 (24.66)
Unfriendly relationship with superior, colleagues and subordinates	28 (38.36)	45 (61.64)
Long work hours	44 (60.27)	29 (39.73)
Exposure to infectious diseases	50 (68.49)	23 (31.51)
Needle-stick injuries	47 (64.38)	26 (35.62)
Inadequate motivation?	72 (98.63)	1 (1.37)
N=Number and %=Percent		

Occupational stress management strategy

Occupational stress management strategies used by the nurses were break time 39 (60%), meditation 33 (51.6%), exercise 41 (64.1%) and relaxation 50 (74.3%), (Table 4). Majority 68 (93.2%) of the nurses manage their time better, 65 (89%) identify sources of stress and avoid unnecessary stress. 62 (84.9%) express their feelings instead of stomaching them, 61 (83.6%) adjust their standards and attitudes, 61 (83.6%) keep their sense of humour by laughing most of the time and 50 (68.5%) accept the things they cannot change respectively. Only few of the nurses took drugs 6 (8.2%) and ate excessively

4 (5.5%) as other means of managing occupational stress (Table 5).

Table 3 Types of occupational stress experienced by nurses at work.

	Number of Subjects	Proportion (%)
Physical Stress		
Headache	20	28.99
Insomnia	2	2.9
Fatigue	16	23.19
High Blood Pressure	11	15.94
Headache and Ulcer	1	1.45
Headache and Insomnia	1	1.45
Headache and Fatigue	10	14.49
Headache and High Blood Pressure	2	2.9
Ulcer and Insomnia	1	1.45
Insomnia and Fatigue	1	1.45
Headache, Ulcer and Fatigue	2	2.9
Headache, Insomnia and Fatigue	1	1.45
Headache, Insomnia, Fatigue and High Blood Pressure	1	1.45
Total	69	100
Emotional Stress		
Anxiety	1	2.22
Over reaction	3	6.67
Frustration	27	60
Night terrors	2	4.44
Anxiety and Over reaction	7	15.56
Over reaction and Frustration	2	4.44
Anxiety, Frustration and Night terrors	1	2.22
Anxiety, Over reaction and Frustration	2	4.44
Total	45	100
Psychological Stress		
Forgetfulness	11	29.73
Lack of concentration	13	35.14
Withdrawal	5	13.51
Forgetfulness and Lack of concentration	7	18.92
Lack of concentration and Memory Loss	1	2.7

Total	37	100
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Association between socio-demographic characteristics and type of stress experienced

The results show that age is significantly associated with physical and emotional types of stressors and not associated with psychological stress ($P < 0.0001$, 0.004 and 0.37 respectively). Sex of nurses is not associated with physical, emotional and psychological types of occupational stress among nurses ($P = 0.891$, 0.558 and 0.65). The results also show that rank is only significantly associated with the psychological stress ($P = 0.001$) and not associated with physical and emotional types of stress occurring among the nursing profession ($P = 0.079$ and 0.353). Years of experience is significantly associated with physical stress ($P = 0.003$) and not associated with emotional ($P = 0.951$) and psychological stress ($P = 0.149$). The study further indicated that there is statistically significant relationship between salaries and emotional stress experienced by nurses ($P = 0.042$) while with physical and psychological there is no significant relationship ($P = 0.126$ and 0.382). The association between departments and the physical, emotional and psychological types of stress experienced by the nurses was statistically significant ($P = 0.002$, 0.007 and $P < 0.0001$) respectively (Table 6).

Table 4 Occupational stress management strategies used by nurses.

	Number of Subjects	Proportion (%)
Break Time		
Never	25	38.46
Sometimes	39	60
Always	1	1.54
Meditation		
Never	20	31.25
Sometimes	33	51.56
Always	11	17.19
Exercise		
Never	18	28.13
Sometimes	41	64.06
Always	5	7.81
Relaxation		
Never	5	7.46
Sometimes	50	74.63
Always	12	17.91

Discussion

Job related stress is becoming increasingly big syndrome among nurses [19]. Stress has a cost for individual in terms of

health and well-being and for organization in terms of absenteeism and turnover which is indirectly affecting quality of care provided to the patient [19]. The working environment is one of the most important recourses of occupational stress [2]. The importance of management of occupational stress is recognized [2]. It has been found to be related not only with loss of productivity and loss of working hours but with the arousal of diseases and occupational accidents [2]. This study focused on the types of occupational stress experienced by nurses at Saint Dominic Hospital at Akwatia, Ghana. The study participants were selected from the nursing care department who are professionals and auxiliary nurses. Findings from the survey may therefore be regarded as a window that provides information on the various types of stressors and how it is managed among nurses in the hospital.

In this study, majority of the nurses identified inadequate motivation, inadequate staffing levels, handling a large number of patients alone, lack of break period during shift, lack of opportunity for growth/promotion and nursing difficult patients as causes of stress. These findings are consistent with an Australian study [20] which ranked stressors in order of sternness of impact. Majority of the respondents stated Job insecurity as a cause of stress; this is in contrast to a study by Kane, [10] whose study found that job insecurity does not stress nurses. Other causes identified include; non-conducive environment, lack of hospital equipment, shortage of health workers, lack of harmony among staff and noisy environment. The findings in this study is consistent with the study carried out by Kane, [10] in India which found out that most causes of stress were jobs not completed in time because of shortage of staff, conflict with patient relatives, overtime, and insufficient pay. This agrees with the finding by Wong et al., [21] in China where 55.5% of the public health nurses experienced high level of stress at works due to work overload, lack of promotion, inadequate staffing, poor working and salary

conditions, job dissatisfaction and frustration of all kinds [20]. These findings are similar to a Ghanaian study by Kyeraa, [22]. Ivancevich and Matteson, [23] have likewise shown that non-supportive work environment, role ambiguity, family-related, personal characteristics and professionalism are occupational stressors that have been suggested as reasons contributing to sources of occupational stress in nursing profession.

Table 5 Other occupational stress management strategies used by nurses.

Other stress management strategies	Yes (%)	No N (%)
Identify the source of stress and avoid unnecessary stress	65 (89.04)	8 (10.96)
Taking of drugs	6 (8.22)	67 (91.78)
Alter the situation	27 (36.99)	46 (63.01)
Manage your time better	68 (93.15)	5 (6.85)
Express your feelings instead of bottling them up	62 (84.93)	11 (15.07)
Adapt to stress	41 (56.16)	32 (43.84)
Adjust your standards and attitudes	61 (83.56)	12 (16.44)
Keep your sense of humour by laughing most of the time	61 (83.56)	12 (16.44)
Accept the things you can't change	50 (68.49)	23 (31.51)
Eating excessively	4 (5.48)	69 (94.52)

Table 6 Association between some socio-demographic characteristics and type of stress experienced using Pearson's Chi-Squared test (χ^2).

Indicators	Types of Stress Experienced by Nurses at Work								
	Physical Stress			Emotional Stress			Psychological Stress		
	Pearson's Test (X ²)	Chi-Squared	P-Value	Pearson's Test (X ²)	Chi-Squared	P-Value	Pearson's Test (X ²)	Chi-Squared	P-Value
Age (Years)	77.4144		<0.0001*	46.7656		0.004*	16.1775		0.37
Sex	7.2143		0.891	6.8077		0.558	3.3227		0.65
Rank	139.1692		0.079	75.9332		0.353	79.7501		0.001*
Years of experience	67.3758		0.003*	13.7998		0.951	20.632		0.149
Salary	18.8948		0.126	15.9939		0.042*	5.2865		0.382
Department	136.1072		0.002*	85.4473		0.007*	71.9113		<0.0001*

(*) Statistically significant at p-value<0.05

The types of stress experienced by majority of the nurses revealed by this study include; headache, fatigue and high blood pressure as physical type of stress. This finding conforms

to that of Peterson and Wilson, [24] whose study reported that, 1 in 5 nurses examined were at risk for stress-related health problems; 2 in 5 encountered distress as a result of too

much work pressure or mental fatigue at work. This is confirmed by Lee and Wang [25]. Most of the nurses confirmed that lack of concentration and forgetfulness as the most psychological types of stress experienced on the job. Occupational stress among nurses is associated with a variety of personal and institutional factors. Moustaka and Constantinidis have found that the interaction between organizational factors and the characteristics of individual workers play a significant role due to different working conditions [2]. Lee and Wang found that a high level of occupational stress is related to workload and responsibility [25].

The study found that, majority of the nurses identified sources of stress and avoided unnecessary stress (89%), managed their time better (93.2%), adjusted their standards and attitudes (83.6%), expressed their feelings instead of stomaching them (84.9%), keep their sense of humour by laughing most of the time (83.6%) and accepted the things they cannot change (68.5%) as other ways of managing stress. These findings are confirmed in a Nigerian study [1]. For nurses who implement various stress-coping strategies exhibit fewer mental health related problems such as anxiety, depression, and feelings of inadequacy [21]. The findings from occupational stress management strategies revealed that in order to manage stress, most of the nurses sometimes went on break, carryout exercises, relaxed positive or negative meditation was another way of managing stress [1,2].

The hypotheses tested between age and psychological stress experienced among nurses showed no relationship. This finding is consistent with Kane, [10] whose study found that increase in age or seniority did not significantly decrease stress. However, there was significant association between age and physical and also between age and emotional stress experienced among nurses. This is confirmed by a Serbian study on demographic determinants of the participants (age, marital status, educational level) significantly affected perception of stress at work place. Also there was no statistically significant relationship between sex, salary earned and the types of stress experienced by nurses. It is believed that the basic concept of stress relates both to an individual's perception of the demands being made on them and to their perception of their capability to meet those demands [26]. However, there was statistically significant association between the rank of nurses and psychological type of stress experienced among the nurses. This conforms to a study conducted in Oyo State, Nigeria by Olaleye, [27] who stated that job stress and burnout syndrome had significant interactive effect on state of health and coping ability of nurses.

Considering years of experience, there is statistically significant association between years of experience and physical stress. However, there was no significant association between years of experience and the other types of stress (emotional and psychological). Concerning the department a nurse belongs, the hypothesis test revealed that there is statistically significant association between the department and the three major types of occupational stress (physical,

emotional and psychological). This findings is confirmed by a Jordanian study [28].

Conclusion

This study indicated that occupational stress is present among nurses because of the daily hectic activities they undergo. Most of the nurses who participated in the study experienced physical, emotional and psychological forms of occupational stress: statistically significant associated with the department a nurse is. It is recommended that Nurses' executives and hospital management should help create an adequate stress-free work environment for nurses by: having a policy for the management of worker health that makes reference to occupational stress and be able to assess the risks of work-related stress; providing adequate information on learning opportunities for stress management strategies that is directly applicable to the nursing environment and the job; making motivational packages available to nurses in appreciation for the role they play in saving lives. There is need for the leadership of nurses' association to implement better work and management systems by developing a more friendly and supportive culture. It is essential to establish a mentoring program for new employees, creating a warm and inviting break room that is conducive to socializing. The need for the nursing administration to increase the amount and quality of support for nurses through the introduction of 'people management' training schemes for supervisors, and allow interaction among them to encourage cooperation and teamwork. Stress and stress management programme should be introduced in nursing colleges to equip students before commencing clinical nursing. Professional counselling unit should be established to expose nurses to the causes of stress to sharpen their coping strategies to enable them handle the effects of stress. There is need to recruit more nursing staff to augment the current number to help reduce workload and the number of working hours of nurses. To sustain the interest of nurses in the profession, there is the need to improve the general working conditions.

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References

1. Olayinka AO, Osamudiamen OS (2013) Occupational stress management among nurses in selected hospital in Benin city, Edo state, Nigeria. *Eur J Exp Biol* 3: 473-481.
2. Moustaka M, Constantinidis TC (2010) Sources and effects of Work-related stress in nursing. *Health Sci J* 4: 210-216.

3. Judkins SK (2004) Stress among nurse managers: can anything help? *Nurse Res* 12: 58-70.
4. Akinboye J, Akinboye D, Adeyemo D (2002) Coping with stress in life and work place. Stirling-Horden Publishers [Nig] Ltd Ibadan, Nigeria.
5. Nedd N (2006) Perception of empowerment and intent to stay. *Nurs Econ* 24: 13-18.
6. Tzeng H (2002) The influence of nurses' working motivation and job satisfaction on intention to quit: an empirical investigation in Taiwan. *Int J Nurs Stud* 39: 867-878.
7. Chapman A (2006) Poor workplace health extract Chartered Institute of Management Publication.
8. ILO (1986) International Labour Organization psychosocial factors at work: Recognition and control. Occupational safety and health series. International Labour Office, Geneva.
9. ILO (1992) International Labour Organization preventing stress at work. Conditions of Work Digest. International Labour Office, Geneva.
10. Kane PP (2009) Stress causing psychosomatic illness among nurses. *Indian J Occup Environ Med.* 13: 28-32.
11. Cottrell S (2001) Occupational stress and job satisfaction in mental health nursing: focused interventions through evidence based assessment. *J Psychiatr Ment Health Nurs* 8: 157-164.
12. Mead R (2000) What is stress? Stress management, coaching and training for individuals and groups. Roger Mead Associates.
13. Smeltzer S, Cheever B, Bare J, Hinkle K (2008) Brunner and Suddarth text-book of medical-surgical nursing, (11th edn) Lippincott Williams & Wilkins, Philadelphia.
14. Shirey M (2006) Stress and coping in nurse managers: Two decades of research. *Nurse Econ* 24: 203-211.
15. Laver R (1999) The best and worst jobs. *Maclean's*.
16. Krohe JJ (1999) Workplace stress: How do you handle it - when neither fight nor flight are options? *Across the Board.* 1999: 36-42.
17. Lee J, Graham AV (2001) Students' perception of medical school stress and their evaluation of wellness elective. *Medical Education* 35: 652-659.
18. www.stata.com/stata11/.
19. Gulavani A, Shinde M (2014) Occupational stress and job satisfaction among nurses. *IJSR* 3: 4.
20. Stordeur S, D'hoore W, Vandenberghe C (2001) Leadership, organisational stress, and emotional exhaustion among hospital nursing staff. *J Adv Nurs* 35: 533-542.
21. Wong D, Leung S, So CDL (2001) Mental health of chinese nurses in Hong-Kong: The roles of nursing stress and coping strategies. *Online J Issues Nurs* 5: 1-22.
22. Kyreaa DA (2014) Causes of stress among nurses in the greater accra region. *Int J Res Social Sci* 3: 8.
23. Ivancevich MJ, Matteson TM (2002) Organizational Behavior and Management. 6th eds The McGraw Hill Companies, USA.
24. Peterson M, Wilson J (2004) Work Stress in America. *Int J Stress Manag* 11: 91-113.
25. Lee I, Wang HH (2002) Perceived occupational stress and related factors in community nurses. *J Nurs Res* 10: 253-260.
26. McVicar A (2003) Workplace stress in nursing: A literature review. *J Adv Nursing* 44: 633-642.
27. Olaleye BA (2002) Psycho-Social effects of job stress and burn-out syndrome among nurses in state-owned hospitals in Oyo State. MSW Project University of Ibadan, Nigeria.
28. Al-Hawajreh K (2011) Exploring the Relationship between Occupational Stress and Organizational Commitment among Nurses in Selected Jordanian Hospitals. *An - Najah Univ J Res (Humanities)*. 25: 1950-1959.