

# Occupational stress among nurses in a hospital setting in Ghana

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## Abstract

**Background:** The prevalence of occupational stress among nurses is an endemic problem. The study sought to determine the current level of occupational stress experienced by nurses through the use of the Weiman Occupational Stress Scale as well as determining the most common occupational stressors and stress reduction strategies identified by the nurses.

**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. Weiman Occupational Stress Scale and other measuring tools on occupational stress were used to measure the stress level of the Nurses. Descriptive statistics was also used to analyzed and give an overview of the data generated by the study population.

**Results:** The study found out that nurses of the hospital were found to experience above average levels of occupational stress with the mean score and individual average score of 37.01 and 2.47 indicating a 10% higher than the established Weiman Occupational Stress Scale mean score of 33.75 and individual average of 2.25. The study also found that the most common stressors were workload, inadequate resources and conflicting demands whilst the most common strategies the workers used for managing stress were resorting to hobbies, identifying the source of stress and avoiding unnecessary stress, managing time better, adjusting to standards and attitudes and expressing their feelings instead of bottling them up.

**Conclusion:** Results from the study reinforced the proposition that nurses of the St. Dominic Hospital at Akwatia, Ghana experienced work-related stress above average. It is recommended that the nurses should be well educated to understand that the healthcare-specific operational demands are part of his or her job. However, high stressors may nonetheless continue to pose risks and these can be handled through the institution of formalized peer support and clinical guidance systems within the hospitals.

## 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 recourses 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

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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 82.0% 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 determining the current level of occupational stress experienced by nurses through the use of the Weiman Occupational Stress Scale as well as determining the most common occupational stressors and stress reduction strategies identified by the nurses.

## Research methodology

### Study area

The study took place at the Saint Dominic Hospital, Akwatia in the Denkyembaour district, Ghana. Denkyembaour 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 to collect data on the characteristics of working at the Hospital with focus on occupational stress levels and coping strategies. The data collected were responses to predetermined questions asked of respondents to discover specific characteristics of nurses of the hospital. A questionnaire consisting of 42 questions was developed and self-administered. Lists of nurses were obtained from Nurses' Administration of the hospital and combined into one list with the most senior staff at the top. Purposive sampling technique was used to select 73 nurses from the total population of 118 registered nurses 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

A self-administered questionnaire developed based on literature was used for collecting data for this study. It consisted of three parts namely Socio-demographic Data, Occupational Stress Scale, and Stress Management or Reduction Strategies. The first part of the questionnaire comprises socio-demographic data of nurses such as age, gender, marital status, experience and designation or department. The second part comprises fifteen Likert-scale type questions that measure work-related stress. The Scale was developed based on the Weiman Occupational Stress Scale and other measuring tools on occupational stress. It is aimed at determining the level of occupational stress among nurses in the hospital. Answers on Part II of the questionnaire range from 1-5 points, with 1 = never, 2 = seldom, 3 = sometimes, 4 = frequently, and 5 = nearly always. Respondents were asked to score questions on sources of stress and individual characteristics which may influence the level of stress experienced by them. The 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. It is scored by adding together the total number of points for the 15 questions and then dividing the sum by the number 15. The range that can be scored by a subject is a maximum of 75 and a minimum of 15. The greater the score, the more occupational stress is being reported. A similar instrument was used in similar research by William Steber in his study of frontline corrections officers of the Wittenberg Home Youth and Family Programs in Wisconsin in 1998. Dan Braaten also used the same design for gauging occupational stress in mental health counsellors of both publicly and privately funded inpatient and outpatient mental health facilities in the state of Wisconsin (Braaten, 2000). Part III is on Stress Management Strategies that aimed at determining the strategies used by nurses of the hospital for the reduction of stress. Survey participants were asked to identify and rank order from a list provided to them on stress management methods that they use most frequently.

### 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 [18].

### Ethical consideration

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

### Study limitations

The results of this study cannot be generalized to workers of the entire workforce of the hospital or healthcare sector. Few significant conclusions can be made or generalized from this study because of the non-probabilistic sampling technique and limited study setting. The scale developed for measuring occupational stress in this study consists of only 15 questions, dealing mainly with present job stress issues. A more extensive set of questions might possibly disclose a more accurate picture of occupational stress.

## Results

### Demographic characteristics of study subjects

All the 73 questionnaires administered were 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).

### Occupational stress level

The overall total score obtained using WOSS for all 73 respondents

**Table 1.** Demographic characteristics of study subjects.

Characteristics	Number of Subjects	Proportion(%)
<b>Age-group (Years)</b>		
20-29	43	58.90
30-39	13	17.81
40-49	2	2.74
50-59	15	20.55
<b>Sex</b>		
Male	8	10.96
Female	65	89.04
<b>Rank</b>		
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
<b>Years of experience</b>		
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
<b>Marital status</b>		
Single	36	49.32
Married	37	50.68
<b>Salary</b>		
Enough	13	17.81
Not Enough	60	82.19
<b>Department/Ward</b>		
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

was 2,702 points. This computes into a mean score of 37.01 per participant. The individual average score was 2.47 on the five point scale (Table 4.1). The mean score and individual average score of 37.01 and 2.47 by survey participants is 10% higher than the established Weiman Occupational Stress Scale mean score of 33.75 and individual average of 2.25. Interpreting this result within the framework of the Weiman Occupational Stress Scale, there is a strong suggestion of occupational stress in workers of the hospital since with the WOSS instrument, the higher the score, the greater the stress in the subject. The average score of 37.01 is 10% above that of the WOSS baseline.

The range of scores for all of the survey participants was from a minimum score of 22.8 (1.6 on the 5 point scale) to a maximum score of 51.5 (3.5 on the 5 point scale).

### Types of occupational stressors

The specific characteristics of the jobs of workers of the hospital may be partly accountable for the stress level revealed by the results. This involves role ambiguity whereby the worker often feels unclear about just what the scope and responsibilities of his or her job are. Task-related stress at the hospital may have also arisen from work overload, inadequate resource support, conflicting task demands and poor communication, among others.

How often workers have to contend with too heavy a workload, one that could not possibly be finished with during an ordinary workday, how often they find themselves confronted with inadequacy of resources needed to carry out their jobs and how often they have to think about their inability to satisfy the conflicting demands of various people around them are the major contributors to occupational stress among workers of the hospital. Examining the scores obtained from the survey instrument questions related to work overload, inadequate resources and conflicting demands appear to be the most common sources of stress in workers of the hospital. These questions stand out from the others in that they received an item score means relatively higher than the overall average in the survey.

In order to explore which items may constitute the most common sources of stress to workers of the hospital, responses were summed up across all participants for each question and, judging from the totals obtained, eight items appeared to be the most common sources of occupational stress because they had the highest total scores. Dividing their respective total scores by the total number of participants for the question resulted in above-average score means (Table 2). These include; Handling a large number of patients alone (3.51), Inadequate staffing levels (3.44), Long work hours (3.18), Lack of break period during shift (3.15), Frequent night duty (3.12), Nursing patients without relatives (3.07), Lack of opportunity for growth/promotion (2.78) and Nursing difficult patients (2.44) (Table 2).

### Occupational stress management strategy

In attempt to finding out the most common strategies used nurses in managing occupational stress, a Stress Management Survey instrument was administered. The Nurses were asked to rank in an order of 1-5 their most used stress management strategies. The results produced top five stress management strategies among nurses of the hospital. They include; I resort to my hobbies (1.23), I identify the source of stress and avoid unnecessary stress (1.40), I manage my time better (1.44), I adjust my standards and attitudes (1.66) and I express my feelings instead of bottling them up (1.85) (Table 4).

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

Causes of stress	Total Score	Group Average Score	Individual Average Score
Nursing difficult patients	178	35.60	2.44
Inadequate staffing levels	251	50.20	3.44
Harassment from aggressive relatives	143	28.60	1.96
Nursing patients without relatives	224	44.80	3.07
Working with incompetent staff	114	22.80	1.56
Frequent night duty	228	45.60	3.12
Lack of break period during shift	230	46.00	3.15
Handling a large number of patients alone	256	51.20	3.51
Inadequate delegation of responsibilities	124	24.80	1.70
Job insecurity	123	24.60	1.68
Lack of opportunity for growth/promotion	203	40.60	2.78
Unfriendly relationship with superior, colleagues and subordinates	126	25.20	1.73
Long work hours	232	46.40	3.18
Exposure to infectious diseases	149	29.80	2.04
Needle-stick injuries	121	24.20	1.66
Overall Score	2702	37.01	2.47
WOSS baseline	2531	33.75	2.25

n=73, WOSS = Weiman Occupational Stress Scale

**Table 3.** Most common occupational stress experienced by nurses at work.

Most common stressors	Total Score	Group Average Score	Individual Average Score	Rank order
Handling a large number of patients alone	256	51.20	3.51	1st
Inadequate staffing levels	251	50.20	3.44	2nd
Long work hours	232	46.40	3.18	3rd
Lack of break period during shift	230	46.00	3.15	4th
Frequent night duty	228	45.60	3.12	5th
Nursing patients without relatives	224	44.80	3.07	6th
Lack of opportunity for growth/promotion	203	40.60	2.78	7th
Nursing difficult patients	178	35.60	2.44	8th
WOSS baseline		33.75	2.25	

n=73, WOSS = Weiman Occupational Stress Scale

**Table 4.** Occupational stress management strategies used by nurses.

Stress management strategies	Individual Average Score	Rank order
I resort to my hobbies	1.23	1 <sup>st</sup>
I identify the source of stress and avoid unnecessary stress	1.40	2 <sup>nd</sup>
I manage my time better	1.44	3 <sup>rd</sup>
I adjust my standards and attitudes	1.66	4 <sup>th</sup>
I express my feelings instead of bottling them up	1.85	5 <sup>th</sup>

n=73

## Discussion

The analysis of this study shows that there is high level of stress among nurses at the St. Dominic Hospital, Akwatia, Ghana. The result was in line with the findings of Piko [19] and Rita *et al.* [20]. The occupational stress amongst health care professionals in general and especially is currently a major concern in health policy. Literature indicates that stress denotes various psycho-social situations which tend to produce disorganization of behavior, including physical and mental illnesses.

Nurses all over the world work under stress as the nature of their work requires and this is due to incredible and regular contact with patients who have different diseases. Pamela and James (2002) indicated that what causes stress among nurses were functions of the type of unit on which they work, levels of training, trait anxiety, and socio-demographic characteristics.

Job related stress is becoming increasingly big syndrome among nurses [21]. 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 [21].

In this study, majority of the nurses identified handling a large number of patients alone, Inadequate staffing levels, Long work hours, Lack of break period during shift, frequent night duty, Nursing patients without relatives, Lack of opportunity for growth/promotion and Nursing difficult patients as causes of stress. These findings are consistent with an Australian study [22] which ranked stressors in order of sternness of impact. The findings in this study is also 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.*, [23] 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 [24]. Ivancevich and Matteson [25] 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.

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 [26] 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 [27]. 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 [27].

The study found that, majority of the nurses adopt the following occupational stress management strategies which includes; I resort to my hobbies, I identify the source of stress and avoid unnecessary stress, I manage my time better, I adjust my standards and attitudes and I express my feelings instead of bottling them up. These findings are confirmed in a Nigerian study [28]. 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].

## Conclusion

Results from the study reinforced the proposition that nurses of



the St. Dominic Hospital at Akwatia, Ghana experienced work-related stress above average. The nurses involved in completing the survey instrument scored an individual average stress score of 2.47 on a five point scale. Past administrations of the Weiman Occupational Stress Scale by Weiman and many other researchers yielded a baseline score of 2.25. The nurses in this study therefore scored on average 10% higher than the calculated WOSS baseline and with the Weiman Occupational Stress Scale, the higher the score, the higher the perceived stress. This is because of the daily hectic activities nurses undergo. Most of the nurses who participated in the study experienced several forms of occupational stress. Based on the high level of occupational stress, it is recommended that the nurses should be well educated to understand that the healthcare-specific operational demands are part of his or her job. These education and guidance will make nurses consider the operational demands specific to their jobs to be the most meaningful and motivating stressors.

However, high stressors may nonetheless continue to pose risks and these can be handled through the institution of formalized peer support and clinical guidance systems within the hospitals. With such an intervention, the nurses can have co-workers and professionals or leaders to talk to about difficult events or situations whose intensity could cause trauma or extreme stress and to which they have been exposed. It is further recommended that, workload issues should be tackled. The nurse's role and responsibilities should be clearly defined and his or her workload also be brought in line with his or her capabilities and resources. Work timetables should be made well-suited with demands and responsibilities outside the job in order to reduce the feeling of too much to do and too little time in which to do it.

There should be well structured hospital work environment to provide the nurses with access to opportunity, information, resources, and power. This can endow the nurse psychologically by improving his or her autonomy, growing his or her confidence and power, and generally helping him or her in efforts at giving meaning to his or her work. This may result in job satisfaction, a greater sense of personal accomplishment and less occupational stress.

For further research, studies need to be conducted in Ghana on occupational stress. Whilst there is sufficient evidence in several other countries to believe that work stress is a factor among health care personnel, the literature is remarkably silent on Ghana. Researches are needed to augment the understanding of stress in Ghana and its effect on patient outcomes in particular. In order to derive a better understanding of occupational stress in nurses and healthcare workers in Ghana, research with a wider scope is needed. The present study has been conducted using only one hospital and this is why a more comprehensive scope and methodology should be used to explore the topic further.

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