



Measuring the Level of Work Related Stress among Nurses in University of Port Harcourt Teaching Hospital: A Descriptive Study

Chukwu Chinenye Chituru Chichi^{1*}

¹Department of Nursing, Faculty of Health Sciences, Madonna University, Elele Campus

*Corresponding Author

Chukwu Chinenye Chituru Chichi
Department of Nursing, Faculty of
Health Sciences, Madonna University,
Elele Campus

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Abstract: Work-related stress is reportedly a very common issue among nurses in health care. This study was aimed at assessing the level of work-related stress among nurses in University of Port Harcourt Teaching Hospital. Objectives were to: assess the level of work-related stress, compare the level of work-related stress among nurses across units/wards and assess for availability of stress reduction support systems. Cross sectional descriptive survey design was adopted with a sample size of 288 nurses. A self-structured questionnaire was used to collect data and data was analyzed using frequencies and percentages with the aid of SPSS version 23 and difference between variables was tested using T test. Majority (86.3%) of the nurses experienced severe stress, all respondents (100%) lacked support systems, and there was significant difference in the stress level between the units/wards. It was suggested, therefore, that a special reward/recognition should be introduced to nurses who were dedicated to their work, and more nurses employed to share the work burden, with occupational health services provided in the study center.

Keywords: Nurse, stress, work- related stress, measuring, level of work, Medical wards, Surgical wards.

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INTRODUCTION

Nursing is a caring profession responsible for issues related to maintenance of health and treatment of wide range of illnesses in health care institutions (Redfern, 2012). However, it has been observed that intrinsic to this caring occupation are several sources of in-built stress with a global rate of 9.20-68.0% of nurses suffering from work- related stress (National Nurses United, 2015; Nabirye, Brown, Pryor & Maples, 2011). It is well-known that nursing profession is both mentally and physically demanding as it involves delivering of humane, empathetic, cultural sensitive, proficient and moral care that are so demanding and complex (Selberg, 2013).

Cherry and Jacobs (2015) supported the concept that nurses tend to experience high level of work related stress from poorly equipped and overcrowded wards as well as from poor interpersonal relationships with colleagues, physician, work overload, patients and patients' relatives and pressure of work-family interface.

Also in this 21st century nursing role is rapidly changing, nursing has tremendously evolved through the years and still evolving. Modern nursing is highly organized and has more structure as nurses are assigned to wider range of health care responsibilities such as diagnosing patients' disease using nursing care plan and implementing planned care for their recovery, and also review and update patients' reports to observe changes in their

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condition. The economic situation in the society and other related societal challenges such as terrorism, global warming, and genetic modification of food / refined food has led to increase in obesity, cancer, diabetes and other health challenges. This means that our health care systems are dealing with a high level of complex illnesses (Beheshtifar & Nazarian, 2013). Patients' care has definitely become more complicated.

Moreover, hospitals are tight in budget and short-staffed. This is in-line with the findings of a study conducted in China by Wong, Leung, So, and Lam (2014) which stated that 55.5% of nurse's experienced high levels of work-related stress due to inadequate staffing, work overload, and poor working environment.

As new diseases evolve each day so technology and new skills to tackle such diseases are required. In addition to clinical nursing care the need to learn and practice how to use modern equipment in patients' care which includes information technology is now a requirement in nursing care: hence work related-stress is presently very common in nursing profession. In view of the above, it is imperative to understand stress as a concept. Lazarus and Folkman (2002) defined stress as "any situation in which internal demands, external demands, or both, are appraised as demanding or surpass the adaptive or coping resources of an individual or group". The situation that evokes stress is called the stressor and these are tension producing internal or external stimuli, agents or factors placing a demand upon the body and causing intensification of stress and disequilibrium.

National Institute for Occupational Safety and Health Administration (NIOSH, 1999) defined Work-related stress as the physical and emotional harmful responses that occurs when occupational necessities do not go with the capabilities, resources, or needs of the employee. Thus when stress level is equal to the degree of ability to accommodate or cope, the person is in an equilibrium state. The individual performance at work and personal satisfaction is high and usually little or no harm occurs, meanwhile, when stress is greater than the ability to adjust, there is a problem of poor performance and stress related health problems.

The experience of work-related stress can cause dysfunctional behavior at work which can lead to poor mental and physical health. In severe cases, long-term stress or traumatic events at work may lead to psychological problem. More nurses in the world are needed and yet some are contemplating leaving the profession due to high level of work

related stress and this will intensify the nursing shortage problem and put strain on the working nurses (Heinen, *et al.*, 2013). This agrees with the findings of Blaug, Kenyon, and Lekhi, (2011) which shows that 41% of hospital nurses were dissatisfied with their jobs and 22% planned to leave their positions in less than 1 year due to high level of workplace stress.

According to ethics of nursing, a nurse is expected to;

- i. Advocate for health promotion and safety of patients
- ii. Develop own competence throughout their practice as well as being mindful of own health.
- iii. Actively participate and contribute to nursing research and development
- iv. Collaborate with other health care team members to promote health and safety of patients (International Council of Nurses, 2015).

When a nurse is stressed it becomes difficult for the nurse to carry out the above functions and offer quality nursing care. Hence the need for the study to measure the level of work-related stress among nurses in University of Port Harcourt Teaching Hospital.

Statement of Problem

Nowadays, more and more nurses experience stress at work due to overload, high demands, poor work conditions, longer working hours, lack of autonomy and lack of social support and rewards. Available evidence shows that stress can cause negative consequences for individuals, including somatic diseases, mental health disorders or feeling of exhaustion (Urbanetto 2011). Stress negatively impact on organizations resulting in increased accident rates or poorer production performance, frequent sickness, absenteeism and premature retirement among others. Nursing as a profession is increasingly characterized by occupational stress leading to psychological and physical problems (Sinha, Chatterjee & Iskanus, 2011). Nurses are expected to be in excellent state of mind because nursing service involves being responsible of other peoples' lives hence mistakes or errors could be costly and fatal which may lead to loss of life which is irreversible (Yeboah & Ansong, 2014).

Work-related stress has been a long-standing concern of the health care industry. Nursing in Nigeria has significantly changed in the last decade with the promotion of higher standards of care and need for advanced educational attainments among nurses. Because of these changes, there are new innovations in nursing practice which are quite

stressful to the nurse hence hospitals have to deal with work-related stress that has become issue of great concern. Significant research is available on the stress encountered by nurses elsewhere however; there is paucity of research on work-related stress among nurses in the University of Port Harcourt Teaching Hospital even as Nurses in University of Port Harcourt Teaching Hospital has continually expressed dissatisfaction about their job due to high level of work-related stress. This necessitated the present study.

Purpose of study

The purpose of this study is to investigate the level of work-related stress among nurses and compare their stress experiences across practice settings in the University of Port Harcourt Teaching Hospital.

Objectives of the Study

The specific objectives of this study were to:

- Assess the level of work-related stress among Nurses in various units of University of Port Harcourt Teaching Hospital Choba, Rivers State.
- Compare the level of work-related stress among nurses across units/ wards of University of Port Harcourt Teaching Hospital Choba, Rivers State.
- Assess for availability of stress reduction support systems for nurses in the University of Port Harcourt Teaching Hospital Choba, Rivers State.

Research Questions

1. What is the level of work-related stress among nurses in the University of Port Harcourt Teaching Hospital?
2. What is the difference in the level of work-related stress among nurses in different departments in the University of Port Harcourt Teaching Hospital?
3. What are the available support systems to reduce stress among nurses in the University of Port Harcourt Teaching Hospital Choba, Rivers State?

Research Hypothesis

There is no significant difference in the level of work-related stress among nurses in the medical department and those in surgical department.

Significance of study

This study may point to specific work organizational issues and provide information on how perceived stress and work characteristics were associated. This study may show need for greater surveillance of factors that contribute to stress in nurses; perceived stress differences depending on

department within the hospital; provide information for nurses on how to handle job demands at work that could reduce perceived stress. If impacts of stress among nurses are examined, individual and workplace interventions might be developed and implemented to assist in identifying predisposing factors to stress and, in turn, reduce or prevent work related stress in the future. A reduction in stress may lead to a higher retention rate for nurses; hence reduce the problem of nursing shortage.

Additionally, it will be important to compare impact of stress in various healthcare environments, to provide organizational interventions that might be appropriate in preventing and/or treating high levels of stress among the nursing staff. This is a very important issue in this time of nursing shortage and changes in healthcare delivery.

Scope of study

The scope of this study covers all the nurses working in University of Port Harcourt Teaching Hospital. It investigates the level of work-related stress and possible ways of reducing stress among nurses as well as compares their stress experience in their different work/ units.

MATERIAL AND METHODS

Research Design

This study employed cross sectional descriptive survey design to collect the data with focus on measuring the level of work-related stress among nurses. A cross-sectional study investigates the connection between diseases (or other health related state) and other variables of concern as they exist in a defined population at a particular time (e.g. calendar year) (Polit & Hungler 2013).

Sample size and sampling technique

One of the very critical decisions to be made in an investigation is the determination of the sample size (Shaughness, Zechmeister & Zechmeister 2014). A sample is a section of the members of a population being studied. Using Taro Yamens formular, a total sample size of 262 nurses from the population of 761 was randomly selected in the 15 nursing departments across the units/wards in the research setting. Ten (10%) of this number were added to account for attrition, therefore the total of two hundred and eighty eight (288) nurses participated in this study. The nurses were stratified according to their different departments and ranks. This is to ensure that all categories of nurses are represented

Proportionate sampling technique was used to select sample size from each section of the setting. Thereafter the researcher used stratified random sampling technique to select the sample from each

section until the sample size for the section was reached. And randomly the questionnaires were distributed.

Instrument for data collection

Questionnaire is the instrument for data collection in this study. The reasons why questionnaire was used as instrument for data collection in this study is that, the use of questionnaires promises a wider coverage since researchers can approach respondents more easily than other methods such as interview, surveys, clinical trials etc. Its reliability of the responses is generally higher; this arises from the greater assurance of anonymity (Polit & Hungler, 2013).

The instrument for this study is of four parts, Part A: perceived stress scale and Part B: Available support systems to prevent stress Questionnaire.

Validity and reliability of the instrument

Questionnaire was validated by giving the draft copies to expert and my supervisor for criticisms for face validity. The cronbach alpha technique was used to determine the internal consistency of the instrument. Copies of the instrument were subjected to pilot study consisting of selected nurses from other health care setting outside of study area.

Method of data collection

Consent sort from Institution Research Board and Director of nursing services and same granted. Consent was also sort from all ward managers, same was granted before the questionnaires were administered by the researchers to the nurses during their leisure period after attending to their patients. Respondents were given appropriate orientation on their participation and purpose of the study was explained, all ethical

concerns were clarified. Questionnaires were administered and the researcher had them collected immediately after completion. The process of data collection took two weeks during morning and evening shifts to be able to cover all nurses across shifts. Each instrument was coded after data collection to enhance their entry into the spread sheet for analysis.

Method of data analysis

Statistic package for social sciences (SPSS) window version 23 was used to analyze the data. Descriptive statistics such as percentage and frequencies is used to describe the variable distribution and inferential statistical” T test’ is used to test hypothesis to determine if there is a statistically significant difference between two independent sample groups.

Ethical consideration

In order to protect participants, the researcher strictly observed the following central pivotal dimension (a) informed consent, (b) privacy and confidentiality, (c) protecting vulnerable subjects, and (d) avoiding harm to participants as stated by (Barker, 2016). This research strictly adhered to all established research protocols by maintaining the highest ethical standards.

RESULTS

The data analysis was guided by the research questions for this study. A total of 288 copies of the questionnaires were administered. 18 were discarded as they were incompletely filled out, yielding response rate of 93.3%. Therefore attrition rate of 6.7% was observed less than the 10% already added to calculate sample size in anticipation for attrition.

Table 1: Work-Related Stress among the Respondents using perceived stress scale, (n = 262)

S/N	Statement In the last month:	Very often (4)	Often (3)	Less often (2)	Never (1)	\bar{X}	SD
1	How often have you been upset with things that happened unexpectedly	79(28.3)	92(34.0)	54(20.0)	45(16.7)	3.77	3.47
2	How often have you felt that you are unable to control the important things in your life	42(15.6)	64(23.7)	104(38.5)	60(22.2)	3.72	3.77
3	How often have you felt nervous and stressed	84(31.1)	124(46.0)	23(8.5)	39(14.4)	3.77	3.43
4	How often have you dealt successfully with life hassles	60(22.2)	23(8.5)	120(44.4)	67(28.8)	3.16	3.77
5	How often have you felt that you are effectively coping with important changes that were occurring in your life.	20(7.5)	40(14.8)	80(29.69)	130(48.1)	3.77	3.62

S/N	Statement In the last month:	Very often (4)	Often (3)	Less often (2)	Never (1)	\bar{X}	SD
6	How often have you felt confident about your ability to handle your personal problems.	78(28.9)	42(15.6)	40(20.0)	110(40.7)	3.72	3.62
7	How often have you felt that things were going away.	122(45.2)	80(29.6)	54(14.1)	14(5.2)	3.71	3.47
8	How often have you found that you could not cope with all you have to do	40(14.8)	152(56.3)	38(14.1)	40(14.8)	3.02	3.72
9	How often have you been able to control irritations in your life?	20(7.4)	34(12.6)	36(13.3)	180(66.7)	3.40	3.74
10	How often have you felt that you were on top of things	53(19.6)	145(53.7)	15(5.6)	57(21.1)	3.74	3.70
11	How often have you been angered because of things that happened that you were outside of your control	214(79.2)	35(13.0)	9(3.3)	12(4.5)	3.71	3.47
12	How often have you found yourself thinking about things that you have to accomplish?	168(62.2)	75(27.7)	10(3.9)	17(6.2)	3.02	3.72
13	How often have you been able to control the way you spend your time	20(7.4)	16(5.9)	21(7.8)	213(78.9)	3.40	3.74
14	How often have you felt difficulties were piling up so high that you could not overcome them	76(28.2)	93(34.40)	41(15.2)	60(22.2)	3.74	3.70

Table 1 shows that overwhelmingly majority of the respondents (79.2%) were very often angered because of things that happened outside their control; (62.2%) of the respondents very often found themselves thinking about things they have to accomplish.

However, less than half of the respondents (45.2%) very often felt things were going away. Above half (56.3%) of the respondents often found out that they cannot cope with all they have to do;

(53.7%) of the respondents often felt they were on top of things. Also less than half of the respondents often felt nervous and stressed. Less than half (44.4%) of the respondents often felt that they dealt successfully with life hassles. More than half of the respondents (66.7%) never felt they were able to control irritation in their life.

Research question 1: What is the level of work-related stress among nurses in the University of Port Harcourt Teaching Hospital

Table 2: Levels of Work Related Stress among the Respondents

Work Related Stress	Frequency (N)	Percentage (%)
Severe stress (scores 33-56)	233	86.3
Moderate stress (scores 25-32)	37	13.7
Mild stress (scores 01-24)	00	

Table 2 shows that overwhelming majority (86.3%) of the respondents perceived severe work related stress, while only 13.7% perceived moderate work related stress. However, none of the respondents perceived mild stress.

Research question 2: What is the difference in the level of Work-related stress among nurses in

different departments in university of Port Harcourt Teaching Hospital

Hypotheses

There is no significant difference in the level of work- related stress among nurses in the medical department and those in surgical department.

Table 3: Difference between work setting and level of work-related stress

Work setting	Level of work-related stress		Total
	Severe	Moderate	
Medical Departments	125	19	144
Surgical Departments	108	18	126
Total	233	37	270

T test table

Work Setting	N	\bar{X}	Sd	df	t-cal	t-crit	Result
Medical	144	15.02	5.414	168	3.965	1.960	Significant
Surgical	126	10.95	5.048				

Table 3 shows that since the calculated t-value (3.965) is greater than the critical t-value (1.960) at df of 168 at 0.05 level of significance, this finding is unlikely to occur if there is no difference between Nurses' work departments and their level of work related stress. Thus, it is concluded that there appears to be difference between Nurses' work

departments and their level of work-related stress. This shows that nurses in Medical ward experience severe stress more than those in surgical ward, hence the hypothesis is therefore rejected.

Available Support System to Reduce Stress

Table 4: Percentage analysis of the available Support System to Reduce Stress among the nurses

S. No	Items	Yes (%)	No (%)
1	Do you receive enough support from your manager	006 (02.2)	264 (97.8)
2	Do you receive enough support from your co-workers	035 (12.9)	235 (87.1)
3	Do you have off duty periods	267 (98.9)	003 (01.1)
4	Are there adequate facility to care for your patients	094 (34.8)	176 (65.2)
5	Do you receive proper recognition for achievement at work	Nil	270(100.0)

Table 4 shows that over whelming (97.8%) of the respondents do not receive enough support from the manager, also (87.1%) of the respondents do not receive enough support from co- workers, more than half (65.2%) of the respondents stated that there are no adequate facilities to care for the patient. Though majority of the respondents (98.9%) agreed they have off duties regularly, all (100%) of the respondents indicated that they do not receive proper recognition for achievement at work.

DISCUSSION

The study respondent (n-270) indicated overall severe stress level of about (87%) and moderate stress level of (13.7%) and no mild stress recorded. The findings in this study is similar with the findings of the study conducted by Bhatia (2017) which concluded that prevalence of severe level of work related stress among nurses(87.4%). Similarity was also noted with the findings of Vernakar and Shah (2018) which concluded that majority of the nurses experienced moderate to severe stress level of work related stress. Chiriwa (2017) opined that severe stress is prevalence in nursing. In this study the major stress perceived by the respondents were angered as a result of things that happened outside of your control (79.2%), Above half of the respondents were never able to control the way they spent their time (78.9%). (66.7%) of the respondents never controlled irritation in their life, (62.2%) very often found themselves thinking about things that they need to accomplish.

The research also showed that, the effect of staff wellbeing on performance depends on the climate for patient care and that a strong climate at local or team level can help buttress some of the

positive effects of individual wellbeing on patient care. Research conducted for the NHS trade unions (Income Data Services IDS, 2012) involved a comprehensive survey of NHS employees across all Agenda for Change occupations, exploring their working hours, job satisfaction, levels of morale and motivation, presented a picture of a workforce that is short staff, high levels of stress, low morale, with around two-thirds considering leaving their job, which is similar to the findings of this study. Support from managers and team mates is very important and most appreciate a simple 'thank you' or 'well done', can go a long way in boosting the nurses morale at work. Only 2.2% indicated having received enough support from their manager, and 12.9% receive enough support from co-workers, while none of the respondents receive proper recognition for achievement at work. Also, only 34.8% of the respondents indicated that there are adequate facilities to care for their patients. However, they report having off duty periods. This implies there are no adequate measures in place to reduce stress in the University of Port Harcourt Teaching Hospital. This study is consistent with the findings of Tabby (2015) who stated that staff welfare issues also contribute to stress among nurses and also study by Mosadeghard (2013) concluded that the major sources of stress were inadequate pay, inequality at work, too much work, staff shortage, lack of promotion, job insecurity and lack of management support. Sveinsdottir (2016) identified inadequate supervision and insufficient resources as causes of stress among Icelandic nurses. While Glazer and Gyurak (2018) concluded that low salary and lack of resources were causes of stress among nurses. Also a study by Magama and Kgositua (2018) in Bostwana, indicates that all respondents agreed that equipment's used in the hospital is old, unreliable, inadequate and never replaced and 48%

of the respondents reported shortage of equipment's. A study by Pallesen and Saksvik (2002) found that main stressor of work related stress among Norwegian nurses were low flexibility in working.

The finding is in contrast with study by Fitzgibbon (2006) which concluded that insignificant percentage of the respondent agreed that they don't receive proper recognition for achievement at work. This reason may be due to proper health care funding and management in the study setting. The findings in this study paints a picture of a nursing workforce experiencing severe work-related stress in attempt to struggle with both high workloads and the fast pace of work, while feeling unsupported by coworkers and managers within their workplace. Significant difference was found between work-related stress and work department of nurses. Since the calculated t-value (3.965), is greater than the critical t-value (1.960) at df of 168 at 0.05 level of significance. This finding is unlikely to occur if there is no difference between Nurses' work departments and their level of work related stress. Thus, it is concluded that there appears to be difference between Nurses' work departments and their level of work-related stress. The hypothesis is therefore rejected.

Existing literature supported this finding. Natasha *et al.*, (2015) identified the difference between work related stress and general health of the nurses. Parveen *et al.*, (2017), suggest that work-related stress does vary within different work units in the same hospital. Work-related stress is said to be one of the most challenging issues in the occupational health and safety field, affecting not exclusively on the wellbeing of individuals, but on the structure of organizations, businesses and on the national economies as a whole (European Agency for Safety and Health at Work, 2013).

CONCLUSION

The findings of this survey highlight the severe levels of work-related stress among the nursing workforce in the study setting. The nurses are experiencing severe work-related stress in an attempt to struggle with both high workloads and the fast pace of work. An association was found between work-related stress and work department of nurses. There appears to be an association between Nurses' work departments and their perceived level work-related stress.

RECOMMENDATION

The study suggests some remedial measures to overcome work-related stress among University of Port Harcourt Teaching hospital nurses as mentioned below:

1. Special reward/recognition should be introduced for those nurses who are dedicated and devoted towards their work.
2. Nursing administration has to be progressive to make the environment congenial and friendly. There should be adequate support system for nurses working in the various units/ward of the hospital. Maximum support from colleagues and supervisors is desired to reduce the extent of work-related stress leading to better performance in their respective field.
3. More nurses should be employed and workload should be distributed according to expertise to minimize fatigue among the aged nurses.
4. Occupational health services play an important role in promoting the health and wellbeing of staff. The study setting should provide occupational health services to nurses. This will contribute to better patient outcomes through its role in supporting the health of nurses.
5. Strategies and intervention programs towards reducing work-related stress and improving nurses work life and patient related outcomes should be developed and implemented. This could be achieved through evidence based policies aimed at creating better work environments where nurses feel more secure and have appropriate resources to successfully discharge their duties, hence improving their health outcomes as well as that of their patients.

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