Occupational Risk and Hazards among Nurses and Health Workers in Federal Psychiatric Hospital, Calabar

Umoh, Edet O. (PhDN)

Federal Neuro-Psychiatric Hospital, Calabar, Nigeria

Abstract: **Though every workplace possess its peculiar risk, psychiatric setting is composed of patients with unpredictable mental state and whose behavior can change to adversity on his/her attendance at any time. Consequently, healthcare workers in this healthcare setting are faced with diverse problems resulting from threat, physical confrontation, verbal and physical assault, poisoning and other potential dangers. This study however was embarked upon to ascertain the major hazards and risks faced by nurses and other health care providers in Federal Psychiatric Hospital, and proffer useful recommendations on the possible ways of cushioning their effects. Six (6) research questions were raised and three (3) hypotheses developed to give direction to the study. Related literatures were adequately reviewed. Health Belief Model and the Theory of Reasoned Action were the theoretical framework used as these theories were found related to the study. The study adopted a descriptive survey research design; the respondents were conveniently selected from all the clinical departments of the hospital for the study. A well validated and reliable questionnaire was used as an instrument for data collection. Data collected were presented using frequency table and charts, and were analyzed using simple percentages and weighted mean scores. The research hypotheses were tested using Pearson Chi-square statistical analysis significant at 0.05. Findings revealed the regular hazards encountered by health care providers in Federal Psychiatric Hospital, Calabar to include noise, verbal and physical aggression, darkness (lack of light), poor lighting system, and attack from patients. The level of exposure of Health care workers in the hospital to hazards and/or risks was moderate. Health assistants were the ones with the highest level of exposure (75.0%), followed by nurses (64.7%) while the least exposed among the cadres of health care workers were pharmacists (16.7%). However, exposure to workplace hazard has significant impact and/or effect on the health status and clinical output of health care workers in the hospital ($p<0.05$) respectively. To cope with these hazards, HCWs employed the following strategies: compliance with all safety instructions, adherence to infection control precautions regarding blood, body fluids and infectious tissues, wearing safety equipments during working hours, and reporting of unsafe situations that are highly hazardous to staff for quick interventions. The Chi-square test of hypothesis three revealed that only "attending lectures/seminars organized on occupational safety in the hospital and beyond" though not a significant measure adopted by the respondents, has statistical significant impact on the exposure of the respondents to workplace hazard. Finally, results of the study revealed that the significant efforts put by the hospital's management in minimizing workplace hazard were: carrying out strict supervision to ensure wards and environmental sanitation, and maintaining emergency team to assist and provide care to un-complying patients. Nonetheless, effort put by the hospital's management in minimizing hazards in the hospital was perceived to be fairly poor according to the respondents' rating. Based on these findings, the researcher recommend a call to traditional leaders, governments and management officials to provide the hospital with steady power supply, ensure 3 monthly fumigation of the hospital premises, employ more nursing and health assistants, and schedule regular continuous education to healthcare providers for update of potential risk and hazard management.**

Key words: **Vulnerable: A person or group of person more exposed or prone to problem like**

I. INTRODUCTION

It was reported that 2.34 million workers die yearly due to disease and accident from work place, out of which 2.02 million death results from work-related sickness and 321 from work incurred accident (International Labor Organization (ILO), (2013). Though every workplace possess its peculiar risk, psychiatric setting is composed of patients with unpredictable mental state and whose behavior can change to adversity on his/her attendance at any time (Tavares, Beck, Magnago, Zanini & Lautert, (2012). Though nurses are saddled with the role of rendering quality care to her clients in her daily schedule, she's most times delivering these services at difficult conditions and sometimes too expensive to recover. Roger, (2009), assess mental health care hazard from safety, threat, physical confrontation, verbal and physical assault, poisoning and potential dangers to self and patients. Most risk arises from environmental factors like parasites, protozoa, snake, felines, rodents and surrounding plants posing dread to workers and even reducing their input.

Kriner, (2016), reported that assaults on staff by psychiatric patients is the most recurring hazard in psychiatric hospitals and further recounts back injuries, stress, muscle disorder, defamation and contact to various kinds of infection.

In psychiatric hospitals nurses and other health workers are faced with risk of management plans while giving injections, providing food, separating fight and counseling. In the course of care nurses are exposed to infestation of the lice, scabies and body secretions (Marziale, Galon, Cassiolato & Girao, 2012).

Roger, (2009), pointed out risk management process as: identifying, analyzing, evaluating and administering treatment to the risk situation and further opined that monitoring of risk situation could best be done by maintaining risk register.

Statement of the Problem

Hazard in psychiatry is so customary that the milieu is termed "every behavior is normal", and nurses being the most integral component of the facility face most occupational risk than other healthcare workers.

While on duty nurses and other health workers are exposed to questionable patients as in and out-patient whose behaviors are unpredictable. Nurses' incidence report gathered from out-patient, acute and chronic wards revealed series of slap, beatings, tearing of cloths, spitting, insult and verbal abuse rained on nurses and other healthcare workers by their patients. In 2004 a nurse's finger was bitten, chewed and swallowed down by a patient in his attempt to separate them from fighting. A nurse fell backward on a rail bar hitting his occipital head in attempt to stop a patient absconding from the facility. Patients aimed a nurse with stone and he fell unconscious in attempt to talk them down of wrongful acts. Night nurses and their assistants complaint of cold exposure, working in darkness, flood, mosquito bites, rodents and sight of snake in the ward and hospital environment frightening and deterring them of their care services.

In a 5 year study from 2011 to 2015, over 165 workers consulted the facility's staff clinic with various complaints and diseases contacted from workplace related hazard and risk.

The hospital management in her concern has provided iron barricade to separate health workers from patient, but it's not enough as most care could not be delivered behind the bar. Again, emergency intervention team and security guard has also been raised but they could not be always around to rescue feeble lonely care givers from unpredictable patients with morbid mentality.

Born out of these verbal and documented hazards it borders the researcher to ascertain the major hazard and risk faced by nurses and health care workers in Federal Psychiatric Hospital, and proffer recommendations on the possible ways of cushioning their effects.

Aims and objectives

The aims of the study are to determine the peculiar hazard, their effect on service delivery and management's efforts at minimizing their recurrences.

Significance of study

This study will educate young psychiatric nurses of various psychiatric presentations and possible ways of tackling their emergence.

It will further direct lecturers of psychiatric nursing on what to furnish the students while in class so as to arm them of impending workplace expected nature of work.

Research Questions

1. What are the regular occupational hazards found in Federal Psychiatric Hospital, Calabar?
2. What is the perceived level of exposure to hazard among HCWs in Federal Psychiatric Hospital, Calabar?
3. What is the impact of exposure to hazard on the health status of health workers?
4. What effect does exposure to hazard pose on the clinical output of health workers in Federal Psychiatric Hospital, Calabar?
5. What mechanism do workers employ to cope with occupational health hazards in Federal Psychiatric Hospital, Calabar?
6. What are the management's efforts at minimizing worker's hazard in Federal Psychiatric Hospital, Calabar?

Hypothesis statements

H_{01}: There is no significant impact of exposure to workplace hazard on the health status of health care providers in Federal Psychiatric Hospital, Calabar.

H_{02}: Exposure to occupational hazard has no significant effect on the clinical output of health care providers in Federal Psychiatric Hospital, Calabar.

H_{03}: Coping mechanisms employed by health care providers in Federal Psychiatric Hospital, Calabar have no significant impact on their level of exposure to hazards and/ or risks in Federal Psychiatric Hospital, Calabar.

Attack, danger or being harmed.

- *Hazard*: An instance of suffering peril, danger or loss
- *Obtrusive observation*: A noticeable type of observation known to the patient useful in psychiatry setting
- *Non-obtrusive observation*: A covert type of observation which is not known to the patients.
- *Trial Leave*: A brief period of holiday to go home from hospital granted to psychiatric patients to permit home adaptation and observation.
- *Coping mechanism*: These are ways workers devise to solve or adapt with the hazard of the workplace which they are working.

II. LITERATURE REVIEW

This review would be discussed under hazard exposure in demographics, regular occurring hazard, perceived level of exposure, impact of these exposed hazards on workers, effects of exposed hazard clinical output, mechanism employed to cope with occupational hazard and management's effort to minimize hazards in Federal Psychiatric Hospital, Calabar.

Regular occupational hazard in psychiatric hospital

Work at psychiatric hospital is so obscured that health workers are thoughtful of what might befall them in their duty schedule. Studies by Fernandes & Marziale (2014), reports these available hazards in psychiatric hospital are: physical noise, biological attack, chemical exposures, ergonometric impact, stress from psycho-social interactions and physical assault from patients. Davidson, (2009) observed psychiatric hazard prevailing among fellow patients, patients to staff in the course of delivering their official duties, hazard from working environment making nurses and other health workers very cautious and fearful while on duty to act or talk. Though health workers believe danger in psychiatric hospital is a matter of fight and flight responds, Friedman, (2006), reported how a caregiver, expert in schizophrenia management was killed in the office by his old schizophrenic patient. Emonogu, (2016), dread entry into the ward hall alone while on evening duty, unless accompanied by assistant or emergency team officials.

The most common hazard in psychiatry setting is verbal abuse, insult, confrontations and attack by patients and their relatives. Ergun (2005) & Shogni et. el (2008), observed most verbal abuse on morning duties while confrontation and physical attack occur on evening and nights. Adegoke, Akodu & Oyeyemi (2008), listed ergonometric risk as musculoskeletal problems in psychiatry due to prolong standing, constant mobility and forceful activities. This manifests in neck, shoulder, wrist and back ache as a result of manual frequent lifting, restraining patients, attending to patient's needs, hoarse and stained voice in effort to caution and talk down patient's wrong doings.

While interacting with Ita, (2016), she complaint of environmental hazard like extreme exposure, cold, harsh breeze and flood during rainy season. The cold and damp environment favors mosquitoes to thrive and infest workers in such a way that, they must go after malaria treatment within or after every scheduled night duty.

Exposed workplace hazard in demographics

It is true that older workers are more useful to health care establishments due to their many years of experience, high level of education and qualification, and managers are rest assured having most of them on duty schedule than younger workers as they can do most of the job alone. These qualities add value to their service winning client's trust and patronage to the facility. Aon Risk Solution, (2012), reported that though aging workers possess wisdom and experience, they are more vulnerable to illness and injuries. With old age, the body is more prone to musculoskeletal injuries as bones gets weaker from 40 to 50 years of age. This accounts for incidents of fracture and cumulative trauma while attending to patients, resulting in falls, dizziness and blackout (National Council on Compensation Insurance, 2013). More so, workers from age 65 years are vulnerable to arthritis, wear out of cartilage and joint leading to difficult and painful movements (O'Brien-Pallas, Thomson, Alksnis, Koehoorn, Kerr & Bruce, 2004).In addition to this, immune system of the elderly is known to be slow, predisposing them to quick illness with prolonged recovery exposing them to develop more work related illness than younger workers (National Council on Compensation Insurance, 2013).

A recent research by Bureau of Labour Statistics, (2012), revealed that registered nurses and their nursing aides or assistant faces more work hazard than other sector of workers. In a research "Caring for Caregivers" in Facts About Hospital Workers Safety, (2013), the categories of healthcare givers on top of occupational health hazard were nurses, nursing aid, orderlies, nurse attendance and health assistance. In another development where workers are few proportional to the number of patients, risk of medical error and high infection to patients are enormous. More medication errors with nosocomial infection are reported at where workers indulge in overtime, working under stress, injury and fatigue (Rogers, Hwang, & Scott. 2004). Again, Cimiotti, Aiken, Sloane & Wu, (2012), reported of frequent urinary tract and infection of operation site due to higher patient-nurse ratio in healthcare institutions. In another study, nurses' complaint of interference of unsafe working conditions with their efforts to render quality service care while, working with injuries to attain high turnover affects workers' health and safety.

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Perceived level of exposure to hazard among Healthcare workers

Among all healthcare workers, nurses and their assistants faces the highest risk as foremost first liners in healthcare industry. Lim, (2000), confirmed this from his studies that 74.5% of these who suffer needle stick injury are nurses. Aluko, Adeboyo, Adebisi, Ewegbemi, Abidoye & Popoola (2016), reported that nurses perceived exposed hazard in recapping of needle, hand washing before and after clinical procedures, refuse disposal, needle stick injury and disposal of sharps. Before now, WHO (2002) had classified hazard into physical, biological, ergonomic, mechanical, chemical and psychological. Findings of Amosun, Degun, Atulomah, Olanrewaju & Aderibigbe (2011), had disclosed that cardinal hazards among healthcare workers are blood-borne infections: HIV, HBV and HCV, burn-out stress, allergies to materials, spills of chemicals, radiation exposures, assaults, and others. They attribute the cause to arise from carelessness, negligence, unavailable equipments and protective devices, increased workload, inadequate number of caregivers, incompliance to guidelines of basic safety and hygienic rules and poor knowledge on operations of modern healthcare equipments. On this regard, Center for Disease Control and Prevention published standard precautionary measures on how to handle infectious materials and prevent occupational exposures in healthcare facilities (Molinari, 2003).

Impact of hazard on the health status of health workers

Fernandes & Marziale, (2014), reports of 6,300 deaths with 5,500 related history to clinical dealings. Due to environmental risks, worker's health and wellbeing deteriorates through tropical illness like malaria, typhoid and hepatitis. Coupled with low pay and financial constraints they could not afford money to buy drugs for treatment, essential food nutrients to build their body defense, resulting in sickness and low work performance (AhasanMR, 2001). This manifests in poor resumption to work, abandonment/negligence of duty, request for special duty shift, dodging from work schedule and application for sick leave. At other time workers are reported of dizziness, falls slumping and hospital admissions (Karahan, et. al., 2009).

A serious impact of occupational risk in psychiatric hospital is fear, thought of impending danger, insecurity and stress. This mind set arises from work overload, expectation of the oncoming shift, disturbance from patients and relatives (Zaeem, Zafar & Atif, 2016). Many nurses resent psychiatry because of these scenarios and prefer community or general health care setting.

Health workers of out-patient clinic are observed in strain and exhaustion on tireless efforts to restrain un-complying restless patients, lifting helpless obsessed and tidying negative/emotional deficit in-mates. Out of the boredom they return home stressed up coupled with family commitments.

In order to avoid workplace hazard workers lodged verbal and written excuses to stay away from work. Within May 2017, the researcher observe that workers tender over 12 excuse duty and sick reports, while others obtained on counter medications to keep fit without seeking official aid and assuming sick role.

Effects of exposure to occupational hazard on clinical output of workers

It is quite clear that a disabled cannot nurse a disabled. Works of Katsuro & Gadzirayi (2010), revealed that workers who were packers in a popcorn factory easily suffer of heat strain, heat strokes and muscle cramp caused by high temperature. Those who fare well were gunners and extruders because of their body adjustment with sweating done by fast vascular flow. Though this brought partial relieve, biologically salt is lost along with water leading to salt deficiency in the vital organs which would lead to weakness and emaciation. The researchers further disclosed that while attending to fainting staff at the clinic, production time is lost along with the daily productivity. Psychiatric healthcare workers face ergonomic hazard in lifting helpless patients from unusual position, transferring un-complying patients to bed, restraining unstable patients from unacceptable act and separating fights. Worse force is expended in experience of attack, escape from patient's demonstration and aggression resulting from hallucinatory impulses (Freund & Dropkin, 2014). Reports of slip and falls are a frequent occurrence as consequence of bathroom bath, restraining and assisting recovering patients to assume activities of daily living. These results in serious body injuries like wound, bruise, fracture and blood loss as observed by Antai, M., (2017). Another factor that exacerbates hazard in psychiatry is working without light during evening and night duty (Arasi, Balasubramanian, Palsamy, Gurusamy, Diana, Ravindran, & Balakrishnan, (2015). Psychiatric healthcare workers in the ward face great deal of hazards every day from their patients. This ranges from verbal and physical abuse, outburst of anger, aggression and violent attack towards themselves or in the course of settling disputes between patients. (Magtubo, 2016), reports that effects from exposed hazard adversely affect workers clinical output as seen in physical injury and verbal abuse resulting in decreased activity, decreased productivity and negative emotions. Most workers lost their job satisfaction, reduce quality of their service and may decide to leave the job for another. Consequently, the morale of the institution would be reduced giving way to hostile work environment, medical errors and injury claims by staff on management. From

interactions, two nurses reports of "battle scars" which are nail marks found on their hands and forearms, gotten from unpredictable patients while attending to them in a psychiatric ward.

Coping mechanism with occupational hazard

Coping mechanism are understood as cognitive and behavioral activities devised by workers to help him endure, abide and tolerate the hazardous condition. In other words they are means workers used to minimize or avoid internal and external demand which may wrought conflict in workplace as a result of occupational hazard (Ifeoluwa, 2015). Coping occurs in 4 various dimensions: physical, emotional, positive and negative. Problem focuses are efforts of the workers to look for the ways to reduce or eradicate hazardous situation with self control and social support. Emotional focuses are means of management and adjustments a worker used to avoid problem with his superiors while living in the hazards by obeying masters directives and exercising self control. In positive coping workers change their ways of thinking for improvising measure by learning alternative skills, debriefing with people of similar experience and seeking advice from seniors, relatives and friends as done by experience and skillful nurses. Finally, negative coping occur among workers who console themselves, waits for when time will change the situation, look or expect others to work for amelioration of the condition (Lv et.al, 2014). In its worse aspect, workers are seen conversing, drinking and smoking to forget workplace dissatisfactions or plays truancy mindless of any punishment (Happel, 2012). This is observable in worker's attitude when researcher observe duty staff come to evening duty from 4pm against 2.00pm with personal complaints, and choose to close 6.30pm with complaint of 'no light' or 'I live at far distance'.

Management's efforts at minimizing workers' occupational hazard

Work as a Psychiatric Nurse in hospital setting weather in the community or health centre requires risk assessment and management (O'Rourke & Bailies, 2006). This involves both the staff and management institute to be using a "fight or flight" mechanism in work attention. In fight they adopt firmness, extreme control over the situation, reaction and identification of origin of the risk. In flight, the staff tries to avoid or deny the existence of dissatisfaction, and try to minimize or modify the risky posing or anxiety provoking situation.

Hale, (2005) said the best way to manage a risky patient is through risk assessment and involvement of multidisciplinary team (MDT). He also added that depressed patients should be nursed and observed for a long time irrespective of their reduced suicidal tendencies, and should be granted trial leave when he's bright and mixes well.

Professor Rix, (2005), opined that psychiatric trained nurses should do all their best for the interest of the patient irrespective of their behaviors. This they can do by following these steps: apply the hospital approved measures in handling the situation; alert or inform your superior officers on the management step; when patient is at risk of taking his life, report to managing team and hospital authority; be concise, sincere and factual to those who needs you; and maintain accurate record of findings and observations.

Risk Management in Mental Health Services (2008), opined that health institutions should first embark on assessing risky situations with a systematic approach, then deciding on measures to manage the condition in attempt to prevent potential dangers. Process of managing risk is embedded as identification, evaluation, assessment and management of the situation in their order of importance (HSE, 2007). In most cases management considers their cost at minimizing observed hazard. Though some express concern to seek help from government and non-governmental agencies others incorporate their local problems like renewal of factory license, high wage bills and other costs of production as excuses for not improving working condition in their institution (Katsuro & Gadzirayi, 2010). This breeds resentment, insubordination, low morale and negligence of duty which results in low productivity. Freund & Dropkin (2014), recommend that though equipments are costly, there is need for appropriate machines and devices like total lift, stand aids, sit/stand lifts, adjustable height beds and baths, slide sheet, back belt and invitation of more manual labor for help where strain is observed enormous. Spiro, Josh (2010), pointed out the following 9 measures for institutions to employ in minimizing hazard: avoid combustible material/article around working environment, proper care for the aged and children, staff supervision, avoid placing one staff alone on duty, providing well-lit environment, installing security cameras, providing functional intercommunication system, fire extinguisher and protective devices for staff.

III. THEORETICAL FRAMEWORK

Florence Nightingale's environmental theory in 1860 express the need of nurses using available environment to help patient recover from his/her worries (Kozier, Erb, Barman & Snyder, 2004). She wanted nurses to modify their working environments to be suitable for patient's gradual recovery amidst external factors which aims at disabling patient's biological and psychological development. Nurses try to maintain a therapeutic milieu to enhance patient's recovery and peaceful co-existence. On this regard they must actively relate with patient to deliver holistic care which is contemporary and expected care that fits the scientific age. The nurse here utilizes available environment to create rapport, establish trust, win cooperation, and acquire support and encouragement from relatives, hospital management and the Government. It may be regrettable and discouraging to help ungrateful people who might turn to attack at anytime. But the goal of nursing by Nightingales was to convert the physical environment to be therapeutic for patient's recovery.

Nursing a psychiatric patient involves extreme skill and caution which the nurse applies in her daily schedule.

Perceived severity and perceived susceptibility of Health Belief Theory propounded by Rosenstock, Hochbaum, Kegele & Leventhal (1950s) is compatible to this study. It stands that through assessment workers are aware of impending dangers and health consequences from their working environment. These with low risk get into the milieu to work and combat emerging dangers while these with high risk lodge excuses to exempt them from work.

Another theory found relevance is Theory of Reasoned Action (TRA) by Martin Fishbein & Icek Ajzen (1967), which tries to relate between human attitude and behavior in a given environment. It predicts human's behavior based on his pre-existing attitude and intentions, and explains that someone's reason for behavior is based on the outcome he expects to see as a result of his performance (Rogers, Archibald, Morrison, Wilsdon, Wells, Hoppe, Nahom & Murowchick, (2002). From this theory, workers evaluate the benefits they would earn from taking risk to care for patient in a hazardous environment, and the impending danger they are going to encounter in the course of attending to such patients. Realizing that it's only the monthly salary and allowance which every worker is equally entitled they ponder within, "are others rendering their services in such a cruel environment"? They therefore decide to dodge, lodge excuse or neglect the duty.

Assumptions of the Study

Assumptions about this study refer to what people over here considers about workers serving and delivering healthcare to psychiatric patients.

Some thinkers assumes that attendants to psychiatric patient are equally possessors of evil spirits responsible for the patients mental state, and this is why psychiatric workers could find it easy to work and relate with a mentally ill. Others regard psychiatric hospital as a place of punishment meant for people with abnormal behaviors hence improving the working condition there means abrogating the purpose for which it was designed. In the same vain people consider that the machinery on ground is to inflict punishment which is consequent and deserving for every wrong doings hence psychiatric health workers should be instrumental of this and only bear the situation of the place for the time of their duty schedule.

IV. METHODOLOGY

Research design

Descriptive survey design was used for the study. This is a research design that has as its main objective the accurate portrayal of the characteristics of persons, phenomena, situation, population or groups and/or the frequency with which certain phenomena occur (Alexia, 2013). Since the purpose of descriptive survey is to observe, describe or document aspects of a situation, it is considered appropriate for this study on occupational risks and hazards among healthcare workers in Federal Psychiatric Hospital, Calabar, Cross River State, Nigeria.

Research setting

The setting of the study is Federal Psychiatric Hospital Calabar, Cross River State in Nigeria. The hospital is located at 113 Calabar bounded northward by Calabar road, southward by Target road, eastward by White house road and westward by Edgerley road. It is one of the specialist hospitals concentrating on mental illness and promotion of mental health. It was founded on 1903 by the British Colonial Government empowering her with concept, manpower, facilities and experience of psychiatric managements. She is blessed with learned professionals in the field of nursing, medicine, pharmacy, social works, laboratory sciences, medical records, rehabilitation and occupational works.

Population of the study

The population of study includes all Healthcare Workers in Federal Psychiatric Hospital, Calabar including Doctors, Nurses, Health Assistants, Pharmacists, and Laboratory Scientists etc. According to 2016 Administrative Report of the Hospital, a total of 368 healthcare workers are working in the hospital as at the time of this study.

Target population

The target population for the study consists of all Health care workers working in various Departments of Federal Psychiatric Hospital, Calabar. These include 47 Doctors, 105 Nurses, 17 Medical Recorders, 12 Pharmacists, 22 Laboratory Scientists, 131 Health Assistants, 10 Occupational Therapies, 6 Clinical Psychologists, and 18 Clinical Social workers, giving a total of 368 healthcare workers.

Inclusion criteria

Inclusion criteria are those workers having contact during their job schedule with psychiatric patients, their body products and specimens as outpatient or in-patient, in the wards, clinics and units of federal psychiatric hospital, Calabar. They include nurses, doctors, pharmacies, psychologists, social workers, health records, laboratory scientists, emergency prepared workers, laundry, kitchen, health assistance and orderlies.

Exclusion criteria

These are workers of the facility without direct relationship with the patients like securities, workers in maintenance department, administration, library, account, legal unit, procurement, and others. They are exempted from the study as their experience, service and work schedule has no dealing with psychiatric patients.

Sampling method/technique

The sample size for the study consists of 188 Health care workers working in Federal Neuropsychiatric Hospital,

Calabar. The sample size was obtained using Krejcie and Morgan (1970) power analysis formula for known population.

S = X2NP (1-P)/ d2 (N-1) + X2P (1-P)

S = required sample size

X2 = the table value of chi-square for one degree of freedom at the desired confidence level

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (.05)

A multi-stage sampling procedure was used in the study. Purposive sampling technique was used to select Federal Psychiatric Hospital, Calabar for the study. Stratified sampling technique was then applied to divide the health care workers into different strata based on their cadre. These include doctors, nurses, health assistants, laboratory scientists, pharmacists, medical recorders, occupational therapists, clinical psychologists and clinical social workers. Since each cadre of health care workers has its population size, the sample size was proportionately allocated to each cadre using proportional sampling technique:

n / N x Nh

Where n = sample size

N = total population

Nh =population for each village

Accordingly, the sample size for each cadre is as follows:

S/No.	Cadre of HCWs	Population	Sample
1.	Doctors	47	24
2.	Nurses	105	54
3.	Medical Records	17	9
4.	Pharmacists	12	6
5.	Lab. Scientists	22	11
6.	Health Assistants	131	67
7.	Occupational Therapists	10	5
8.	Psychologists	6	3
9.	Social workers	18	9
	Total	368	188

However, convenient sampling method was applied in selecting HCWs from each cadre for the study.

Instrument for data collection

A structured instrument titled "questionnaires on occupational risks and hazards among healthcare workers in Federal Psychiatric Hospital, Calabar" was developed by the researcher for data collection. This instrument consists of six sections with a total of 32 items. Section A elicit information regarding the respondents personal characteristics, section B was on the regular occupational risks/hazard faced by the respondents, while section C was on management's efforts at minimizing workplace hazard among the respondents, section D was on the mechanisms employed by the respondents in coping with occupational hazards, section E was on exposure to occupational risks and/or health related effect of exposure to workplace hazards and/or risks among respondents, and section F was on the clinical output of respondents. The instrument was constructed using four/five points Likert scale and the dooming variables. Respondents were scored as follows:

Yes	-	2
No	-	1
Strongly Agree (SA)	-	5/4
Agree (A)	-	4/3
Undecided (U)	-	3
Disagree (D)	-	2/2
Strongly Disagree (SD)	-	1/1

Validation of instrument

In establishing the validity of the instrument for data collection, the designed research instrument was face and content validated by an expert in test and measure and a competent psychiatric expert by evaluating the relevance of the content and clarity of the statements. The necessary suggestions from the validators were effected by the researcher in the final refinement of the instrument.

Reliability of instrument

A pilot survey was conducted for the reliability of the instrument by pre-testing twenty (20) copies of the questionnaire that served as an interview schedule in another Psychiatric Clinic at Odukpani, Cross River State. The data obtained from the copies of the structured interview schedule were subjected to test-retest reliability using Spearman Rank Order Correlation Coefficient to test the internal consistency of the instrument. A correlation coefficient of 0.727 (see appendix II) was obtained; thus, the reliability of the research instrument was established.

V. METHOD OF DATA COLLECTION

The questionnaire which served as an interview schedule was used to obtain information from the respondents. Two research assistants were used for data collection. These research assistants were psychiatric nurses. They were trained on the purpose of the study and the interpretation of the questions in the interview schedule to facilitate the collection of data from the respondents. Data collection was done on daily bases for a period of two weeks covering all work shifts per day. The interview was conducted on one to one basis, that is, individually. This was to ensure that the respondents

were interviewed properly and calmly. A total of 188 copies of interview guide which was the sample size for the study were distributed, but the researcher succeeded in collecting 175 questionnaires which were properly filled giving a response rate of 93.1%.

Procedure for data analysis

Item by item analysis was carried out to show the response frequency and percentages of various categories of data generated from the research instrument. The analysis was done using Statistical Package for Social Sciences (SPSS) Version 20. Data completed were presented in tables. Mean scores and standard deviation were also computed. All percentages greater or equal to fifty (50) was considered significant. Interpretation of the mean scores is shown below:

Scores interpretation (for 4 points Likert Scale)

Mean Score	Rating of Management's effort	Level of Exposure
<1.50	Very Poor	Negligible
1.50 – 2.49	Poor	Low
2.50 – 3.49	fairly poor	Moderate
3.50 & above	Good	High

Scores interpretation (for 5 points Likert Scale)

Mean Score	Management's effort	Mechanism employed by HCWs	HCWs Clinical Output
<2.50	Insignificant	Insignificant	Very Poor
2.50 – 3.49			Poor
3.50 – 4.49	Significant	Significant	Good
4.50 & above			Very Good

VI. RESPPONDENTS' DEMOGRAPHICS

Table 1: Respondents' demographic data

Distribution of respondents by gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	88	50.3	50.3	50.3
	Female	87	49.7	49.7	100.0
	Total	175	100.0	100.0	

Distribution of respondents by Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less or equal to 20 years	2	1.1	1.1	1.1
	21-30 years	64	36.6	36.6	37.7
	31-40 years	73	41.7	41.7	79.4
	41-50 years	21	12.0	12.0	91.4
	Above 50 years	15	8.6	8.6	100.0
	Total	175	100.0	100.0	

Distribution of respondents by marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	65	37.1	37.1	37.1
	Married	103	58.9	58.9	96.0
	Divorce	1	.6	.6	96.6
	Separated	6	3.4	3.4	100.0
	Total	175	100.0	100.0	

Distribution of respondents by religion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Christianity	169	96.6	96.6	96.6
	Muslim	2	1.1	1.1	97.7
	Traditionalists	2	1.1	1.1	98.9
	Others	2	1.1	1.1	100.0
	Total	175	100.0	100.0	

Distribution of respondents by Academic qualification

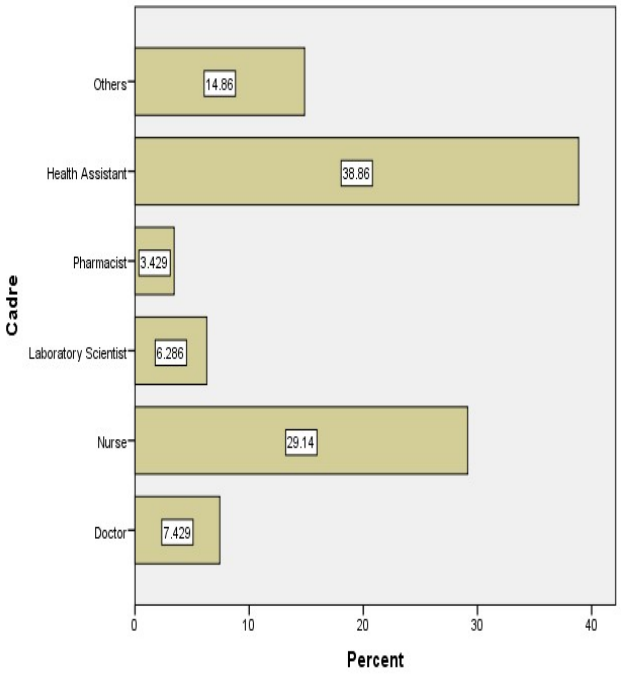
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SSCE	57	32.6	32.6	32.6
	Diploma Certificate	51	29.1	29.1	61.7
	Bachelor's Degree	57	32.6	32.6	94.3
	Masters' Degree	4	2.3	2.3	96.6
	Doctorate Degree	6	3.4	3.4	100.0
	Total	175	100.0	100.0	

Distribution of respondents by years of work experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less or equal to 5 years	35	20.0	20.0	20.0
	6-10 years	72	41.1	41.1	61.1
	11-15 years	39	22.3	22.3	83.4
	16-20 years	11	6.3	6.3	89.7
	21-25 years	1	.6	.6	90.3
	26 years & above	17	9.7	9.7	100.0
	Total	175	100.0	100.0	

The above table shows that 88 (50.3%) out of 175 respondents used for the study were male while 87 (49.3%) were female. About 2 (1.1%) respondents were less but not more than 20 years of age, 64 (36.6%) were between 21-30 years, 73 (41.7%) were between 31-40 years, while 21 (12.0%) respondents were between 41-50 years, and 15 (8.6%) were above 50 years of age. On the marital status of the respondents, the table reveals that 65 (37.1%) were single, while 103 (58.9%) were married, 1 (0.6%) was divorced, and 6 (3.4%) were separated. One hundred and nine (96.6%) respondents were Christians, 2 (1.1%) respondents were Muslim, 2 (1.1%) were traditionalists, and 2 (1.1%) had other

forms of worship. Presenting the respondents' educational background, the table shows that 57 (32.6%) out of the 175 respondents had Senior School Certificate (SSC), 51 (29.1%) had diploma certificate, 57 (32.6%) had Bachelors' Degree, while 4 (2.3%) had Masters' Degree, and 6 (3.4%) had Doctorate Degree. Regarding the respondents' years of work experience, the table shows that 35 (20.0%) out of the 175 respondents have worked in the hospital for less but not more than 5 years, 72 (41.1%) have work experience ranging from 6-10 years, 39 (22.3%) respondents have work experience of 11-15 years, while 11 (6.3%) have acquired working experience of 11-15 years, 11 (6.3%) have worked in the hospital for 16-20 years, 1 (0.6%) respondent have an experience 21-25 years and 17 (9.7%) have work experience of 26 years and above. The distribution of the respondents by cadre is presented in the figure below. According to the figure, 7.4% of the 175 respondents were Doctors, 29.1% were Nurses, 6.3% were Laboratory Scientists, while 3.4% were Pharmacists, 38.9% were Health Assistants, and 14.9% were other health care workers in the Hospital comprising of social workers, clinical physchologists, occupational therapies and medical recorders.



Hazards/Risk Faced By Hcws in the Hospital

Table 2A: Physical Hazards

Noise					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	78	44.6	44.6	44.6
	Yes	97	55.4	55.4	100.0
	Total	175	100.0	100.0	

Temperature					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	110	62.9	62.9	62.9
	Yes	65	37.1	37.1	100.0
	Total	175	100.0	100.0	

Humidity					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	138	78.9	78.9	78.9
	Yes	37	21.1	21.1	100.0
	Total	175	100.0	100.0	

Verbal and physical aggression					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	69	39.4	39.4	39.4
	Yes	106	60.6	60.6	100.0
	Total	175	100.0	100.0	

Occasional Flood					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	92	52.6	52.6	52.6
	Yes	83	47.4	47.4	100.0
	Total	175	100.0	100.0	

Darkness					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	55	31.4	31.4	31.4
	Yes	120	68.6	68.6	100.0
	Total	175	100.0	100.0	

Falls					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	141	80.6	80.6	80.6
	Yes	34	19.4	19.4	100.0
	Total	175	100.0	100.0	

Shaft/needle prick					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	130	74.3	74.3	74.3
	Yes	45	25.7	25.7	100.0
	Total	175	100.0	100.0	

The physical hazards encounter by HCWs in the hospital is presented in the table below. The table reveals that out of the 175 respondents used for the study, 97 (55.4%) affirmed that noise is a major hazard they are exposed to in the hospital, 65 (37.1%) said it is temperature, 37 (21.1%) said it is humidity, 106 (60.6%) cited verbal and physical aggression (abuse) as a significant hazard they are faced with, while 83 (47.3%) said they are mostly disturbed by flood, 120 (68.6%) said darkness

was their major problem in the hospital, 34 (19.4%) said falls, and 45 (25.7%) cited shaft/needle prick as the most significant hazard they are faced with while carrying out their professional duty in the hospital.

On biological hazards, the table reveals that 87 (49.7%) said 'yes' that animals are potential source of hazard in the hospital, 49 (28.0%) said insect is a major problem to them, 59 (33.7%) said bacteria, virus and protozoa were sources of risk to them, 49 (28.0%) said they were exposed to parasites, 69 (39.4%) said human beings were threat to them, 64 (36.6%) said exposure to blood was a significant hazard among them, while 81 (46.3%) cited body fluid as their major source of hazard, and 68 (38.9%) said that exposure human body waste was hazardous to them.

Table 2B: Biological Hazards

Animals					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	88	50.3	50.3	50.3
	Yes	87	49.7	49.7	100.0
	Total	175	100.0	100.0	
Insects					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	126	72.0	72.0	72.0
	Yes	49	28.0	28.0	100.0
	Total	175	100.0	100.0	
Bacteria, virus and protozoa					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	116	66.3	66.3	66.3
	Yes	59	33.7	33.7	100.0
	Total	175	100.0	100.0	
Parasites					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	126	72.0	72.0	72.0
	Yes	49	28.0	28.0	100.0
	Total	175	100.0	100.0	
Humans beings					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	106	60.6	60.6	60.6
	Yes	69	39.4	39.4	100.0
	Total	175	100.0	100.0	
Blood					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	111	63.4	63.4	63.4
	Yes	64	36.6	36.6	100.0
	Total	175	100.0	100.0	
Body fluid					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	94	53.7	53.7	53.7
	Yes	81	46.3	46.3	100.0
	Total	175	100.0	100.0	
Human biological wastes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	107	61.1	61.1	61.1
	Yes	68	38.9	38.9	100.0
	Total	175	100.0	100.0	

On the ergonometric hazards, 46 (26.3%) admitted inappropriate posture as hazard resulting from their occupation, 62 (35.4%) said monotony and repetitiveness schedules are hazard they are constantly exposed to, 64 (36.6%) said they are faced with physical strain, 32 (18.3%) accepted that carrying heavy load is the risk they face while carrying out their daily duty, 70 (40.0%) admitted that high expectation from supervisors is hazardous, 94 (54.9%) agreed that poor lighting system constitute a major source of hazard to them, while 49 (28.0%) cited trekking as a risky venture, 60 (34.3%) said separation of fight is a risk they face in the hospital, 46 (26.3%) mentioned turning and lifting as hazards they encounter, 72 (41.1%) said that prevention of escape pose risk to them, and 112 (64.0%) admitted that attack from patients is a major hazard they face in the hospital.

Table 2 C: Ergonometric Hazards

Inappropriate posture					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	129	73.7	73.7	73.7
	Yes	46	26.3	26.3	100.0
	Total	175	100.0	100.0	
Monotony and repetitiveness schedules					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	113	64.6	64.6	64.6
	Yes	62	35.4	35.4	100.0
	Total	175	100.0	100.0	

Physical Strain					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	111	63.4	63.4	63.4
	Yes	64	36.6	36.6	100.0
	Total	175	100.0	100.0	

Carrying heavy weight					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	143	81.7	81.7	81.7
	Yes	32	18.3	18.3	100.0
	Total	175	100.0	100.0	

High expectation from supervisors					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	105	60.0	60.0	60.0
	Yes	70	40.0	40.0	100.0
	Total	175	100.0	100.0	

Poor lighting					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	79	45.1	45.1	45.1
	Yes	96	54.9	54.9	100.0
	Total	175	100.0	100.0	

Trekking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	126	72.0	72.0	72.0
	Yes	49	28.0	28.0	100.0
	Total	175	100.0	100.0	

Separation of fight					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	115	65.7	65.7	65.7
	Yes	60	34.3	34.3	100.0
	Total	175	100.0	100.0	

Turning and lifting					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	129	73.7	73.7	73.7
	Yes	46	26.3	26.3	100.0
	Total	175	100.0	100.0	

Prevention of escape					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	103	58.9	58.9	58.9
	Yes	72	41.1	41.1	100.0
	Total	175	100.0	100.0	

Attack from patients					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	63	36.0	36.0	36.0
	Yes	112	64.0	64.0	100.0
	Total	175	100.0	100.0	

On the psychological hazards faced by HCWs in the hospital, the table reveals that 82 (46.9%) out of the 175 respondents said in affirmation that they are faced with stressful roles, 71 (40.6%) said 'yes' that they are exposed to physical assault, 61 (34.9%) agreed that working night shift was hazardous to them, 56 (32.0%) said that relationship with their boss, co-workers and patients is problematic, 67 (38.3%) said the hospital environment is frightful, 44 (25.1%) accepted that long working hours serve as a source of hazard to them, 77 (44.0%) said they are faced with so much work, while 48 (27.4%) said they are constantly faced with implicative job schedule, and 72 (41.1%) said that being alone on duty is hazardous to them.

Table 2D: Psychological Hazards

Stressful roles					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	93	53.1	53.1	53.1
	Yes	82	46.9	46.9	100.0
	Total	175	100.0	100.0	

Physical assault					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	104	59.4	59.4	59.4
	Yes	71	40.6	40.6	100.0
	Total	175	100.0	100.0	

Working night shifts					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	114	65.1	65.1	65.1
	Yes	61	34.9	34.9	100.0
	Total	175	100.0	100.0	

Relationship with boss, co-workers and patients					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	119	68.0	68.0	68.0
	Yes	56	32.0	32.0	100.0
	Total	175	100.0	100.0	

Environmental freights					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	108	61.7	61.7	61.7
	Yes	67	38.3	38.3	100.0
	Total	175	100.0	100.0	

Long working hours					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	131	74.9	74.9	74.9
	Yes	44	25.1	25.1	100.0
	Total	175	100.0	100.0	

Work overload					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	98	56.0	56.0	56.0
	Yes	77	44.0	44.0	100.0
	Total	175	100.0	100.0	

Implicative job schedule					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	127	72.6	72.6	72.6
	Yes	48	27.4	27.4	100.0
	Total	175	100.0	100.0	
Being alone on duty					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	103	58.9	58.9	58.9
	Yes	72	41.1	41.1	100.0
	Total	175	100.0	100.0	

On the chemical hazards faced by HCWs in the hospital, 74 (42.3%) admitted that carbon monoxide poses work place hazard to them, 33 (18.9%) said that spilled chemical is a source of hazard in the hospital, while 39 (22.3%) said they are significantly exposed to burns/scales, and 46 (26.3%) said 'yes' that they are exposed to hazardous vapour and fumes in the hospital.

Table 2E: Chemical Hazards

Carbon monoxide					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	101	57.7	57.7	57.7
	Yes	74	42.3	42.3	100.0
	Total	175	100.0	100.0	
Spilled-up chemical					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	142	81.1	81.1	81.1
	Yes	33	18.9	18.9	100.0
	Total	175	100.0	100.0	

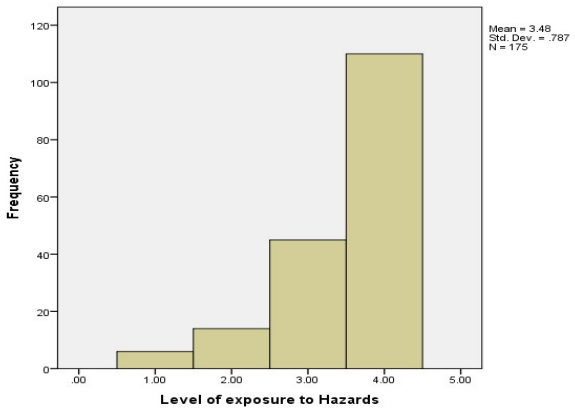
Burns/scales					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	136	77.7	77.7	77.7
	Yes	39	22.3	22.3	100.0
	Total	175	100.0	100.0	
Vapour and fumes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	129	73.7	73.7	73.7
	Yes	46	26.3	26.3	100.0
	Total	175	100.0	100.0	

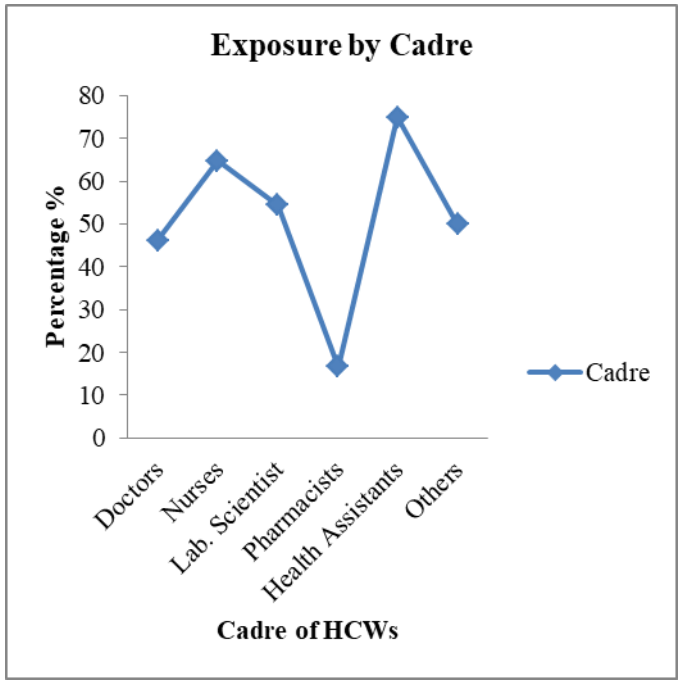
Level of Exposure of Hcws To Occupational Hazard

Table 3: HCWs perceived exposure to hazard					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low/ negligible	6	3.4	3.4	3.4
	Low	14	8.0	8.0	11.4
	Moderate	45	25.7	25.7	37.1
	High	110	62.9	62.9	100.0
	Total	175	100.0	100.0	

To ascertain the exposure of the respondents to hazards in the mental health facility, question 26 of the questionnaire demanded that the respondents rate the level at which they are exposed to hazard in their work place. According to their rating presented in the above table, 110 (62.9%) out of the 175 respondents rated themselves as being highly exposed to hazards in the hospital, 45 (25.7%) said they are moderately exposed to risks and/or hazard, while 14 (8.0%) said their level of exposure to work place hazard is low, and only 6 (3.4%) respondents rated their exposure as being very low thus could be neglected. Consequently, the histogram presented below shows a depreciating proportion (height) of the bars from the bar with the highest exposure score (4.00) at the right side of the figure, to the bar with the lowest exposure score (1.00) at the left side of the figure. Hence, it could be deduced that the respondents were moderately exposed to hazard with a perceived exposure score of 3.48±0.787 (see chapter three).

However, an analysis of the respondents' exposure by cadre is presented in the line graph below. As reveal by the trend of the graph, health assistants were the ones mostly exposed (75.0%) to hazards in the hospital, followed by Nurses (64.7%), Laboratory Scientists (54.5%), others consisting of Social Workers, Occupational Therapists, Clinical Psychologists and Medical Recorders (50.0%), Doctors (46.2%) while the least were Pharmacists (16.7%).





Impact of Hazard on Respondents' Health Status

In response to item 27 of the research instruments, table 4A below reveals that nearly have of the respondents representing 49.7% have been on sick leave. Among this percentage, table 4B shows that about 38.9% representing 68 out of the 175 respondents had sicknesses resulting from their exposure to workplace hazard or risks in the hospital. Hence, the health status of 107 (61.1%) respondents were not affected by their exposure to work related hazards while that of 68 (38.9%) respondents were affected consequent upon their exposure to work place hazards or risks. Results of the cross-tabulation presented in table 4C reveals that none (0.0%) of the 13 doctors used for the study was sick as a result of exposure to work place hazard, 16 (31.4%) nurses had health related problem resulting from their exposure to hazards and or risks in the hospital, only 1 (9.1%) Laboratory Scientist had health related problem linked to exposure to hazards, none (0.0%) of the pharmacist had any workplace hazard related health issue, while 46 (67.6%) health assistants were on sick leave as a result of their exposure to hazard in the hospital, and only 5 (19.2%) respondents representing other cadres of health care workers in hospital had health issues related to their exposure to workplace hazard.

Table 4A: Distribution of respondents who have been on sick leave before

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	88	50.3	50.3	50.3
	Yes	87	49.7	49.7	100.0
	Total	175	100.0	100.0	

Table 4B: Distribution of respondents whose sickness resulted from their exposure to work place hazard

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not affected	107	61.1	61.1	61.1
	Affected	68	38.9	38.9	100.0
	Total	175	100.0	100.0	

Table 4C: Cross-tabulation showing effect of exposure on respondents' health status by cadre

Count

		Effect on Health		Total
		Not affected	Affected	
Cadre	Doctor	13	0	13
	Nurse	35	16	51
	Laboratory Scientist	10	1	11
	Pharmacist	6	0	6
	Health Assistant	22	46	68
	Others	21	5	26
Total		107	68	175

Clinical Output of HCWS

Table 5A: Respondents' response on their clinical output

Item 29: I can conveniently go into the ward alone at any point of the shift to attend to any patient					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	28	16.0	16.0	16.0
	Disagree	45	25.7	25.7	41.7
	Undecided	14	8.0	8.0	49.7
	Agree	53	30.3	30.3	80.0
	Strongly Agree	35	20.0	20.0	100.0
	Total	175	100.0	100.0	

Item 30: I can freely relate with patients to resolve his or her problems					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	9	5.1	5.1	5.1
	Disagree	15	8.6	8.6	13.7
	Undecided	21	12.0	12.0	25.7
	Agree	95	54.3	54.3	80.0
	Strongly Disagree	35	20.0	20.0	100.0
	Total	175	100.0	100.0	
Item 31: I can conveniently check patient's belongings					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	14	8.0	8.0	8.0
	Undecided	30	17.1	17.1	25.1
	Undecided	24	13.7	13.7	38.9
	Agree	72	41.1	41.1	80.0
	Strongly Agree	35	20.0	20.0	100.0
	Total	175	100.0	100.0	
Item 32: I can administer all kinds of drug treatment to patients in the ward					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	22	12.6	12.6	12.6
	Disagree	77	44.0	44.0	56.6
	Undecided	27	15.4	15.4	72.0
	Agree	33	18.9	18.9	90.9
	Strongly Agree	16	9.1	9.1	100.0
	Total	175	100.0	100.0	

The table above presents the response of the respondents on their clinical output. When they were asked if "they can conveniently go into the ward alone at any part of the shift to attend to any patient", 35 (20.0%) strongly agree, 53 (30.3%) agree, while 14 (8.0%) were undecided, 45 (25.7%) disagree on this item, and 28 (16.0%) strongly disagree. 35 (20.0%) strongly agree that "they can freely relate with patients to resolve his/her problems", 95 (54.3%) agree on this item of the research instrument, 21 (12.0%) were undecided, 15 (8.6%) disagree, and 9 (5.1%) strongly disagree. 35 (20.0%) strongly agree that "they can conveniently check patient's belonging", while 72 (41.1%) agree, 24 (13.7%) were undecided, 30 (17.1%) disagree, and 14 (8.0%) strongly disagree. Finally, the respondents were asked if "they can administer all kind of drug treatment to patients in the ward", 16 (9.1%) strongly agree on this item, 33 (18.9%) agree, while 27 (15.4%) were undecided, 77 (44.0%) disagree, and 22 (12.6%) strongly disagree. The summary statistics presented in the table below shows that the respondents were good at freely relating with patients to resolve their problems with a mean performance score of 3.75±1.035.

Table 5B: Summary Statistics on the respondents' clinical output					
		Item 29	Item 30	Item 31	Item 32
N	Valid	175	175	175	175
	Missing	0	0	0	0
Mean		3.1257	3.7543	3.4800	2.6800
Std. Deviation		1.41266	1.03511	1.21693	1.18438

Mechanisms Employed By Workers to Cope With Occupational Hazard in the Hospital

Table 6A: Mechanisms employed by the respondents in coping with occupational hazard in the hospital

Item 21: Compliance with all safety instructions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	1.7	1.7	1.7
	Disagree	10	5.7	5.7	7.4
	Undecided	65	37.1	37.1	44.6
	Agree	47	26.9	26.9	71.4
	Strongly Agree	50	28.6	28.6	100.0
	Total	175	100.0	100.0	
Item 22: Adherence to infection control precautions regarding blood, body fluids and infectious tissues					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	3.4	3.4	3.4
	Disagree	16	9.1	9.1	12.6
	Undecided	6	3.4	3.4	16.0
	Agree	71	40.6	40.6	56.6
	Strongly Agree	76	43.4	43.4	100.0
	Total	175	100.0	100.0	
Item 23: Wearing safety equipments during working hours					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	11	6.3	6.3	6.3
	Disagree	32	18.3	18.3	24.6
	Undecided	16	9.1	9.1	33.7
	Agree	71	40.6	40.6	74.3
	Strongly Agree	45	25.7	25.7	100.0
	Total	175	100.0	100.0	

Item 24: Attending lectures/seminars organised on occupational safety in the hospital and beyond					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	16	9.1	9.1	9.1
	Disagree	49	28.0	28.0	37.1
	Undecided	20	11.4	11.4	48.6
	Agree	53	30.3	30.3	78.9
	Strongly Agree	37	21.1	21.1	100.0
	Total	175	100.0	100.0	

Item 25: Reporting of unsafe situations that are highly hazardous to staff for quick intervention					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	10	5.7	5.7	5.7
	Disagree	20	11.4	11.4	17.1
	Undecided	7	4.0	4.0	21.1
	Agree	64	36.6	36.6	57.7
	Strongly Agree	74	42.3	42.3	100.0
	Total	175	100.0	100.0	

Table 5A above presents the various mechanisms employed by respondents in coping with workplace hazard. Table ... shows that 50 (28.6%) out of the 175 respondents strongly agree that they comply with all safety instructions in the hospital, 47 (26.9%) agree, 65 (37.1%) were undecided, while 10 (5.7%) disagree and 3 (1.7%) strongly disagree. 76 (43.4%) strongly affirmed that for them to cope with work place hazard, they adhere to infection control precautions regarding blood, body fluids and infectious tissues, 71 (40.6%) agree, while 6 (3.4%) were undecided, 16 (9.1%) disagree, and 6 (3.4%) strongly disagree. 45 (25.7%) respondents strongly agree that they wear safety equipments during working hours as a means of curtailing their exposure to hazards, while 71 (40.6%) agree, 16 (9.1%) were undecided, 32 (18.3%) disagree and 11 (6.3%) strongly disagree on this item. 37 (21.1%) respondents strongly agree that in order to cope with workplace hazards they frequently attend lectures/seminars organized on occupational safety in the hospital and beyond, 53 (30.3%) agreed on this item, while 20 (11.4%) were undecided, 49 (28.0%) disagree and 16 (9.1%) strongly disagree. Finally, 74 (42.3%) respondents strongly agree that they report all unsafe situations that are highly hazardous to staff for quick intervention, 64 (36.6%) agree, 7 (4.0%) were undecided, while 20 (11.4%) disagree, and 10 (5.7%) strongly disagree. According to the summary statistics below, the significant methods of coping with workplace hazard adopted by the respondents were compliance with all safety instructions (3.749±0.991), adherence to infection control precautions regarding blood, body fluids and infectious tissues (4.11±1.066), wearing of safety equipments during working hours (3.611±1.226) and reporting of unsafe situations that are highly hazardous to staff for quick intervention (3.983±1.201).

Table 6B: Summary Statistics on the mechanism employed by the respondents in coping with workplace hazard						
		Item 21	Item 22	Item 23	Item 24	Item 25
N	Valid	175	175	175	175	175
	Missing	0	0	0	0	0
Mean		3.7486	4.1143	3.6114	3.2629	3.9829
Std. Deviation		.99116	1.06597	1.22610	1.31723	1.20093

HCWs Percieved Efforts by Hospital's Management At Minimizing Worker's Hazard

Items 12 to 19 of the questionnaire elicit information on the efforts of the hospital's management at minimizing workplace hazards among HCPs. The respondents were however demanded to rate this effort in item 20 whether it is very good, good, poor or very poor. Respondents' response regarding this objective is presented in the table below. According to the table 34 (19.4%) out of the 175 respondents strongly agree that in order to minimize workplace hazards among health care workers in the hospital, management of the hospital has provided equipments and tools for staff protection; whereas 54 (30.9%) respondents agree on this item of the research questionnaire, 20 (11.4%) were undecided, while 40 (22.9%) disagree and 27 (15.4%) strongly disagree. 33 (18.9%) respondents strongly agree that management in an effort to minimize workplace hazard has employed more staff to reduce work overload/stress among HCPs in the hospital, 43 (24.6%) agree, 16 (9.1%) respondents were undecided, while 48 (27.4%) disagree and 35 (20.0%) strongly disagree on this item. 38 (21.7%) respondents strongly agree that the hospital management has organized series of educational and developmental programs on how to prevent workplace hazard, 45 (25.7%) agree, while 21 (12.0%) respondents were undecided, 33 (18.9%) disagree and 38 (21.7%) strongly disagree. 50 (28.6%) respondents strongly agree that the hospital management in order to minimize the incidence of hazard among HCPs has carried out strict supervision to ensure wards and environmental sanitation, whereas 68 (38.9%) agree on this item, 16 (9.1%) were undecided, while 28 (16.0%) disagree, 13 (7.4%) strongly disagree. Furthermore, when the respondents were asked if management has put in place standard policies and procedures for occupational safety, 32 (18.3%) strongly agree on this item, 39 (22.3%) agree, while 22 (12.6%) were undecided, 58 (33.1%) disagree and 24 (13.7%) strongly disagree. 24 (13.7%) respondents strongly agree that the hospital management has provided counseling services to workers exposed to post-traumatic stress syndrome, 39 (22.3%) agree on this item, while 17 (9.7%) were undecided, 60 (34.3%) disagree and 35 (20.0%) strongly disagree. 73 (41.7%) respondents strongly agree that management of the hospital

maintains emergency team to assist provide care to un-complying patients, 68 (38.9%) agree, 11 (6.3%) were undecided, while 16 (9.1%) disagree, and 7 (4.0%) strongly disagree. Finally, the table shows that 44 (25.1%) out of the 175 respondents strongly agree that the hospital management ensure regular fumigation of the facility, 35 (20.0%) agree on this item of the questionnaire, while 20 (11.4%) were undecided, 37 (21.1%) disagree, and 39 (22.3%) strongly disagree. Using the weighted score for each of the items presented in table 7B, it can be deduce that carrying out strict supervision to ensure wards and environmental sanitation (3.651±1.254) and maintaining emergency team to assist and provide care to un-complying patients (4.051±1.100) were the significant efforts put by management of the hospital to address the issue of exposure to occupational hazard in the hospital. However, this efforts by management, was in general rated by the respondents based on their perception. According to table 6C below, among the 175 respondents, 33 (18.9%) rated management's efforts at minimizing workplace hazard in the hospital as very good, 51 (29.1%) rated it good, while 65 (37.1%) rated the effort as being poor, and 26 (14.9%) said their effort was very poor. Based on this rating, it can be concluded that efforts put by the hospital's management at preventing or minimizing workplace hazard is fairly poor with an average rating score of 2.52±0.964 (see chapter three).

Table 7A: Management's effort at minimizing workplace hazards among respondents

Item 12: Provision of equipments and tools for staff protection					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	27	15.4	15.4	15.4
	Disagree	40	22.9	22.9	38.3
	Undecided	20	11.4	11.4	49.7
	Agree	54	30.9	30.9	80.6
	Strongly Agree	34	19.4	19.4	100.0
	Total	175	100.0	100.0	
Item 13: Employment of more staff to reduce work load					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	35	20.0	20.0	20.0
	Disagree	48	27.4	27.4	47.4
	Undecided	16	9.1	9.1	56.6
	Agree	43	24.6	24.6	81.1
	Strongly Agree	33	18.9	18.9	100.0
	Total	175	100.0	100.0	

Item 14: Organizing educational and developmental programs on how to prevent workplace hazards					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	38	21.7	21.7	21.7
	Disagree	33	18.9	18.9	40.6
	Undecided	21	12.0	12.0	52.6
	Agree	45	25.7	25.7	78.3
	Strongly Agree	38	21.7	21.7	100.0
	Total	175	100.0	100.0	
Item 15: Carrying out strict supervision to ensure wards and environmental sanitation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	13	7.4	7.4	7.4
	Disagree	28	16.0	16.0	23.4
	Undecided	16	9.1	9.1	32.6
	Agree	68	38.9	38.9	71.4
	Strongly Agree	50	28.6	28.6	100.0
	Total	175	100.0	100.0	
Item 16: Putting in place standard policies and procedures for occupational safety					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	13.7	13.7	13.7
	Disagree	58	33.1	33.1	46.9
	Undecided	22	12.6	12.6	59.4
	Agree	39	22.3	22.3	81.7
	Strongly Agree	32	18.3	18.3	100.0
	Total	175	100.0	100.0	
Item 17: Providing counseling services to workers exposed to post-traumatic stress syndrome					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	35	20.0	20.0	20.0
	Disagree	60	34.3	34.3	54.3
	Undecided	17	9.7	9.7	64.0
	Agree	39	22.3	22.3	86.3
	Strongly Disagree	24	13.7	13.7	100.0
	Total	175	100.0	100.0	
Item 18: Maintaining emergency team to assist provide care to un-complying patients					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	4.0	4.0	4.0
	Disagree	16	9.1	9.1	13.1
	Undecided	11	6.3	6.3	19.4
	Agree	68	38.9	38.9	58.3
	Strongly Agree	73	41.7	41.7	100.0
	Total	175	100.0	100.0	

Item 19: Ensuring regular fumigation of the facility					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	39	22.3	22.3	22.3
	Disagree	37	21.1	21.1	43.4
	Undecided	20	11.4	11.4	54.9
	Agree	35	20.0	20.0	74.9
	Strongly Agree	44	25.1	25.1	100.0
	Total	175	100.0	100.0	

Table 7B: Summary Statistics on Management's efforts at minimizing workplace hazard								
		Item 12	Item 13	Item 14	Item 15	Item 16	Item 17	Item 18	Item 19
N	Valid	175	175	175	175	175	175	175	175
	Missing	0	0	0	0	0	0	0	0
Mean		3.1600	2.9486	3.0686	3.6514	2.9829	2.7543	4.0514	3.0457
Std. Deviation		1.38448	1.44345	1.48009	1.25427	1.35814	1.36549	1.09999	1.52307

Table 7C: Respondents' rating of managements' effort at minimizing workplace hazard in the hospital					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Poor	26	14.9	14.9	14.9
	Poor	65	37.1	37.1	52.0
	Good	51	29.1	29.1	81.1
	Very Good	33	18.9	18.9	100.0
	Total	175	100.0	100.0	

Test of Research Hypotheses

Hypothesis One:

H_0: There is no significant impact of exposure to workplace hazard on the health status of health care providers in Federal Psychiatric Hospital, Calabar.

H_1: There is a significant impact of exposure to workplace hazard on the health status of health care providers in Federal Psychiatric Hospital, Calabar.

The above stated hypothesis was tested using chi-square statistical analysis significant at 0.05.

Table 8: Chi-Square Tests for hypothesis One			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.993[a]	3	.000
Likelihood Ratio	25.881	3	.000
Linear-by-Linear Association	17.732	1	.000
N of Valid Cases	175		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.33.			

The Pearson chi-square has a value of 23.993 at 0.05 level of significant (or 95% confidence interval) with 3 degrees of freedom (as shown in the table above). The coefficient level is given by:

= (1 – p-value) X 100

= (1 – 0.000) X 100

= 1 X 100

= 100%

Based on this result, the null hypothesis is rejected. This is because the coefficient level of 100% is greater than 95% the required confidence interval. Hence, it is concluded that there is a significant impact of exposure to workplace hazard on the health status of health care providers in Federal Psychiatric Hospital, Calabar.

Hypothesis Two

H_0: Exposure to occupational hazard has no significant effect on the clinical output of health care providers in Federal Psychiatric Hospital, Calabar.

H_1: Exposure to occupational hazard has significant effect on the clinical output of health care providers in Federal Psychiatric Hospital, Calabar.

The above stated hypothesis was tested using Pearson Chi-square statistical analysis significant at 0.05.

Table 9A: Cross tabulation showing the effect of exposure to hazard on the clinical output of HCPs							
Count							
		Clinical output					Total
		1.00	2.00	3.00	4.00	5.00	
Level of exposure	Negligible	2	0	0	1	1	4
	Low	2	4	6	3	0	15
	Moderate	6	8	7	16	10	47
	High	8	30	9	43	19	109
Total		18	42	22	63	30	175

Table 9B: Chi-Square Test for hypothesis two			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.667[a]	12	.001
Likelihood Ratio	26.664	12	.009
Linear-by-Linear Association	4.040	1	.044
N of Valid Cases	175		
a. 10 cells (50.0%) have expected count less than 5. The minimum expected count is .21.			

Based on the results presented in the table above, the coefficient level is given by:

= (1 – p-value) X 100

= (1 – 0.001) X 100

= 0.999 X 100

= 99.9%

With the figure above, the null hypothesis is rejected since 99.9% is greater than 95%. Hence, the conclusion that exposure to occupational hazard has significant effect on the clinical output of health care providers in Federal Psychiatric Hospital, Calabar.

Hypothesis Three

H_0: Coping mechanisms employed by health care providers in Federal Psychiatric Hospital, Calabar have no significant impact on their level of exposure to hazards and or risks in the hospital.

H_1: Coping mechanisms employed by health care providers in Federal Psychiatric Hospital, Calabar have significant impact on their level of exposure to hazards and or risks in the hospital.

To test this hypothesis, items 21 to 25 under section D of the research instrument measuring the coping mechanisms of the respondents were matched with item 26 which measures the exposure of the respondents to work place hazards and or risks. Using Pearson chi-square, only item 24 significantly matched with item 26. According to the table below, among the respondents who strongly disagree on "attending lectures/seminars organised on occupational safety in the hospital and beyond" as a method used in coping with workplace hazard in the hospital, about 87.5% of them were highly exposed to hazard; those who disagree on this item, 79.6% of them were highly exposed, whereas those respondents who agreed on this item, 52.8% of them were highly exposed, while those respondents who strongly agreed on this item as a tool of coping with hazards in the workplace, 51.3% of them were highly exposed to hazards in the hospital. This implies that workers who participate in continuing education are more vested with knowledge on how to cope with workplace hazards and they readily translate this knowledge into practice resulting in their low and/or moderate level of exposure to these workplace hazards.

Table 10A: Cross tabulation showing the impact of continuing education on the level of exposure of the respondents to workplace hazards							
Count							
		Item 24					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Item 26	Undecided	0	1	3	2	0	6
	Low	0	3	0	6	5	14
	Moderate	2	6	7	17	13	45
	High	14	39	10	28	19	110
Total		16	49	20	53	37	175

Table 10B: Chi-Square Tests for the impact of continuing education on the level of exposure of the respondents to workplace hazards			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.361[a]	12	.005
Likelihood Ratio	29.847	12	.003
Linear-by-Linear Association	7.761	1	.005
N of Valid Cases	175		
a. 11 cells (55.0%) have expected count less than 5. The minimum expected count is .55.			

However, the result of the Pearson chi-square presented above shows that the statistical observation above is significant. This is because the coefficient level of 99.5% is greater than 95% being the confidence interval. Hence, it can be infer that attending seminars/workshops/lectures on occupational safety as a mechanism employed by workers to cope with workplace hazard, have significant impact on the exposure of healthcare providers to hazard in Federal Psychiatric Hospital, Calabar. Other mechanisms employed by the respondents were not statistically significant, hence poses no impact on the level of exposure of the respondents to workplace hazards. In conclusion therefore, it can be stated that attending lectures/seminars on occupational safety in the hospital and beyond was the only mechanism employed by the respondents that significantly impact on their level of exposure workplace hazard in Federal Psychiatric Hospital, Calabar.

VII. DISCUSSION

Hazards faced by HCWs in Federal Neuropsychiatric Hospital, Calabar

According to the findings of the study, the physical hazards that are significant among the respondents include noise 97 (55.4%), verbal and physical aggression 106 (60.6%) and

darkness (lack of light) 120 (68.6%) being the most occurring physical hazard in the hospital. None of the biological hazards cited in the instrument was considered a significant hazard regularly encountered by the respondents. The significant ergonometric hazards were poor lighting system 94 (54.9%) and attack from patients 112 (64.0%) being the most occurring ergonometric hazard among the respondents. None of the psychological and chemical hazards mentioned in the questionnaire were considered significant among the respondents (see chapter three).

These finding agree with Arasi et al. (2015) who pointed out that working without light on evening and night duty is one of the major hazards faced by HCWs in a psychiatric setting. Also, Magtubo (2016) asserts that psychiatric healthcare workers in the ward face great deal of hazards every day from their patients. This according to author, ranges from verbal and physical abuse, outburst of anger, aggression and violent attack towards themselves or in the course of settling disputes between patients.

HCWs exposure to hazard in Federal Psychiatric Hospital, Calabar

Based on the respondents' self-rating of their level of exposure to occupational hazard, about 62.9% of the 175 respondents were rated as being highly exposed to hazards in the hospital. However, an exposure score of 3.48±0.787 revealed that the respondents were moderately exposed to hazard. Health assistant were the ones with the highest level of exposure (75.0%), followed by nurses (64.7%) while the least were pharmacists (16.7%).

These findings corroborate with the report of Bureau of Labour Statistics, (2012) who reported that registered nurses and their nursing aides or assistant faces more work hazard than other sector of workers. Also, in a research "Caring for Caregivers" in Facts About Hospital Workers Safety, (2013), the categories of healthcare givers on top of occupational health hazard were nurses, nursing aid, orderlies, nurse attendance and health assistance.

Impact of exposure to hazard on the health status of HCWs

The study's findings revealed that among the 175 respondents, about 38.9% were on sick leave as a result of workplace hazard. Among this category of the respondents, According to the results, none (0.0%) of the 13 doctors was sick as a result of exposure to work place hazard, 16 (9.1) nurses had health related problem resulting from their exposure to hazards and/or risks in the hospital, only 1 (0.6%) Laboratory Scientist had health related problem linked to exposure to hazards, none (0.0%) of the pharmacist had any workplace hazard related health issue, while 46 (26.2%) health assistants were on sick leave as a result of their exposure to hazard in the hospital, and only 5 (2.9%) respondents representing other cadres of health care workers in hospital had health issues related to their exposure to workplace hazard. Result of the chi-square test revealed a Pearson chi-square value of 23.993 at 0.05 level of significant (or 95% confidence interval) with 3 degrees of freedom (as shown in the table above). This value was significant since its associated probability was less than the level of significance (i.e $p<0.05$). Hence, it was concluded that there is a statistical significant impact of exposure to workplace hazard on the health status of health care providers in Federal Psychiatric Hospital, Calabar.

This finding agrees with Fernandes & Marziale, (2014) who reported that due to environmental risks, worker's health and wellbeing deteriorates through tropical illness like malaria, typhoid and hepatitis.

Effect of exposure to hazard on the clinical output of HCWs in Federal Psychiatric Hospital, Calabar

Findings revealed that a greater part of the respondents agree that they can conveniently go into the ward alone at any part of the shift to attend to any patient, a significant number of them agree that they can freely relate with patients to resolve his/her problems, while many of the respondents said in affirmation that they can conveniently check patient's belonging, and most of them disagree that they can administer all kind of drug treatment to patients in the ward. To determine if exposure to workplace hazard has any effect on the afore-stated clinical output of the respondents, the test of hypothesis two revealed that exposure to occupational hazard has significant effect on the clinical output of the respondents where $p<0.05$.

This result is in line with Magtubo, (2016), who reported that effects of exposed hazard may affect workers clinical output as seen in physical injury and verbal abuse which results in decreased activity, decreased productivity and negative emotions. Workers lost job satisfaction, reduce quality of their service and may resign.

Mechanisms employed by HCWs in coping with workplace hazard in Federal Psychiatric Hospital, Calabar

Results revealed that about 37.1% of the respondents were undecided as per their compliance with safety instructions in the hospital, more than one-third of the respondents strongly agreed that to cope with work place hazard, they adhere to infection control precautions regarding blood, body fluids and infectious tissues, most of the respondents agree that they wear safety equipments during working hours as a means of curtailing their exposure to hazards, a higher percentage agreed that in order to cope with workplace hazards they frequently attend lectures/seminars organised on occupational safety in the hospital and beyond, and most of the respondents said in strong affirmation that they report all unsafe situations that are highly hazardous to staff for quick intervention. According to the findings, the significant methods of coping with workplace hazard adopted by the respondents were; compliance with all safety instructions (3.749±0.991), adherence to infection control precautions regarding blood, body fluids and infectious tissues (4.11±1.066), wearing of safety equipments during working hours (3.611±1.226) and

reporting of unsafe situations that are highly hazardous to staff for quick intervention (3.983±).. However, result of hypothesis three revealed that among all these strategies adopted by the respondents, only attending seminars/workshops/lectures on occupational safety has significant impact on the exposure of healthcare care workers to hazard in Federal Psychiatric Hospital, Calabar ($p<0.05$).

This finding corroborate with Professor Rix (2005) who opined that psychiatric trained nurses should do all their best for the interest of the patient irrespective of their behaviours. According the author, they can do this through the following steps: applying the hospital approved measures in handling the situation; alert or inform your superior officers on the management step; when patient is at risk of taking his life, report to managing team and hospital authority; be concise, sincere and factual to those who needs you; and maintain accurate record of findings and observations.

Management's efforts at minimizing workplace hazard in Federal Psychiatric Hospital, Calabar

Findings of the study revealed that carrying out strict supervision to ensure wards and environmental sanitation (3.651±1.254), and maintaining emergency team to assist and provide care to un-complying patients (4.051±1.100) were the significant efforts put by management of the hospital to address the issue of exposure to occupational hazard in the hospital. According to the respondents' rating, it was concluded that efforts put by the hospital's management at preventing or minimizing workplace hazard is fairly poor with an average rating score of 2.52±0.964.

Agreeing with the above stated results, Spiro, Josh (2010), pointed out that staff supervision is one of the measures institutions can employ to minimize hazard.

VIII. CONCLUSION

Based on the findings of the study, it is concluded that the major hazards that are encountered by health care providers in Federal Psychiatric Hospital, Calabar were noise, verbal and physical aggression, darkness (lack of light), poor lighting system, and attack from patients with darkness being the most significant hazard faced by the workers. Health care workers in the hospital were moderately exposed to hazard in the hospital. Health assistants were the ones with the highest level of exposure (75.0%), followed by nurses (64.7%) while the least exposed among the cadres of health care workers were pharmacists (16.7%). However, exposure to workplace hazard has significant impact and/or effect on the health status and clinical output of health care workers in the hospital ($p<0.05$) respectively. To cope with occupational hazards in the hospital, HCWs employed the following strategies: compliance with all safety instructions, adherence to infection control precautions regarding blood, body fluids and infectious tissues, wearing safety equipments during working hours, and reporting of unsafe situations that are highly hazardous to staff for quick interventions. Based on the mean score for the strategies outlined above, adherence to infection control precautions regarding blood, body fluids and infectious tissues was the major strategy employed by the respondents in coping with work place hazard. However, the chi-square test of hypothesis three revealed that only "attending lectures/seminars organized on occupational safety in the hospital and beyond" though not a significant measure adopted by the respondents, has statistical significant impact on the exposure of the respondents to workplace hazard. This means that HCWs who attend lectures and/or seminars on occupational safety organized in the hospital and beyond were likely to have less exposure to hazards in the hospital compared to those who do not attend this continuing education programs at all. The significant efforts put by the hospital's management in minimizing workplace hazard were: carrying out strict supervision to ensure wards and environmental sanitation and maintaining emergency team to assist and provide care to un-complying patients. Nonetheless, effort put by the hospital's management in minimizing hazards in the hospital was perceived to be fairly poor according to the respondents' rating.

Implication of Study to Nurses

- Nurses should put up their psychiatric nursing skills of firmness, gain courage at work, willingness to help and save life, showing love, sympathy and empathy on their patients.
- Nurses should keep their mental state healthy both in the society and at work place, possess high sense of self awareness and self-assessment of their emotional state.
- The management should put more effort at ensuring proper electrification and lighting of the wards, recruiting enough nurses to be on duty and improving working conditions for patients and staff wellbeing.

Suggestion for Further Studies

More study should spring forth from this study regarding the following areas:

- Experience of occupational stress among nurses of Federal Psychiatric Hospital Calabar in the recessive condition of the country.
- Effective implementation of central feeding in Federal Psychiatric Hospital Calabar

IX. RECOMMENTATIONS

- A call to Calabar Community Leaders, The State and Federal government, Non-Governmental Organizations and Associations to help workers regarding provision of steady light for effective nursing care
- Fumigation of the facility should be every 3 months for total eradication of rodents, insects and reptiles from scaring workers on duty

- Employment of more nurses and health assistants to assist the existing once so that there would be more staff on duty to make supervision perfect and ease patient's attention
- Nursing and workers continuous education should be made mandatory for the purpose of updating them with impending hazards, maintenance of standard precautions, positive adjustment mechanisms to hazardous conditions and management's measures of minimizing pressing hazardous conditions.

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APPENDIX I

QUESTIONNAIRE ON OCCUPATIONAL RISKS AND HAZARDS AMONG HEALTHCARE WORKERS IN FEDERAL PSYCHIATRIC HOSPITAL, CALABAR

Dear Respondents,

I am an Assistant Director of Nursing of the above hospital carrying out a research study on the above subject matter in the institution. The acquired result is to be reverted to enhance nursing management and improve patient's care in the hospital.

Your co-operation will help in the successful and timely completion of the study.

Please your information will be given extreme confidentiality.

No name or address is required on the questionnaires.

Thanks for complying.

You are kindly requested to tick (√) from the options that are provided, which seems most appropriate to you.

SECTION A: Demographic information

1. Gender: Male [ ] Female [ ]
2. Age: ≤ 20 years [ ] 21-30 years [ ] 31-40 years [ ] 41-50 years [ ] >50 years [ ]
3. Marital Status: Single [ ] Married [ ] Divorce [ ] Separated [ ]
4. Religion: Christian [ ] Muslim [ ] Traditionalist [ ] Others [ ]
5. Highest academic qualification: FSLC [ ] SSC [ ] Diploma Certificate [ ] Bachelor's Degree [ ] Masters' Degree [ ] Doctorate Degree [ ]
6. Cadre: Doctor [ ] Nurse [ ] Laboratory Scientist [ ] Pharmacist [ ] Health Asst. [ ] Others specify ...
7. Years of work experience: Less than 5yrs [ ] 5-10yrs [ ] 11-15yrs [ ] 16-20yrs [ ] 21-25yrs [ ] 26 yrs & above [ ]

SECTION B: Occupational Risks/Hazards

Please tick [√] any of the two (2) options (Yes or No) that is most applicable to you.

S/No	Which of the under listed risks and/or hazards have you regularly been exposed to in your routine work at the hospital?	Options	
8.	**Physical Hazards**	Yes	No
	Noise		
	Temperature		
	Humidity		
	Verbal and physical aggression		
	Occasional flood		
	Darkness		
	Falls		
	Shaft/needle prick		
9.	**Biological Hazards**		
	Animals		
	Insects		

	Bacteria, virus, protozoa		
	Parasites		
	Human beings		
	Blood		
	Body fluid		
	Human body wastes		
10.	**Ergonometric Hazards**		
	Inappropriate posture		
	Monotony and repetitiveness schedules		
	Physical strain		
	Carrying heavy weight		
	High expectation from supervisors		
	Poor lighting		
	Trekking		
	Separation of fight		
	Turning and lifting		
	Prevention of escape		
	Attack from patients		
11.	**Psychological**		
	Stressful roles		
	Physical assault		
	Working night shifts		
	Relationship with boss, co-workers and patients		
	Environmental fright		
	Long working hours		
	Work overload		
	Implicative job schedule		
	Being alone on duty		
12.	**Chemical**		
	Carbon monoxide		
	Spilled up chemical		
	Burns/scales		
	Vapour and fumes		

SECTION C: Management's effort at minimizing workplace hazards among HCPs

Please read the statements below and tick [√] any of the option that is most appropriate to you.

S/No	Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	In order to minimize workplace hazards and/or risks, the hospital management have					
12.	Provided equipments and tools for staff protection					
13.	Employed more staff to reduce work overload/stress					
14.	Organized educational and developmental programs on how to prevent workplace hazards					
15.	Carried out strict supervision to ensure wards and environmental sanitation					
16.	Put in place standard policies and procedures for occupational safety					
17.	Provided counselling services to workers exposed to post-traumatic stress syndrome					
18	Maintain emergency team to assist provide care to uncomplying patients					
19	Ensure regular fumigation of the facility					

20. In general, how would you rate the effort put in place by management of the hospital to curb or minimize exposure to workplace hazard in Federal Neuropsychiatric Hospital, Calabar?

Good [ ] Moderate [ ] Poor [ ]Very Poor [ ]

SECTION D: Mechanisms employed by HCWs to cope with occupational health hazards

Please read the statements below and tick [√] any of the options that you employ in order to cope or control occupational risks and hazards in the hospital.

S/No	Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
21.	Compliance with all safety instructions					
22.	Adherence to infection control precautions regarding blood, body fluids and infectious tissues					
23.	Wearing safety equipments during working hours					
24.	Attending lectures/seminars organised on occupational safety in the hospital and beyond.					
25.	Reporting of unsafe situations that are highly hazardous to staff for quick intervention.					

SECTION E: Exposure to occupational risks/ health related effect of exposure to workplace hazards and/or risks among healthcare workers

26. For the past years you've been working in the hospital, how would you rate your exposure to risks and/or hazards as a healthcare provider?

High [ ] Moderate [ ] Low [ ]Undecided [ ]

27. Have you been on sick leave before? Yes [ ] No [ ]

28. If yes to question 27 above, was your sickness as a result of exposure to workplace hazards or risks? Yes [ ] No [ ]

SECTION F: Effect of exposure to hazard on clinical output of HCWs

Please read the statements below and tick [√] any of the options that you employ in order to cope or control occupational risks and hazards in the hospital.

S/No	Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
29	I can conveniently go into the ward alone at any part of the shift to attend to any patient					
30	I can freely relate with patients to resolve his/her problems					
31	I can conveniently check patient's belongings					
32	I can administer all kind of drug treatment to patients in the ward					

APPENDIX II

Data showing individual scores per item for test-rest Reliability Measurement

Respondents	Test scores						Retest scores					
	1	2	3	4	5	Total	1	2	3	4	5	Total
1.	2	5	5	3	4	19	2	4	4	4	4	18
2.	2	4	4	4	4	18	1	5	1	2	4	13
3.	2	1	4	2	4	13	2	4	4	3	4	17
4.	1	1	4	4	4	14	1	4	4	3	2	14
5.	2	5	3	1	1	12	1	4	4	3	4	16
6.	2	4	5	3	4	18	2	4	4	4	4	18
7.	2	1	1	4	2	10	2	4	4	3	5	18
8.	2	4	4	4	4	18	2	5	5	3	4	19
9.	1	2	5	4	4	16	2	2	5	3	3	15
10.	1	5	2	4	4	16	2	5	5	4	5	21

Source: Questionnaire items 11, 12, 21, 26, 30

APPENDIX III

Correlation Coefficient Computation for Reliability test-retest measurement

Respondents	**Test scores (x)**	**Re-test scores (y)**	**R (x)**	**R (y)**	**D**	**D^2**
1	19	18	3	4	-1	1
2	12	13	10	9	1	1
3	13	15	9	7	2	4
4	14	16	8	6	2	4
5	10	14	12	8	4	16
6	18	17	4	5	-1	1
7	16	18	6	4	2	4
8	16	18	6	4	2	4
9	18	21	4	1	3	9
10	18	19	4	3	1	1
						$\sum = 45$

Source: Appendix II

$$r = 1 - \frac{6\sum D^2}{n(n^2-1)}$$

$$r = 1 - \frac{6(45)}{10(10^2-1)}$$

$$r = 1 - \frac{270}{10(10^2-1)}$$

$$r = 1 - \frac{270}{10(100-1)}$$

$$r = 1 - \frac{270}{990}$$

$$r = 1 - 0.2727$$

$$r = 0.727$$