

*Full Length Research*

# Conceptualizing Data in Analyzing Occupational Hazards among Health Workers in Specialist Hospitals, Port Harcourt, Rivers State, Nigeria

AMIETUBODIE, SOTONYE PATIENCE

Medical Unit, Rivers State House of Assembly, Port Harcourt. Nigeria

Accepted 24 March 2017

The study conceptualized data in analyzing occupational hazards among health workers in specialist hospitals, Port Harcourt, Rivers State, Nigeria. A total of 470 health workers participated in the study. Stratified random sampling technique was used to select the subjects. A validated 45-item instrument titled Correlates of Occupational Hazards among Health Workers in Specialist Hospitals (COHHWSH) was used for data collection. Cronbach alpha was used to determine the reliability of the instrument to obtain an index of 0.83 for the entire instrument. Eight research questions and eight hypotheses guided the investigation. Data collected were coded for analysis using SPSS version 21 and Eviews statistical packages. Descriptive statistics of percentage and mean were used to analyze the demographic data and research question 7 and 8. Furthermore, Linear Regression Analysis was used to answer and test research questions and hypotheses (1 to 6) and ANOVA was used to test the hypotheses 7 and 8 at .05 alpha levels. Findings established that infrastructure and staff attitude are positive significant predictors of occupational hazards, remuneration, personnel, working environment and management style were not significant predictors of occupational hazards among health workers; Age and working experience do not significantly influence occupational hazards among staff. It was therefore recommended that level of infrastructure in hospitals should be improved for the efficient delivery of duties of health workers and health workers should try to develop positive attitude towards duties because a positive attitude to work is likely to lead to reduced occupational hazard among others.

**Key Words:** Conceptualization, Occupational hazards, Health Workers, Specialist Hospitals

**Cite This Article As:** AMIETUBODIE SP (2017). Conceptualizing Data in Analysing Occupational Hazards among Health Workers in Specialist Hospitals, Port Harcourt, Rivers State, Nigeria. *Inter. J. Acad. Res. Educ. Rev.* 5(2): 48-61

## INTRODUCTION

The WHO (2012) has described "health as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity, Occupational Health is the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations by preventing departures from health, controlling risks and the adaptation of work to

people, and people to their jobs" (ILO/WHO, 2001). According to them, "Occupational Health ought to go for the advancement and support of the most noteworthy level of bodily, intellectual and communal affluence of workers in very jobs; the counteractive action amongst specialists takeoffs from wellbeing brought about by their working conditions; the assurance of specialists in their

job from dangers coming about because of components unfriendly to health; the setting and upkeep of the specialist in a word related environment adjustment of effort towards human and of every human to his employment”.

### **Concept of Occupational Health Hazard**

Occupational health is the branch of health science concerned with the promotion and safety of the wellbeing, safety and benefit of personnel of all categories (Adeniyi, 2002). Occupational health as the study of factors or conditions influencing the health and wellbeing of the workers not only in their work places but also in their homes, He also indicated that it was concerned with the detection, evaluation and control of environmental and safety hazards associated with work environment and their homes "Work related wellbeing is at the focal point of feasible advancement as stipulated in WHO worldwide technique of Occupational Health for all by the year 2000, (WHO, 2000) this will empower the labourers to know the base standard required in any work environment particularly at the wellbeing divisions.

The "occupational health hazards among health care workers" could be understood from physical-chemical-biological-mechanical and psychological dimensions. Accordingly, it is a circumstance which poses a danger to human health and well-being. This definition is hereby adopted for this study. Occupational hazards is said to be anything or condition or omission or commission in the work environment which carry or have the potential of engendering deleterious health condition among workers employed in such workshop or plant (Nwankwo, 2003). The healthiness care personnel may be unprotected to five categories of dangers, dependent upon his profession. (Nwankwo 2003, Lucas & Gilles 2003, Park 2007): physical, chemical, biological, mechanical, and psychological hazards. The physical hazards include heat, noise, accidents, poor ventilation, radiation and pressure. Trauma rising after dangerous atmospheres accounts for a great section of avoidable man disease, and sound in the place of work is liable for the most predominant work-related damage: earshot loss or lasting deafness. Sound is a healthiness dangers in numerous activities.

The impacts of commotion are of two sorts: sound-related impact which comprise of brief or perpetual listening to misfortune and non sound-related impacts which comprise of anxiety, weakness, impedance with correspondence by discourse, diminish effectiveness and irritation. Presentation to vibration might likewise deliver wounds of the joints of the hands, elbows and shoulders. The radiation risks contain hereditary changes, mutation, tumor, leukemia, depilation, ulceration, sterility and in amazing cases demise.

Chemical hazards, on other hand, are inorganic materials, for instance, lead, mercury, arsenic, cadmium, and asbestos, a characteristic substance, for instance, polychlorinated biphenyls (PCBs), Vinyl chloride, and the pesticide DDT. Of particular concern is the conceded potential for the chemicals to make tumor, as in the occasions of lung infection and mesothelioma brought on by asbestos, liver development achieved by vinyl chloride and leukemia realized by benzene. Minamata affliction, achieved by sustenance spoiled with mercury, and Yusho disease, from support contaminated with chlorinated furans are outlines of exceptional destructive ailments happening in non word related settings. Substance operators act in three ways which incorporate nearby activity, inward breath and ingestion. Local actions of some chemicals cause dermatitis, eczema, ulcers and irritation. Inhalation of chemical substances comprises of dusts, gases metal and their compound, which are releases into the atmosphere during crushing, foundry, quarry among others and strictly hazardous to healthful living. Occupational disease might likewise come about because of ingestion of synthetic substances, for example, lead, mercury, arsenic, zinc, phosphorus and these substances are gulped in moment sums through defiled hands, sustenance or cigarettes.

The hazards can be classified as endogenous or exogenous. Exogenous hazards are those brought into the hospital from the outside. For example, a nurse who has undiagnosed pulmonary tuberculosis may spread this among patients and staff before a diagnosis is made. Endogenous sources are those that are transmitted to health care workers from patients (Blood, sera, laboratory specimens) in the course of their work. Park (2007) maintained that it is convenient to classify hospital hazards according to their sources. Consequently all health personnel's that are exposed to the same sources run the same risks depending on the degree of exposure (ILO, 1990). Dangers owing experience of diseased body fluid or further physique liquids of patients are: HIV, HBV, HCV, Cytomegalovirus and protozoa including malaria parasites. Occupational groups among health workers that are exposed to various occupational health hazards include all those involved in invasive procedures (doctors, nurses, endoscopists, workers in renal dialysis suites), technicians of various categories working in different places (theatres, injection room, accident and emergency department, laboratories and maternity) and cleaners or housekeeping staff. Location of accidents in hospitals environment include wards, theatres, intensive care units, various clinics, dialysis units, accident and emergency departments, others like mortuary, and instrument repair workshops. Sources of injuries and occupational hazards include needles (assorted), lancets, scapel blades, dental material, sterilizers, autoclave and other skin piercing instruments.

Activities associated with accidents include;

administering or drawing of injections with syringe, wrong disposal of syringe and needles, recapping of needles and syringes, suturing and related activities, cleaning waste bags containing sharp improperly disposed of, needle left in tray or and trolley, re-sheathing needle and passing instrument to doctor or nurse among others. According to Takala, (2000) the term "Occupation risk factor is defined as a chemical, physical, biological or other agent that may cause harm to an exposed person in the workplace and is potentially modifiable. Ergonomics, on the other hand, is the study of the relationship between people and their working environment. It combine all other factors like physical ,biological, mechanical, psychological and physical issues to improved workers efficiency and well being and maintain industrial production through the design of an improved workplace". As a health worker, the first thing to do is to identify the hazards in the work environment and then put control measures in place. Health workers in this study refers to health personnel who had undergone specialized training for specified number of years in the care and management of the sick and licensed to practice. Occupational health problems issues among health laborers are issues of individual health workers", as well as issues identifying with the strength and security of labor/workplace, association of labor/administration rationality of the environment (WHO, 1995).

### Classification of occupation hazard

There are 59 million medicinal services specialists around the globe, extending from direct care suppliers to restorative waste handlers. Social insurance specialists involve around 10% of the workforce in the European Union. Medicinal services is a high-chance area due to the high rate of business related wounds and infections. All the nations in the European Union are confronting a genuine absence of dynamic human services laborers. As an outcome, the extent of more youthful individuals in the working-matured populace will diminish, and the extent of more seasoned individuals in the working-matured populace will increment. Human services specialists have a tendency to resign sooner than laborers in different parts of the economy in view of business related anxiety and other work related wellbeing dangers Thirion A, FernándezMaciás E, Hurley J, Vermeylen G., (2007). Work related wellbeing and security of social insurance laborers in Europe The real working environment risks in the medicinal services segment are organic (flu, TB, HIV, hepatitis), concoction (drugs, disinfectants, pesticides), ergonomic (lifting, exchanges), stress/viciousness (staffing lack, shift pivot), and physical perils (radiation, heat, mishaps) are. As indicated by the following study, a considerable

proportion of medical caretakers report having had the accompanying work related or business related ailments or wounds (1): Injury because of a mischance 13% (9.7% doctor's analysis); Musculoskeletal issue in the back, appendages or other body section 52.8% (28.7% doctor's determination); Cardiovascular infection 11.6% (9.1% doctor's finding); Respiratory illness 13.8% (9.2% doctor's conclusion); Mental issue 18.9% (5.4% doctor's analysis); Neurological or tangible sickness 19.4% (10.5% doctor's analysis); Digestive tract malady/condition 22.3% (11.3% doctor's analysis); Skin issue 27.7% (15.6% doctor's analysis) (European Foundation for the Improvement of Living and Working Conditions, 2001). Control can be connected at the wellspring of the peril, along the way between the source and the laborer, or at the specialist. Control at the source is favored. Peril acknowledgment is a critical part of the Joint Health and Safety Committee; the control of risks is a general obligation for business, the accompanying are the characterizations of danger among wellbeing specialists

**Chemical:** Bleach, lead, ruthless chemicals, flammables, solvents, poisonous vapors, allergens, radiation, and distinctive exposures every now and again found in exploration labs. Widespread compound standards have improved starting late, however necessity slacks in making countries. Where errand moving happens, staff may not be adequately arranged to handle chemicals properly. They may don't have an agreeable supply of spreads, gloves, and eyewear, and might work in structures with inadequate ventilation. A study revealed that 71% of Nigerian dental specialists concentrated on were every now and again displayed to risky levels of dental amalgam, which could achieve fluctuating hurting (Fasunloro&Owotade 2004). In various making associations where new advancements and compound methods are familiar with the wellbeing structure, the level of blend exposures is not adequately assessed, and additional examination is required.

**Physical:** Slips, trips, falls, physical strain, truly difficult work, extend periods of time, weariness, and savagery. health specialists might work in structures that don't meet security codes. Contingent upon the seriousness of a damage, fault might be set on the individual harmed. Lugh et al.(2010)stated that "a few societies think about torment as a shortcoming and ergonomics a superfluous solace as opposed to a preventive measure, In Malaysia, ergonomics was the zone of OSH where health specialists exhibited the minimum learning, For such reasons, health specialists may not report a harm or strain; in this manner, they frequently don't get legitimate treatment, and little is archived. In struggle circumstances, health laborers hazard their lives to achieve groups in need". Also (WHO 2012) vied that the in "Afghanistan, Côte d'Ivoire, Democratic Republic of the

Congo, Iraq, Libya, Pakistan, Somalia, Sri Lanka, and the West Bank, health laborers, offices, drug stores, emergency treatment posts, and ambulances have been focused by warring groups (ICRC 2011). The issue of brutality against the health area in compassionate crises has developed such that it was particularly tended to at the 65th World Health Assembly”.

**Psychosocial:** Anxiety, fear brought on by roughness, eager or verbal abuse, business related drug or alcohol usage, wretchedness, and intimidation in the workplace. These psychosocial dangers can have a grouping of different impacts.

**Physiological:** According to Housman, Jettingoff, & Cedillo (2007) “hypertension, strained muscles, cerebral pains, and headaches. Anxiety was recorded to increment cardiovascular ailment among health laborers in Colombia, Mexico, and Brazil .health laborers might will probably participate in undesirable practices, for example, smoking or liquor misuse, trying to soothe stress”

**Passionate:** Nervousness or disturbance, negative states of mind, and poor group assurance. In Ethiopia, health laborer anxiety was appeared to increment because of absence of all inclusive precautionary measure materials to shield themselves from organic liquids (Reda . 2010). A negative psychosocial environment might antagonistically influence connections with partners and patients and could improve the probability of physical harm. In territories intensely influenced by the AIDS pandemic, watching over vast quantities of to a great degree wiped out patients for whom they can do little can be unpleasant and take a passionate toll (Baleta 2008; Van Dyk 2007).

**Cognitive:** Energetic or verbal abuse, business related solution or alcohol usage, wretchedness, and intimidation in the workplace. These psychosocial dangers can have a grouping of different impacts: Forgetfulness, loss of center, lessened consideration, and forceful or hasty conduct. This could bring about procedural or judgment blunders, which decreases efficiency and administration procurement quality (Houtman, Jettinghoff, & Cedillo 2007). Psychosocial word related risks might be hidden underneath social standards and saw diversely relying upon the wellbeing laborer's sexual orientation, age, instruction, societal position, or impression of psychological wellness issues; in any case, they are the most drastically averse to be perceived as OSH perils in the work environment by wellbeing specialists in creating nation settings (on the same page.). In nations without contextualized psychological well-being assets and couple of specialists or analysts, psychosocial wellbeing administrations remain profoundly vilified and get to is

low (WHO 2006).

**Attitude:** Another survey study was conducted by Odd, Kjell and Olar (2000) in U.S.A among catering personnel working on a drilling platform at the Continental Shelf in the North Sea. The motivation behind the study was to discover the elements in charge of word related dangers discernment in their working environment. Around forty respondents were utilized for the study. It was watched that twenty six respondents (65%) saw risks in their workplace more than others. By differentiating the compelling gatherings, i.e.; the high and low risks perceivers it was found that socio demographics, e.g.; sexual orientation, conjugal status, age and working background had no elucidating power.

Notwithstanding, the discoveries uncovered that the labourer fragment inclined to see high risks additionally reported higher level of copy out, uneasiness and despondency than did the low perils perceivers. They (the high perils perceivers) were likewise less fulfilled by their remain focused stage, and they reported more wellbeing issues also. The discoveries showed that dangers impression of risks go past unimportant "frosty discernment", additionally taking advantage of contrarily sentiments and passionate states.

**Management Style:** A study conducted by Olayemi (2005) at Psychiatric Hospital, Aro-Abeokuta which was aimed at assessing and increasing the level of awareness of occupational hazards among clinical psychiatric staff in Aro-Abeokuta. This was finished by recognizing risks and making proposals to avert them. The study populace comprised of specialist, medical attendants, advisor, social laborers, clinical clinician and expert therapist. A unique rundown of 101 clinical staff members was made for the study. Ninety six clinical staff reacted to the study giving a reaction rate of 96%. Information were gotten using self directed surveys that included inquiries on individual information, attention to word related risks, course participation, ownership of medical coverage strategy, wellbeing measured honed, and experience of word related peril while by and by. Information were investigated utilizing recurrence tables to show the reactions of the psychiatric staff. Where vital, cross organizations were done to decide the huge contrast between variables utilizing chi-square. The age appropriation of the staff went from 25 years to 55years. The age scope of 30-40 years had the most astounding recurrence (30.5%). Forty guys (half) and 36 females (45%) reacted to the study. The male ward I and II had the best number of staff with 28 individuals (35%).

## METHODOLOGY

A descriptive survey design was used for the study. It

was deemed appropriate because it according to Nwankwo (2013) it describes and explains events as they occur in the natural setting. Information from the respondent was presented as it was investigated from the respondent. The design is one of the best available designs to a researcher who is interested in collecting an original data for the purpose of describing the population that is fairly large.

The population for this study consists of 3460 health workers in specialist hospitals in Rivers State. Three specialist hospital in Rivers State were used, they are University of Port Harcourt Teaching Hospitals (UPTH), with 2,600 health workers, Braithwaite Memorial Specialist Hospital (BMSH) with 750 health workers and Neuro Psychiatric Hospital(NPH) with 110 health workers.

The sample size for the study is 692 (20%) health workers. Before composing the sample for the study, the Taro Yamane Formula was used to determine the minimum sample size that could be selected from a population of 3460 health workers.

$$s = \frac{N}{1 + N(e)^2}$$

$$s = \frac{3460}{1 + 3460(0.05)^2} = 359$$

A total of 692 health workers was selected to participate in the study because it is advisable to use sample size higher than the minimum estimate given by the formula (Nwakwo, 2013). To select the 692 subjects from this 3460 health workers the “proportionate stratified random sampling technique” was used to obtain the sample size to ensure equal representation of each group in the sample, (see table 1).

The table 1 shows that 520 professional and non professional health workers in the specialist hospitals were selected from UPTH, 150 from BMSH and 22 from NPH making up a total of 692 health workers, representing 20 percent (%) of each stratum.

**Research Instrument:** A structured validated questionnaire titled “Correlates of Occupational Hazards among Health Workers in Specialist Hospitals” (COHHWSH) in Rivers State. The questionnaire was of two parts; the first part is structured to gather information about personal data of the respondents, it has blank space for respondents to fill, or tick appropriately. The second part was on Occupational Hazard and its correlates among Health Workers of specialist Hospitals in Rivers State.

The instrument consisted of a total 45 items on the Occupational Hazards and its correlates as stated in the research questions with modified “4-point Likert Scale of Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D)”.

**Validity of the Instrument:** The instrument posed face and content validity, copies of the instrument(questionnaire) were given to the project supervisor and two other lecturers in the “Department of Human Kinetics and Health Education of the University of Port- Harcourt”. The corrections and observations of the expert were used to produce the final draft of the questionnaire.

**Reliability of the Instrument:** The reliability of the instrument was determined through Cronbach Alpha method with 20 respondents of the Neuro Psychiatric Hospital, Rivers State. Twenty (20) copies of the questionnaire were administered to them, the responses from the questionnaire administered were scored, coded and transferred to (SPSS) for the computation of the internal consistency of the instrument (compound type) using the Cronbach Alpha method to be obtain the result in Table 2.

The researcher collected a letter of introduction from the Head of the “Department Human Kinetics and Health Education, University of Port Harcourt, Rivers State”. The researcher used the letter to introduce her and purpose of the research to the respondents soliciting for their co-operation. A total of 692 copies of the questionnaire was administered directly to professional and non professional health workers. The filed questionnaire was collected immediately on the spot and some were retrieved on an agreed date and time by the respondents. A total of 470 copies of the questionnaire representing about 68% of the total was obtained. Further, sorted the questionnaire to identify the ones that are properly filed and separate them from the ones not properly field. The questionnaire was coded for analysis using SPSS and Eviews statistical packages. Descriptive statistics of percentage and mean were used to analysis data concerning the demographic data and research question 7 and 8. Furthermore, linear regression analysis was used to answer and test research question and hypotheses (1 to 6) and ANOVA were used to test the hypotheses 7 and 8 at 0 .05 alpha levels.

Table 3 showed that the relationship between infrastructure and occupational hazard among health workers in Specialist Hospitals, Rivers State was high and positive (Beta=0.283). The Adjusted R-squared of 0.078 showed roughly the contribution of 7.8% of infrastructure to occupational hazards among health workers in Specialist Hospitals, Rivers State. The regression equation,  $y=54.56+0.13x$  showed that any increase in the value of infrastructure(x) is not likely to

**Table 1:** Composition of Sample for the Study through proportional stratified random sampling technique

Hospital	UPTH	BMSH	NPH	Total
Population	2600	750	110	3460
Proportion	0.75	0.22	0.03	1.00
Selected size	520	150	22	692

**Table 2.**

Some correlates	N	Alpha coefficient $\alpha$
Personnel	5	0.78
Remuneration	5	0.86
Infrastructure	5	0.69
Attitude	5	0.62
Environment	5	0.74
Management	5	0.69
<b>Occupational Hazards</b>	<b>N</b>	<b>Alpha coefficient, <math>\alpha</math></b>
Physical hazards	3	0.73
Psychosocial hazards	3	0.71
Biological hazards	3	0.69
Chemical hazards	3	0.79
Ergonomic hazards	3	0.68
<b>All items of the instrument</b>	<b>45</b>	<b>0.83</b>

**Table 3:** Descriptive statistics showing the pattern of responses of the respondents on each item of the instrument measuring the occupational hazard and its correlates

<b>Correlates of occupational Hazard</b>				
SN	Personnel	Mean	SD	Decision
1	Most specialist hospital use auxiliary nurse in place of professional nurse	2.37	0.93	
2	Doctors are always assign to required/recommended numbers of patients	<b>2.50</b>	<b>0.67</b>	*
3	Nurses are always overstaff in most specialist hospital	2.31	0.82	
4	Health personnel are send for training regularly	<b>2.52</b>	<b>0.84</b>	*
5	Most workers skills matches the use of required equipment	<b>2.61</b>	<b>0.56</b>	*
<b>Remuneration</b>				
6	Health workers are promptly paid	2.29	0.68	
7	Most health workers are given accommodation close to hospital	<b>2.60</b>	<b>0.81</b>	*
8	Health workers are always paid leave allowance	<b>2.60</b>	<b>0.76</b>	*
9	Most health workers are paid transport allowance	<b>2.57</b>	<b>0.77</b>	*
10	Most health workers are paid sick allowance	2.49	0.79	

**Table 3:** Continuation

<b>Infrastructure</b>				
11	Specialist Hospitals has enough bed space for patients	<b>2.65</b>	<b>0.63</b>	*
12	Specialist Hospitals premises are design with enough packing space for workers	<b>2.53</b>	<b>0.69</b>	*
13	Health workers are given good offices space with ventilations	2.43	0.64	
14	Specialist Hospitals have good working equipment for the required operation	<b>2.51</b>	<b>0.74</b>	*
15	Specialist Hospitals has a stand for Ambulances in case of emergency calls	2.45	0.70	
<b>Attitude</b>				
16	Hands are washed most time after services without antiseptic	2.49	0.69	
17	Most health workers handle some cases with hand gloves	2.40	0.77	
18	Used gauze/cotton are poorly disposed	2.45	0.64	
19	Refuse are left a long time before disposal	2.20	1.04	
20	Chemicals are poorly label at storage	2.41	0.78	
<b>Environment</b>				
21	Most Specialist hospital has a store	<b>2.57</b>	<b>0.91</b>	*
22	Most Specialist hospital has dispensary unit	<b>2.63</b>	<b>1.00</b>	*
23	Most Specialist hospital has a special area for it's refuse disposal	<b>2.58</b>	<b>0.71</b>	*
24	A good Specialist hospital have enough bed space for patients with good arrangement for movement	<b>2.61</b>	<b>0.74</b>	*
25	Specialist Hospitals are regularly fumigated.	<b>2.79</b>	<b>0.90</b>	*
<b>Management</b>				
		<b>Mean</b>	<b>SD</b>	<b>Decision</b>
26	There are no precaution policies in most Specialist hospitals	2.58	0.62	*
27	Risk assessment/evaluation procedure are not clear	2.68	0.77	*
28	Individuals feelings and health status are not considered before there assign to work	2.50	0.63	*
29	Specialist Hospitals have safety meetings with the workers regularly .	2.60	0.67	*
30	Most services and operation are carried out with proper supervision	2.77	0.88	*
	<b>Grand mean</b>	<b>2.52</b>	<b>0.76</b>	*

\* = Agree

<b>Occupational Hazards</b>				
SN	<b>Physical hazards</b>	<b>Mean</b>	<b>SD</b>	<b>Decision</b>
31	I have slipped and fallen in course doing my job as a health workers	2.33	0.81	
32	The level of noise in the hospital is contributing to deafness among the staff	<b>2.74</b>	<b>0.85</b>	*

**Table 3: Continuation**

33	I often have physical strain or cuts do to the nature of my job	2.34	0.75	
	<b>Psychosocial hazards</b>			
34	Health workers often get depressed due to some circumstances, e.g late payment of salaries, environment etc	2.46	0.90	
35	I often have fatigue and/or hypertension due to my work	2.42	0.83	
36	Health workers age rapidly due to stress prevalent in the job.	2.44	0.87	
	<b>Biological hazards</b>			
37	Health workers are prone to sickness due to working environment	2.36	0.91	
38	I have contacted bacteria that led to cholera in the hospital that I work	2.38	0.75	
39	Some health workers have contracted tuberculosis from the hospital	2.49	0.66	
	<b>Chemical hazards</b>			
40	Some health workers are said to have developed neurological disorders due to the chemical they use in working	2.38	0.85	
41	I have suffered respiratory disorder due to inhalation of some dangerous chemicals	<b>2.72</b>	<b>0.98</b>	
42	Health workers develop skin disorders due chemicals utilized while working	<b>2.63</b>	<b>0.91</b>	
	<b>Ergonomic hazards</b>			
43	Health workers suffer waist pain due to age by carrying heavy loads	<b>2.60</b>	<b>0.87</b>	*
44	I often have backache due to bad sitting position in my office	<b>2.66</b>	<b>0.96</b>	*
45	Long standing hours lead health workers to have waist pain	<b>2.64</b>	<b>0.86</b>	*
	<b>Grand mean</b>	<b>2.51</b>	<b>0.85</b>	*

\*Agree

lead to decrease in the occupational hazards (y). Table 3 further showed that infrastructure do have a significant correlation with occupational hazard among health workers in specialist hospitals, Rivers State ( $F=40.66$ ,  $p<.05$ ). The null hypothesis one was rejected at .05 level of significance.

Table 5 showed that the relationship between remuneration and occupational hazard among health workers in Specialist Hospitals, Rivers State was high but negative ( $Beta=-0.227$ ). The Adjusted R-squared of 0.04959 showed roughly the contribution of 5.0% of remuneration to occupational hazards among health workers in Specialist Hospitals, Rivers State. The regression equation,  $y=68.58-0.094x$  showed that any increase in the value of remuneration (x) is likely to lead

to a decrease in the occupational hazards (y). Table 4 further showed that remuneration do have a significant relationship with occupational hazard among health workers in specialist hospitals, Rivers State ( $F=25.47$ ,  $p<.05$ ). The null hypothesis two was rejected at .05 level of significance.

Table 6 showed that the relationship between personnel and occupational hazard among health workers in Specialist Hospitals, Rivers State was high but negative ( $Beta=-0.239$ ). The Adjusted R-squared of 0.055 showed roughly the contribution of 5.5% of personnel to occupational hazards among health workers in Specialist Hospitals, Rivers State. The regression equation,  $y=70.53-0.127x$  showed that any increase in the value of personnel (x) may lead to a concomitant decrease in the



**Table 4:** Summary of linear regression analysis on the relationship between infrastructure and occupational hazard among health workers in specialist hospitals, Rivers State

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	54.55715	1.293724	42.17062	0.0000
Infrastructure(x)	0.129580	0.020321	6.376785	0.0000
Beta	0.283000	Mean dependent var		62.67660
R-squared	0.079942	S.D. dependent var		5.171853
Adjusted R-squared	0.077976	Akaike info criterion		6.047402
S.E. of regression	4.966122	Schwarz criterion		6.065073
Sum squared resid	11541.99	Hannan-Quinn criter.		6.054354
Log likelihood	-1419.139	Durbin-Watson stat		1.785459
F-statistic	40.66339			
Prob(F-statistic)	0.000000			

**Regression equation:  $Y=54.56+0.13x$**

**Table 5:** Summary of linear regression analysis on the relationship between remuneration and occupational hazard among health workers in specialist hospitals, Rivers State

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	68.57949	1.192555	57.50636	0.0000
Remuneration (x)	-0.094046	0.018635	-5.046686	0.0000
Beta	-0.227000	Mean dependent var		62.67660
R-squared	0.051612	S.D. dependent var		5.171853
Adjusted R-squared	0.049586	Akaike info criterion		6.077728
S.E. of regression	5.041998	Schwarz criterion		6.095399
Sum squared resid	11897.38	Hannan-Quinn criter.		6.084680
Log likelihood	-1426.266	Durbin-Watson stat		1.768115
F-statistic	25.46904			
Prob(F-statistic)	0.000001			

**Regression equation:  $Y=68.58-0.094x$**

occupational hazards (y). Table 5 further showed that personnel do have a significant relationship with occupational hazard among health workers in specialist hospitals, Rivers State ( $F=28.40$ ,  $p<.05$ ). The null hypothesis three was rejected at .05 level of significance.

Table 7 showed that the relationship between working environment and occupational hazard among health workers in Specialist Hospitals, Rivers State was moderately high but negative (Beta=-0.159). The Adjusted R-squared of 0.023 showed roughly the contribution of 2.3% of working environment to occupational hazards among health workers in Specialist Hospitals, Rivers State. The regression equation,  $y=65.60-0.044x$  showed that any increase in the value of

working environment (x) may lead to a concomitant decrease in the occupational hazards (y). Table 5 further showed that working environment do have a significant relationship with occupational hazard among health workers in specialist hospitals, Rivers State ( $F=12.10$ ,  $p<.05$ ).

Table 8 showed that the relationship between attitude and occupational hazard among health workers in Specialist Hospitals, Rivers State was high and positive (Beta=0.285 ). The Adjusted R-squared of 0.079 showed roughly the contribution of 7.9% of attitude to occupational hazards among health workers in Specialist Hospitals, Rivers State. The regression equation,  $y=56.89+0.097x$  showed that any increase in the value of

**Table 6:** Summary of linear regression analysis on the relationship between personnel and occupational hazard among health workers in specialist hospitals, Rivers State

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	70.52778	1.491461	47.28772	0.0000
Personnel (x)	-0.127529	0.023932	-5.328889	0.0000
Beta	-0.239000	Mean dependent var		62.67660
R-squared	0.057206	S.D. dependent var		5.171853
Adjusted R-squared	0.055192	Akaike info criterion		6.071812
S.E. of regression	5.027106	Schwarz criterion		6.089483
Sum squared resid	11827.20	Hannan-Quinn criter.		6.078764
Log likelihood	-1424.876	Durbin-Watson stat		1.791430
F-statistic	28.39706			
Prob(F-statistic)	0.000000			

**Regression equation:  $Y=70.53-0.127x$**

**Table 7:** Summary of linear regression analysis on the relationship between working environment and occupational hazard among health workers in specialist hospitals, Rivers State

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	65.60142	0.873167	75.13044	0.0000
Environment (x)	-0.044466	0.012782	-3.478909	0.0006
Beta	-0.159000	Mean dependent var		62.67660
R-squared	0.025209	S.D. dependent var		5.171853
Adjusted R-squared	0.023126	Akaike info criterion		6.105188
S.E. of regression	5.111702	Schwarz criterion		6.122859
Sum squared resid	12228.60	Hannan-Quinn criter.		6.112140
Log likelihood	-1432.719	Durbin-Watson stat		1.727109
F-statistic	12.10281			
Prob(F-statistic)	0.000551			

**Regression equation:  $Y=65.60-0.044x$**

**Table 8:** Summary of linear regression analysis on the relationship between attitude and occupational hazard among health workers in specialist hospitals, Rivers State

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	56.88708	0.927759	61.31664	0.0000
Attitude (x)	0.096922	0.015051	6.439371	0.0000
Beta	0.285000	Mean dependent var		62.67660
R-squared	0.081390	S.D. dependent var		5.171853
Adjusted R-squared	0.079427	Akaike info criterion		6.045826
S.E. of regression	4.962211	Schwarz criterion		6.063497
Sum squared resid	11523.82	Hannan-Quinn criter.		6.052778
Log likelihood	-1418.769	Durbin-Watson stat		1.772092
F-statistic	41.46551			
Prob(F-statistic)	0.000000			

**Regression equation:  $y=56.89+0.097x$**

**Table 9:** Summary of linear regression analysis on the relationship between management style and occupational hazard among health workers in specialist hospitals, Rivers State

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	65.65606	1.093721	60.02998	0.0000
Management(x)	-0.045407	0.016273	-2.790369	0.0055
Beta	-0.12800	Mean dependent var		62.67660
R-squared	0.016365	S.D. dependent var		5.171853
Adjusted R-squared	0.014263	Akaike info criterion		6.114220
S.E. of regression	5.134838	Schwarz criterion		6.131891
Sum squared resid	12339.55	Hannan-Quinn criter.		6.121172
Log likelihood	-1434.842	Durbin-Watson stat		1.695032
F-statistic	7.786160			
Prob(F-statistic)	0.005480			

**Regression equation:  $y=65.65-0.045x$**

**Table 10:** Summary of ANOVA on the influence of working experience on occupational hazard among health workers in specialist hospitals, Rivers State

Experience	N	Mean	SD	Std. Error	95% CI	
					Lower Bound	Upper Bound
1-5 years	31	62.8065	4.20650	.75551	61.2635	64.3494
6-10 years	113	62.4071	5.56879	.52387	61.3691	63.4451
11-15 years	156	62.9679	5.07927	.40667	62.1646	63.7713
16-20 years	90	62.8111	4.61043	.48598	61.8455	63.7767
21 and above	80	62.2875	5.75270	.64317	61.0073	63.5677
Total	470	62.6766	5.17185	.23856	62.2078	63.1454

#### ANOVA

Source of variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	35.713	4	8.928	.332	.857
Within Groups	12509.129	465	26.901		
Total	12544.843	469			

attitude (x) may not lead to a concomitant decrease in the occupational hazards (y). Table 7 further showed that attitude do have a significant relationship with occupational hazard among health workers in specialist hospitals, Rivers State ( $F=41.47$ ,  $p<.05$ ).

Table 9 showed that the relationship between management style and occupational hazard among health workers in Specialist Hospitals, Rivers State was moderately high and negative (Beta=-0.1280). The Adjusted R-squared of 0.0142 showed roughly the contribution of 1.4% of management style to occupational hazards among health workers in Specialist Hospitals, Rivers State. The regression equation,  $y=65.65-0.045x$  showed that any increase in the value of management

style (x) may lead to a concomitant decrease in the occupational hazards (y). Table 6 further showed that management style do not have a significant relationship with occupational hazard among health workers in specialist hospitals, Rivers State ( $F=7.78$ ,  $p<.05$ ).

Table 10 showed that mean rating on occupational hazard among health workers with 11-15 years of working experience was 62.97,  $SD=5.079$  while that of those with 21 and above of working experience was 62.29,  $SD=5.75$ . The ANOVA result showed that there is no significant relationship between working experience and occupational hazard among health workers in specialist hospitals, Rivers State ( $F=.332$ ,  $p.05$ ).

Table 11 showed that the mean rating of occupational

**Table 11:** Summary of ANOVA on the influence of age on occupational hazard among health workers in specialist hospitals, Rivers State

Age (years)	N	Mean	SD	Std. Error	95% CI	
					Lower Bound	Upper Bound
30 and below	111	62.5856	5.02985	.47741	61.6395	63.5317
31-36	212	62.7170	5.44904	.37424	61.9792	63.4547
37-42	82	62.5244	4.14617	.45787	61.6134	63.4354
43-48	39	63.7436	5.62755	.90113	61.9193	65.5678
49 - Above	26	61.6154	5.74162	1.12602	59.2963	63.9345

  

ANOVA						
Source of variance	Sum of Squares	Df	Mean Square	F	Sig.	
Between Groups	76.846	4	19.211	.717	.581	
Within Groups	12467.997	465	26.813			
Total	12544.843	469				

**Table 12:** Summary of findings

SN	Relationship/influence	Beta value	Nature of relationship	Percentage Contribution	p-value Decision
1	Infrastructure and Occupational Hazard	0.283	high and positive	7.8%	0.000*
2	Remuneration and Occupational Hazard	-0.227	high and negative	5.0%	0.000*
3	Personnel and Occupational Hazard	-0.239	high and negative	5.5%	0.000*
4	Working Environment and Occupational Hazard	-0.159	moderately high and negative	2.3%	0.000*
5	Attitude and Occupational Hazard	0.285	high and positive	7.9%	0.000*
6	Management Style and Occupational Hazard	-0.128	moderately high and negative	1.4%	0.005*
7	Working Experience on Occupational Hazard				.857, ns
8	Age on Occupational Hazard				.581, ns

\*=significant

hazards among health workers in the age bracket of 43-48 years was the highest (M=63.74, SD=5.62). This was followed by that of those in the age bracket of 31-36 years (M=62.71, SD=5.44). The least was obtained by those in the age bracket of 49 years and above (M=61.61, SD=5.74). The ANOVA result showed that there is no significant relationship between age and occupational hazard among health workers in specialist hospitals Port Harcourt, Rivers State ( F=0.717, p>.05).

**SUMMARY**

According to ILO/WHO, (2001) Occupational Health is the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all

occupations by preventing departures from health, controlling risks and the adaptation of work to people, and people to their jobs, while occupational health hazards among health care workers” could be understood from physical-chemical-biological-mechanical and psychological dimensions. Hazards therefore, can be classified as endogenous or exogenous. Exogenous hazards are those brought into the hospital from the outside while endogenous sources are those that are transmitted to health care workers from patients (Blood, sera, laboratory specimens).

Impacts of commotion are of two sorts: sound-related impact which comprise of brief or perpetual listening to misfortune and non sound-related impacts which comprise of anxiety, weakness, impedance with correspondence by discourse, diminish effectiveness and

irritation, as activities associated with accidents include; administering or drawing of injections with syringe, wrong disposal of syringe and needles, recapping of needles and syringes, suturing and related activities, cleaning waste bags containing sharp improperly disposed of, needle left in tray or and trolley, re-sheathing needle and passing instrument to doctor or nurse among others.

## REFERENCE

- Adeniyi, J.A (2002).Occupational health and safety: concepts, objectives and relevance. *Nigerian School Health Journal*, 14 (1&2), 192-199
- Andersen, T. Clausen, O. S. Mortensen, H. Burr, and A. Holtermann, (2012), A. prospective cohort study on musculoskeletal risk factors for long-term sickness absence among healthcare workers in eldercare. *International Archives of Occupational and Environmental Health*, vol. 85, no. 6, pp. 615–622.
- Baleta, Adele.( 2008). Swaziland nurses the wellbeing of its health workers. *The Lancet* 371, no. 9628: 1901-1902
- Carpenter, Christopher J. (2010)."The role of behavioral science theory in development and implementation of public health interventions". *Annual review of public health* **31**: 399–418.
- Couy;, D.J. & Ellis, R.J. (1994) *Politics, Policy and Culture*, p. 247 (Oxford, Westview Press). DAKE, K. (1992) Myths of nature: cultural and social construction of risk, *Journal of Social Issues*, 48 (4), pp. 21-37.
- Coyle, D.J. (1994) The theory that would be king in: D.J. COYLB, & R. ELLIS (Eds) *Politics Policy and Culture*, pp. 219-239
- Douglas, M. (1966) *Purity and Danger, An Analysis of Conceptions of Pollution and Taboo*, (London, Routledge and Kegan Paul).
- Douglas, M. (1970) *Natural Symbols, Explorations in Cosmology*, (London, Penguin).
- Douglas, M. (1978) *Cultural Bias: Royal Anthropological Institute Occasional Paper No. 35*, (London, Royal Anthropological Institute).
- Douglas, M. (1982) *Essays in the Sociology of Perception*, p. 340 (London, Routledge and Kegan Paul).DOUGLAS, M. (1985) *Risk Acceptability According to the Social Sciences*, p. 115 (New York, Russel Sage Foundation).
- Douglas, M. (1990) Risk as a forensic resource, *Daedalus*, 119 (4), pp. 1-16.
- Douglj's, M. (1992) *Risk and Blame: Essays in Cultural Theory*, p. 323 (London, Routledge).
- Fasunloro, A & Owotade J.F., (2004). Occupational Health Hazards Among Dental Staff of OAUTH. *The Journal of Contemporary Dental Practice*, volume 5,No 2.
- Glanz, Karen; Barbara K. Rimer; K. Viswanath (2008). *Health behavior and health education: theory, research, and practice*. (4th ed.). San Francisco, CA: Jossey-Bass. pp. 45–51.
- Goniewicz, M. A. Włoszczak-Szubzda, M. Niemcewicz, M. Witt, A. Marciniak-Niemcewicz,& M. J. Jarosz, (2012) Injuries caused by sharp instruments among healthcare workers—international and Polish perspectives. *Annals of Agricultural and Environmental Medicine*, vol. 19, no. 3, pp. 523–527
- Gupta, (2011)."Human resources for maternal, newborn and child health: from measurement and planning to performance for improved health outcomes. *Human Resources for Health*
- ILO (1990). .Bangladesh Women: An Improved Technology Project .Report No BGD/89/M03/NOR, Geneva: International Labour Organization, Switzerland.
- International Committee of the Red Cross (ICRC). (2010). *Health care in danger: Making the case*. Geneva, Switzerland: ICRC.
- Lipscomb J. and L. Rosenstock (1997), "Healthcare workers: protecting those who protect our health," *Infection Control and Hospital Epidemiology*, vol. 18, no. 6, pp. 397–399
- Lucas, A.O. & Gilles, H.M. (2003). *Short Text Book of Public Health Medicine for the Tropics*, Revised 4th edition, London: Power Hodder Arnold
- Lugah, V., B. Ganesh, A. Darus, M. Retneswari, M.R. Rosnawati, and D. Sujatha.( 2010). Training of occupational safety and health: Knowledge among healthcare professionals in Malaysia. *Singapore Medical Journal* 51, no. 7: 586
- MajiTijaniJ. ,( 2006). Occupational health hazards among workers of seven-up bottling company plc, kaduna plant. Dept. Of Community Medicine Faculty of Medicine
- Manyele, H. A. Ngonyani, and E. Eliakimu, (2008) "The status of occupational safety among health service providers in hospitals in Tanzania," *Tanzania Journal of Health Research*, vol. 10, no. 3, pp. 159–165.
- Nwankwo, O.S. (2013). *Occupational Health and Industrial Safety*, Owerri: Concave Publishers, Nigeria.
- Odd KjellandOlar (2000). An Investigation into the Effects of Noise on the Hearing Capacities of the Workers on two Sawmill in Ile-Ife Osun State, Nigeria. *Nigerian School Health Journal* ,15 (1&2),248-258.
- Olayemi, E.O. (2005). Occupational hazards among clinical staff of Aro-Abeokuta Psychiatric Hospital. *National Journal of Mental Health*, 12 (1), 34-44.
- Ostrander, D. (1982) One- and two-dimensional models of the distribution of beliefs in: M. Douglas (Ed.) *Essays in the Sociology of Perception*, pp. 14-30
- Park, K. (2007). *Prevention and Social Medicine*, 19th

- edition.India:M/S Banarsidas Bhanot.
- Reda, Ayalu A., Shiferaw Fisseha, Bezatu Mengistie, and Jean-Michel Vandeweerd (2010). Standard precautions: Occupational exposure and behavior of health care workers in Ethiopia. *PLoS One* 5, no. 12. .
- Rosenstock, Irwin (1974). "Historical Origins of the Health Belief Model". *Health Education Behavior* 2 (4): 328–335.)
- Takala, J. (2000). Safe Work-The Global Program on Safety, Health and the Environment, Asian Pacific Newsletter on Occupational Health and Safety, Vol. 7: pg.4-8.
- Thirion A, Fernández Maciás E, Hurley J, Vermeulen G., (2007). European Foundation for the Improvement of Living and Working Conditions.Fourth European Working Conditions Survey ISBN 92-897-0974-x.
- Thompson, M. (1997) Security and Solidarity: An anti-reductionist framework for thinking about the relationship between us and the rest of nature (Bergen, LOS-senteret).
- Van Dyk, Alta C.,( 2007). Occupational stress experienced by caregivers working in the HIV/AIDS field in South Africa. *African Journal of AIDS Research* 6, no. 1
- WHO, The World Health (2006) Report Working Together For Health, World Health Organization, HSE, Moving And Handling In Health And Social Care, Health And Safety Executive.
- WHO. World Health Organization, (2010). Classifying health workers. Geneva
- WHO/ ILO (1995).Global Strategy on Occupational Health for all-the way to Health at Work to Achieve Millennium Development Goals. Document No. WHO/ILO/97, Geneva: World Health Organization.
- Wilburn and G. Eijkemans, (2004), "Preventing needle stick injuries among healthcare workers: a WHO-ICN collaboration," *International Journal of Occupational and Environmental Health*, vol. 10, no. 4, pp. 451–456
- World Health Organization (WHO). 2012. WHO's response, and role as the health cluster lead, in meeting the growing demands of health in humanitarian emergencies. Geneva, Switzerland: World Health Organization.