

Occupational Hazards of Health Care Workers in Ikwerre Local Government Area of Rivers State Nigeria

RIGHTEOUS, INNIME

Option: Occupational Health and Safety Studies
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ABSTRACT

This study investigated occupational hazards of health care workers in Ikwerre LGA of Rivers State. A cross sectional descriptive survey design was adopted to study all the health care workers in the government owned health facilities of Ikwerre LGA with a population of 263. Instrument for data collection consisted of a self-structured questionnaire which was validated with a reliability coefficient of 0.81. A total 01250 copies of the questionnaire were administered to health care workers in all the 35 government owned health facilities in Ikwerre LGA. Data, were analyzed using Statistical Package for Social Science (SPSS) version 21. The data obtained were presented in tables of frequency, and percentage, mean score and standard deviation were used to answer the research questions while ANOVA and Z-test were used to test hypotheses at 0.5 alpha level. The study revealed that there was a high level of knowledge about occupational hazard. The most common hazards \V5 ergonomic hazards (3.0 ± 2.5), followed by biological hazards (2.5 ± 1.4). Perceived health effects were waist pain, musculoskeletal disorders, and sleeplessness and eye problems. Safety practices to control occupational hazards among others included; immunization against Hepatitis-B virus, hand wash with soap and water, conducive working environment, wearing adequate Personal Protective Equipment (PPEs). Also, year of service, age, gender and educational qualification had no significant influence on occupational hazards of health care workers in Ikwerre LGA $P > 0.05$ while marital status significantly influenced occupational hazards of health care workers $P < 0.05$. Therefore, it was recommended among others that government should open the closed down hospitals, renovate and equip dilapidated facilities to be conducive and safe in order to prevent hazards. Also, there should be a continuous education and awareness campaign on safety of health care workers through regular seminars, workshops and training.

INTRODUCTION

It is observed that many people troop in and out of the hospitals and other health care facilities on the daily bases with one form of health challenge or the other, and will desire that their problems are solved. In a bid to ensure that the patients/clients go home satisfied, the health care workers will definitely pass through the huddles and challenges that accompany the services they render, in as much as every sphere of life has its own peculiar challenges.

The services of health care workers are so important that no society can do without it. Health care workers represent twelve percentage of the workforce population worldwide and are frequently exposed to several occupational hazards. They are in constant contact with patients that expose them to infections and thus require proper protective measures to reduce their risk of acquisition of disease or injury (Tinubu, Mbada, Oyeyemi & Fubunmi, 2010).

According to Ghosh (2013), health care workers are defined to be all people engaged in actions 'whose primary intent is to enhance health. They make important contributions and are critical to functioning of most health systems. By profession, health care workers attend to clients and patients through a variety of preventive and curative services (Aluko, Adebayo, Adebisi, Ewgebemi, Adideoye & Popoola, 2016).

Achalu (2000) opined that health workers comprise of all those whose services are required in the hospital and health care environments. The professional health workers include: doctors, surgeons, dentists, nurses, laboratory scientists/technicians, pharmacists among others, while the non-professional health workers are cleaners, messengers, helpers, drivers, laundry workers, cooks, labourers, laboratory attendants, among others. Both the professionals and non-professionals carry out their duties within the different health facilities.

Raymond (2005) posited that health care facility is workplace as well as a place for receiving and giving care. The services provided at these health care facilities by health care workers include clinical, surgical, counseling, psychiatric consultations and treatment for the healthy, sick and the injured. Health care sector employs over 59 million workers globally and offer variety of services to patients and clients and are classified as hazardous and high risk work places (Rutledge, Maslack & Marek, 2004).

Consequently, while the attention of the health care workers is focused on providing care, they are vulnerable to hazards that could be detrimental to their health and wellbeing (Aluko et al. 2016). They are exposed to various hazards in their workplace which negatively affect their job as well as health. Some hazards are common to all health care workers, while some are peculiar to the particular profession (Occupational Safety and Health Administration (OSHA). 2016).

According to Fusunloro and Owotade (2004). Occupational hazard is a scientific and public health issue, defined as a potential risk to the health of a person emerging from an unhealthy environment. It is any activity, material, process, or situation that is likely to cause an accident or disease at the work place.

Joseph and Joseph (2016) stated that the health industry is one of the most hazardous places to work in. Employee in the industry is constantly exposed to a complex variety of health and safety hazards in the course of their work. The World Health Organization Report (2006) working together for health reported that there is a severe health workforce shortage especially in fifty seven countries mostly in Africa and Asia. Fear of contracting infectious is primarily responsible for high attrition rate among health care workers.

According to National Institute for Occupational Safety and Health (NIOSH 1999), health care workers face a wide range of hazards on the job including sharp injuries, harmful exposure to chemical and hazardous drugs, back pain injuries, latex allergy, violence and stress (Centre for Diseases Prevention and Control (CDC) 2017). They are exposed to complex health and safety hazards everyday including biological hazards such as tuberculosis, hepatitis, HIV/AIDS and Severe Acute Respiratory Syndrome (SARS). Chemical hazards such as ethylene oxide, anesthetic gases, glutaraldehyde, physical hazards such as noise, radiation, slips and falls, psychological hazards such as shift work, violence, stress, fire and explosions hazards such as using oxygen, alcohol, sanitary gels and electrical hazards such as frayed electrical cords.(Raymond. 2005). World Health Organization (WHO) (2017) posited that, the global burden of disease from sharp injuries to health care workers showed that 37% of the hepatitis B among health care workers was the result of occupational hazard. Also, 50% of health care workers had Latent Tuberculosis Infection (LTBI) (Nicolau, Ling, Tian, Lienhardt & Pai 2012). While Oji, Fasubaa, Onwudiegwu, Dare and Ogunniyi (2002) stated that the common occupational hazards of health care workers were work related stress (83.3%), needle stick injury (75.5%), sleep disturbances (42.3%), assault (24.3%) among others.

Certain factors account for increase in occupational hazards among health care workers. Ndejjo, Musinguzi, Musoke and Wang (2015) posited that age those 30 years and above, duration of service; those who are more than 5 years in the service, and gender; female health care workers, had more biological hazards than those who are less than 30 years, worked for less than 5 years and their male counterparts. In the same vein, Owie and Apang (2016) stated that health care workers who are older, and those who worked over 10 years in tuberculosis center, have more chances of contacting tuberculosis than those who are younger and worked for less than 10 years. While Eljide (2015) reported a difference in the prevalence of occupational hazards among the levels of study in favor of those in higher levels of study, because they spend more time in training than their colleagues.

The havoc of hazards on the worker and the workforce cannot be undermined as it accumulates to poor health. Amadi (2011) opined that poor health can lead to poor disposition and capacity for work, poor performance reduces productivity, poor health leads to absenteeism, sickness contributes to risk for the worker himself and hazard to other mates. According to International Labour Organization (ILO) (2016), 400 of the world's annual Gross Domestic Product (GDP) is lost as a result of occupational hazards as employers are faced with loss of skilled staff absenteeism, migration, early retirement and high insurance premium due to exposure from occupational accidents and diseases.

It is important to note that, there is an increase of occupational hazards of health care workers most in developing countries. Health services delivery is fraught with minimal protective precautions against exposures to numerous fomites and infectious agents in the developing countries (Aluko et al 2016). According to Masum, William and Mosharraf (2011) these increases are largely blamed on health care workers not practicing universal safety precautions such as hand washing, wearing of gloves and the usage of personal protective equipment (PPE). These unsafe practices increase the risk of injuries as well as transmission of infections to health care workers.

Statement to the Problem

Health care workers are p1-one to diverse occupational hazards ranging from biological, chemical ergonomic, physical and psychosocial. Chemicals such as bleach, detergents, solvents, lead, and flammables used in the hospital may become hazards. Health care worker may encounter et floor, slip, falls, heavy lifting and other as physical hazard, as well as psychosocial hazards of exposure to stress, verbal and violent attacks from patients or relatives. Conditions such as insufficient access to clean water, lack of protection against blood borne diseases, lack of sterile equipment and proper waste management expose the worker to biological hazard with poorly designed bed level and position causing ergonomic hazard. According World Health Organization (WI 10) (2002), 3 million health care workers are exposed to blood born virus each ear, 2 million to hepatitis B, 900,000 to hepatitis C and 300,000 to HIV.

In Rivers state, the health facilities are poorly equipped, with shortage of staff and inadequate provision of necessary equipment needed to protect the health car-c workers. It is observed that in the rural areas like Ikwerre LGA health care workers are more prone to violent. physical and verbal attacks. In the same vein, the increasing number of patients to 'tile health care facilities in the LGA has increased the job burden on the health care worker with subsequent exposure to physical, chemical, biological, ergonomic and psycho-social hazards.

There is a limited research on occupational health in Nigeria to the best of the researchers knowledge no study has been carried out to determine the occupational hazards of health care workers in Ikwerre Local Government Area.

Research Question

To guide the study the following research questions were formulated:

1. What are the physical biological, chemical, psychosocial and ergonomic hazards among health care workers in Ikwerre LGA?
2. What is the knowledge of health care workers in Ikwerre LGA about occupational hazard?
3. What are the perceived consequences or effects of occupational hazards on the health of the health care workers in Ikwerre LGA?
4. What are the safety practices that can be adopted to prevent occupational hazards among health of health care workers in Ikwerre LGA?

Concept of Occupational hazard

Hazard is any agent that can cause harm or damage to life, health, property or the environment (Wikipedia). According to Hornby (2011), hazard is defined as anything that can be dangerous or cause harm. It is an inherent property of substance, agent and source of energy or situation that has the potential of causing undesirable consequences (Aluko et al. 2016).

Achalu (2000) opined that hazards are conditions with the potential of causing injury or ill-health. Exposure to hazards can lead to accident while an injury sustained in an accident can result to disease if contaminated with germs. A worker is in contact with ml occupational environment which is the Sum of external conditions and influences which prevails at the place of work and has a bearing on the health of the work force. Hazard affects workers in various occupations as a result of their exposure to different type s and varying degrees in the workplace (Bell, Collins, Tiesman, Ridenour, Konda, Wolf & Evnoff, 2013).

Occupational hazard on the other hand refers to workplace activities that have the potentials to cause or increase the risk of injury or ill- health (Ford & Tetrick, 2011). It involves actions or practices that can expose an individual worker to injury or ill ness. It is a risk associated with a particular job. According to Fusunloro and Owotade (2004) cited in Owie and Apange (2016), occupational hazard is a scientific and public health issue, defined as the “potential risk to the health of a person emerging from unhealthy environment”. It can also be referred to as any activity, material, process or situation that is likely to cause an accident or disease at the workplace.

A worker is placed in a highly complicated environment which is getting more complicated as man is becoming more ingenious. Basically, three types of interactions exist in a working environment; man and physical, chemical and biological agents; man and machine; and man and man. All these factors either singly or in different combinations affect the health of the worker (Park. 2009)’’.

International Labour Organization (ILO) World Health Organization (WHO) (2015) defined occupational hazard as working conditions which result in an illness or exposure to dangerous substances or conditions. They come in the form of physical, chemical, biological, mechanical, psychological or ergonomic. It could as well be referred to as potential danger that the health care workers are exposed to in course of discharging their responsibilities to their clients or patients.

Achalu (2000) posited that occupational hazard is a work material or substance process or situation that predisposes to or cause accident or disease. Occupational hazards are responsible for occupational accidents or diseases encountered by many workers. There is no job or occupation without hazard. Occupational hazard is therefore, anything at the work place that can cause accident, illness, injury or damage to people as a result of their work.

Types of Occupational Hazard

A worker may be exposed to any of the five different types of occupational hazard depending upon his occupation; these are physical hazards, chemical hazards, biological hazards, mechanical hazards and psychosocial hazards (Park, 2009). According to WHO (2017), health care facilities around the world employ over 59 million worker who are exposed to a complex variety of health and safety hazards every day including; chemical, biological, physical, ergonomic, psych- social, fire and explosion, and electrical hazards These hazards in one way or the other affects the health and wellbeing of the health care worker as he discharges his daily duties.

Biological Hazard

This is also known as biohazards, it originates in biological process of living organism. According to Park (2009), biological agents that workers are exposed to include infective and parasitic that cause occupational diseases such as bacteria, virus and fungal. Achalu (2010) opined that the resultant occupational disease of biological hazard include brucellosis, Leptospirosis, anthrax, tetanus. Schistosomiasis. Occupational exposure to infection may be due to direct contact with patients in the health care setting and almost all the infectious diseases can be an occupational hazard to workers in the health care setting, they include: HIV/AIDS, tuberculosis, hepatitis B virus (Achalu. 2000).

According to Ghosh (2013), biological exposure causes arc due to blood borne pathogens from percutaneous injuries, splashes, and other contact; exposure to infectious microorganisms, exposure to biological components of surgical, smoke from use of Laser and

electrosurgical unit, etc. Blood borne pathogens are microorganisms that are present in blood, tissue, blood products and other potential infections materials like semen, vagina secretion, cerebrospinal fluid, pleural fluid. Pericardial fluid, amniotic fluid, amniotic fluid, synovia fluid and saliva. Health care workers exposure to biological hazards could arise due to insufficient access to clean water, lack of universal precaution for protection against blood borne diseases, lack of sterile equipment and proper waste management, exposure to bacteria, fungi, parasite or blood borne virus as well as communicable diseases such as avian flu, swine flu among others (Center for Disease Control. 2017). Occupational hazard as a result of exposure to infectious blood borne pathogen and other health related events are among the most serious health risk faced by health care workers in developing countries (Bayera and Banyen, 2014).

Chemical Hazards

According to Park (2009), chemical hazards are on the increase with the introduction of newer and complex chemicals. Chemical agents act in three ways: Local action, inhalation and ingestion. The effects depend upon the duration of exposure, the quantum of exposure and individual susceptibility. Some chemicals have cumulative effects. Raymond (2005) stated that some chemical agents that constitute health challenges include: dust, vapor, paints, mist, fumes, gases, pesticides, metals, and their liquid or compound. They may be medication and other substances used for therapeutic purposes.

Chemical agents that cause occupational health problem to health care workers include: glutaraldehyde, when exposed has being responsible for serious ill- health in some nurses and other health workers.

Ghosh (2013) opined that health care workers are faced with significant risk of developing Latex sensitivity or latex allergy from exposure to latex in products such as surgical gloves with reactions ranging from irritant contact dermatitis and allergic contact sensitivity, to possible life threatening sensitivity. Employees exposed to latex gloves and other products containing natural rubber Latex ma develop allergic reactions such as Skin rashes, hives, nasal, eye, or sinus symptoms and asthma.

Physical Hazard

This consists of heat and cold, light, noise, vibration, ultraviolet radiation, ionizing radiation. etc. (Park. 2009).

According to Raymond (2005), the highest occupational risk for many health care workers consist of musculo-skeletal injury (commonly manifested as back pain, usually caused by moving and handling gadget). Other physical hazards in the hospital include noise in boiler houses and iodizing radiation in various diagnostic and therapeutic contexts. Health care workers experience light, high or low pressure, high or low temperature, explosives, combustible liquid, compressed gases, vibrations, etc. These hazards result to health problem such as burns, heat stroke, heat cramp, eye strain, hearing effect, visual fatigue, etc. In the course of discharging their duties, health care workers can experience slips, strips and falls.

Psychosocial Hazards

According to Park (2009), the psycho-social hazards arise from the worker's failure to adapt to an alien psychological environment. Frustrations, lack of job satisfaction, insecurity, poor human relationship, emotional tension are some of the psychosocial factors which may undermine both physical and mental health of the worker.

Achalu (2000) posited that psychological hazards arise from work organization relationship at work, leadership style, workers participation, boredom, un-fulfillment, insecurity, psychosocial stress, work pressure and also workers inability to adapt or fit into the job, workplace violence and stress are some of the psychosocial hazards suffered by health care workers, nurses and doctors suffer more stress, emotional problems, violence, family disorder etc. (Lambert & Lambert, 2008).

According to National Institute for Occupational Health and Safety (2008) cited in Ruotsalainen, Verbeek, Marine and Serra (2014), occupational stress and burnout are high prevalent among health profession, some studies suggest that this is due to inadequate staffing level, long work hour, exposure to infectious diseases, and hazardous exposure to substances leading to illness and death. Other stresses are emotional labor or caring for ill people and high patient load with consequences of substance abuse. Suicide, depressive disorder and anxiety, all of which occur at higher rate in health care workers than the general population. Elevated levels of stress are also linked to high rate of burnout, absenteeism and diagnostic errors and to reduce rates of patient satisfaction.

Ergonomic Hazard

These hazards are related to poorly designed tools, equipment or workstations. It includes awkward or extreme postures, whole body or hand/ arm vibrations and repetitive motions (Wikipedia). In the health care setting, lifting of heavy objects and patients pose risk or injury to the musculoskeletal system such as the muscle or ligament of the lower back tendons or nerves of the hands/ wrists or bones surrounding the knees.

Mechanical Hazard

This type of hazard centers around machinery, protruding and moving parts and there likes (Park, 2009). Jain and Roa (2008) opined that mechanical hazard arises from faulty design of machines, carelessness of operators and workers, contact with moving machinery lifts, hand tools, hoist and shaft etc. Injuries that result from mechanical hazards include cutting, tearing, crushing, breaking of body Parts etc.

Other types of hazard experienced in the health care setting include fire and explosion such as using oxygen, alcohol, sanitizing gels and electrical, such as frayed electrical cord (WHO,2017).

Predisposing Factors to Occupation Hazard among Health Care Workers

Health care workers are in constant contact with patient and are exposed to numerous hazards. Many factors have been implicated as causes and predisposing factors to occupational hazard among health care workers.

According to Ndejjo et al. (2015), the likely predictors for biological and non- biological hazards are not wearing all necessary PPE, working overtime, job related pressure and working in multiple health facilities. It furthered that factors that contribute to occupational illness/ injuries in health care facilities include negligence and carelessness of Health care workers, lack of adequate protective aids and equipment, inadequate number of staff excessive workload, failure to observe basic safety and hygiene guidelines, and inadequate operational knowledge of modern health care equipment. In support to the above, Amosum, Degun, Atulomah, Olanrewaju and Aderibigbe (2011) opined that increase in occupational hazards in developing countries are largely blamed on health care workers not practicing universal safety precautions such as: hand washing, wearing of gloves and the usage of

protective personal equipment (PPE). Adding that, this unsafe practice increases the risk of injuries as well as transmission of infections to health care workers.

In the same vein, Lee (2009) stated that other factors include lack of comprehensive vaccination coverage among health care workers against Hepatitis B virus, poor use or non-availability of Post Exposure Prophylaxis (PEP) and lack of adherence to standard safety infection control measures such as use gloves, washing or hands and. usage of disinfectant, Similarly, these other factors account for increase Tuberculosis among health care workers how work in TB center those with high ratio of TB patient per health worker, Health care workers who are much older and those who worked over 10 years at such facilities Owie and Apange (2016).

Lack of laws and policies have been also implicated as a factor' responsible for occupational hazard among these workers. According to Ahasan and Partunen (2001), there is lack of adequate laws and policies regulating the work environment. Occupational and safety laws represent only about 10% of the population in developing countries. Even in circumstances where occupational health and safety laws exist, workers are being employed in conditions which not only deprived them their dignity and value but also expose them to number of occupational accidents Owie and Apange (2016).

Musculoskeletal diseases which are frequent among health care worker have been implicated to be responsible by many factors. Adegoke, Akodu and Oyeyemi (2008) cited in Owie and Apange (2016) opined that frequent lifting or transferring of dependent patients, bending, treating large number of people, working in the same position for hours, prolonged standing posture, performing manual therapy arid psychological stress are facorts responsible for musculoskeletal diseases.

Similarly, occupational stress is prominent among health care workers. In a study of Orji et al. (2002), work related stress is associated with excess workload, long working hours, numerous shift duties and high number of patent attendance. Other causes of stress among health care workers include; long d stance travel to work, poor communication' between patient and health care worker, low socio- economic status, irregular medical supplies at the health facilities, lack of career structure for health care workers and insufficient income earned by health care workers per month. Owei and Apanga (2016) added that lack of experts and resources to manage occupational hazard and improper disposal of medical waste such as needles and other sharps are other factors.

Consequences/Effects of Occupational Hazard on the Workers

The International Labor Organization (ILO) estimates that 160 million people from the work force suffer from work related diseases such as musculoskeletal diseases and mental health problems, while 270 million fatal and non-fatal work related accidents result in over 350,000 casualties and over 2 million work related deaths each year which all are attributable to occupational hazards (Owei and Apanga, 2016). In the same vein, Ghosh (201 3) Opined that the National Institute for Occupational Safety and Health (NIOSH) (1999) estimated that 600.000 to 800,000 percutaneous injuries occur annually to health care workers.

According to Aluko et al. (2016), the consequences of occupational illness and injuries include physical, economic and psychological damage to the health care workers and their dependents. The prominent hazards to health care workers include blood borne infections (Hepatitis B and C, HIV/AIDS), back and neck pain, burn out stress, allergic reactions to latex materials, spills from chemicals, exposure to radial ion, and assault horn patients and

others. Exposure to X-ray may lead to burns, genetic defect and dermatitis. Similarly, health care workers who spend much time in noisy areas suffer health problems such as hearing loss, irritation and discomfort (Prashal & Bansal, 2008). Owei and Apahga (2016) stated that health care workers experience symptoms ranging from immediate reaction from contact dermatitis to type 1 hypersensitivity reaction. Scarcity of personnel is another challenge posed by occupational hazard to the health care profession. According to Ndejjo, et al. (2015), in sub-Saharan Africa, the scarcity of human resources for health is described as a humanitarian crisis due to significant emigration of trained professionals, difficult working conditions, poor salaries, low motivation and high burden of infectious diseases. Similarly, Association of Preoperative Registered Nurses (AORN) noted that occupational injuries resulting from unsafe work place impacts the health care organization by increase costs and reduced ability to provide service. Adding that, occupational hazard in the workplace has been identified as a major contributor to Nurses leaving the profession, contributing to the growing nursing shortage (Ghosh, 2013).

In the same vein, working together for Health reported a severe health care work force shortage especially in 57 countries, mostly in Africa and Asia. Fear of contracting infectious disease is primarily responsible for high attrition rate among health care workers (World Health Report 2006).

The economy growth of a nation is not left out in the effect of occupational hazard. According to the ILO (2016), 4% of the World Annual Gross Domestic Product (GDP) is lost as a result of occupational hazard as employers are faced with loss of skilled staff absenteeism, migration, early retirement and high insurance premium due to exposures from occupational accident and diseases.

Stress is one of the major consequences of the occupational hazard of the health care worker. According to a publication by National Institute for Occupational Safety and Health (NIOSH), (2013), consequences of stress include substance abuse, suicide, major depressive disorder and anxiety, all of which occur at a higher rate in health care workers than the general population. Elevated level of stress are also linked to high rate of burn out, absenteeism and diagnostic errors and to reduced rates of patient's satisfaction. Occupational stress among health care workers is argued to be responsible for high level of job burn-out, and job burnout among health care workers causes physical fatigue, emotional exhaustion, depersonalization and psychosomatic problems. Others are alcohol intoxication, poor job satisfaction and stress induced hypertension (Orji et al.2002).

Work related pressure among health care workers has been reported to have negative impact including the compromise of patient care, thus resulting to a diminished quality of life to both health care workers and patient (Ndejjo et al. 2015). It is also noted that many of the health care workers run shift duty (morning, evening and night), Lynche and Reese (2002) opined that shift workers are particularly vulnerable to hazard. Between 5-20 % suffer from shift maladaptive syndrome which can result in sleep disturbances, gastro intestinal problems, depression, personality changes and decrease interpersonal skills. Even moderate sleep deprivation can cause mood disruption, irritability, low motivation and slowed responses. To cope with these problems, sufferers are more likely to self-medication with alcohol or drugs. Violence/attack is another consequence of occupational hazard among health care workers; this could be physical abuse, verbal abuse or both. These abuses follow cancellation of appointment, long waiting time at health facilities and during payment of patient bills.

Verbal attack includes swearing, threatening, shouting and sexual harassment. This violence are perpetuated by patient and their relatives. (Azodo, Ezeja and Ehrkhamenor, 2011).

According to Amadi (2011), the effects of these hazards when they occur include injuries, incapacitation, low productivity, economic waste, absenteeism, hardship etc.

Prevention and Control of Occupational Hazards

According to Park (2009), various measures for the prevention and control of occupational hazards and diseases may be group under three headings, medical, engineering and statutory or legislative. Medical measures include pre-placement examination, periodic examination, medical and health care services, notification, supervision of working environment, maintenance and analysis of records, health education and counseling. Such measures as building design, good housekeeping, use of protective devices etc. are engineering measures. While legislative measures involve laws, rules and regulations that protect the health, safety and welfare of the worker.

To minimize occupational hazard among health care workers, NIOSH (2014) recommended minimizing exposure to hazardous drugs and chemicals through preventive measures such as engineering controls, administrative controls and use of PPE.

The use of protective clothing ensures that any injurious substances handle at work and the chances of the worker going home with contaminated skin or clothing is minimized. The head, eyes, nose, hands and feet can also be protected from various forms of hazards. Personal protection with personal apparels can be achieved by use of facemask, earplugs, and muffs, hand gloves, boots, coveralls, goggles, helmet, etc. Most workers default in the use of personal protective effects (WHO Report, 2006).

Similarly adherence to universal precaution for infection control is necessary, CDC (2017) opined that standard precautions are evidenced based practices designed to protect both the health care personnel and prevent the spread of infections among the patients. The standard precautions include hand hygiene, use of PPE (e.g. Gloves, gowns, face mask). Respiratory hygiene and cough etiquette, safe injection practices and safe handling of potential contaminated equipment or surface in the patient's environment. National Health and Medical Research Council (2010) added prospective safe use and disposal of sharps, routine environmental cleaning, reprocessing of reusable medical equipment and instruments aseptic technique, waste management and appropriate handling of linen as universal precaution for infection control.

According to ILO (2003) the concept of risk assessment and risk management are fundamental to prevention and control of risks to safety and health in the workplace. The key aspect of risk assessment include making sure all relevant risk are taken into account checking the efficiency of the safety measures adopted, documenting the outcomes of the assessment and reviving the assessment regularly to keep it updated.

In the same vein, the WHO Global Plan of Action on Workers Health calls on all member states to develop national programme for health workers occupational health and for WHO to develop national campaign for immunizing health workers against H hepatitis B which is 95% preventable with immunization (WHO 2017). WHO global burden of disease from sharp injuries among health workers showed that 37% of the hepatitis B among health Workers was the result of occupational exposure. Needle stick injuries, the cause of 95% of the HIV occupational seroconversion are preventable with practical low cost measures and

have the co- benefit of preventing exposure to other blood borne viruses and bacteria (Ghosh, 2013).

In the opinions of Rohman (2015) to keep workers healthy, the top workplace factors that directly impact the health of employees that should be addressed are job design, including control over work, overtime and number of hour worked, providing social support, conflict between work and family commitment, perceived fairness and justice at work, lay off and economic insecurity, offering health insurance etc.

While Adegoke, Akodu and Oyeyemi (2008) stated that to cope with musculoskeletal diseases, the following were adopted adjustment of position/bed height, requesting for assistance when handling patient, and selection of method best suitable for worker.

In the developing countries like Nigeria, health care workers are poorly prepared to handle occupational hazards and therefore sustain injury and illness while performing their duties. (Orji et al. 2002) cited in Aluko et al. (2016). Owie and Apanga (2016) suggested the following as measures to prevent occupational hazards of health care workers: availability of post exposure prophylaxis to health care workers who sustained needle stick injuries, use of and provision of proper medical waste disposal system, making available, personal protective equipment with written plan on how to use them, posters placed on health care facilities to remind workers of universal safety precautions, periodic training of health care workers on universal health and safety precautions and succulence systems on occupation hazard among health care workers in both facilities to detect earls, report and respond appropriately to such hazards. Also, instituting the ILO standard on occupational safety and health will provide essential tool for government, employers and workers to establish practices that confer maximum safety at work as well as investing heavily into occupational health and safety research, as this will influence positively on policy and decision making regarding health and safety issues among health care workers.

Research Design

This study adopted a cross sectional descriptive survey design. This type of design is carried out in a natural setting aimed at describing, explaining and analyzing behavior OF events as they occur at a particular time (Elendu, 2010). It described the occupational hazard of health care workers in Ikwerre LGA of Rivers State Nigeria.

Population of the Study

The population for the study consists of all health care workers in the government owned health care facilities in Ikwerre LGA of Rivers States, including professional health care workers and non- professional health care workers. The professional health care worker is made up of 239 personnel while the non-professional health care workers are 24 personnel with a total or 263 workers. (Report of Rivers State Primary Health care Management Board and Hospital Management Board Staff Audit, 20 16) (Ref. Appendix 2).

Sample and Sampling Techniques

All the 263 health care workers were selected for the study. Studying every member of the population is considered appropriate because the number is small and easy to manage. This procedure was used by Al-Khatib, El-Ansari and Adequate in 2015 to study all the 322 nurses working in the chosen hospital of Nablus, West Bank Palestine.

Method of Data Analysis

The data generated for the study was analyzed using the Statistical Package for Social Science (SPSS) Version 21. Simple percentage, frequencies, mean and standard deviation

was used to answer the research questions. While ANOVA and z-test was used to test the hypotheses at 0.5 Alpha-level of significance.

Question One: What are the physical, biological, chemical, psychosocial and ergonomic hazards of health care workers in Ikwerre LGA

Distribution of extent of exposure to occupational hazards among health care workers in Ikwerre LGA.

S/N	Occupational Hazards	N = 2.38				X ±SD
		Frequently (%)	Occasionally (%)	Rarely (%)	Never (%)	
Biological Hazards						
1	Blood spill on the skin	41(17.2)	133(55.9)	47(19.7)	17(7.1)	2.7±1.3
2	Needle stick injury	19 (8.0)	123(51.7)	66(27.7)	30(12.6)	2.5±1.3
3	Vomitus, urine or sputum of patient	33(13.9)	96(40.3)	84(35.3)	25(10.5)	2.5±1.0
4	Patient cough or sneeze directly to mouth or nostrils	41(17.2)	88(37.0)	71(29.8)	38(16.0)	2.5±1.9
	Grand Mean					2.5±1.4
Physical Hazard						
5	Noise at the workplace	78(33.8)	83(33.9)	54(22.7)	23(9.7)	2.9±2.7
6	Slips and full	18(7.6)	71(29.8)	85(35.7)	64(26.9)	2.2±0.8
7	Cut/injury on the body	12(5.0)	90(37.8)	85(35.7)	51(21.4)	2.3±0.5
8	X-ray (radiation)	12(5.0)	105(44.1)	53(22.3)	138(58.0)	0.1±0.6
9	Electric shock	5(2.1)	77(32.4)	75(31.5)	132(55.5)	0.6±0.7
10	Heat/cold at work	75(31.5)	115(48.3)	36(15.1)	12(5.0)	3.1±2.8
	Grand Mean					2.3±1.3
Chemical Hazard						
11	Skin reaction from chemical agent	20(8.4)	78(22.8)	87(36.6)	53(22.3)	2.3±0.9
12	Inhalation of dust or chemical	66(27.7)	98(41.2)	55(23.1)	19(8.0)	2.9±1.9
13	Watery eye due to chemical	23(7.7)	66(27.7)	86(36.1)	63(26.5)	2.2±0.9
14	Respiratory disorder (chemical anesthesia)	15(6.3)	38(16.0)	93(9.1)	92(38.7)	1.9±0.8
	Grand Mean					2.3±1.1

Ergonomic Hazards						
15	Lifting of patients	67(28.2)	93(39.1)	55(23.1)	23(9.7)	2.9±2.3
16	Standing up for long time	146(61.3)	63(27.5)	22(9.2)	7(2.9)	3.5±2.8
17	Use of force to push objects	45(24.8)	86(36.1)	72(30.2)	35(14.7)	2.6±1.9
18	Repeated bending while working	122(51.3)	59(24.8)	42(17.6)	15(6.3)	3.2±2.9
Grand Mean						3.0±2.5
Psychosocial Hazard						
19	Physical abuse (Violence)	12(5.0)	63(26.5)	90(37.8)	73(30.7)	2.1±0.8
20	Verbal abuse from patient/clients	56(23.5)	117(49.2)	46(19.3)	19(8.0)	2.9±1.8
21	Stress due to long working hours	119(50.0)	92(38.7)	21(8.8)	6(2.5)	3.4±2.4
22	Use of drug or alcohol to sleep	6(2.5)	33(13.9)	81(34.0)	118(49.6)	1.3±0.2
23	Problem with management or boss	14(5.9)	73(30.7)	92(38.7)	59(24.8)	2.2±1.2
24	Mental disorder/fatigue	10(4.2)	57(30.7)	73(30.7)	98(41.2)	1.8±0.9
25	Working in isolation (Boredom)	19(8.0)	61(25.6)	61(21.6)	68(28.6)	1.8±0.9
Grand Mean						2.2±1.3
Cumulative Mean						2.5±1.5

Table 1 Shows that ergonomic hazards (3.0 ± 2.5) is the most hazard respondents were exposed to, followed by biological hazards (2.5 ± 1.4), physical hazard (2.3 ± 1.3), chemical hazard (2.3 ± 1.1) with psychosocial hazard (2.2 ± 1.3) as the least. Standing up for long time (3.5 ± 2.8) and repeated bending (3.2 ± 2.9) were the most ergonomic hazards, with blood spill on the skin (2.7 ± 1.3) as the most biological hazards, while stress due to long working hour (3.4 ± 2.5) is the most psychosocial hazard. Inhalation of dust or chemical (2.9 ± 1.9) is the most chemical hazard while heat/cold (3.1 ± 3.8) is the most physical hazard. The least physical and psychosocial hazards are electric shock (1.6 ± 0.7) and use of drug or alcohol to sleep (1.3 ± 0.2).

Criteria mean = 2.5, mean value of 2.5 and above is considered significant.

Research Question Two: What is the knowledge of health care workers in Ikwerre Local Government Area about occupational hazard?

Distribution of Knowledge of occupational hazard among health care workers in Ikwerre LGA.

Variation	True		False		Total	
	Frequency	%	Frequency	%	Frequency	%
Health care workers are exposed to various occupational hazard (T)	238	100.0	0.0	0.0	238	100.0
Recapping used needle increases risk of infection (T).	214	89.9	24	10.1	238	100.0
There is a relationship between needle stick injury and transmission of Hepatitis B virus as well as risk of HIV infection (T)	228	95.8	10	4.2	238	100.0
All body fluid should be treated as infection (T)	211	88.7	27	11.3	238	100.0
Hand washing is the most effective means of preventing infection in the health care setting (T)	229	96.2	9	3.8	238	100.0
Gloves should always be worn when handling patient's	234	89.3	4	1.7	238	100.0
Sharps should be disposed in the sharp boxes (T)	228	95.8	10	4.2	238	100.0
Health care worker can become a hazard to his/her colleagues (T)	199	83.6	39	16.4	238	100.0
Prevention/control of hazards should be a shared responsibility between the hospital management and staff (T)	234	98.3	4	1.7	238	100.0

Table 2 shows that all the health care workers 238 (100%) knew that they were exposed to various occupational hazards, 214(89.9%) knew that recapping used needle increases risk of infections, 228(95.8) were aware of the relationship between needle stick injury and transmission of Hepatitis B virus HIV.

Another 229(96.2%) of the respondents were aware that hand washing is the most effective means of preventing infectious in the health care setting. Others are; all body fluid should be treated as infectious 211(88.7%), sharps should be disposed in the sharp boxes 228(95.8%), health care worker can become a hazard to his/her colleague 199(83.6%). Also, prevention and control of hazards should be a shared responsibility between hospital management and staff 234(98.3%).

Research Question Three: What are the perceived consequences or effects of occupational hazards on the health care workers in Ikwerre LGA.

Distribution of consequences/effects of occupational hazards among health care workers in Ikwerre LGA

S/N	Effect/Consequences	N = 238
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		Frequently (%)	Occupationally (%)	Rarely (%)	Never (%)	X ±SD
1	Allergic skin reaction	6(2.5)	97(40.8)	98(41.2)	37(15.5)	2.3±0.7
2	Musculoskeletal disorder	32(13.4)	106(44.5)	50(21.0)	50(21.0)	2.5±1.1
3	Poor performance	8(3.4)	62(26.1)	113(47.5)	55(23.1)	2.0±1.8
4	Hearing problem	6(2.5)	23(9.7)	84(35.3)	125(69.7)	1.5±0.7
5	Alcoholic intoxication	6(2.5)	12(5.0)	54(22.7)	166(69.7)	1.1±0.7
6	Waist pain	67(28.2)	132(55.5)	31(13.0)	8(3.4)	3.1±2.7
7	Eye problem	16(6.7)	94(39.5)	87(36.6)	41(17.2)	2.4±1.8
8	Sleepless night	35(14.7)	111(46.6)	63(26.5)	29(12.2)	2.6±1.8
9	Cut/injury at work	3(1.3)	73(30.7)	91(38.2)	71(29.8)	2.0±0.8
10	Absenteeism from work	5(2.1)	81(34.0)	108(45.4)	44(18.5)	2.2±1.5
	Grand Mean					2.1±1.3

Table 3 shows that that most prevalent occupational hazards experienced by health care workers in Ikwerre LGA waist pain (31±2.7), followed by sleeplessness (2.6±1.8), and musculoskeletal disorders (2.5±1.1). others are eye problem (2.4±1.8) and allergic skin reaction (2.3±0.7), while alcoholic intoxication (1.1±0.7) is the least consequent or effect suffered by health care workers. Criteria mean = 2.5, mean value of 2.5 and above is considered significant.

Research question Four: What are the safety measures to control occupational hazards among health care workers in Ikwerre L.G.A.

Distribution of safety measures among health care workers to control occupational hazards

S/N	Effect/Consequences	N = 238				X ±SD
		Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)	
1	Immunization against Hepatitis B virus	102(42.9)	84(35.3)	35(14.7)	17(7.1)	3.1±2.9
2	Provision and use of adequate and complete P.P.Es	52(21.8)	97(40.8)	64(26.9)	25(10.5)	2.7±1.8
3	Hand wash with soap and water	148(66.2)	78(32.8)	12(5.0)	0(0.0)	3.6±2.5
4	Post exposure prophylaxis (PEP)	76(31.9)	97(40.8)	48(20.2)	17(7.1)	3.0±2.9
5	Conducive working environment	168(70.6)	67(28.2)	3(1.3)	0.(0.0)	3.7±2.9
6	Periodic medical checkup/HIV screening	93(39.1)	95(99.9)	41(17.2)	9(3.8)	3.7±2.8
7	Appropriate handling of hospital waste and linen used by patients	102(42.9)	95(39.9)	35(14.7)	6(2.5)	3.1±2.3
8	Training/seminars	117(49.2)	112(47.1)	4(1.7)	5(2.1)	3.2±2.7
9	Social support	97(40.8)	105(44.1)	26(10.9)	10(4.2)	3.4±2.8
10	Monitoring of occupational	52(21.8)	77(32.4)	67(28.2)	42(17.6)	2.5±1.8

safety laws for complains

Grand Mean

3.1±2.7

Table 4 shows that conducive working environment (3.7±2.8) is the most safety measure that could be adopted to prevent occupational hazards among health care workers. This is followed by hand wash with soap/water (3.6±2.5), training/seminars (3.1±2.7), appropriate handling of hospital waste and linens used by patients (3.2±2.7). Others are, immunization against Hepatitis B-virus (3.1±2.9), periodic checkup/HIV screening (3.1±2.3). Post Exposure Prophylaxis (3.0±2.9) and adequate and complete PEE (2.7 ±1.8). Also, monitoring of occupational laws (2.5±1.8) as well as social support (3.1±2.8). Criteria mean=2.5, mean value of 2.5 and above is considered significant.

Waist pain, sleepless night, eye problem, skin reactions and musculoskeletal disorders are the effects of occupational hazards suffered by the respondents. Also, there is a high level of awareness of occupational hazard among the health care workers, while safety practices that could be adopted to control occupational hazard include; immunization against hepatitis-B virus, hand washing with soap and water, provision and use of adequate and complete PPEs, conducive working environment, medical checkup/HIV screening, appropriate handling of hospital wastes and linen, use of Post Exposure Prophylaxis, training/seminars, social support as well as monitoring of occupational safety laws.

Conclusion

Based on the finding of the research, the following conclusions are made.

1. Year of service has no significant influence on exposure to occupational hazards among health care workers in Ikwerre LGA.
2. Age has no significant influence on occupational hazards on occupational hazards of the health care workers in Ikwerre LGA.
3. Educational qualification has no significant influence on occupational hazards of health care workers in Ikwerre LGA.
4. Marital status has significant influence on occupational hazards of health care work in Ikwerre LGA.
5. Gender has no significant influence on occupational hazards of health care/workers in Ikwerre LGA.

Recommendations

Based on the findings of the researcher, the following recommendations are made

- The government should ensure that dilapidated health care facilities as well as the closed down hospitals are opened and renovated with modern facilities to meet the modern day standard of health care practices and decongest the existing facilities.
- The health education unit as well as the management of the health care facilities should as a matter of necessity ensure that there is a continuous awareness campaign of health care workers on safety precautionary practices to prevent occupational hazards through regular seminars, workshops and training.
- Health care workers in Ikwerre LGA should ensure that they wear the appropriate and complete PPEs when discharging their duties as exposures to occupational hazards are eminent in the health care setting.
- Health care workers who are yet to take a complete immunization against hepatitis-B virus should make themselves available.

- Health care workers should report cases of needle stick injuries promptly adequate Post Exposure Prophylaxis.
- There should be a massive education and awareness campaign to discourage members of the communities from verbal and physical attack on the health care workers. This should be coordinated b) the health education department of the hospitals, local government authorities and the ministry of health through the community cadets and the mass media.
- Employers of health care workers should give accelerated attention to welfare needs of the workers, this could be through bonus, awards studs leave, health insurance or regular promotion as at when due, as these incentives increase the zeal and capacity of the personnel to work.
- The government should improve on the man power need of the hospital employing sufficient workers to ease the work load on the health care workers.
- There should be adequate and timely provision of amenities needed to protect and control occupational hazards of health care workers eg. Post exposure Prophylaxis drugs, PPEs. immunization toxoids etc.
- Government should establish and equip occupational health service units in all the tertiary/secondary health care facilities, as well as the Local Government Council health authorities to monitor compliance to occupational health laws.

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