

## Prevailing Occupational Health Hazards and the use of Protective Devices Among Nurses in University of Maiduguri Teaching Hospital

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### Abstract

*Nursing is an enviable and lifesaving profession not only in Nigerian setting but globally, as applicable to other areas of human endeavour, the practitioners are exposed to many occupational hazards, some of which produce physical disabilities while others if care is not taken, may lead to life threatening diseases. This study assessed the prevailing occupational hazards and the use of protective devices among nurses in university of Maiduguri teaching hospital. The researchers used a descriptive survey design. A structured and validated questionnaire was used to collect data from 174 nurses using multi-stage random sampling. Analysis was done using frequency counts and percentages. Findings revealed that backache, needle prick and skin injuries are the common occupational hazards suffered by most nurses in the teaching hospital. It was also discovered that hand gloves and face masks were the only protective devices readily available for use by the nurses. The study suggests that hospital management should ensure that protective apparatus are always made available for worker to use.*

**Keywords:** *Occupational health hazards, Protective device and Maiduguri.*

### Background to the Study

Nursing is an enviable and lifesaving profession in the healthcare setting, but as applicable to other areas of human endeavour, the practitioners are exposed to many occupational hazards, some of which produce physical disabilities while others if care is not taken, may lead to life threatening diseases like HIV/AIDS, Ebola and hepatitis B (Stonerock, 2004). Nursing and other related healthcare occupations are demanding professions, men and women in these jobs are responsible for providing high-quality health care, though their working environments such as hospitals, clinics and laboratories, are increasingly recognized as hazardous workplaces (Stonerock, 2004). The key safety issues impacting this work force include needle stick injuries, workplace violence and musculoskeletal injuries related to patient handling (Josephson, 2008).

In recent years it has become apparent that health care workers are exposed to a variety of occupational insults that can result in serious acute and long term adverse health outcomes. In nursing, the situation is complicated because of high demand on quality nursing care, most nurses do not have adequate knowledge on the assessment of hazards when they occur, others may not apply protective measures properly even if they know (Monica, 2007). However many hospitals are built and managed without due concern for the health of the workers, often because of lack of experience in the area of occupational health.

Since 1950, the International Labour Organization (ILO) and the World Health Organization (WHO) have shared a common definition of occupational health as the promotion and maintenance of the highest degree of physical, mental and social wellbeing of workers in all occupations and places of employment. Hazards are often seen as risks or dangers that are inherent in one's occupation. The employee often times due to ignorance or negligence of the hazards overlooks the use of protective measures (Ajayi, 2006). The National Institute of Occupational Safety and Health estimates that each year about 100,000 people die of occupational illness. Nearly 400,000 new cases of occupational diseases are recognized annually which was observed to be one of the major causes of low productivity among the workers (Ajayi, 2006). Similarly the role of Labour Statics (2003), stated that more than 4,351,000 cases of nonfatal musculoskeletal injuries and illness occur in work places of these, 1,315,000 injuries resulted in lost workdays (Brunner and Surddarth, 200, Garret, 2009). Research has shown that, in nursing practice, most of the injuries occur during patients handling and movement activities (Nelson and Baptist, 2004).

Nurses in emergency department and other health care settings continue to report high level of job related injuries, illness, and assault. A typical example of such hazard in the health profession is the recent cases of Ebola virus outbreak in Nigeria

that claim the lives of two nurses and a doctor who were in active service to humanity.

This study therefore, will help create awareness on the on prevailing occupational hazards and how often nurses use such protective devices or measures in the prevention of occupational hazards. The outcomes of the study will draw the attention of hospital managements on the need to provide protective devices to nurses in order to reduce occupational hazards and in turn increase productivity. The findings will further provide information to the government on the prevailing occupational hazards and the need for adequate funding of health institutions.

#### Statement of the Problem

Nurses face the risk of occupational health hazards from potentially deadly diseases from the use of unsafe personal protective equipment each and every day; risks that are totally unnecessary. The National Institute of Occupational Safety Health (NIOSH) has estimated that over 600,000 needle sticks occur annually leading to 1,000 infections and over 100 deaths (NIOSH, 2004). The organisation also estimated that each year, 100,000 people die from occupational illnesses. Nearly 400,000 new cases of occupational diseases are recognized annually. Anecdotal observation by the researchers during clinical supervision in University of Maiduguri Teaching Hospital (UMTH), indicates a high rate of needle prick, complain of backache and skin rashes among nurses. In view of the above, the researchers deem it imperative to investigate the prevailing occupational health hazards and the use of protective devices among nurses of University of Maiduguri Teaching Hospital.

#### Objective of the study

1. To determine the prevailing occupational health hazards among nurses in University of Maiduguri Teaching Hospital (UMTH), Borno state.
2. To determine the availability of the protective devices in University of Maiduguri Teaching Hospital (UMTH) Borno state.
3. To determine how often nurses in UMTH uses the available protective devices

#### Empirical Review

Elshamy, El-Hadidi, El- Roby and Fouda (2006), conducted a research to determine the health hazards among nurses exposed to chemotherapy drugs; identified potential risk factors that may predispose nurses to chemical hazards; and evaluated available protective measures used in clinical practice at the Mansoura University Hospital. Health hazards among the studied group and control were: abortions (31.4% versus 10.3%), infertility and sub-fertility (14.3% versus 3.4%), premature labour (14.3% versus 17.2%), soft tissue injuries due to spills and splashes (14.3% versus 0.0%), and developmental and behavioural abnormalities among the

children of the nurses (8.6% versus 3.4%). Urine samples from study nurses were more mutagenic than controls (40% versus 10.3%). But the protective measures against these potential risk factors were not available. This gap that existed between the potential risk factors and non-availability of protective measures was blamed to managerial lapses.

A study carried out by Teferi (2009), to assess occupational hazards among students of nursing and midwifery in clinical practice in all degree awarding nursing and midwifery schools in Addis Ababa. Majority of the study population (93.1%) indicated that they had needle prick, blood splash and skin cuts during their clinical practice.

Furthermore, Maritsa, Paraskeui, Maria and Georgios (2012), determined occupational exposure to blood and body fluids among health care professionals at general hospital in Attica, emergency departments. The study sampled 124 nurses working at emergency departments of six general hospitals in Attica. 87.1% of participants reported exposure to blood or other liquids at all shift. 52.8% reported exposure during evening shift, 30.6% during morning shift and 16.7% during night shift. On the degree of exposure, 10.3% reported third degree wound, 32.7% reported second degree wound while 57.0% reported first degree wound. As regard to the use of protective equipment, only 23% of the participants were in the habit of using protective devices such as hand gloves, face masks, goggles, caps, good personal relationship and protective shoes when carrying out procedures.

Amosu, Degun, Atulomah, Olarewju and Aderibigbe (2011), conducted a descriptive survey to investigate the level of knowledge on the predisposing factors to occupational hazards among nurses in health facilities in Abeokuta, Ogun state, Nigeria. It was found that 96.2% of the respondent knew that the profession is prone to occupational hazards, and as expressed by 88.6% of the respondents, back injury was the commonest hazard, followed by neck pain as attested to by 84.8% of the nurses, 79.5% reported assault from patients, 40.0% reported muscular disorder and 20.0% reported workplace violence. The most prominent predisposing factor observed was prolonged standing as viewed by 84.5% of the respondents.

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20.0% reported workplace violence. The most prominent predisposing factor observed was prolonged standing as viewed by 84.5% of the respondents.

**Target Population:** All nurses working in the university of Maiduguri teaching hospital were the target population for this study comprising of about 330 registered nurses (record and statistic unit UMTH, 2013).

**Sample and Sampling Technique:** A total of one hundred and eighty one (181) respondents from the various hospital units were selected using multi-stage random sampling technique.

**Instrument for Data Collection:** A self-structured and validated questionnaire was used to collect data on prevailing occupation health hazards and the use protective devices used among nurses in University of Maiduguri Teaching Hospital. The questionnaire comprised of four sections. Section A gathered data on the demographic characteristics of respondents. Section B: Gathered data on the types of occupational health hazards. Section C: Elicited data on available protective devices against health hazards and Section D: On the use of protective devices/measures by nurses.

**Validity/Reliability of Instrument:** The questionnaire was constructed by the researcher and submitted to research colleagues for face and content validity. Thereafter the instrument was pre-tested at State Specialist Hospital Maiduguri, Borno State, using twenty (20) registered nurses. Reliability co-efficient of 0.78 was found.

**Method of Data Collection:** Ethical clearance was obtained from University of Maiduguri Research and Ethical Committee. Permission to collect data was also given by the hospital management. Nurses were selected from various units' namely; medical unit, surgical unit, accident and emergency unit, paediatric unit, theatre unit, ear nose and throat unit, obstetric and gynecological unit using proportion by size. Questionnaires were then administered to nurses who accepted to participate in the study. A total of 181 questionnaires were administered however, one hundred and seventy four (174) were retrieved for analysis.

**Method of Data Analysis:** Data generated for the study was analyzed using frequencies and percentages and presented on tables.

## Results

Table 1: Sex distribution table

Sex	Frequency	Percentage (%)
Male	92	52.9
Female	82	47.1
Total	174	100

Table 1 shows that 92 (52.9%) were male and 82 (47.1%) female.

Table 2: Age distribution

Age	Frequency	Percentage (%)
20-29	80	46.0
30-39	64	36.8
40-49	24	13.8
50and above	06	3.4
Total	174	100

Table 2 Shows that 80 (46.0%) were within the age range of 20-29, 64 (36.8%) were between 30 and 39, 24 (13.8%) between 40 and 49 while 6 (3.4%) were 50 years and above.

Table 3: Rank distribution table

Rank	Frequency	Percentage (%)
NO I	40	46.0
NO II	40	46.0
SNO	62	35.6
PNO	18	10.34
ACNO	04	2.29
CNO	5	5.7
Total	174	100

Table 3 shows that 40(46.0%) of the respondents were Nursing officer I, 40(46.0) Nursing officer II, 62(35.6%) Senior Nursing Officers, 18(10.34%) were Principal Nursing Officer, 4(2.29%) were Assistant Chief Nursing Officer and 5(5.7%) were Chief Nursing Officer.

Table 4: Types of occupational health hazards among nurse

Health hazard	Yes		No		Total	
	Freq.	%	Freq.	%	Freq.	%
Backache	154	88.5	20	11.5	174	100
Assault	72	41.4	101	58.6	174	100
Needle Prick	142	81.6	32	18.4	174	100
Violence	48	27.6	126	72.4	174	100
Skin irritation	110	63.2	64	36.8	174	100
Cuts	100	57.5	74	42.5	174	100
Infectious diseases	96	55.2	78	44.8	174	100

Table 4 shows that 154(88.5%) of respondents reported backache,72(41.4%) reported assault,142(81.6%) needle prick,48(27.6%) violence,110(63.2%) reported skin irritation,100(57.5%) cuts and 96(55.2%) of respondents reported infectious disease as prevailing occupational health hazard.

Table 5: Available protective devices/measures used against prevailing occupational health hazards.

Protective Devices/Measures	Yes		No		Total	
	Freq.	%	Freq.	%	Freq.	%
Caps	94	54.0	80	46.0	174	100
Face masks	170	97.7	4	2.3	174	100
Hand gloves	172	98.9	2	1.1	174	100
Goggles	2	1.1	172	98.9	174	100
Aprons	44	25.3	130	74.7	174	100
Shoes	116	66.7	58	33.3	174	100
Inter-personal relationship	160	92.0	14	8.0	174	100
Good regular shifting hours	98	56.3	76	43.7	174	100

Table 5 shows that 94(54.0%) of respondents reported availability of caps,170(97.7%) face mask, 172(98.9%) hand gloves, only 2(1.1%)reported availability of goggles,44(25.3%) reported availability of aprons,116(66.7%) reported availability of protective shoes,160(92.0%) reported good inter-personal relationship as a measure and 98(56.3%) of respondent believed that well-co-ordinated shifting hour is a measure against occupational hazards.

Table 6: Usage of the available protective devices/measures

Usage of protective devices	Frequency	Percentage (%)
Always	126	72.4
Seldom	48	27.6
Never	0	0.0
Total	174	100

Table 6 revealed that 126(72.4%) of respondent always use protective device/measure, while 48(27.6%) seldom use protective measures /devices

### Discussion

This work provided the opportunity to examine the prevailing type of occupational health hazards and the use of preventive devices among nurses. Result obtained from the study indicates that backache, needle prick and skin irritation are the most prevalent occupational health hazard among nurses in the UMTH. This findings is in consonant with previous studies (Elshamy, El-hadidi, El-Roby and Fouda, 2006, Amosu, Degun, Atulomah et al, 2011, Maritsa, Paraskeui, Maria and Georgios, 2012) which reported that irritation injury due to splashes and spills, back injury and needle pricks are the commonest occupational hazard among nurses in health facilities. Backache occurring among nurses of UMTH could be as a result of performing task that require repetitive motion, lifting of patient and performing procedures such as wound dressing, vital sign monitoring etc that require nurses to be bending repetitively and severally. The prevalence of needle prick injury could be as a result of work pressure on nurses and in an attempt to meet up with other patient needs, nurses end up not observing universal precaution when handling needles. This predisposes nurses to needle prick injury. Furthermore in an attempt to disinfect their hands after procedure, nurses use any available antiseptic some of which may irritate them causing skin rashes.

The study further examined the available protective devices used against prevailing occupational health hazards in UMTH. Results reveals that hand gloves, face masks and good personal relationship with colleagues and patients were the most available protective devices/measures used by nurses in the UMTH. The availability of these protective devices may be because they are the consumables commonly used in all procedures. It may also not be unconnected to their affordability and indispensability.

Though nurses in UMTH were reported to always use the protective devices/measures available in the hospital, this finding was not upheld by previous researchers (Maritsa, Paraskeui, Maria and Georgios, 2012). This indicates that nurses of UMTH are aware of the need to use protective devices or measure as



revealed, however; the few that seldom use protective devices may be nurses that are in clinics where they handle clean procedures that do not require the use of gloves and face masks which are the most commonly available protective devices in the hospital.

#### Summary

This study was taken to determine prevailing occupational health hazards and the use of protective devices among nurses in the UMTH, Borno state. From the finding, it is cleared that majority of nurses suffered from some occupational health hazards. The common ones include: backache, needle prick and skin injury while the least occupational health hazards were violent and assault. And the most protective devices available for them were hand gloves and face masks while the least protective devices were goggles and aprons. Majority of the nurses in the UMTH were in good habit of using the available protective devices/measures.

#### Recommendations

1. There should be regular immunization for staff against communicable diseases and provision of other protective devices for the hospital staff so as to reduce the risk of occupational hazards.
2. The management of hospitals should provide free periodic medical examination for all workers.
3. Hospital management should ensure that protective apparatus are always made available for worker to use.
4. Conferences and seminar should be organized to sensitize health care worker on the need to always utilize universal precautions protect themselves irrespective of whether they work in the wards or clinics.

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