

## THE ROLES OF NURSES IN MAINTENANCE OF SAFE WORKING ENVIRONMENT IN AKWA IBOM STATE, NIGERIA

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### ABSTRACT

*This study was conducted to assess the role of nurses in maintenance of safe working environment in General Hospital, Ikono. Data for the study were collected from 120 respondents through the use of questionnaire. Four hypotheses were tested using percentages, t-test and chi-square statistics at .05 level of significance. The results indicated that nurses were knowledgeable about maintenance of safe working environment than others. Individual play significance role in the maintenance of safe working environment. It also indicated that the nurses differ in the maintenance of safe working environment based on age, gender, and qualifications. It was recommended that all nurses, employers and employee should be trained on maintenance of safe working environment.*

**Keywords:** Nurses, Employers and Employee, Safe Working Environment, Maintenance, T-test, Chi-square, Personal Protective Equipment (PPE)

### INTRODUCTION

The occupational ecological system which contains the internal environment or workplace, the equipment, substances or material, used with their by-products and the workforce that makes the machine to work is a significant part of the total ecological system. In considering the occupational ecological system, one must recognize the resultant effects of the intersections of the machines/materials and workforce, which produces hazards. These hazards may be physical, chemical, biological, and ergonomic or psychosocial (Niscon, 1992). Hazards are inherent in every work process or system, it exists as a natural phenomenon or condition created in an industrial environment as a result of intersections that exist between man and machines and between environment and man. These dynamic conditions can only be controlled but cannot be eliminated to a large extent as long as a product continues. For instance, most industrial processes are noisy and total elimination of noises in such processes is impossible. In other words, noise in an individual environment can only be controlled to a bearable level but cannot be totally eliminated as long as production continues. The key to the management of hazards in the work environment includes knowing and understanding the hazards inherent in every activity in the work environment and the risk of exposure to them. This is very complex to those responsible for the promotion and protection of people at work. The first assumption of a safety conscious individual working in a dusty environment is to protect himself against inhalation, ingestion and absorption of the hazardous agent into the body. However, the attitudes of the employer who may be aware of the risks of this practice do not help the situation because most of them prefer the procurement of Personal Protective Equipment (PPF) such as face masks, gloves and overall for their workers as the best option. This is because personal protective equipment are the least expensive and easiest in terms of controlling the health hazards in the work environment but at the same time the least effective within a normal practice, personal protective equipment should only be used as a primary control methods where other measures are not reasonably practicable. Most of the employers also consider that the control of health hazards in the work place is supplementary to production and never consider it as part of the process, these attitude are more prominent in developing countries where there is no clear regulation concerning the control of occupational health hazards. However the types of control measure to be adopted depend on the nature of the hazardous agents and its routes of entry into the body. We are also guided by the fact that there is a relation between the amounts of hazardous agent in the breathing zone and the duration of exposure of the workers, therefore reduction in the concentration of the hazardous agent in the breathing zone and the duration of exposure will reduce the risk of exposure. There are a number of ways to reduce the concentration of the hazardous agent in the breathing zone and the duration of exposure. These are a number of ways to reduce the concentration of the hazardous agent in the breathing zone and the duration of exposure. These are a number of ways to reduce the concentration of the hazardous agent in the breathing zone and the duration of exposure.



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She should apply the basic principles of environmental control viz: such as substitution, isolation or enclosure and as a last resort personal protection to guarantee a free working environment. Other function includes diagnosis and treatment of disease and injury, health supervision and screening, health education, counseling services, vaccination services, etc. The nurses provide primary care in the work place for injuries, illnesses both work related and non-occupational, the nurse usually assist the occupational health physicians. The role of the nurse include the promotion and protection of health, management research and policy development, provides care and health services to workers through promotion and restoration of workers health (Mehi, 1995). The nurse uses substitution as the most effective methods of control, rather than using hazardous substance, considering should be given to whether it is necessary or if it can be replaced by one which will not have an adverse effect either on the employees or the final product, example carbon tetrachloride has been largely replaced by less hazardous solvents such as trichloroethene, in engineering, radiation can be replaced by ultrasound, in non-destructive testing. Machines that cannot be guarded can be replaced by those which require two-hands to start thus keeping fingers away from the dangerous parts. Noisy machines may be replaced by quieter one as well as use of fibre glass to replace asbestos. According to Achalu (2000), there should be isolation and enclosure of dangerous part of machinery or processes, introduction of wet method to reduce airborne dusts from operation such as grinding, milling and mining and location of exhaust ventilation system at the source of generation of air contaminants. The nurse should be able to monitor and inspect the work environment which will safe as essential tools towards maintaining healthy and safe working conditions. Monitoring involves the recognition of potential hazards in the industrial environment and the classification of the hazards according to location and severity and review of previous inspection to help familiarize withal related problems inherent in every industrial activity. The nurse should also create awareness to every worker towards protection against a known hazard, as this is the second line of defence against an unexpected conditions such as face masks and respirators, footwear, goggles, earmuff, apron, gloves, etc to prevent hazards in a working environment. The nurse advises the workers on various types of protective equipment such as:

- Personal protective equipment for the employee
- Protection for the head: This can be achieved by the use of helmets which can be categorized into:
  - Limited voltage resistance for general services, high voltage resistance
  - No voltage resistance (metallic helmets), limited protective protection for fire fighting. Others include lump caps and caps for long hairs.
- Protective equipment for the eye include cover goggles, tempered lenses, protective spectacles, protective goggles including chemical mask duster, welder's chippers and laser goggles.
- Face protection: This can be achieved by the use of one or more of the equipments; face shields, baring helmets, acid-proof hoods, air supplied hood, welding helmets.
- Hand protection equipments: Asbestos gloves, metal mesh gloves, rubber gloves, rubber, neoprene or vingle gloves, leather gloves, chrome tanned leather gloves, cotton or fabric gloves, heated industrial gloves, hand leather.
- Foot protection equipment including: Safety boots, shoes and rubber overshoes, safety shoes with metal guards, leather shoes with wooden soles for wet work condition, reinforced shoes, metal free shoes, boots and other foot wear.
- Force arm protection devices including wristlets (arm protector), protective sleeves and rubber sleeves are all available and are made in many of the same materials as gloves.
- Leg protection – legging and kneepads
- Respiratory equipments – Airline breathing apparatus, respirators for the control of occupational disease caused by breathing contaminate in air.

Etuk (2006) stated that another important role of the nurse is in diagnostic procedures in which she has to liaise with the medical doctor in order to make proper diagnosis of the patient's illness or disease prior to medical treatments. By prompt diagnosis, this will also help in the prompt treatments of workers so as to have a sound health in few days in order to return back to workplace on time. The nurse pleads for workers regards health condition, yet does not sabotage the efforts of the management. The nurse advises the employers and the employees on the health need of workers. Nursing entails demands that no professional



physically and mentally capable of performing a specific task and that the work will not adversely affect the health of the employee. To ensure this need the nurse is to:

- Liaise with workers requiring special attention example aged, pregnant women, disabled workers, diabetes and canteen workers.
- Design and administration of health questionnaire to screen prospective employee.
- Performance of medical test on those involved in hazardous operation e.g. test for lung infection among those exposed to dust and smoke, audiometric for those exposed to noise, others include; blood urine and stool test for workers with ionizing radiations or with inorganic substances.
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Burgees (1994), stated that modern industrial processes have introduced into the work environment substances and materials which are hazardous to health. These substances and materials are in form of dust, gases, vapour and mists. Their concentration may exceed the accepted safe levels. At the same time, heat that often accompanies most industrial processes is dissipated into the work environment. This is much more uncomfortable in the tropics resulting in heat stress with its accompanying health illness. However, a well-designed and effective ventilation system will remove these problems and create a conducive, safe and healthy work environment for the workers. Ventilation can therefore be defined as a process of controlling the work environment through the supply of air to dilute the concentration of contamination to acceptable levels and at the same time to remove contamination at their source and to heat and cool the work environment. Therefore a nurse being a all round worker should make sure there is adequate fresh and purified air supplied to the office environment to create conducive and comfortable work environment. Ventilation and air conditioning system with the ability of maintaining relative humidity between 30-70% should be installed. There should be an effective maintenance culture to prevent organisms such as legionnaires diseases or humidifier fever. The ventilation should be capable of removing unwanted fumes, gases or dust from offices. The nurse should work with the management and the electrician to make sure all areas of the office and work environment is adequately eliminated. It is recommended that all areas of the offices should be well illuminated with 500lux working desk and 750 to 1000lux for high-precision work such as drawing (Harrington & Gill, 2005). According to Achalu (2000), the nurse also gives health education to the workers in order to raise general awareness, workers valuation and corporate (group) collaboration of the health staff, labour and management in ensuring utmost safety in the work place, by the faithful implementation of the health education as related to the work place. Some method of health education used in the occupational health safety include the following:

- Information processes – posters, talks, seminars, etc.
- Use of health and safety committee
- Accident prevention and accident investigation committees
- Incentive programmes for safety, example prizes and bonus programmes for cleanest, safest departments annually, etc.
- Distinction programme for usage conditions not to be encouraged at any rate.

The nurse also as a health worker advice the management with respect to overcrowding, legislation aims to ensure that all factories where work is being carried on should not be so overcrowded as to cause risk or injury to the health of persons employed therein. To this end, each workroom must not be less than a fit (2.77m) high measured from floor to the lowest part of the ceiling where there is no ceiling to the lowest part of the roofing material. The foregoing, therefore, formed the basis for researchers' interest to investigate the role of nurses in the maintenance of safety working environment in Akwa Ibom State, Nigeria. To enhance the investigation, the following research questions and hypotheses were formulated to guide the study:

#### Research Questions

- 1) What are the demographic characteristics of the respondents?
- 2) What is the role of nurses in maintenance of safe working environment?

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2. There is no significant difference in the role of nurses by age in the maintenance of safe working environment.
3. There is no significant difference in the role of nurses by qualification in the maintenance of safe working environment.

### Research Method

The descriptive design was used in this survey study. This design was considered appropriate because it helped the researchers to identify, study and analyze the roles of nurses in maintenance of safe working environment. The population of this study consisted of nurses under the employment of Hospital Management Board, Uyo, working in General Hospital, Ikono. The population was 120 nurses. The nurses were eligible to participate in the study because they had been trained on occupational safety. Purposive sampling technique was used to draw the 120 nurses working in General Hospital, Ikono, for the study. The decision to use them was based on the fact that the population was good enough for the study. The instrument for data collection was the questionnaire titled "Nurses and Maintenance of Safe Working Environment Questionnaire (NMSWEQ)". The NMSWEQ was arranged in two sections. Section A elicited demographic information from the respondents. Section B sought information as the roles of nurses in the maintenance of safe working environment. The researchers administered the instruments (NMSWEQ) to the respondents in General Hospital, Ikono. All the 120 self-administered questionnaires were completed and used for analysis. Data generated in the study were analyzed using percentages, t-test and chi-square statistics. Decisions were taken at 0.05 level of significance.

### RESULTS

The results are presented in Tables.

Variables	Frequency	Percentage
<b>Sex</b>		
Male	38	31.67
Female	82	68.33
<b>Age</b>		
20-29 years	17	13.33
30-39 years	70	58.33
40-49 years	29	24.17
50 + years	5	4.17
<b>Professional Qualifications</b>		
B.Sc. Nursing	3	2.50
Chief Nursing Officer (CNO)	22	18.33
Registered Nurse/Midwives	95	79.17

As shown in Table 1, the respondents were males (31.67%) and females (68.33%). Their ages were 20-29 years (13.33%), 30-39 (58.33%), 40-49 years (24.17%). Among them were nurse with B.Sc. Nursing (2.50%), Chief Nursing Officers (18.33%) and Registered Nurse and Midwives (79.17%).

Table 2: Respondents Score on Role of Nurses in Maintenance of Safe Working Environment (N=20)

		F	%
1.	Encouraged the nurse of protective equipment	104	86.7
2.	Health education on safety procedures in General Hospital, Ikono	120	100
3.	Counseling slippery items including liquids on the floor	-	-
4.	Assist in illuminating of the office	72	60
5.	Health education of general cleanliness	72	60
6.	Advice on avoidance of overcrowding	117	97.50
7.	Ensure appropriate spacing of equipments in wards and	68	56.67



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This result is supported by Osangingbemi (2003) who found out that nurses with higher qualification maintained safe working environment than those with lesser qualification.

### CONCLUSION

The study was carried out to assess the role of nurses in maintenance of safe working environment in General Hospital, Ikono. The review of the related literature as a guide to have more knowledge in maintenance of safe working environment.

### RECOMMENDATIONS

All nurses should be trained on occupational health nurses in order to be equipped with knowledge and information about occupational and environment safety. Persons with the right qualifications and safety should be employed in industries. Current factories inspectors should be trained and also updating their knowledge in all the principles guiding occupational safety and health and stipulating adequate and regular inspections not policing of workplaces. Awareness should also be created through workshops and seminars of the importance of health and safety of workers among trade union leaders and workers themselves. The national industrial safety council of Nigeria, a tripartite organization made up of the government, employer and trade unions representatives should spear head this approach. However, Nigeria Institute of Safety Professionals (NISIP) has started organizing certified courses of short duration for workers in the country and this should also be available in Akwa Ibom State. NISP also organizes annual conference where employers, employees and the public are educated on the importance of promotion of the general well-being of the workforce. The government, the employers, and the workers should be encouraged and make good advantage of this innovation while our higher institutions should also be encouraged to offer degrees or diploma courses in occupational health and safety. This is mainly because working together, sharing knowledge and co-operating in all the important endeavours will prevent the needless suffering that is encountered by the workmen and women in most workplaces in Nigeria today. These efforts will subsequently have positive impacts on the general well being of the workforce and enhance productivity and efficiency.

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