



## **PROBLEMS OF ENVIRONMENTAL HEALTH CARE WORKERS IN EBONYI STATE**

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### **Abstract**

*The study examined the problems of environmental health care workers in Ebonyi State. Two research questions guided the study while two hypotheses were tested at 0.05 level of significance. Descriptive survey research design was adopted for this study. The population for the study consisted of 9,599 (5439 urban and 4160 rural) environmental health care workers in Ebonyi State. The sample size was 960 how environmental health care workers in Ebonyi State. The sample size was drawn using proportionate random sampling technique. The instrument for data collection was a researcher's structured and validated questionnaire titled "Problems of Environmental Health care Workers Questionnaire (PEHCWQ)". Reliability of the instrument was determined using Cronbach Alpha statistic estimated at the end of which 0.81 and 0.79 were derived as the reliability indices. The reliability index was 0.80 which made the instrument reliable. Mean and standard deviation were used to answer the research questions while t-test statistic was used to test the hypotheses. The findings of the study showed that occupational hazards and climate are problems of environmental health care workers in Ebonyi State. The researcher recommended that regular conferences and seminars should be held by the Ebonyi State government in conjunction with the Ministry of Health in order to keep the environmental health care workers abreast of the various issues associated with occupational hazard.*

**Keywords:** Environmental, health care workers, occupational hazards, climate change.

### **Introduction**

The environment is the total living and non-living surroundings of any organism needed for life and sustainability. The environmental public health has become a prominent, but and complex multi-dimensional issue on the public policy agenda of states and international organizations. Worldwide, the health-care force represents 12% of the working population (Erah, Chijioke, Uwaibi, Akamien and Okhawere, 2020). Nigeria has one of the largest pools of healthcare personnel in Africa (WHO, 2015) and they make up about one third of the total workforce in Nigeria. Health workers perform their duties in an increasing hazardous work environment and occupational settings (Moore, 2010). Personnel in this workforce are responsible for providing quality health care services, even though their work places (hospitals, clinics and laboratories) are increasingly unsafe. It was reported by Lipscomb and Rosenstock (2017) that healthcare workers (HCWs) encounter different hazards due to their activities. This includes but not limited to sharp related injuries, direct infections, stress, assault from patients and their relatives, allergies, back pain, and other musculoskeletal injuries. In spite of the numerous hazards in their unsafe



workplaces, healthcare occupational settings continue to be neglected by governments, management and regulators.

Furthermore, environmental health care workers are responsible for monitoring and enforcing health and hygiene legislation. They also investigate when there's an incident, such as pollution, a noise problem, toxic contamination, pest infestation or an outbreak of food poisoning. According to the World Health Organization (2021), the problems faced by environmental health care workers include chemical pollution, air pollution, occupational hazard, climate change, disease-causing microbes, lack of access to health care, poor infrastructure, and poor water quality. However, for the purpose of this study, the researcher focused on occupational hazards and climate change.

Occupational hazards exist wherever healthcare is practiced. Occupational hazard is any danger to health, limb or life that is inherent in or is associated with, a particular occupation, industry or work place (Eyayo, 2014). Occupational hazards are dangerous to human health and well being which are associated with specific occupations, while efforts are made to reduce hazards; these hazards remain present in the workplace by the nature of various professions (International Labour Organization, 2013). Annually, there are two (2) million deaths that are attributed to occupational diseases and injuries, while 4% of Gross Domestic Product (GDP) is lost due to occupational diseases and injuries (Eyayo, 2014). With increasing global surface temperatures the possibility of more droughts and increased intensity of storms will likely occur. There are numerous implications of occupational diseases and injury among health workers, which include: Physical, biological, chemical, ergonomics, and psychological damage to the worker and his family.

Health care workers are at potential risk of harm from exposure to numerous hazardous agents encountered in their workplace (Vecchio, Sasco and Cann, 2013). According to Rai, El-Zaemey and Dorji (2021), health care workers are exposed to numerous workplace hazards. The implementation of safety measures in high-income countries has largely mitigated these risks. However, in many low- and middle- income countries (LMICs), resources to institute safety measures are lacking, increasing the risk of occupational exposures to these hazards. Climate change is already impacting health in a myriad of ways, including by leading to death and illness from increasingly frequent extreme weather events, such as heat waves, storms and floods, the disruption of food systems, increases in zoonoses and food-, water- and vector-borne diseases, and mental health issues.

Climate change is referred to as a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period (Rasak, 2013). Climate change is the single biggest health threat facing humanity, and health professionals worldwide. According to the World Health Organization (2021), climate change affects the social and



environmental determinants of health of individuals and the society at large. According to Nwafor in Rasak (2013), climate change will be felt more by the developing countries like Nigeria because of their low coping capabilities. Ilevbare (2019), posited that the impacts of climate change are more devastating due to their vulnerability and low coping capability. Climate change leads to worsening air quality, adverse impacts on food and water supply and quality, and more frequent and extreme weather events, which all have profound impacts on the health of the environmental health care workers (Centre for Disease Control (CDC), 2017). The distance from the equator affects the climate of a place. Globally there has been a significant change in the state of the environment. Climate change and the greenhouse effect have been on the rise leading to so many natural disasters such as ice-melting, floods, tsunamis, air pollution, the emergence of infectious and non-communicable diseases leading to various health risks humans (Farooq, Meraj and Sensing, R.2019). The factors associated with climate change of environmental health care workers might depend on location.

A location is the place where a particular point or object exists. Location denotes the geographical situation which may be a part of space or a point or position in space where objects, organisms, fields or events may be found. Location is a place, especially the place where something happens or is situated (Barnhant in Onunze, 2013). In this study, location depicts either urban or rural environment where environmental health care workers reside.

In Ebonyi State, thousands of environmental health care workers are routinely exposed to different hazards in their work place whereas most of them are not prepared to cope with these. Environmental health care workers are involved in repetitive tasks throughout the day in various sections of the environment (Malik, Maan, Pasha, Akhtar and Ali, 2010). They face physical, chemical, biological, mechanical and psychosocial hazards and diseases like accidents, stresses, cardiovascular problems, pulmonary problems and cancers (Parimalam, Kamalamma and Ganguly, 2017). Furthermore, environmental health care workers encounter operational problem of noise, toxic material, heat and stress, radiation trauma and other hazards. The nature of work performed by a person exposes him or her to some environmental issues. This prompted this study which focused on the problems of environmental health care workers in Ebonyi State.

Environmental health-related risks are becoming a primary concern in Nigeria, with diverse environmental problems such as air pollution, water pollution, oil spillage, deforestation, desertification, erosion, and flooding (due to inadequate drainage systems) caused mostly by anthropogenic activities. In developed countries like Nigeria, there is a genuine interest to protect workers against the harmful effects of their place of work because some places of work are not only dangerous to the workers but also to the general public due to pollution. Since ill-health and injuries inflicted by the system of work or working conditions jeopardize employee's ability



to effectively discharge their duties, close and continuous attention to quality health and high standards of safety must be maintained at all times in the workplace. Occupational hazards and climate change are the major challenges facing environmental health care workers Ebonyi State. This has been a source of concern to both the government and the management of the health sectors. Therefore, these necessitated the need for the researcher to ascertain the problems of environmental health care workers in Ebonyi State.

### **Purpose of the Study**

The main purpose of this study was to determine the problems of environmental health

care workers in Ebonyi State. Specifically, this study sought to determine the:

1. Occupational hazards problems of environmental health care workers in Ebonyi State;
2. Climate change problems of environmental health care workers in Ebonyi State in relation to climate change.

### **Research Question**

The following research questions guided the study:

1. What are the occupational hazard problems of environmental health care workers in Ebonyi State?
2. What are the climate hazard problems of environmental health care workers in Ebonyi State?

### **Hypotheses**

The following hypotheses guided the study and were tested at 05 level of significance:

**H<sub>01</sub>:** There is no significant difference between the mean scores of urban and rural environmental health care workers in Ebonyi State occupational hazards.

**H<sub>02</sub>:** There is no significant difference between the mean scores of urban and rural environmental health care workers in Ebonyi State on their climate change problems.

### **Research Method**

Descriptive survey research design was adopted for this study. Kothari and Garg (2014) defined descriptive survey research design as one that is concerned with describing the existing characteristics with specific predications, with narration of facts of a particular individual, or of a group or situation. This design is suitable for the study because it involved the collection of data from a representative of the environmental health care workers using the questionnaire as the research instrument. The population for the study consisted of 9,599 (5439 urban and 4160 rural) environmental health care workers in Ebonyi State. The researcher used proportionate random sampling technique and got the sample size of 960 (544 urban and 416 rural) environmental health care workers in Ebonyi State. The instrument for data collection was a researchers' structured and validated questionnaire titled



“Problems of Environmental Health care Workers Questionnaire (PEHCWQ)”. The instrument was validated by three experts in the Faculty of Education, ESUT. The instrument comprised 15 items divided in clusters based on the two research questions. Reliability of the instrument was determined using Cronbach Alpha statistic estimated at the end of which 0.81 and 0.79 were derived as the reliability indices. The reliability index was 0.80 which made the instrument reliable.

A 4-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with numerical values of 4, 3, 2 and 1 respectively was used in determining the mean scores of each item. The researchers used help of two research assistants to administer and retrieve the instrument from the respondents. Mean and standard deviation were used to answer the research questions while t-test statistic was used to test the null hypotheses. The decision for the interpretation of the results was based on the values of the calculated mean. Therefore, when the mean score of an item is greater than or equal to 2.50, it is said to be “Agree”, but when it is less than 2.50, it is “Disagree”.

## Results

**Table 1: Mean scores of urban and rural environmental health care workers on their problems as regards occupational hazards**

ITEMS		Urban = 544			Rural = 416		
S/N	The following are the problems of environmental health care workers as regards occupational hazards:	$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec
1	chemical spill.	2.61	0.91	A	2.51	0.96	A
2	cross-contamination from solid materials.	2.56	0.95	A	2.63	0.90	A
3	vector borne diseases.	2.58	0.95	A	2.66	0.92	A
4	blood-borne pathogens.	2.59	0.90	A	2.62	0.91	A
5	infectious diseases.	2.55	0.96	A	2.56	0.92	A
6	musculoskeletal injuries.	2.61	0.93	A	2.53	0.95	A
7	burns.	2.59	0.90	A	2.51	0.92	A
8	fracture.	2.61	0.93	A	2.59	0.99	A
GRAND MEAN/SD		2.59	0.93	A	2.58	0.93	A

Data presented on Table 1 show that the respondents agreed on the items stated on the problems of environmental health care workers as regards occupational hazard in Ebonyi State. The environmental health care workers in the urban areas mean ranged from 2.55 to 2.61 while their counterparts in the rural areas mean scores ranged from 2.51 to 2.66 respectively. In addition, they have grand means of 2.59 and 2.58 and standard deviations of 0.93 and 0.93 respectively. The closeness of the



standard deviations showed that the respondents were homogenous in their responses. Thus, the environmental health care workers agreed that occupational hazard is one of the problems of environmental health care workers in Ebonyi State.

**Research Question 2:** What are the problems of environmental health care workers in Ebonyi State in relation to climate change?

**Table 2: Mean scores of urban and rural environmental health care workers on their problems in relation to climate change**

ITEMS		Urban = 544			Rural = 416		
S/N	The following are the problems of environmental health care workers in relation to climate change:	$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec
9	respiratory allergies.	2.55	0.89	A	2.54	0.96	A
10	increased cardiovascular disease.	2.59	0.90	A	2.56	0.93	A
11	premature deaths related to extreme weather events.	2.56	0.85	A	2.63	0.99	A
12	injuries.	2.57	0.90	A	2.55	0.89	A
13	water-borne illnesses.	2.53	0.95	A	2.53	0.95	A
14	threats to mental health.	2.64	0.89	A	2.52	0.82	A
15	heat-related morbidity.	2.59	0.91	A	2.61	0.92	A
<b>GRAND MEAN/SD</b>		<b>2.58</b>	<b>0.90</b>	<b>A</b>	<b>2.56</b>	<b>0.92</b>	<b>A</b>

Data presented on Table 2 show that the respondents agreed on the items stated on the problems of environmental health care workers in relation to climate change in Ebonyi State. The environmental health care workers in the urban areas mean ranged from 2.53 to 2.64 while their counterparts in the rural areas mean scores ranged from 2.52 to 2.63 respectively. In addition, they have grand means of 2.58 and 2.56 and standard deviations of 0.90 and 0.92 respectively. The closeness of the standard deviations showed that the respondents were homogenous in their responses. Therefore, the environmental health care workers agreed that climate change is one of the problems of environmental health care workers in Ebonyi State.





### Hypotheses

**Table 3: t-test summary of the mean scores of urban and rural environmental health care workers on their problems as regards occupational hazards in Ebonyi State.**

Groups	n	$\bar{x}$	SD	Df	t-cal	t-crit	Decision
Urban	544	2.59	0.93	958	0.16	$\pm 1.96$	Do not reject Ho
Rural	416	2.58	0.93				

The result on Table 3 shows that the calculated t-value 0.16 is less than the critical value  $\pm 1.96$ . The null hypothesis was not rejected. Therefore, there is no significant difference between the mean scores of urban and rural environmental health care workers on their problems as regards occupational hazards in Ebonyi State.

**Table 4: t-test summary of the mean scores of urban and rural environmental health care workers on their problems in relation to climate change in Ebonyi State.**

Groups	n	$\bar{x}$	SD	df	t-cal	t-crit	Decision
Urban	544	2.58	0.90	958	0.12	$\pm 1.96$	Do not reject Ho
Rural	416	2.56	0.92				

The result on Table 4 shows that the calculated t-value 0.12 is less than the critical value  $\pm 1.96$ . The null hypothesis was not rejected. Therefore, there is no significant difference between the mean scores of urban and rural environmental health care workers on their problems in relation to climate change in Ebonyi State.

### Discussion of Findings

#### Occupational hazards Problems of environmental health care workers in Ebonyi State

The finding of the study revealed that occupational hazard is one of the problems of environmental health care workers in Ebonyi State. The evidence of the finding revealed that chemical spill, cross-contamination from solid materials, vector borne diseases, blood-borne pathogens among others are some of the occupational hazards associated with the problems of environmental health care workers in Ebonyi State. The finding is in line with (Eyayo, 2014), who posited that occupational hazard is one of the problems associated with environmental health care workers. Further finding revealed that there was no significant difference between the mean scores of urban and rural environmental health care workers on their problems as regards occupational hazards in Ebonyi State.



### **Climate hazard Problems of environmental health care workers in Ebonyi State**

The finding of the study revealed that climate change is one of the problems of environmental health care workers in Ebonyi State. The evidence of the study revealed that respiratory allergies, increased cardiovascular disease, premature deaths related to extreme weather events, injuries, water-borne illnesses among others are some of the climate change issues associated with the problems of environmental health care workers in Ebonyi State. The finding is in agreement with Rasak (2013), who posited that climate change is a critical problem associated with environmental health care workers. Further finding revealed that there was no significant difference between the mean scores of urban and rural environmental health care workers on their problems in relation to climate change in Ebonyi State.

### **Educational Implication**

The implication of the study to health education includes:

The environmental health care workers should be abreast of the problems associated with them. If the problems are noted, it will make the environmental health care workers to effectively assist the health educators in order to excel in their academic pursuits.

### **Conclusions**

The study examined the problems of environmental health care workers in Ebonyi State. The study concludes that occupational hazards and climate change are some of the problems of environmental health care workers in Ebonyi State. The hypotheses revealed that there is no significant difference between the mean scores of urban and rural environmental health care workers on their problems as regards occupational hazards and climate change in Ebonyi State.

### **Recommendations of the Study**

Based on the findings and conclusions of the study, the following recommendations were made:

1. Regular conferences and seminars should be held the Ebonyi State government in conjunction with the Ministry of Health in order to keep the environmental health care workers abreast of the various issues associated with occupational hazard.
2. The environmental health care workers should be trained and re-trained to keep their mindsets alive on the problems of environmental health care workers in particular reference to climate change in Ebonyi State





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