

Evaluation of Occupational Safety and Health Administration Status of College of Health Sciences and Technology, Idah Kogi State

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Abstract:- This research study was conducted to evaluate occupational safety and health administration status of the Basic Science Laboratories in Nigerian Higher Institutions with a case study on College of Health Sciences and Technology, Idah, Kogi State. A non-experimental research design in which stratified sampling of probabilistic was used as sampling technique to sample the respondents which include the students, laboratory staff, lecturers and the management staff. Interview and self administered questionnaire and observational checklist were used to collect data while tables, frequency and pie chart were used to analyze the data collected. 189 copies of questionnaire retrieved fully filled and analysis of these indicated that 74.69% of the respondent attended secondary education and 21.43% have tertiary education which may have exposed the respondents [90.61%] to be aware of the occupational safety and health administration while the pattern of occupational hazards encountered are chemical spillage [42.23%], shock [30%], fall [15.31%] and slip [6.12%]. There was a proper management of occupational safety and health administration in the college but the compliance was too low hence, proper implementation of safety reporting system, appropriate job safety analysis of laboratories procedures, provision of job card attach to each fire safety equipment, regular hazards spotting, monitoring, evaluation work permit and control were recommended to improve the occupational safety and health administration status of the college.

I. INTRODUCTION

OSHA was officially formed on April 28, 1971, when the Occupational Safety and Health Act became effective in operation with George Guenther as first director of the agency. OSHA has a number of training, compliance assistance, and health and safety recognition programs throughout its history.

The OSHA Training Institute, which trains government and private sector health and safety personnel, began in 1972. In 1978, the agency began a grant making program, now called the Susan Harwood Training Grant Program, to train workers and employers in an attempt to reduce workplace hazards. OSHA started the Voluntary Protection Programs in 1982, which allows employers to

apply as "model workplaces" to achieve special designation if they meet certain requirements.

The whole world, developed, developing and under developed nations are in one way or the other struggling to survive and withstand the human desire. Most of these nations are competing on some inventions through scientific research. It is essential that workers are healthy irrespective of where they work and what tools they employ because the conditions under which people work and the equipment they use influence their health.

The importance of occupational health is often overlooked and people tend to equate occupational illness with industrialization and huge factories in urban areas. This narrow view hampered the development of occupational health in developing countries. While at work, people face a variety of hazards almost as numerous as the different types of works; these include chemicals, biological agents and adverse ergonomic conditions among others. It is estimated that about 2.9 billion workers are currently exposed to hazardous risks at their work places. As such two million deaths are attributable to occupational diseases and injuries leading to 4% of Gross Domestic Product (GDP) is loss due to occupational diseases and injuries. WHO's programme on workers' health is concerned with the control of occupational health risks, the protection and promotion of the working populations and the humanization of work.

The Health and Safety Executive (2000) estimated that in the United Kingdom alone, about 500 people are killed every year and several hundred thousand are either injured or suffer work related ill health. In an industrializing economy such as Nigeria where there are no accurate data and laws are not enforced, the figures may be higher. Newspaper reports that in Nigeria, industrial accidents in factories mainly owned by expatriates that are poorly equipped with safety standards and tolerated by workers have led to deaths, amputation of limbs and permanent disabilities of the workers. Due to low levels of compliance to rules and lack of enforcement of those rules, the company barely loses anything. In many cases, compensations are not paid and because of gross unemployment, the workers cannot protest as there are countless others waiting to take their place.

Occupational Health deals with the health, safety and welfare of the workers who are engaged in different kinds of economics activities as well as the effect of the working environment on the general well being of these workers and the influence of workers' state of health on their ability to perform the task given them. The National Industrial Council of Nigeria [NISCN] was established in May, 1984 by a cabinet decision under the sponsorship of the Federal Ministry of Labour and Productivity. It is a tripartite organization consisting of representatives of government, employers and workers.

The main objectives are the promotion of Occupation Health and Welfare in industrial establishments. It functions in advisory capacity on all matters relating to its objectives and by cooperating with all branches of government services, employers and workers' organizations, any organizations or individuals in Nigeria or elsewhere in furtherance of its. In essence, the Council has a Technical arm that renders technical assistance to the Council,

The Nigerian Institute of Safety Professionals [NISP] now Institute safety Professionals of Nigeria [ISPON].

The point of emphasis in Nigeria education today is progressive education, which implies that the learners' education is to be based on their needs and interest to be able to fit in well in the society. According to the 1979 constitution, education in Nigeria became the responsibility of the State and Local councils. The first 6 years of primary education were made mandatory, which was a significant factor in the development of education in Nigeria. There has been a noticeable upgrading of educational facilities in Nigeria in recent years. The formal education system in Nigeria includes:

- 6 years of primary schooling
- 3 years of junior secondary schooling [JSS]
- 3 years of senior secondary schooling [SSS]
- 4 years of tertiary education — finally directing towards a bachelor's level degree or its equivalent in the majority of the subjects.

Kogi State came into being as a result of the state creation exercise on 27th of August, 1991 with the administrative headquarters in Lokoja. The creation of the state was indeed a significant development for its citizens. This is because it brought about the reunion of a people who had shared historical roots and co-existed peacefully with the former Kabba province in the defunct Northern Region for more than 80 years.

The state which is structured into 21 LGA's comprises of three major ethnic groups i.e. Ebira Igala and Okun (Yoruba) other minor groups include – Bassa Komo, Bassa Nge, Kakanda, Kupa, Ogori-Magongo, Nupe, Oworo, and Gwari etc.

There are 8 languages spoken as first language in Kogi State. Ebira, Igala, Nupe and Yoruba are major languages. The other languages are minority languages.

A. Problem Statement

Education is crucial in any society for the preservation of lives of its members and the maintenance of the social structure and the implementation of structured education policy in Nigeria. It is a welcome idea and social with economic developments but the occupational health and safety standards to monitor and reduce health hazards exposure to teaching and non-teaching staffers including students are essential to better health, increase productivity and stable economy is very important. The teaching and learning systems in most schools especially in secondary and higher institutions are technologically advancing with introduction of many new health hazards policy being introduced into the system of which the employers, employees and students are not fully aware hence, the following questions may be pertinent to the success of this research work:

- How is the layout of your working environment?
- What emergency [fire and safety] equipment do you installed within the college?
- Do you have Occupational Health and Safety Officer in your college?
- Do you undergo training on new technologies introduced or refresher's training on existing technologies?

The researcher intends to work on the Evaluation of Occupational Health and safety Administration [OSHA] status in college of health science and technology Idah and use it to sensitize the governing council and the Supervisory Ministries, Provosts, Teaching and non-teaching staff, parents, contractors and clients to these schools including students to identify inherent health hazards in teaching and learning environments as well as cautiously monitor and provide means of reducing those hazards to bearable levels.

B. Aims

The aim of this research work is to evaluate the Occupational Safety and Health

Administration status of the laboratories in college of health sciences and technology Idah Kogi state

➤ Objectives

1. To assess the management of Occupational Safety and Health Administration in the laboratories of the college.
2. To ascertain the level of compliance to Occupational Safety and Health Administration in laboratories of the college.
3. To recommend [where necessary] possible requirements of Occupational Safety and Health Administration.

C. Hypothesis

1. That improper management of Occupational Safety and Health Administration in the Laboratories of the college results in multiple accidents and degrees of injuries in the laboratories.
2. That non compliance to occupational safety and Health Administration is rampant in the laboratories of the college selected for study.

3. That non-compliance to Occupational Safety and Health Administration increases the exposure of both Laboratory workers and Laboratory users to health hazards.

D. Significance

This research study on completion will help to improve the Occupational Health and Safety Administration status of colleges of health sciences and technologies and stands as template for Nigerian Higher Institutions.

E. Justification of the Study

The workplace is an environment of combination of everything you might contact at work, whether you are aware of the contact or not. The floor on which you stand, the equipment you handled and the odour you inhale are part of your work environment and whenever any of these elements within your environment make you sick in one way or the other, they become environmental hazards/workplace hazards. Hence, to stay healthy, you need to know which parts of your work environment that might be harmful, the different types and levels of hazards they might cause, and how you may be exposed to these hazards, risks they carry, how they affect your health and how you can protect yourself from exposure to such dangers.

Human body has natural defense mechanisms which help to protect body systems against many hazards. However, these hazards arising from bacteria, viruses, chemicals, dusts, vapours, noise, extreme temperatures, and work processes can often times break down the body defense mechanisms and results in illnesses and injuries.

II. LITERATURE REVIEW

Many occupational scientists and technologists had tabled this topic and came out with so many proofs. For the purpose of this study, the following texts were used to review the literature from different authors on the subject matter. This literature was arranged in APA style (American psychological association).

According to 'WORKSAFE COMPENSATION BOARD, 2008' Working in a laboratory usually involves working with various chemical, physical, and biological hazards. Because the hazards vary from lab to lab, employers such as CHST Idah, Kogi state are expected as a matter of must to address the hazards specific to their laboratories as records and statistically proved. However CHST Idah Kogi state lack behind in this OSHA compliance and implementing as revealed by this study:

These include:

- Written safe work and emergency procedures.
- Training and education of workers.
- Workplace inspections (regular and special inspections of workplace equipment, methods, and practices).
- Investigation of workplace accidents (accident investigations and reports).
- First aid equipment and procedures

- Periodic management meetings to review health and safety activities.
- Regular staff safety meetings or an occupational health and safety committee where required.
- Records and statistics.

According to [ILO/ WHO, 1950] Occupational Health was summarized as the "prevention of departure from health among workers caused by their working conditions; the promotion of workers in their employment from risks resulting from factors adverse to health, the placing and maintenance of the worker in occupational environment adapted to their physical and psychological well-being; and the adaptation of work to man and man to his work.

World Health Organization Experts Committee defined Occupational Health as:

- The maintenance and promotion of the highest degree of physical, mental and social well-being of workers in all occupations.
- The prevention among workers departure from health caused by their employment risks resulting from factors adverse to health.
- The placing and maintenance of the workers in occupational environment adapted to their physical and psychological requirement.

According to Patton, (1997), He defined Program evaluation as "systematic inquiry that describes and explains the policies' and program's operations, effects, justifications, and social implications"

According to Mark et al., (2000) also lamented on the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming"

A. Theoretical Frame Work

"... All too often lives are shattered unnecessarily because of poor working conditions and inadequate safety systems..."

According to Kofi Anna, 2005 said let me encourage everyone to join the International Labour Organization [ILO] in promoting safety and health at work. It is not only sound economic policy; it is a basic human right.

According to Michael J and Pascal C, (1989) enlisted that the work system comprised of five [5] interacting components: employees, tasks, technology, work environment and the organization [corporate processes]. They opined that each of the components produces risks for employee safety and health, for example, the work environment has hazards and the employees engaged in unsafe acts. These risks could be controlled by working with each component to make improvements.

According to Karsh B, (2009) holds that there were safety and health risks that occurred because of the interactions among the various components; for example, the organizational component's failure to notify employees about the risks of new materials, or the employee's failures to notify the organization about transient and temporary hazards. In essence, there is a need to be aware of and deal with the hazards that occur within a component and from the interactions among the components.

B. Aims/Objectives Of Occupational Health And Safety

- To reduce the risk of injury and health impairment of workers arising from exposures to the hazards in the working environment.
- To provide a work environment free of health hazards.
- To increase the size of the occupational sector and their various contributions to all round development of the society.
- To generate awareness and create a safety consciousness in the workers of various categories.
- To create health facilities and services where they are easily accessible and available.
- To maintain an existing relationship between occupation and health.

C. Advantages Of Occupational Health And Safety

In the effective administration of occupational health and safety programmes, a lot of advantages have been identified which includes:

- ❖ Enactment of laws specifying payments to workers for industrial accidents or for illness caused by occupation.
- ❖ It helps workers to become enlightened that their rights are well preserved and that their duties are well defined and attended to.
- ❖ It ensures suitable job placement.
- ❖ It promotes physical and mental well being.
- ❖ It portends better health and ensures longer life.
- ❖ It lowers personal medical costs.
- ❖ It sustains employee earnings.
- ❖ It ensures greater job satisfaction.
- ❖ It contributes to the prosperity of the community.
- ❖ It decreases welfare costs and improves public relations.

D. Occupational Health And Safety Standards

A **standard** is a set of rules, requirements, or principles. **Occupational Health and Safety standards** are set of minimum guidelines or requirements designed to maintain and improve standards of Health and Safety at work and to protect persons, other than those at work, against risks to health and safety arising out of activities of work. The valuable roles of Occupational Health and Safety standards include making products, homes and workplaces safer than they would have been if standards were not in place. Mandatory standards, codes, practices among others are those that have been passed into law such as the laws under the jurisdiction of the Occupational Safety and Health Administration [OSHA], USA [OSH Act] 1970, Safety and Health Act 1974, Factories Act 1990 (Nigeria). The very essence of such statute emphasizes the importance attached to a safe working environment.

OSHA's Occupational Exposure to Hazardous Chemicals in Laboratories standard (29 CFR 1910.1450), referred to as the Laboratory standard, covers laboratories where chemical manipulation generally involves small amounts of a limited variety of chemicals. This standard applies to all hazardous chemicals meeting the definition of "laboratory use" and having the potential for worker exposure. [OSHA Factsheet, 2011].

Occupational Safety and Health Administration (OSHA) Laboratory Standard [29

CFR 1910.1450] reads as follows;

➤ Scope and Application.

1. This section shall apply to all employers engaged in the laboratory use of hazardous chemicals as defined below.
2. Where the section applies it shall supersede, for laboratories, the requirements of all other OSHA health standards in 29 CFR part 1910, subpart Z, except as follows:
 - i. For any OSHA health standard, only the requirement to limit employee exposure to the specific permissible exposure limit shall apply for laboratories, unless that particular standard states otherwise or unless the conditions of paragraph (a)(2)(iii) of this section apply.
 - ii. Prohibition of eye and skin contact where specified by any OSHA health standard shall be observed.
 - iii. Where the action level (or in the absence of action level, the permissible exposure limit) is routinely exceeded for an OSHA regulated substance with exposure monitoring and medical surveillance requirements, paragraphs(i)(ii) of this section shall apply.

E. Safety Culture

According to American Chemical Society, (2012) the safety culture of an institution is a reflection of the actions, attitudes, and behaviors of its members [managers, supervisors, and employees in the industrial and governmental communities; and the administration, faculty, staff, and students in the academic community] concerning safety. Serious chemical or laboratory incidents within an organization are often thought to be the result of a weak or deficient safety culture—a principal root cause of the incident. A weak safety culture within an organization is usually the result of one or more factors, including:

- ❖ No clear commitment of institutional administration to actively promote safety at all levels (weak or deficient leadership in safety).
- ❖ Failure to establish accountability for safety among leaders, managers, supervisors, employees, and students.
- ❖ Lack of interest in spending significant time or resources on safety.
- ❖ Weak or missing safety management system.
- ❖ Failure to adequately educate students in safety and to build strong safety skills.
- ❖ Failure to evaluate students' safety knowledge and skills through tests and observations.

- ❖ Failure to build and maintain strong safety awareness and interest in safety.
- ❖ Failure to learn lessons from past incidents and implement changes (improved safety practices) to prevent future incidents.
- ❖ Weak collaborative interactions within the safety program and on safety issues.

According to the US. Nuclear Regulatory Commission (NRC), a good safety culture is “a reflection of the values, which are shared throughout all levels of an organization, and which are based upon the belief that safety is important, and it is everyone’s responsibility”. On 14th June, 2011, the Nuclear Regulatory Commission issued its final “Safety Culture Policy Statement,” which defined a safety culture as: “an organization’s collective commitment, by leaders and individuals, to emphasize safety as an overriding priority to competing goals and other considerations to ensure protection of people and the environment.” The NRC specified nine traits of a good safety culture which include the followings:

- Leaders demonstrate a commitment to safety in their decisions and behaviors.
- Problem identification and resolution.
- All individuals take personal responsibility for safety.
- The process of planning and controlling work activities is implemented, so safety is maintained.
- Continuous learning.
- Positive, non-punitive environment for raising safety concerns.
- Effective safety communication.
- Respectful work environment.
- Questioning attitude.

➤ *Identifying and Evaluating Hazards*

- ❖ Hazards to the investigator and risks to the environment and the success of the experiment are identified and evaluated. Material Safety Data Sheets [MSDS] should be used for reagents, especially for new reagents.
- ❖ Routes of potential exposure are identified; these routes may include exposure to hazards through skin or inhalation but they may be other hazards that result from handling or processing chemicals, such as being hit by flying objects (from explosions), receiving cuts (preparation steps with sharp objects), or adverse contact with equipment (contact with moving parts, pinching, burns, pressure, or electrical shocks). Eliminating or minimizing potential routes of exposure is a critical component of hazards assessment and management.
- ❖ A questioning or challenging attitude is welcomed to ensure the best analysis possible.
- ❖ Potential, credible accident or event scenarios are hypothesized and discussed.
- ❖ Controls are identified that will eliminate the hazard, control it, or protect the investigator in the event the thinkable or unthinkable happens.
- ❖ Regulatory requirements, which are often hazards-based, are identified.
- ❖ Tools are used to facilitate a thorough review and to lend a reasonable consistency across the organization. These tools may take a number of forms (for example,

checklists, what-if analyses, barrier analyses, failure modes analyses, control banding, and so forth).

➤ *Performing the Work with the Identified Controls and Protective Measures in Place*

- ❖ Confirm that the agreed-upon controls and protective measures are in place and functioning before the work begins. This includes a conscious evaluation of the skills and capabilities of the individuals who will complete the work.
- ❖ Conduct the experiment with the identified controls in place. If unexpected conditions are found, the investigator pauses and ensures the scope of the work or the necessary controls have not changed significantly enough to warrant additional analysis.
- ❖ Question or remind investigators about their controls, especially if they suspect a necessary control is not in place or is not being used.
- ❖ Seek to avoid at-risk behavior in your work and help others recognize risky behavior in their work, as needed. At-risk behavior, a leading cause of incidents, results when personnel bypass safe practices to reduce the time or level of effort. Examples of at-risk behavior include: not wearing personal protective equipment; not using hoods; skipping safety plans or steps; poor housekeeping; and scaling up a reaction without adequate planning. Prevention of at-risk behavior is a key component of safety.

➤ *Identifying Lessons to be Learned*

- ❖ The investigator approaches the end of an experiment the same way he or she began and asks even more questions. For example, “Did a hazard manifest itself that was not previously identified? Did a control perform the way it was expected to or do I need another option if I repeat this experiment? Did something go really well that others can learn from? Did I recognize any close calls that can serve as a warning for identifying areas of needed improvement?”
- ❖ Hazards analysis documents are continually improving and not something that are created once and never looked at again.
- ❖ If an incident occurs, students and investigators could learn how to conduct investigations and root cause analyses, and then communicate the lessons learned to others.

➤ *The Hazard Communication Standard*

The Hazard Communication standard (29 CFR 1910.1200), sometimes called the

HazCom standard is a set of requirements first issued in 1983 by OSHA. The standard requires evaluating the potential hazards of chemicals, and communicating information concerning those hazards and appropriate protective measures to employees. The standard includes provisions for:

- ❖ Developing and maintaining a written hazard communication program for the workplace.
- ❖ Lists of hazardous chemicals present.

- ❖ Labeling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces.
- ❖ Preparation and distribution of material safety data sheets [MSDSs] to workers and downstream employers.
- ❖ Development and implementation of worker training programs regarding hazards of chemicals and protective measures.

This OSHA standard requires manufacturers and importers of hazardous chemicals to provide material safety data sheets [MSDS] to users of the chemicals describing potential hazards and other information. They must also attach hazard warning labels to containers of the chemicals. Employers must make MSDSs available to workers. They must also train their workers in the hazards caused by the chemicals workers are exposed to and the appropriate protective measures that must be used when handling the chemicals.

➤ *Safety attitude, safety awareness, safety ethnics*

According to National Science Foundation, (2012), Solid safety awareness and attitudes are as important to basic and medical sciences as are following experimental procedures and keeping good recordkeeping of conducted experiments. Building safety awareness requires a long-term effort safety is highlighted repeatedly. Faculty and staff members have an ethical obligation to teach students and new employees about the need for a positive, proactive attitude toward safety while conducting an experiment in laboratory. Following safety policies and procedures in a lab is just as important as the information the students receive in a presentation or the knowledge a student gains from an experiment. Thus, everyone who teaches or trains others in chemistry has to know and follow the appropriate safety practices in the laboratory.

Safety should be a focus for all students, chemistry majors as well as non- chemistry majors and all chemistry-based science courses. It will benefit the chemical enterprise, if all students grow to understand and appreciate that working safely without injuring themselves or the larger environment is an essential career goal. Every member of the organization must share in the safety vision and demonstrate a high level of safety awareness, especially toward laboratory safety.

Everyone involved in the teaching or learning process must be convinced of the necessity of good safety practices and a strong safety culture. Members include faculty, instructors, academic staff, teaching assistants, and stockroom personnel. In addition, maintenance, shipping and receiving, and facility management personnel must contribute to the safety culture. Professional training, education, and development of these individuals will require varying approaches and task appropriate content.

According to Hill, R (2003), the proper attitude for safety is reflected in the Safety Ethic"— value safety, work safely, prevent at-risk behavior, promote safety, and accept responsibility for safety.

- ❖ Value safety: Safety is an integral part of what one does, its automatic, and it does not change its priorities it is never questioned and never compromised.
- ❖ Work safely: One continues to learn about safety, learns to recognize hazards, assesses the risks of hazards, manages the risks of hazards, and prepares to handle emergencies.
- ❖ Prevent at-risk behavior: One does not cut corners or bypass safety measures in the laboratory and shares this information with others, as needed.
- ❖ Promote safety: One encourages and acknowledges others for working safely.
- ❖ Accept responsibility for safety: One takes steps to work safely, setting a positive example for others, and being accountable for safety.

III. METHODOLOGY

3.1 RESEARCH STUDY AREA

The research study area is at laboratories of college of health sciences and technology, idah, kogi state which include biology, Chemistry and Biochemistry laboratories, Medical laboratories. The population of the study includes the students , lecturers and laboratory staff [including laboratory supporting staff] with a total number of one hundred.

3.2 RESEARCH DESIGN

This research study is a non-experimental research design on the Evaluation of Occupational Safety and Health Administration [OSHA] status in college of health technologies Idah Kogi state.

3.3 SAMPLING TECHNIQUES

The population of the study area is the total population of both the staff and students (excluding the students on practical) at the health training institutions in Kogi state.

The case study (The college Health Sciences and technology Idah comprises of five schools with total work force of 210 and the students population of about 1480

The researcher distributed 200 questionnaires to the institution using stratified and simple random probabilistic sampling techniques to select two hundreds respondents for this work. See the table 3.1 below:

S/n	Sub Groups	No of Unit	Sample size with Probabilities proportionate size
1.	Students	1480	$\frac{1480 \times 200}{1690} = 175$
2.	Lecturers	210	$\frac{210 \times 200}{1690} = 25$
	Total	1690	200

Table 3.1 selection of sample size using stratified sampling at College of Health Sciences and Technology, Idah

3.4 RESEARCH INSTRUMENT

Instruments used in collecting data for this research study are direct observation with the use of OSHA adopted checklist [see appendix, interview and self administered questionnaires.

3.5 ADMINISTRATION OF RESEARCH INSTRUMENT/DATA GATHERING PROCEDURES

3.5.1 Observation: The researcher observed the laboratory environment [arrangement of the laboratory], users of different laboratories and the procedures of operation in the laboratories of colleges of health sciences and technology to obtain data on the management and the level of compliance of Occupational Safety and Health Administration status.

3.5.2 Interview: The researcher interviewed few students and laboratory staff to obtain research data.

3.5.3 Questionnaire: 200 structured questionnaires were printed and distributed among the sample size to obtain data on the assessment of management and to ascertain the level of compliance of Occupational Safety and Health Administration status. Consent was sought from the Laboratory staff, students, lecturers and management staff before the commencement of the survey. The questionnaires were designed to comprise two sections; [a] the information on bio data of the respondents and [b] the information about variables under study.

3.6 RELIABILITY AND VALIDITY OF INSTRUMENT

The OSHA adopted checklist and designed questionnaires were practically examined through pre-test, test and retest other institutions and compared the related data gathered in order to declare the authenticity of the data that was given.

3.6.1 PRE-TEST

Forty questionnaires were practically applied to both staff and students at Ajine College of Health Technology, Dekina in Kogi State to facilitate the test.

3.6.2 TEST

Two hundred questionnaire were distributed to the College of the study area in other to obtain a reliable information.

3.7 METHOD OF DATA ANALYSIS

The data [which are qualitative in nature] were analyzed using tables and frequency procedure to provide the graphical and statistical presentation for describing types of variables under study.

IV. DATA PRESENTATION AND ANALYSIS

4.1 ANALYSIS OF RESPONDENTS

TABLE 4.1: RESPONDENT ACCORDING TO AGE

AGE	NUMBERS OF RESPONDENTS	PERCENTAGE (%)
11-20	19	10.1
21-30	45	23.8
31-40	65	34.4
41-50	33	17.5
51-60	17	9.0
61 and above	10	5.3
Total	189	100

Figure 4.1 RESPONDENTS ACCORDING TO AGE

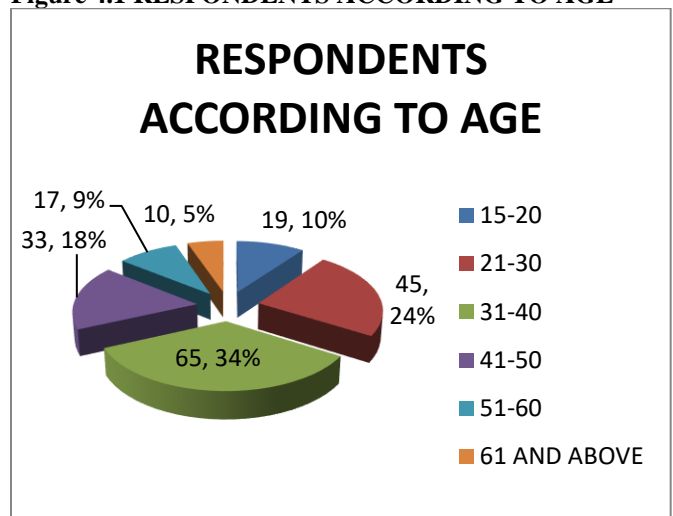


TABLE 4.2: RESPONDENT ACCORDING TO SEX

SEX	NUMBERS OF RESPONDENTS	PERCENTAGE (%)
Male	63	33
Female	126	67
Total	189	100

Figure 4.2 RESPONDENTS ACCORDING TO SEX

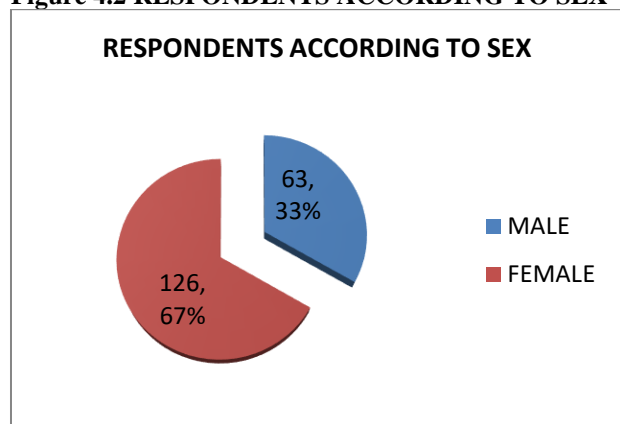


TABLE 4.3: RESPONDENT ACCORDING TO EDUCATION STATUS

STATUS	NUMBERS OF RESPONDENTS	PERCENTAGE (%)
Primary	10	5
Secondary	34	18
Tertiary	142	75
None	3	2
Total	189	100

Figure 4.3 RESPONDENTS ACCORDING TO EDUCATIONAL STATUS

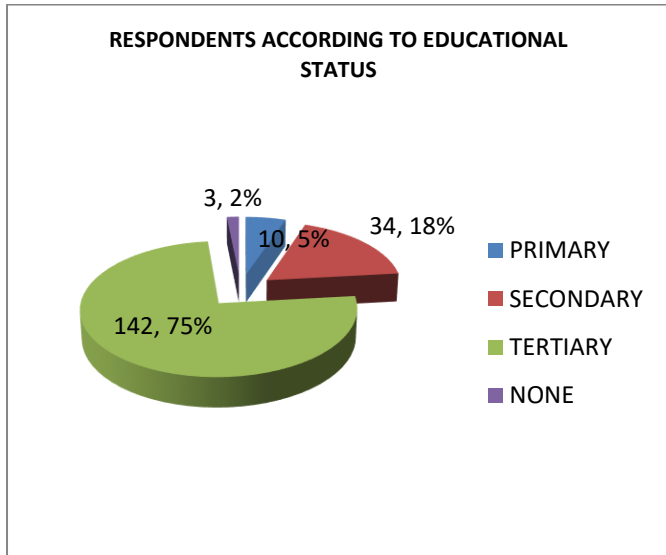


TABLE 4.4: RESPONDENT ACCORDING TO OCCUPATIONAL STATUS

Occupational status	No. of respondents	Percentages (%)
Teaching staff	45	23.8
Non – teaching staff	14	7.4
Students	130	68.8
Total	189	100

Figure 4.4: RESPONDENT ACCORDING TO OCCUPATIONAL STATUS

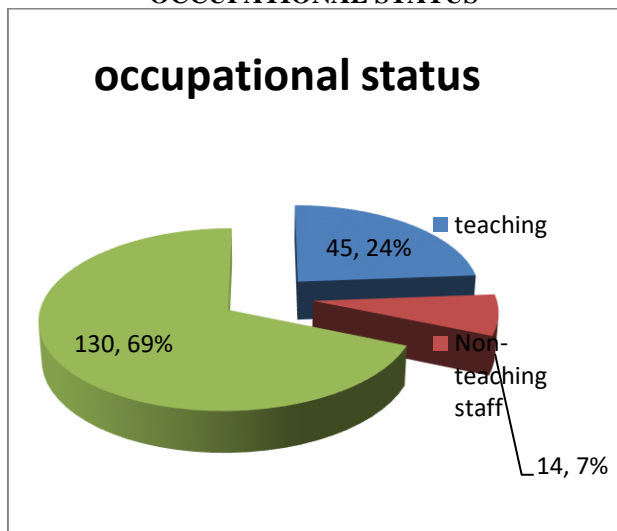


TABLE 4.5: RESPONDENT ON AWARENESS ON LABORATORY HEALTH HAZARDS

Awareness on laboratory health hazards	NUMBERS OF RESPONDENTS	PERCENTAGE (%)
Yes	154	81.5
NO	35	18.5
Total	189	100

Figure 4.5 RESPONSES ON LABORATORY HEALTH HAZARDS AWARENESS

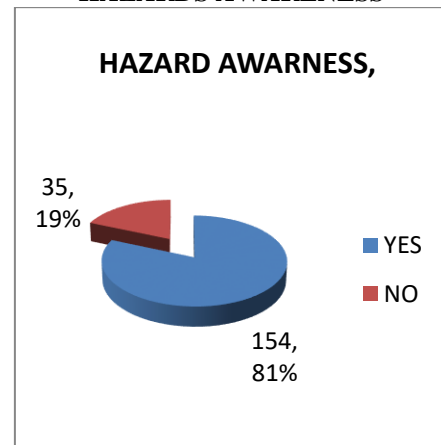


TABLE 4.6: RESPONDENT ON TRAINING RECORD

Training records	No. of respondents	Percentages (%)
Available	108	57.0
Not available	81	43.0
Total	189	100

Figure 4.6: RESPONDENT ON TRAINING RECORD

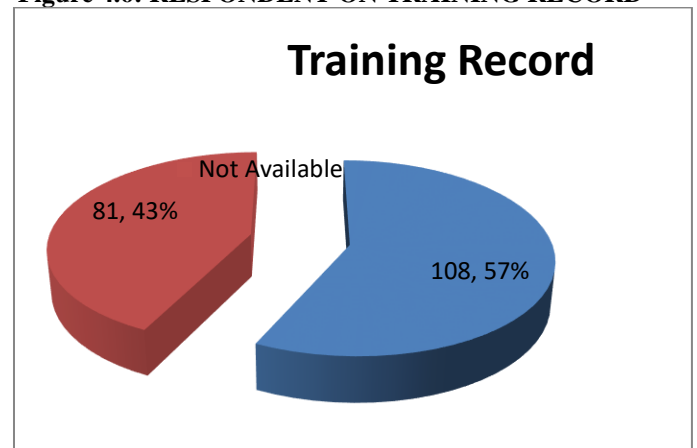


TABLE 4.7: RESPONDENT ON FUNCTIONAL STANDARD OPERATION PROCEDURE SOP

Functional SOP	No. of respondents	Percentages (%)
Yes	152	80.42
NO	37	19.58
Total	189	100

Figure 4.7: RESPONDENT ON FUNCTIONAL STANDARD OPERATION PROCEDURE SOP

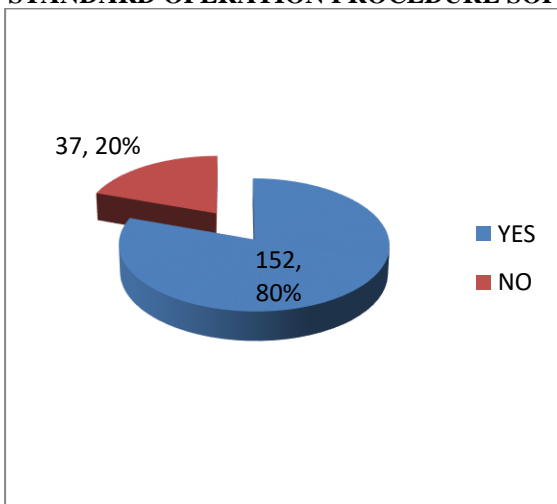


TABLE 4.8: RESPONDENT ON LABORATORY HEALTH AND SAFETY SIGN POST

Laboratory health and safety sign post	No. of respondents	Percentages (%)
Yes	63	33.3
NO	126	66.67
Total	189	100

Figure 4.8: RESPONDENT ON LABORATORY HEALTH AND SAFETY SIGN POST

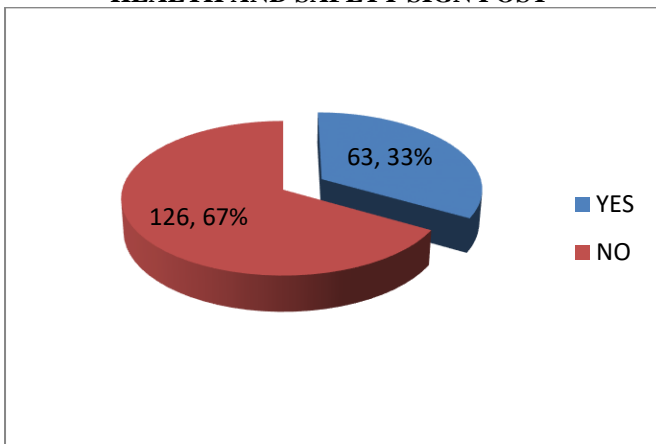


TABLE 4.9: RESPONDENT ON FUNCTIONAL FIRE AND SAFETY GADGETS

Functional fire and safety gadgets	Numbers of Respondents	Percentage (%)
Available	152	80.42
Not available	37	19.58
Total	189	100

Figure 4.9: RESPONDENT ON FUNCTIONAL FIRE AND SAFETY GADGETS

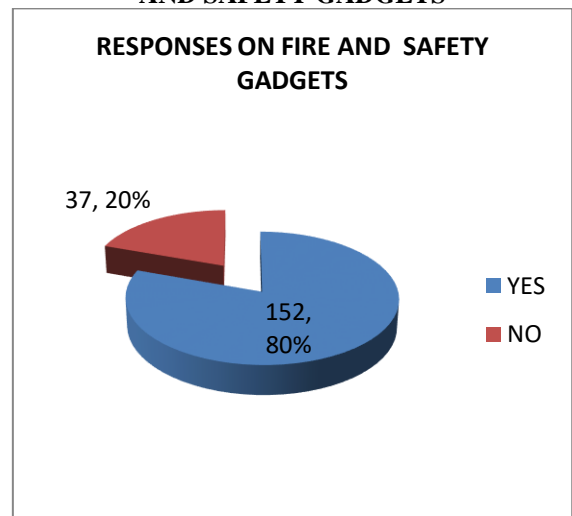


TABLE 4.10: RESPONDENT ON FUNCTIONAL FIRE AID BOX

FIRST-AID FACILITIES	NUMBERS OF RESPONDENTS	PERCENTAGE (%)
Available functional	63	33.3
Not Available	126	66.67
Total	189	100

Figure 4.10: RESPONDENT ON FUNCTIONAL FIRST AID BOX

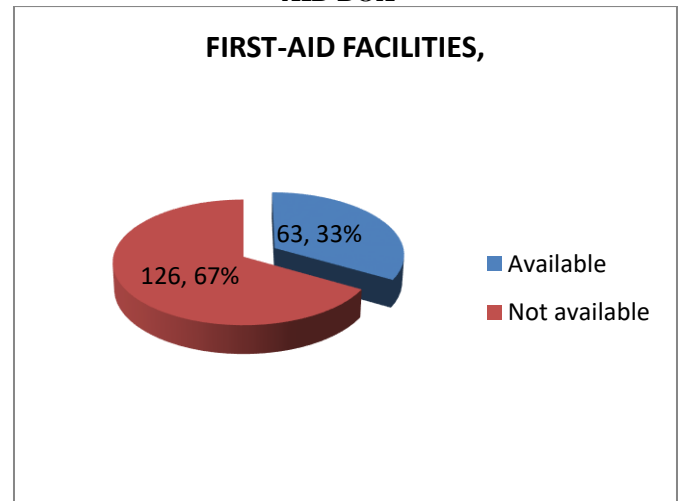


TABLE 4.11: RESPONDENT ON FUNCTIONAL SICK BAY/CLINIC

Functional sick bay/clinic	No. of respondents	Percentages (%)
Yes	157	83.1
No	32	16.9
Total	189	100

Figure 4.11: RESPONDENT ON FUNCTIONAL SICK BAY/CLINIC

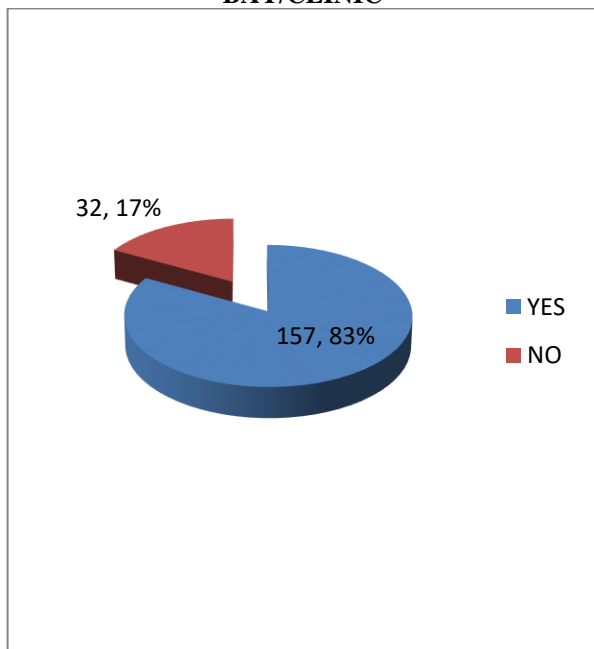


Figure 4.13: RESPONDENT ON HOW WASTES ARE COLLECTED

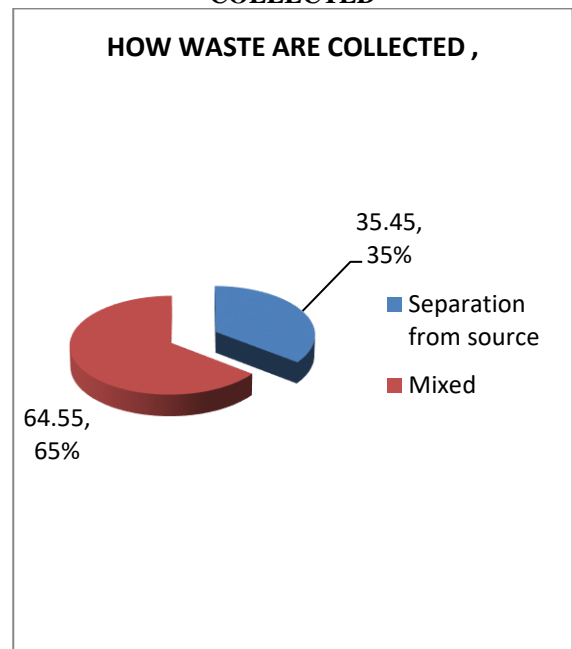


TABLE 4.12: RESPONDENT ON INTERVAL OF WASTE COLLECTION

Interval of waste collection	No. of respondents	Percentages (%)
Daily	125	66.1
Weekly	14	7.4
When it fills the bin	50	26.5
Total	189	100

TABLE 4.14: RESPONDENT ON HAZARD ENCOUNTER IN THE COUNTRY

Hazard encounter in the country	No. of respondents	Percentages (%)
Shock	45	24
Chemical spill	80	42
Slip	25	13
Fall	30	16
None	9	5
Total	189	100

Figure 4.12: RESPONDENT ON INTERVAL OF WASTE COLLECTION

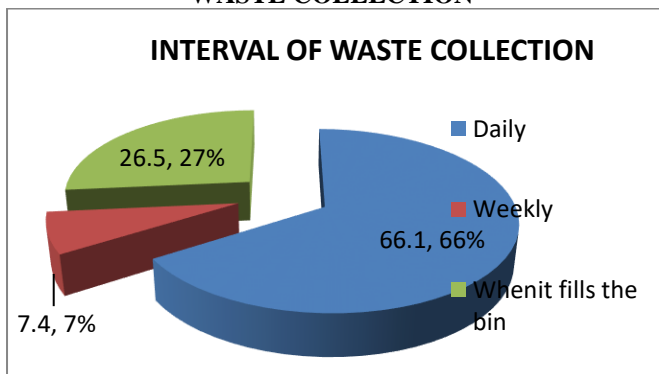


Figure 4.14: RESPONDENT ON HAZARD ENCOUNTER IN THE COUNTRY

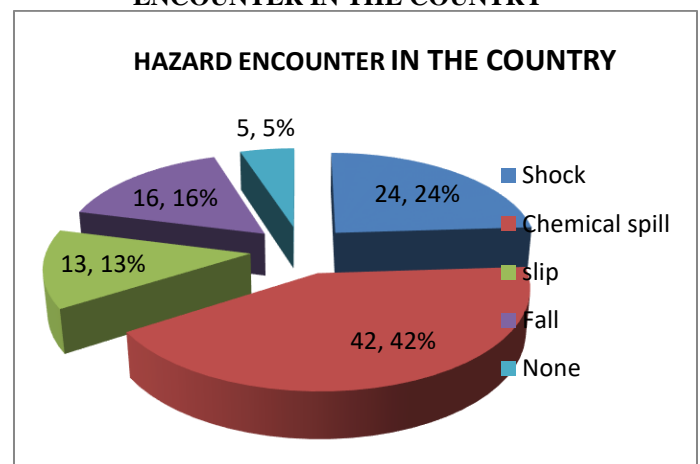


TABLE 4.13: RESPONDENT ON HOW WASTES ARE COLLECTED

How wastes are collected	No. of respondents	Percentages (%)
Separation from the source	67	35.45
Mixed	122	64.55
Total	189	100

V. CONCLUSION

Safety in the laboratory requires continuous attention and reinforcement of safety practices. The awareness to occupational safety and health administration in laboratories in college of health sciences and technology, Idah was good, indicates the proper management of occupational safety and health administration in the colleges of health sciences and

technology laboratories. However, the level of compliance to occupational safety and health administration in college of health sciences and technology Idah was very low. The continuous attention requires reinforcing the safety practices in the laboratories in terms of posts on emergency contacts, health hazards liable to encounter in the laboratories, how to operate fire and safety gadgets, among other things at the laboratory entrance and conspicuous areas in the laboratories were not duly posted.

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