

Research Article

Workplace Risk Associated Activities: Case Study of Medical Laboratory Science Council of Nigeria (MLSCN)

Christian Nnaemeka Ofodeme^{1,*} , Humphrey Ndubueze Elendu² , Ini Edeh³ ,
Ogbonna Nwachi Idume³ , Miriam Ijeoma Ahunanya⁴ , Chioma Nkechi Nnama⁵ 

¹Department of Medical Laboratory Science, Veritas University, Abuja, Nigeria

²Department of Medical Laboratory Planning, Research and Statistics, Medical Laboratory Science Council of Nigeria, Abuja, Nigeria

³Department of Examination, Medical Laboratory Science Council of Nigeria, Abuja, Nigeria

⁴Laboratory Accreditation Department, Medical Laboratory Science Council of Nigeria, Abuja, Nigeria

⁵Department of Chemical Engineering, University of Abuja, FCT, Abuja, Nigeria

Abstract

In the study of the Workplace Risk Associated Activities, Medical Laboratory Science Council of Nigeria (MLSCN) Case Study, a descriptive survey research design was adopted. The research method used for the primary data collection was structured closed and opened-ended questionnaire created with Epi-Info version7 based on the research aim and objectives of the study. The collected data was analysed using Epi-Info version7. Results indicated that: high number of person-to-person contacts (83.3%), high number of respondents/staff encounter with sharp materials during work (55.7%), presence of snakes (3.8%) and rodents (39.2%) In or around offices, presence of mosquitoes bite (43.0%), low number of immunized respondents/staff (24.4%), low number of trained respondents/staff on workplace risks (33.3%), working space (67.1%), job schedule orientation (66.7%), respondents/staff that cover their mouth when coughing or sneezing (66.6%) and respondents/staff that wash hands before eating in the office (89.6%). These trends amount to high risks with high likelihood and consequences calling for urgent attention. Though the organization scored high (98.7%) in assess control by making sure that all offices had lock and keys and were locked when leaving office, in switching off electrical appliances when leaving office (94.8%), washing hands before eating in office (89.6%) and in work environment cleanliness and conduciveness (88.5%) yet more hard work is needed to enable attainment of 100% in all workplace safety areas. The logistic regression analysis of training (outcome variable) and covariates: washing hands before eating in the office, covering mouth when coughing or sneezing and switching off light when leaving office indicated significant results ($p < 0.5$) with likelihood of about 90.0% There are high workplace risks associated activities in MLSCN calling for urgent attention.

Keywords

Workplace, Medical Laboratory Science Council of Nigeria, Staff, Risk Associated Activity

*Corresponding author: chukwuemekannama@gmail.com (Christian Nnaemeka Ofodeme)

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1. Introduction

Work could be defined (Merriam-Webster Dictionary, 2016). Work could impact on the safety and health of the individuals or employees either during or after work. These work impacts on the health and safety of the employees could vary from organisations to organisations depending on how conducive a workplace is or the exposure to the existing risks or hazards in a given workplace.

A conducive, sound and safe workplace begins with knowing and identifying the existing work-related health and safety risks. Next is to minimize or eliminate those risks especially, those risks that can cause workers serious injury, illness or death. Achieving these could lead to improvement/growth in the safety and health of the workers and the organisation.

Documenting and analyzing records of health monitoring, workplace incidents, near misses, worker complaints, sick leave, and results of any inspections, audits and investigations could catalyse hazards identification and elimination.

Also, risks associated with any given work depends on the consequence or severity of an accident or ill health that could occur, and the likelihood of its occurrence. Risks or accidents at workplace can be controlled or prevented. Some methods of control or prevention are better than others depending on the situation in achieving optimum results. Most importantly, whatever risk control method applied, the aim should be to reduce the likelihood of occurrence and/ or the consequence or severity of the risk. In all situations, the risk must be reduced to an acceptable level before commencement of work or for a workplace to be conducive. Hence, this study seeks to identify the workplace risks associated activities with the Medical Laboratory Science Council of Nigeria (MLSCN) staff as case study.

Knight, f. H. [12] defined risk as measurable uncertainty or possible events whose unfavorable consequences are difficult to accept or are even unacceptable [26]. Risk describes features of the probability of occurrence or the average expected probability of events that could have a negative, undesirable effect on humans and their environment or an organization [26, 28].

Referring the Concise Explanatory Dictionary of Hungarian, risk is the possibility of hazard or loss involved in a particular action [5]. In the opinion of [4, 16], the distinction between risk and hazard is of principal significance, as there will always be active agents and passive sufferers who are only affected by actions but are not involved in the process of decision-making, which gives rise to the antagonism of decision-makers and those affected by their decisions.

For [17], risk is an intrinsic property of any decision, it is measured by a combination of several factors (severity, occurrence, exposure to, etc.), although it is generally limited to two factors: severity and frequency of occurrence of a potentially damaging accidents that incorporate some exposure factors.

In the British Standard Occupational Health and Safety Assessment Series, (BSOHSAS18001) the risk is a combination of the likelihood of an occurrence of a hazardous event or exposures to danger and the severity that may be caused by the event or exposure.

In this context (BSOHSAS18001), the concept of risk asks two main questions:

- 1) What is the probability that a particular hazardous event or exposure will actually occur in the future?
- 2) How severe would the impact on health and safety be if the hazardous event or exposure actually occurred?

The risk can be defined as an uncertain event or set of circumstance which, should it occur, will have an effect on achievement of one or more objectives [27].

“The concept of risk is as old as mankind” [8], risk is the likelihood that a harmful consequence will occur when people are exposed to a hazard. A risk level is made up of two elements: (a) the likelihood of an incident happening; and (b) the consequence if it did happen, what are the likely consequences of exposure? [5] The likelihood of infectious diseases occurring in departmental workplaces is “almost certain” while the consequence may range from insignificant to critical [10]. Factors that may influence consequence include “susceptible populations” who may be at increased risk of acquiring an infectious disease or having a more severe consequence [27].

Susceptible populations include: the infants whose immune systems may not be fully developed, the elderly like the chronological age of 65 or older that may have weaker immune systems or other conditions, the immune compromised who may have impaired immune system, the non-immunized like the conscious object or s to vaccination, those with specific medical conditions [5]. Consider the workplace population in general as well as these susceptible populations when determining controls and these populations may extend beyond staff to family or household or public contacts [16].

Poor and unsafe working conditions, rapid introduction of new industries, invention and application of new tools for mass production and other processes brought about serious danger not anticipated to the employees. [21].

Providing the foundations for modernization, scientific and technological development eliminated the hazards and risks posed by nature, while giving rise to new ones [13]. Referring [3], “the social production of wealth is systematically accompanied by the social production of risks”.

According to [22, 23] social factors determining risk perception include: social inequalities, attitude to authority, power distance individualism vs. collectivism; masculinity vs. femininity; methods of managing uncertainty: strong vs. weak uncertainty avoidance.

People accepted work-related illnesses and injuries as part of the job and lived shorter lives, frequently dying in their forties and fifties, with workers in some trades dying in their

thirties [14]. The International Programme for the Improvement of Working Conditions and Environment (known as PTAPIACT) activities, emphasize that the improvement of occupational safety and health and working conditions should be considered as complex problem in which various factors are interrelated, such as protection against risks in the working environment, adaptation of work processes to the physical and mental capabilities of workers, improvement of work schedules and job content [11, 2].

Physical environmental factors contribute to a variety of health problems employees face in the work settings and these categories: chemical hazards, physical hazards like radiation, noise, vibration and exposure to extremes of heat and cold; electrical hazards, fire, heavy lifting and uncomfortable working positions, and potential falls [7]. With poor lighting or high noise levels, the employee may face the adverse effects of vision and hearing respectively, heavy objects that must be moved may cause musculoskeletal injuries, hernia and potential or falls, and exposure to excessive heat or cold in many workplaces [7, 29]. Other factors related to physical environment, liquids, gasses, vapours, dust, fumes, fibres or mists [7, 29].

2. Methodology

2.1. Study Area

The Medical Laboratory Science Council of Nigeria (MLSCN) is a Federal Government Statutory Regulatory Agency established by Act 11 of 2003 (CAPM25, LFN, 2004). It is a parastatal, mandatory inspection, mentoring for quality improvement, accreditation, monitoring and evaluation as well as certification of laboratory test kits and reagents. Furthermore, the Act empowers the Council to regulate the training of Medical Laboratory Scientists, Technicians and Assistants.

2.2. Study Population

Population include any group of people, events or items that interest a researcher in a research while target population means “a universal set of study of all members of real or hypothetical set of people, events or objects to which an investigator wish to generalise the result” [18]. The target population for this survey research included all staff of the Medical Laboratory Science Council of Nigeria (MLSCN) with Headquarters in Abuja with population of 181, Federal Capital Territory of Nigeria.

2.3. Study Design

A descriptive survey research design was used in this study. According to [18], “A descriptive research design determines and reports the way things are” and is used if data was collected for describing persons, organizations, set-

tings/phenomena” [18].

2.3.1. Inclusion Criteria

The inclusion criterion was based on all individuals who were staff in the study area.

2.3.2. Exclusion Criteria

The exclusion criterion was based on all individuals who were NOT staff in the study area.

2.3.3. Informed Consent

The informed consent of all the individuals who participated in this research Study were duly obtained.

2.4. Data Collection Instrument

The primary data collection instrument in this study was structured closed and open-ended questionnaires created based on six main determinants of health (age and sex, individual lifestyle, social and community networks, socioeconomic and environmental status, income and education) with the Epi-Info software version 7 based on the research objectives of this research study and administered to the 84 respondents.

While the secondary data were collected from research study related literature.

2.4.1. Validity and Reliability of Data

Expert opinion and positive criticism of the study by my colleagues used to ascertain the content validity and reliability of the data collection instrument use.

2.4.2. Statistical Analysis Method

Data analysis is the processing of making the collected data meaningful or to give important information [24]. The Epi-Info software version 7 was used in analyzing the data. Then the results were presented in tables.

3. Results

The results of this research work are as presented in tables 1 to 20 below:

The frequency distribution by sex: female, 40 (50.6%) and male 39 (49.4%) shows that female responded more than male but almost at equal rate (table 1).

Frequency distribution by age in years: 21-30, 22 (27.9%); 31-40, 30 (38.0%), >50, 5 (6.3%) and it is believed that they were all matured adults (table 2).

Academic attainment frequency distribution: First School Leaving Certificate, 6 (7.6%); First Degree, 39 (49.4%); postgraduate Degree, 34 (43.0%) (Table 3) and it portrayed that the respondents were educated.

Frequency Distribution for Years of Work Experience: <1, 2

(2.5%); 1, 55 (69.6%); 2, 18 (22.9%); 3, 4 (5.1%) (Table 4) it portrayed that more of the respondents had worked for more than five (5) years.

Identifying Direct Contact Workplace Risk Associated Activities: From tables 5 to 13, the identified direct contact workplace risk associated activities include: contacts with clients like hand shaking and exchange of materials (83.3%); contact with sharps (55.7%); mosquitoes bite (43.0%); switching off electrical appliances (94.8%); enough work space (67.1%); saw rodents in office (39.2%); saw snake in or around office (3.8%); washing hands before eating in office (89.6%) and covering mouth when coughing with handkerchief (66.6%).

From tables 14 to 18 Revealing The Indirect Contact

Workplace Risk Associated Activities: staff work environment cleanliness and conduciveness (88.5%); office with lock and key and were locked when leaving office (98.7%) and the immunized staff (24.4%). This is a high risk. It could be again adduced that while most staff had clean and conducive workplace, about 75.6% staff were not immunized and (66.7%) of staff were given job schedule orientation on workplace risks.

The logistic regression analysis of training (outcome variable) and covariates: washing hands before eating in the office, covering mouth when coughing or sneezing and switching off light when leaving office indicated significant results ($p < 0.5$) with likelihood of about 90.0%.

Table 1. Gender Frequency Distribution.

| 1. Gender? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|------------|-----------|---------|-------------|---------------|---------------|
| Male | 39 | 49.37% | 49.37% | 37.92% | 60.86% |
| Female | 40 | 50.63% | 100.00% | 39.14% | 62.08% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Source, Research Study, 2024

Table 2. Frequency Distribution by Age.

| 2. Age in years? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|------------------|-----------|---------|-------------|---------------|---------------|
| 21-30 | 22 | 27.85% | 27.85% | 18.35% | 39.07% |
| 31-40 | 30 | 37.97% | 65.82% | 27.28% | 49.59% |
| 41-50 | 22 | 27.85% | 93.67% | 18.35% | 39.07% |
| >50 | 5 | 6.33% | 100.00% | 2.09% | 14.16% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Table 3. Academic attainment Frequency Distribution.

| 3. Academic Attainment? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|-------------------------|-----------|---------|-------------|---------------|---------------|
| O/Level | 6 | 7.59% | 7.59% | 2.84% | 15.80% |
| First Degree | 39 | 49.37% | 56.96% | 37.92% | 60.86% |
| Masters or PhD | 34 | 43.04% | 100.00% | 31.94% | 54.67% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Table 4. Years of Work Experience Frequency Distribution.

| 4. How many years have you worked in this establishment? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|---------|-------------|---------------|---------------|
| 0 | 2 | 2.53% | 2.53% | 0.31% | 8.85% |
| 1 | 55 | 69.62% | 72.15% | 58.25% | 79.47% |
| 2 | 18 | 22.78% | 94.94% | 14.10% | 33.60% |
| 3 | 4 | 5.06% | 100.00% | 1.40% | 12.46% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Source, Research Study, 2024.

5 Identified Direct Contact Workplace Risks Associated Activities

Table 5. Staff Having Contact with Clients.

| 5. Do you have direct contact with your clients like hand shaking, exchange of writing pen, files, etc.? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|---------|-------------|---------------|---------------|
| Yes | 65 | 83.33% | 83.33% | 73.19% | 90.82% |
| No | 13 | 16.67% | 100.00% | 9.18% | 26.81% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Table 6. Staff Contact with Sharps.

| 6. Do you carry or work with sharp materials that can pierce or cut your skin? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|---------|-------------|---------------|---------------|
| Yes | 44 | 55.70% | 55.70% | 44.08% | 66.88% |
| No | 35 | 44.30% | 100.00% | 33.12% | 55.92% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Table 7. Staff With Mosquitoes Bite.

| 7. Mosquitoes use to bite me while working in the office? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 34 | 43.04% | 43.04% | 31.94% | 54.67% |
| No | 45 | 56.96% | 100.00% | 45.33% | 68.06% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Source, Research Study, 2024.

Table 8. Staff That Switch Off Electrical Appliances.

| 8. Before leaving office, I switch off all electrical appliances in my office? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|---------|-------------|---------------|---------------|
| Yes | 73 | 94.81% | 94.81% | 87.23% | 98.57% |
| No | 4 | 5.19% | 100.00% | 1.43% | 12.77% |
| TOTAL | 77 | 100.00% | 100.00% | | |

Table 9. Staff with Enough Office Space.

| 9. My office has enough space that allows for ease of movement? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 53 | 67.09% | 67.09% | 55.60% | 77.25% |
| No | 26 | 32.91% | 100.00% | 22.75% | 44.40% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Table 10. Staff That Had Seen Rodents In Office.

| 10. I have seen rodents like rats before in my office? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|----------|-------------|---------------|---------------|
| Yes | 31 | 39.24% | 39.24% | 28.44% | 50.87% |
| No | 48 | 60.76% | 100.00% | 49.13% | 71.56% |
| TOTAL | 79 | 100.00 % | 100.00 % | | |

Source, Research Study, 2024

Table 11. Staff That Had Seen Snakes In Office.

| 11. I have seen snakes before in or around my office? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 3 | 3.80% | 3.80% | 0.79% | 10.70% |
| No | 76 | 96.20% | 100.00% | 89.30% | 99.21% |
| TOTAL | 79 | 100.00% | 100.00% | | |

Table 12. Staff That Wash Hands Before Eating In Office.

| 12. I wash my hands before eating in the office? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|---------|-------------|---------------|---------------|
| Yes | 69 | 89.61% | 89.61% | 80.55% | 95.41% |
| No | 8 | 10.39% | 100.00% | 4.59% | 19.45% |
| TOTAL | 77 | 100.00% | 100.00% | | |

Table 13. Staff That Cover Mouth When Coughing or Sneezing.

| 13. When I cough or sneeze I cover my mouth with my handkerchief? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 52 | 66.67% | 66.67% | 55.08% | 76.94% |
| No | 26 | 33.33% | 100.00% | 23.06% | 44.92% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Source, Research Study, 2024

14. Revealed Indirect Contact Workplace Risks Associated Activities.

Table 14. Work Environment Cleanliness and Conduciveness.

| 14. My work environment is clean and conducive? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 69 | 88.46% | 88.46% | 79.22% | 94.59% |
| No | 9 | 11.54% | 100.00% | 5.41% | 20.78% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Table 15 Office with Lock and Key and Were Locked When Leaving Office.

| My office has functional lock and key and I lock it whenever I am the last to leave office? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 77 | 98.72% | 98.72% | 93.06% | 99.97% |
| No | 1 | 1.28% | 100.00% | 0.03% | 6.94% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Table 16. Staff That Had Received Immunization.

| 15. I have received immunization in my workplace? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 19 | 24.36% | 24.36% | 15.35% | 35.40% |
| No | 59 | 75.64% | 100.00% | 64.60% | 84.65% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Source, Research Study, 2024.

16. Establish That Safety Training Impact on Level of Workplace Risks in Organization.

Table 17. Staff That Received Training on Workplace Risks.

| 16. I have received training on workplace risks activities? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|---|-----------|---------|-------------|---------------|---------------|
| Yes | 26 | 33.33% | 33.33% | 23.06% | 44.92% |
| No | 52 | 66.67% | 100.00% | 55.08% | 76.94% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Table 18. Staff That Received Job Schedule Orientation before Assigning Job/Task.

| 17. I was given job schedule orientation before assigning me any job/task? | Frequency | Percent | Cum.Percent | Exact 95% LCL | Exact 95% UCL |
|--|-----------|---------|-------------|---------------|---------------|
| Yes | 52 | 66.67% | 66.67% | 55.08% | 76.94% |
| No | 26 | 33.33% | 100.00% | 23.06% | 44.92% |
| TOTAL | 78 | 100.00% | 100.00% | | |

Source, Research Study, 2024

In the [table 19](#). below, indicated significant result all $P < 0.5$.

Table 19. Logistic Regression Of Training (Outcome Variable) Against (Co-Variates): Switching Off Electrical Appliances When Leaving Office, Washing Hand Before Eating and Covering Mouth When Coughing Or Sneezing.

| Term ($P < 0.5$) | Odds Ratio | 95% | C.I. | Coefficient | S.E. | Z-Statistic | P-Value |
|--|------------|--------|---------|-------------|--------|-------------|---------|
| Before leaving office I switch-off all electrical appliances in my office (Yes/No) | 0.1893 | 0.0172 | 2.0861 | -1.6643 | 1.2243 | -1.3594 | 0.1740 |
| I wash my hands before eating n the office (Yes/No) | 1.5732 | 0.2367 | 10.4552 | 0.4531 | 0.9663 | 0.4689 | 0.6391 |
| When I cough or sneeze I cover my mouth with my handkerchief (Yes/No) | 1.7972 | 0.5853 | 5.5182 | 0.5862 | 0.5724 | 1.0242 | 0.3057 |
| CONSTANT | * | * | * | 0.4432 | 0.3122 | 1.4195 | 0.1558 |

| Convergence: | Converged |
|-------------------------|-----------|
| Iterations: | 3 |
| Final-2*Log-Likelihood: | 89.9622 |
| Cases Included: | 72 |

| Test | Statistic | D.F. | P-Value |
|------------------|-----------|------|---------|
| Score | 4.2256 | 3 | 0.2381 |
| Likelihood Ratio | 4.2217 | 3 | 0.2385 |

Source, Research Study, 2024.

In the [table 20](#) below, indicated significant result all $P < 0.5$ with likelihood of about 90.0%.

Table 20. Logistic Regression Of Training (Outcome Variable) Against (Co-Variates): Switching Off Electrical Appliances When Leaving Office, Washing Hand Before Eating and Covering Mouth When Coughing Or Sneezing.

| Term (P<0.5) | Odds Ratio | 95% | C.I. | Coefficient | S.E. | Z-Statistic | P-Value |
|--|------------|--------|---------|-------------|--------|-------------|---------|
| Before leaving office I switch-off all electrical appliances in my office (Yes/No) | 0.1893 | 0.0172 | 2.0861 | -1.6643 | 1.2243 | -1.3594 | 0.1740 |
| I wash (Yes/No) | 1.5732 | 0.2367 | 10.4552 | 0.4531 | 0.9663 | 0.4689 | 0.6391 |
| When I cough or sneeze I cover my mouth with my handkerchief (Yes/No) | 1.7972 | 0.5853 | 5.5182 | 0.5862 | 0.5724 | 1.0242 | 0.3057 |
| CONSTANT | * | * | * | 0.4432 | 0.3122 | 1.4195 | 0.1558 |

| Convergence: | Converged |
|-------------------------|-----------|
| Iterations: | 3 |
| Final-2*Log-Likelihood: | 89.9622 |
| Cases Included: | 72 |

| Test | Statistic | D.F. | P-Value |
|------------------|-----------|------|---------|
| Score | 4.2256 | 3 | 0.2381 |
| Likelihood Ratio | 4.2217 | 3 | 0.2385 |

Source, Research Study, 2024.

4. Discussion

From [tables 1 to 4](#) above, more female responded more than male colleagues and were all matured and educated adults with more than five (5) years of work experience; and was believed that their responses were accurate. Also, the main aim of this research work is to study the workplace risk associated activities using the Medical Laboratory Science Council of Nigeria (MLSCN) as a case study and suggest ways to reduce the likelihood of occurrence and/or the consequence or severity of the risks resulting there from based on the objectives.

Considering the objectives of this research work which include:

- 1) Identify direct contact workplace risk associated activities.
- 2) Reveal indirect contact workplace risk associated activities.
- 3) Establish that safety training impact level of workplace risks in an organisation.
- 4) Make recommendations from the research work results.

In Identifying Direct Contact Workplace Risk Associated Activities:

From [tables 5 to 13](#) above, the identified direct contact workplace risk associated activities in this research work include: contacts with clients like hand shaking and exchange of materials (83.3%); contact with sharps (55.7%); mosquitoes bite (43.0%); switching off electrical appliances (94.8%); enough work space (67.1%); saw rodents in office (39.2%); saw snake in or around office (3.8%); washing hands before eating in office (89.6) and covering mouth when coughing with handkerchief (66.6%).

This result indicated that most staff had contacts with clients like handshaking and exchange of materials and this could amount high risk for transmitting infections which agreed with the work of [15, 25] who reported that generally, there were three major routes of entry for micro-organisms into our body: through the respiratory system, transmission through contact with body fluids of the infected or contact with contaminated objects. The result indicated that contact with sharps is 55.7% of respondents amounting again to risk of cuts or open skin which may catalyze infection as in the work of [7, 29] who noted that break or open wound in the skin could allow direct contact with blood and body sub-

stances like tetanus and blood borne viruses such as hepatitis B, hepatitis C and Human Immunodeficiency Virus (HIV), these could be prevented by keeping open wounds covered e.g. with a water proof dressing or with appropriate clothing or through safe handling and disposal of sharps.

Also the result pointed that staff that had mosquitoes bite (43.0%); switching off electrical appliances (94.8%); with enough workspace (67.1%); saw rodents in office (39.2%); saw snake in or around office (3.8%); washing hands before eating in office (89.6%) and covering mouth when coughing with handkerchief (66.6%). It could be adduced that were experiencing mosquitoes bite, some staff neither switch off electrical appliances before leaving office nor wash hands before eating in office nor cover mouth when coughing with handkerchief, and there had been presence of snakes and rodents in or around the offices. These activities remain high risks for the staff and requires urgent attention and supports the work of the [19], who reasoned that employers should evaluate safety and health program of a given workplace to ensure that it is effective and appropriate to workplace conditions.

In Revealing The Indirect Contact Workplace Risk Associated Activities:

As reported earlier in the literature review of this work, findings across the literature was that workplace wellness programs are implemented by employers with the goal of improving the health of their employees [6, 9, 10, 20]. The example of the wellness programs include adequate workplace safety like enough space, immunization [1].

This research work revealed that staff work environment cleanliness and conduciveness (88.5%); office with lock and key and were locked when leaving office (98.7) and the immunized staff (24.4%). This is a high risk. It could be again adduced that while most staff had clean and conducive workplace, about 75.6% staff were not immunized and supported the [1], who reported that adults could acquired is eases if they were not fully vaccinated as a child (e.g. measles), were not exposed to infectious diseases during their childhood (e.g. chicken pox), or if their immunity to infectious diseases from previous infection or vaccination has waned e.g., whooping cough (pertussis).

In establishing that' safety Training impacts On Level of Workplace Risks in Organizations:

From the results of this research work as in tables 18 to 20 indicated that 33.3% of respondents had received training on workplace risks and 66.7% got job schedule orientation before being assigned job/task. This implies that more respondents (staff) need training and job schedule orientation and is against the work of [4, 19] who opined that training helps people share knowledge and develop skills, and is an important part of managing risks as it ensures control measures are properly used and maintained.

Also, the logistic regression analysis of training (outcome variable) and covariates: washing hands before eating in the office, covering mouth when coughing or sneezing and

switching off light when leaving office indicated significant results ($p < 0.5$) with likelihood of about 90.0%. These portray that training impacts on level of workplace risks in organizations and agreed with the work of [19] who reported that every employer have a primary duty of care under law to ensure, so far as is reasonably practicable, all persons (workers and others) are provided with any information, training, instruction or supervision needed to protect from both health and safety risks arising from their work.

In Making Recommendations from This Research work:

Referring [5, 8], "The concept of risk is as old as mankind" and risk is the likelihood that a harmful consequence will occur when people are exposed to a hazard: a risk level is made up of two elements: (a) the likelihood of an incident happening; and (b) the consequence if it did happen, what are the likely consequences of exposure? From the result of this research study, the risks identified with high likelihood of occurrence and consequences include:

- 1) High number of person-to-person contacts,
- 2) High number of respondents/staff encounter sharp materials during work,
- 3) Presence of snakes and rodents in or around offices,
- 4) Presence of mosquitoes bite,
- 5) Low number of immunized respondents/staff,
- 6) Low number of trained respondents/staff on workplace risks,
- 7) Inadequate working space,
- 8) Inadequate job schedule orientation,
- 9) Some respondents/staff do not cover their mouth when coughing or sneezing,
- 10) Some respondents/staff do not wash hands before eating in the office.

It is recommended that the management of the organization (MLSCN) should endeavor to remedy these identified workplace associated risks itemized above, provide national plans, guidelines, legal and compliance.

5. Conclusion

This research study exposed that the workplace associated risks identified in the MLSCN include: high number of person-to-person contacts, high number of respondents/staff encounter with sharp materials during work, presence of snakes and rodents in or around offices, presence of mosquitoes bite, low number of immunized respondents/staff, low number of trained respondents/staff on workplace risks, inadequate working space, inadequate job schedule orientation, some respondents/staff do not cover their mouth when coughing or sneezing and some respondents/staff do not wash hands before eating in the office. These amount to high risks with high likelihood and consequences calling for urgent attention. Though the organization scored high (98.7%) in assess control by making sure that all offices had lock and keys and were locked when leaving office, is switching off electrical appliances when leaving office (94.8%), washing

hands before eating in office (89.6%) and in work environment cleanliness and conduciveness (88.5%) yet more hard work is needed to enable attainment of 100% in all workplace safety areas. These if achieved could reduce costs/wastes, strengthen the organization strides and promotes future success in all MLSCN activities.

This is to align with the fact that findings across the literature is that workplace wellness programs are implemented by employers with the goal of improving the health of their employees [6, 9, 10, 20]. Also, elimination of the source of risks is fundamental to the prevention and control risks.

Therefore according to [19], the employer must develop a plan for coming into compliance as promptly as possible, which includes setting priorities and deadlines and tracking progress in controlling hazards or risks.

Abbreviations

| | |
|----------|---|
| BSOHSAS | British Standard Occupational Health and Safety Assessment Series |
| HIV | Human Immunodeficiency Virus |
| MLSCN | Medical Laboratory Science Council of Nigeria |
| OSHA | Occupational Safety and Health Administration |
| PTAPIACT | The International Programme for the Improvement of Working Conditions and Environment |

Author Contributions

Christian Nnaemeka Ofodeme: Conceptualization, Visualization, Writing – original draft

Humphrey Ndubueze Elendu: Formal Analysis, Methodology, Supervision

Ini Edeh: Project administration, Writing – review & editing

Ogbonna Nwachi Idume: Investigation

Miriam Ijeoma Ahunanya: Data curation, Investigation, Writing – review & editing

Chioma Nkechi Nnama: Software, Validation

Conflicts of Interest

The authors declare no conflict of interest.

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