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Original Research Article

Occupational Health Hazards and Safety Practises on Abattoir Workers in Owerri Metropolis, Imo State

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Abstract: The purpose of this study was to determine the impact of occupational health hazards and safety practises on abattoir workers in Owerri Metropolis, Imo State, Nigeria. For the study, three objectives and three questions were developed. This study used a descriptive survey design. The population of the study consisted of 232 abattoir workers recruited from the three major abattoirs in Owerri Metropolis, Imo State. The study's sample included all two hundred and thirty-two (232) abattoir workers from the three major abattoirs in Owerri Metropolis. At the 0.05 level of significance, inferential statistics of Chi square (x2) were used to analyse the data collected for hypotheses, while the objectives were presented in frequency and percentages. According to the findings, the major occupational health hazards include knife cuts, blood/waste splashes, noise, bone piercing, and chemical spill, burns, and irritation. Adopted safety practises include the use of an apron, gloves, boots, and pre- and post-mortem inspection. Based on the findings, it was recommended that the government, through the ministry of health and labour, develop or create survey instruments and conduct surveys on a regular basis to monitor the prevalence of occupational health diseases and the upkeep of safety practises in abattoirs.

Keywords: Occupational Health, Hazards and Safety, Practises, Abattoir.

INTRODUCTION

Due to competing economic, social, and political needs, occupational health remains a neglected "issue" in many developing countries around the world. Clinical care and treatment are frequently prioritised in these countries over appropriate preventive measures (Adib-Hajbaghery & Lotfi, 2013). Occupational health hazards are workplace conditions that can harm a person or his property.

Most countries around the world have a long tradition of slaughtering animals for communal consumption (Abdullahi, 2016). Cattle, sheep (for goat and mutton), pig (for pork), and fowl, primarily chickens, turkeys, and ducks for poultry meat, are the most commonly slaughtered animals for food. This industry has a significant impact on both commerce and employment. Workers in model abattoirs face a variety of hazards, which can be physical, chemical, biological, or ergonomic in nature (Abiayi, 2015). Traditional slaughterhouses have largely been replaced in developed countries by meat packing plants, where animals are slaughtered, the meat packaged, and then distributed. The government typically regulates these large

slaughterhouses to ensure the occupational health and safety of the workers, as well as the sanitary conditions of the meat distributed. The size of slaughterhouses varies from large industrial plants in major cities to small unregulated plants in rural areas and markets. In many developing countries, particularly in Africa, it is not uncommon to see animals slaughtered under a tree, in roadside stalls, in market stalls, or in deteriorated and outdated slaughter units that lack waste management facilities and other facilities necessary for the safety of the workers and consumers of the meat. When handling freshly slaughtered meat and being exposed to sick animals, workers in abattoirs are exposed to biological agents. Skin infections, gastrointestinal infections, respiratory infections, central nervous system infections, and even sepsis are all possible side effects. The United States Department of Labor's 2019 agenda states that approximately 61% of infectious organisms affecting humans today are zoonotic, and slaughterhouses serve as an important interface between human health, animal health, and environmental health (Abrams, 2018).

Butchers are exposed to physical hazards such as noise, cold, vibration, and physical injuries, as well as ergonomic risks such as overexertion, manual and repetitive work such as hanging and cutting meat, awkward positions, and heavy object lifting (Abiayi, 2015). Musculoskeletal disorders (MSD) are caused by damage to muscles, tendons, nerves, or joints. Back pain, neck pain, nerve entrapment, tenosynovitis, bursitis, and trigger finger are all examples of MSDs (Abdullahi, 2016). Butchers may also be injured as a result of knife cuts, slips, and falls.

Workers in slaughterhouses may be exposed to hazardous chemicals such as ammonia, which is used in meat packing, chlorine, which may be added to water to disinfect meat, and hydrogen peroxide, which is sometimes used as a disinfectant, according to Abrams (2018). These exposures can cause throat, eye, nose, and skin irritations, as well as burns from accidental splashes and respiratory symptoms (United States Department of Labour, 2019).

Many studies on Nigerian slaughterhouses have focused on market activities and sanitation. However, in Imo state abattoirs, ante mortem (pre-slaughter) inspection of animals is rarely performed (LaDou, & Harrison, 2017). Abattoir workers are frequently exposed to zoonotic infections due to a lack of necessary tools and equipment. The proliferation of cooperative slaughter slabs and illegal slaughter houses endangers the public. There are usually no facilities for waste management or water supply in these areas. Furthermore, the slabs are frequently located within dwelling houses, where a high risk of contaminating domestic underground water supply sources exists. The cleanliness of abattoirs and slaughterhouses is one of the most difficult public health issues. Because the abattoir processes create unsanitary conditions (Adib-Hajbaghery, & Lotfi, 2013), it is hoped that the findings of this study will help relevant authorities plan appropriate interventions to address this public health issue.

Statement of the Problem

Abattoir work can cause occupational diseases or aggravate pre-existing non-occupational illnesses. Occupational hazards are the leading cause of morbidity and mortality among these workers because many of them are exposed to a variety of hazardous situations on a daily basis. Occupational hazards have increased in recent decades, according to the Centers for Disease Control and Prevention, resulting in increased rates of occupational exposure to blood-borne illnesses and other communicable diseases, primarily in developing and transitioning countries. Among the over 1,400 species of infectious microbes of human pathogens that could be caused by latrogenic or transmissible agents and contacted by vulnerable abattoir workers are 617 zoonotic viruses and bacteria.

In general, Nigeria, particularly Imo State, is filthy. Individual butchers with little hygiene knowledge slaughter on the abattoir floor and outside. Slaughtering takes place in frequently contaminated areas with blood and faeces, and the meat produced is prone to rapid deterioration due to high levels of bacterial contamination. Aside from lowering meat quality, such meat can cause food poisoning and infection in humans. Furthermore, carcasses are being transported in taxi boots, filthy pickup vans, motor cycles, carts, and wheel barrows, and street hawking of meat in open head pans is becoming more common in many Imo State cities. Overexertion and incorrect postures while lifting and moving animals, feed bags, and shovelling waste cause back pain and other musculoskeletal problems. Veterinarians are injured at a rate of at least 10 per 100 veterinarians per year, while abattoir workers are injured at a rate of 45 per 100 abattoir workers. Although data for cases of occupational hazards in developing countries is largely unavailable, the identified causes of these problems are improper market and abattoir planning, as well as the emergence of illegal abattoirs (including slaughter slabs). Lack of adequate facilities, such as inadequate road networks, potable water, a lack of personal

protective equipment, institutional regulation enforcement and monitoring, and, most importantly, corrupt and sharp practises by market and abattoir supervisors.

Our country yearns for, and desires, national self-sufficiency in food production, food security, and health for all. As a result of the foregoing, the researcher has been inspired to identify occupational health hazards and safety practises of abattoir workers in Owerri, Imo State, with the goal of improving the process using the research findings.

Purpose of the Study

The purpose of this study is to ascertain occupational health hazards and safety practices of abattoir workers in Owerri Metropolis, Imo State, Nigeria. Specifically, the following objectives will guide the study:

1. To determine the physical occupational health hazards among abattoir workers in Owerri Metropolis, Imo state.
2. To access the chemical occupational health hazards among abattoir workers in Owerri Metropolis, Imo state.
3. To ascertain the biological occupational health hazards among abattoir workers in Owerri Metropolis, Imo state.

Research Questions

1. What are the physical occupational health hazards among abattoir workers in Owerri Metropolis, Imo state?
2. What are the chemical occupational health hazards among abattoir workers in Owerri Metropolis, Imo state?
3. What are the biological occupational health hazards among abattoir workers in Owerri Metropolis, Imo state?

Hypotheses

The following hypotheses were formulated and presented in null form to guide the study at 0.05 level of significant:

1. There is no significant difference in the physical health hazards among abattoir workers in Owerri Metropolis based on their socio-demographic characteristics
2. There is no significant difference in the chemical health hazards among abattoir workers in Owerri Metropolis based on their socio-demographic characteristics
3. There is no significant difference in the biological health hazards among abattoir workers in Owerri Metropolis based on their socio-demographic characteristics

LITERATURE REVIEW

Concept of Occupational Health

Occupational health is defined by the World Health Organization as "all aspects of health and safety in the workplace," with a strong emphasis on hazard prevention. Rather than simply the absence of disease or infirmity, health has been defined as a complete state of physical, mental, and social well-being (Akpabio & Kalu, 2015). Occupational health is a multidisciplinary field of healthcare concerned with allowing people to do their jobs in the healthiest way possible. In contrast to, say, workplace health and safety promotion, which is concerned with preventing harm from any incidental hazards that may arise in the workplace, health has been defined. Since 1950, the International Labour Organization (ILO) and the World Health Organization (WHO) have shared a definition of occupational health. It was adopted by the Joint ILO/WHO Committee on Occupational Health at its first session in 1950 and revised at its twelfth session in 1995. The primary goals of occupational health are as follows:

Maintenance and promotion of workers' health and working capacity, (ii) improvement of the working environment and work to make it more conducive to safety and health, and (iii) development of work organisations and working cultures in a direction that supports health and safety at work, thereby promoting a positive social climate, smooth operation, and possibly increasing the undertakings' productivity. The term "working culture" in this context refers to a reflection of the essential value systems adopted by the enterprise in question. A culture like this is reflected in the organization's management systems, personnel policies, participation principles, training policies, and quality management (Banjo, 2015). Medicine, psychology, epidemiology, physiotherapy and rehabilitation, occupational therapy, occupational medicine, human factors and ergonomics, and many other disciplines and professions are represented among occupational health professionals. Professionals advise on a variety of occupational health issues. These include how to avoid specific pre-existing conditions causing a problem at work, proper work posture, frequency of rest breaks, preventive measures that can be taken, and so on (Broadway, 2012).

Concept of Occupational Hazards

An occupational hazard is one that occurs at work. Occupational hazards include chemical

hazards, biological hazards (biohazards), ergonomic hazards, and physical hazards. In the United States, the National Institute for Occupational Safety and Health (NIOSH) conducts workplace investigations and research to address workplace health and safety hazards, resulting in guidelines (NOISH, 2016). The Occupational Safety and Health Administration (OSHA) is in charge of developing and enforcing workplace safety and health regulations.

Occupational hazard is a branch of occupational safety and health and public health that refers to both long-term and short-term risks in the workplace (NOISH, 2016). The Occupational Safety and Health Administration (OSHA) are in charge of developing and enforcing workplace safety and health regulations.

Occupational hazard is a branch of occupational safety and health and public health that refers to both long-term and short-term risks in the workplace. Short-term risks include physical injury, while long-term risks include an increased risk of developing cancer or heart disease (Collins James Bel, & Jennifer 2019).

Concept of Abattoir

An abattoir is a special facility that receives, holds, slaughters, and inspects meat animals and meat products before releasing them to the public (Akpabio & Kanu, 2015).

A slaughterhouse, also known as an abattoir, is a facility where animals are slaughtered for human consumption. Slaughterhouses supply meat, which is then packaged by the packaging department.

Hazards and Potential Risk Associated with Abattoir work

Many slaughterhouse workers are not fully qualified and lack certificates proving their fitness to work in the industries (Cohen, 2013). This is due to the abattoir's need for more workers to keep up with day-to-day operations. For fear of being fired or deported, most employees are afraid to report any incidents involving their health, safety, or injuries. As a result of the hazards and potential risks imposed on them in the industries, more slaughterhouse workers will suffer (Davis, 2011). For final production, the slaughterhouses are crammed with numerous machines that are operated by manual labour at various levels. Workers are taught how to operate the various machines used in various processes. Different workers slaughter the animals in some cases, while others sort the various cuts of meat. These workers are aware of the risks associated with slaughterhouse work, as the tools used can result in injuries and accidents.

METHODOLOGY

A descriptive survey design was used in this study. A descriptive survey, according to Ekwe and Obimba (2006), is a type of research method that uses questionnaires to elicit responses on the issues involved in order to explain conditions as they occur in their natural setting. The study's population consisted of 232 abattoir workers recruited from three major abattoirs in Owerri, Imo State. The sample for the study included all 232 abattoir workers from the three major abattoirs in Owerri Metropolis. To collect data, the researcher created a well-structured questionnaire called OHHASPAW. It included open-ended and closed questions, as well as qualitative and quantitative questions. Inferential statistics of Chi square (x2) were used to analyse the data collected for hypotheses at the 0.05 level of significance, while the objectives were presented in frequency and percentages.

RESULTS AND DISCUSSION

Research Question One:

What are the physical occupational health hazardsof abattoir workers in Owerri Metropolis, Imo State?

Table 1: Physical Health Hazard Experienced by Respondents (n =232)

Variables	Frequency(F)	Percentage (%)
Physical Health Hazard Suffered (MRA)		
Blood/Waste Splashes	224	96.6
Knife Cuts	223	96.1
Bone Piercing	208	89.7
Stampede/ Animal kick	12	5.2
Vibration	2	0.9

MRA: Multiple Responses Applicable

Table 1 the physical health hazards suffered by majority of the respondents were blood/waste splashes 224 (96.6%), knife cuts 223 (96.1%) and bone piercings 208 (89.7%). Stampede/animal kick were few 12 (5.2%) and the least reported was vibration 2 (0.9).

Research Question Two:

What are the chemical occupational health hazards of abattoir workers in Owerri Metropolis, Imo State?

Table 2: Chemical Health Hazard Experienced by Respondents (n =232)

Variables	Frequency(F)	Percentage (%)
Chemical Health Hazard Suffered (MRA)		
Hypochlorous acid Splashes	227	97.8
Detergents Splashes	227	97.8
Chlorine Splashes	19	8.2
Hydrogen Peroxide Splashes	14	6.0

MRA: Multiple Responses Applicable

Table 2 the chemical health hazards suffered by most of the respondents were Hypochlorous acid splashes 227 (97.8%) and detergent splashes 227 (97.8%). While chlorine splash and hydrogen perioxide splashes followed behind as 19(8.2) and 14(6.0) respectively.

Research Question Three:

What are the biological occupational health hazards among abattoir workers in Owerri Metropolis, Imo State?

Table 3: Biological Health Hazard experienced by Respondents (n=232)

Variables	Frequency(f)	Percentage (%)
Biological Health Hazard Suffered (MRA)		
Fungal Infections Like Ringworm (Algae infected environment)	226	97.4
Protozoan Infections like Malaria (Insect bites)	226	97.4
Bacterial Infections like Tuberculosis(Infected animals, dirty water)	20	8.6

MRA: Multiple Responses Applicable

Table 3 the biological health hazards suffered by majority of the respondents were fungal infections 226 (97.4%) and protozoan infections 226 (97.4%), while bacterial infections like tuberculosis was reported by 20 (8.6%) respondents.

Test of Hypotheses

Hypothesis One:

There is no significant difference in the physical health hazards among abattoir workers in Owerri Metropolis based on socio-demographic characteristics. Data for verifying the above hypothesis is contained in table 4.

Table 4: Physical Health Hazards among Abattoir Workers based on Socio-demographic Characteristics

Variable	Vibration Piercing	Bone Splashes	Knife Cuts	Blood Waste	Stampede	Total	p-Value 0.05
Age Groups							
18 - 29 years	0	28	31	31	4	94	(0.982)
30 – 39 years	1	85	86	90	3	265	
40 – 49 years	1	56	63	60	4	184	
50 – 59 years	0	26	30	30	1	87	
> 60 years	0	13	13	13	0	39	
Total	**2**	**208**	**223**	**224**	**12**	**669**	
Gender							
Male	1	185	190	192	7	575	*(0.023)
Female	1	23	33	32	5	94	
Total	**2**	**208**	**223**	**224**	**12**	**669**	
Level of Education							
No Formal Education	1	53	57	55	3	169	(0.998)
Primary	0	54	62	60	4	180	
Secondary	1	87	89	93	5	275	
Tertiary	0	14	15	16	0	45	
Total	**2**	**208**	**223**	**224**	**12**	**669**	
How Long have You been Working in this Abattoir							
0 - 5 years	2	41	47	46	6	142	(0.057)

Variable	Vibration Piercing	Bone Splashes	Knife Cuts	Blood Waste	Stampede	Total	p-Value 0.05
6 - 10 years	0	125	135	136	6	402	
10 years and above	0	42	41	42	0	125	
Total	**2**	**208**	**223**	**224**	**12**	**669**	
Location of Abattoir							
Relieve market Abattoir	1	63	70	68	3	205	(0.086)
Obinze Abattoir	0	84	84	84	0	252	
Somachi Abattoir	1	61	69	72	9	212	
Total	**2**	**208**	**223**	**224**	**12**	**669**	

* implies Statistically Significant

Table 4 a chi-square test of independence to access the relationship between socio-demographic characteristics and the physical health hazards of abattoir workers in Owerri Metropolis. Gender [p. Value= 0.023] was the socio- demographic factor that influenced physical health hazards among abattoir workers in Owerri Metropolis. Thus, the null hypothesis was rejected.

Hypothesis Two:

There is no significant difference in the chemical health hazards among abattoir workers in Owerri Metropolis based on socio-demographic characteristics.

Table 5: Chemical Health Hazards among Abattoir Workers based on Socio-demographic Characteristics

Variable	Chlorine Splashes	Hydrogen Peroxide Splashes	Jik Solution Splashes	Detergent Slashes	Total	p-Value 0.05
Age Groups						
18 - 29 years	2	4	32	31	69	
30 – 39 years	9	5	91	90	195	
40 – 49 years	6	4	61	62	133	(0.962)
50 – 59 years	1	1	30	31	63	
> 60 years	1	0	13	13	27	
Total	**19**	**14**	**227**	**227**	**487**	
Gender						
Male	15	8	194	193	410	*(0.037)
Female	4	6	33	34	77	
Total	**19**	**14**	**227**	**227**	**487**	
Level of Education						
No Formal Education	2	2	57	58	119	(0.931)
Primary	7	5	59	61	132	
Secondary	9	6	95	93	203	
Tertiary	1	1	16	15	33	
Total	**19**	**14**	**227**	**227**	**487**	
How Long have You been Working in this Abattoir						
0 - 5 years	3	4	49	49	105	(0.589)
6 - 10 years	14	10	136	136	296	
10 years and above	2	0	42	42	86	
Total	**19**	**14**	**227**	**227**	**487**	
Location of Abattoir						
Relieve market Abattoir	9	4	69	71	153	*(0.001)
Obinze Abattoir	0	0	84	84	168	
Somachi Abattoir	10	10	74	72	166	
Total	**19**	**14**	**227**	**227**	**487**	

* implies Statistically Significant

Table 5 a chi-square test of independence to access the relationship between socio-demographic characteristics and the chemical health hazards among abattoir workers in Owerri Metropolis. Gender [p= 0.037] and location of abattoir [p= 0.001] were the socio-demographic factors that

influenced chemical health hazards among abattoir workers in Owerri Metropolis. Thus, the null hypothesis was rejected.

Hypothesis Three:

There is no significant difference in the biological health hazards among abattoir workers in Owerri Metropolis based on socio-demographic characteristics.

Table 6: Biological Health Hazards among Abattoir Workers based on Socio-demographic Characteristics

Variable	Fungal Infections	Bacterial Infections	Protozoan Infections	Total	p-Value 0.05
Age Groups					
18 - 29 years	30	8	28	66	(0.113)
30 – 39 years	91	6	90	187	
40 – 49 years	62	5	64	131	
50 – 59 years	30	1	31	62	
> 60 years	13	0	13	26	
Total	**226**	**20**	**226**	**472**	
Gender					
Male	193	11	196	400	*(0.001)
Female	33	9	30	72	
Total	**226**	**20**	**226**	**472**	
Level of Education					
No Formal Education	57	4	58	119	(0.983)
Primary	60	7	57	124	
Secondary	94	8	95	197	
Tertiary	15	1	16	32	
Total	**226**	**20**	**226**	**472**	
How Long have You been Working in this Abattoir					
0 - 5 years	48	9	47	104	(0.066)
6 - 10 years	136	11	137	284	
10 years and above	42	0	42	84	
Total	**226**	**20**	**226**	**472**	
Location of Abattoir					
Relieve market Abattoir	71	6	70	147	*(0.003)
Obinze Abattoir	84	0	84	168	
Somachi Abattoir	71	14	72	157	
Total	**226**	**20**	**226**	**472**	

* implies Statistically Significant

Table 6 a chi-square test of independence to ascertain the relationship between socio-demographic characteristics and the biological health hazards among abattoir workers in Owerri Metropolis. Gender [p= 0.001] and location of abattoir [p= 0.003] were the socio-demographic factors that influenced biological health hazards among abattoir workers in Owerri Metropolis. Thus, the null hypothesis was rejected.

DISCUSSION OF THE FINDINGS

The mean age of respondents + SD =40.23 + 2.17years, and the majority of respondents (84.9%) were males, according to this study, which is similar to the study by Ofonime E. and Aniekan J. (2019), where the mean age of respondents was 33.94 years, and the majority of respondents (83.4%) were males.

Blood/waste splashes (96.6%), knife cuts (96.1%), and bone piercings (89.7%) were the most common physical hazards, which agreed with the findings of Ofonime E. and Aniekan J. (2019), who discovered that the most commonly reported workplace hazards were knives (93.6%), bones (57.3%), and a slippery floor (24.8%). This is also consistent with the findings of Abdullahi *et al.,* (2016), who discovered that sharp equipment, such as a knife, was the most common source of occupational hazard (20.0%). This is most likely because the knife is one of the most commonly used tools in slaughterhouses, making injury from it common.

The most common chemical hazards encountered by abattoir workers in this study were jik solution splashes (97.8%) and detergent splashes (97.8%). This was consistent with the findings of

Abdullahi *et al.,* (2016), who discovered a high prevalence of hazardous chemical injuries (67.2%) (Even though the chemicals involved were not mentioned specifically). While significant, this finding is lower than the findings in my study. The difference could be attributed to the study being conducted in different locations. Because the subsequent study was carried out in Malaysia.

Fungal infections (97.4%) and protozoan infections (97.4%) were the most common biological hazards. Blood- borne biological hazards (viral and bacterial isolates) were found in 29.5% of abattoir workers in a study by Banjo *et al.,* (2013). This could be because the study investigated using blood samples obtained from screening their respondents, whereas I did not use this approach in my study. The majority of respondents (91.8%) reported fatigue, overexertion (91.4%), and poor posture (86.2%), with the majority (96.5%) reporting back pain. According to Abdullahi A. *et al.,* (2016), the most common ergonomic health hazards are occupational stress (17.0%) and upper limb, neck, and back pain (11.0%).

Hypothesis One (Null Hypothesis – H0:)

There is no significant difference in physical health hazards among abattoir workers in Owerri Metropolis based on socio-demographic characteristics, according to the hypothesis that guided this study. Gender was the only socio-demographic factor that influenced physical health hazards among abattoir workers in Owerri Metropolis, according to table 27 [x2, p=0.023]. The null hypothesis was rejected because it was designed to take into account all socio- demographic factors, not just gender.

Hypothesis Two (Null Hypothesis – H_0:)

There is no significant difference in chemical health hazards among abattoir workers in Owerri Metropolis based on socio-demographic characteristics, according to the hypothesis that guided this study. Gender [x2, p=0.037] and abattoir location [x2, p=0.001] were the socio-demographic factors that influenced chemical health hazards among abattoir workers in Owerri Metropolis, according to table 28. The null hypothesis was rejected because it was designed to take into account all socio-demographic factors, not just gender and location.

Hypothesis Three (Null Hypothesis – H_0:)

There is no significant difference in biological health hazards among abattoir workers in Owerri Metropolis based on socio-demographic characteristics, according to the hypothesis that guided this study. Gender [x2,p=0.001] and abattoir location [x2, p=0.003] were the socio-demographic factors that influenced biological health hazards among abattoir workers in Owerri Metropolis, according to table 29. The null hypothesis was rejected because it was designed to take into account all socio-demographic factors, not just gender and location.

CONCLUSION

The following conclusions were reached based on the findings:

Abattoir workers continue to face a variety of hazards on the job. Among the major occupational health hazards are knife cuts, blood/waste splashes, noise, bone piercing, chemical spills, burns, and irritation. An apron, gloves, boots, and pre- and post-mortem inspection are among the safety practises that have been implemented. Variables associated with occupational health hazards and safety practises of abattoir workers in Owerri Metropolis include age, gender, and years of experience. Gender influenced abattoir physical, chemical, and biological health hazards the most, while abattoir location influenced chemical, ergonomic health hazards, and safety practises.

RECOMMENDATION

Based on the study's findings, I make the following recommendations:

Developing public health education programmes to raise awareness of occupational health hazards and abattoir safety practises.

The government and the Butchers Association should collaborate to develop and implement policies that promote safe abattoir practises.

The government, through the ministry of health and labour, should develop or create survey instruments and conduct regular surveys to monitor the prevalence of occupational health diseases and the maintenance of safe practises in abattoirs.

REFERENCES

- Abdullahi, A. (2016). Occupational hazards among abattoir workers in Malaysia as a result of noncompliance with meat processing and waste disposal laws. *Risk Management and Health Policy*, 9, 157-63.
- Abiayi, H. I. (2015). Knowledge, attitudes, risk factors, and practises (KARP) that favour Leptospira infection among Nigerian abattoir workers. *Asian Journal of Epidemiology*, 8, 104-13.
- Abrams, H. (2018). A brief overview of occupational health. *Journal of Public Health Policy*, 12(2), 13 – 19.

- Adib-Hajbaghery, E., & Lotfi, M. S. (2013). Abattoir workers' reactions after being injured by sharp instruments. *Trauma on a monthly basis*, 18 (2).
- Akpabio, U., & Kalu, E. (2015). Assessment of abattoir facilities and slaughter practises in Aba, Abia State, Nigeria. *Journal of Veterinary Advances*, 5, 957-61.
- Baldwin, C. L., & Runkle, R. S. (2016). Biohazards symbol: creation of a warning signal for biological hazards. *264-265 in Science*, 158(3798).
- Banjo, T. A. (2015). Abeokuta abattoir workers face occupational health risks. *Acad Arena*, 5, 29-36.
- Broadway, M. J. (2012). Is the British slaughtering industry doomed? *Asian Journal of Epidemiology*, 87, 268-80.
- Cohen, A. (2013). *The health of workers in selected sectors of the urban economy: Challenges and prospects*. Working paper No. 28.Sectoral Activities Department: ILO, Geneva.
- Collins, E. W., James, U. B., & Jennifer, L. (2019). Workplace Slipping, Tripping, and Falling.
- Cunningham, T. (2013). Is your workplace culture protective against hepatitis? https://blogs.cdc.gov/niosh-science-blog/ (accessed 3 June 2019).
- Davis, K. D. (2011). Work Stress and Well-being in the Hotel Industry. *International Journal of Hospitality Management*, 30, 385-390.
- De, A., Castro, S. L., Cabrera, G. C., Gee, K., Fujishiro., & Tagalog, E. A. (2019). Occupational health and safety issues in the Philippines' abattoirs. *The Aaohn Journal,* 57(4), 149-157.
- Dodo, M. (2014). The application of health and safety plan in Nigerian construction firms Jordan *Journal of Civil Environmental Studies*, 3(1 & 2), 89 – 103
- O'Neill, J. W., & Carlback, M. (2011). Do brands matter? A comparison of branded and independent hotels' performance during a full economic cycle. *International Journal of Hospitality Management*, 30, 515-521.