



(REVIEW ARTICLE)



Knowledge of occupational health hazards and preventive practices among abattoir workers in Anambra State

Ilo, Clementine Ifeyinwa ^{1,*}, Ede, Alison Okorie ², Aronu, Cecilia Nkechi ², Abonyi, Isaiah Chimezie ², Okeke, Monique Ugochinyere ², Nwazunku, Augustine Alugbala ², Nwankwo, Chidiebere Joy ² and Mbaegbu, Nnamdi Okwudili ²

¹ Department of Nursing Science, Nnamdi Azikiwe University Nnewi Campus, Anambra State.

² Department of Environmental Health Science, Nnamdi Azikiwe University Nnewi Campus, Anambra State.

GSC Advanced Research and Reviews, 2021, 07(03), 115–121

Publication history: Received on 15 May 2021; revised on 25 June 2021; accepted on 28 June 2021

Article DOI: <https://doi.org/10.30574/gscarr.2021.7.3.0129>

Abstract

An occupational health hazard is any agent, substance, object, equipment, human behaviour or factor capable of injury, disability, disease or death in individual working in an organization. Occupational infections caused by transmissible agents like bacteria, virus, fungi, parasites and toxins produced by these organisms can be hazardous when contracted by abattoir workers in their daily practices. This cross-sectional study assessed the knowledge of occupational health hazards and preventive practices among abattoir workers in Anambra State. Simple random sampling technique was used to select one hundred and twenty abattoir workers from the two major abattoirs in Awka South LGA, Anambra State, Nigeria. A validated structured questionnaire was used for data collection. The split half method was used to obtain a reliability index of 0.73 using Pearson Product Moment correlation coefficient formula. The Chi-Square statistics was utilized to test the null hypothesis at 0.05 level of significance and at the appropriate degree of freedom. Data regarding knowledge of occupational health hazards and the preventive practices against occupational health hazards were analyzed using frequency distribution tables and percentages. The mean and standard deviation of occupational hazard scores of the workers were 2.43 (2.93). The result showed that occupational hazards prevalent among these abattoir workers were of physical, chemical, biological, psychosocial, musculoskeletal and ergonomics in nature. Among the workers, 72.8% had a low level of knowledge while 27.3% had good knowledge of occupational hazards. 23.3% had good preventive practices while 67.7% had fair practice, Sex had a significant association with the level of knowledge ($P < 0.001$) and practice ($P = 0.052$) among the workers. The females had a higher level of knowledge than the males, while the males had a better practice of preventive measures than females. There is need to sensitize and organize trainings for abattoir workers to improve their knowledge and ensure proper control of occupational health hazards.

Keywords: Occupational health; Hazards; Abattoir workers; Knowledge; Preventive practices

1. Introduction

An abattoir or slaughterhouse as described by Stevenson [1] is a place where animals are slaughtered and distributed for human consumption. According to Driscoll, Takala, Steenland, Corvalen and Fingerhut [2] occupational health hazards are among the major sources of morbidity and mortality among all workers. Occupational health remains a neglected issue in many developing countries of the world mostly due to competing economic, social and political needs. These countries often focus on the provision of clinical care and treatment while placing less emphasis on the appropriate preventive measures [3]. In the course of performance of a worker's duties, contact through physical or

*Corresponding author: Ilo Clementine Ifeyinwa
Department of Nursing Science, Nnamdi Azikiwe University Nnewi Campus, Anambra State.

biological agents resulting from occupational exposure remains the source of many occupational health hazards. The Centre for Disease Control and Prevention [4] stated that occupational hazards have continued to rise in the past decades, resulting in increasing rates of occupational exposure to blood-borne illnesses and other communicable diseases mostly in the developing countries.

Susonic, Balcon and Zocin [5] also stated that abattoir work could be associated with health hazards that could result in occupational diseases or may aggravate the existing ill health of non-occupational origin since many animal workers are exposed to many hazardous situations in their daily practice, depending on the work type. In some areas, there are bound to be enhanced occupational hazards due to possible hazardous physical, chemical, biological and/or ergonomic agents even in model abattoirs where meat safety is the ultimate goal. Occupational infections mostly contracted by abattoir workers as identified by Ann, Frisco, Isam and Ahmed, [6] could be caused by iatrogenic or by transmissible agents which includes viruses, bacteria, fungi, and parasites and the toxins produced by these organisms could be very dangerous. Low back pains and other musculoskeletal problems which may result from overexertion and wrong postures during lifting and movements during the slaughtering of the animals and shoveling of waste are common occupational hazards [7].

Banjo, Onilude and Amoo [8] opined that despite the various recognized risks, there seems to be no system put in place by the government to track vital occupationally acquired infections in their entity. Ideally health monitoring would be necessary to identify any disease or health effect that is related to the occupational exposure, in order to ensure that adequate and effective precautions are being taken to protect workers from work-related hazards. Generally, most of these occupational infections are not reported and underreporting makes these occupational infections which occur in large numbers each year to be largely unknown. Furthermore, this paucity of records on the epidemiology of slaughterhouse operations, vis-à-vis workers' operational knowledge and compliance with the preventive practices in most abattoirs is also an impediment to good abattoir operations. These anomalies could be as a result of the government authorities, especially those at the local level constitutionally saddled with management of abattoirs neglecting their responsibility.

These have resulted in deterioration of the sanitary conditions of some of the abattoir, improper meat inspection and poor knowledge of meat hygiene processing. Nwanta [9] observed that the poor environmental hygiene have compromised the health of the public and has hindered planning and policy making on hygienic measures and sanitary practices for the control of abattoir-related health problems. Some of these abattoirs according to Lawan [10] do not have adequate slaughtering and processing facilities, no good sewage or waste disposal systems, inadequate clean water supplies and refrigeration. This has also undermined forecasting and stimulation of public-private-partnership interventions on slaughtered animal wastes management in Nigeria.

A close observation of abattoirs in Anambra State by the researchers revealed that most of the workers are not adequately protected against occupational hazards prevalent in their workplaces. This ugly situation gives a cause to worry because such would lead to exposure of these workers to hazards which might manifest in the physical, mental, social and psychological effects which in turn may influence their day-to-day living. This study, therefore, assessed the knowledge of occupational health hazards and preventive practices among abattoir workers in Anambra State, Nigeria. Information generated from this study will serve as indicator for training and sensitization of these workers in order to improve their knowledge and ensure proper control of occupational health hazards and better wholesome meat delivery to the public.

1.1. Research Questions

The following research questions guided the study:

- What are the occupational hazards prevalent in these abattoirs?
- What is the level of knowledge possessed by abattoir workers on the occupational health hazards in their work place?
- What is the workers' level of practice of preventive measures to avoid occupational health hazards in their work place?

1.2. Research Hypotheses

The following null hypotheses were tested at 5% level of significance:

- There is no statistically significant difference between the male and female workers in their level of knowledge of occupational hazards
- There is no statistically significant difference between the male and female workers in their practice of preventive measures of occupational hazards.

2. Methods and Materials

The study was conducted in the two major abattoirs in Awka (Kwata) and Amansea both in Awka South LGA of Anambra State, Nigeria. The selection was based on their being the two biggest abattoirs in Awka capital of Anambra State. Data were collected over a period of one month in August 2017 and only the registered workers in these two abattoirs were included in the study. A cross-sectional survey was conducted using a simple random sampling technique to select 60 abattoir workers from each of the two abattoirs making a total of 120. Data was collected using a structured questionnaire developed by the researchers and validated by the research experts. By the use of split half method, a reliability index of 0.73 was achieved using Pearson Product Moment correlation coefficient formula. The questionnaire consisted of two parts. Part A consisted of socio demographic information of the workers, such as age, sex, educational level, and years of experience, while in Part B of the questionnaire elicited information regarding the occupational hazards experienced by the workers, their knowledge of occupational hazards and the level of practices of preventive measures in their daily duties. An observation checklist was also included in the practice section. The response items were either correct or incorrect. The researchers administered the 120 copies of the questionnaire on the respondents who completed the questionnaire the same day. Data were analyzed using frequency distribution tables and percentages. In determining the level of knowledge of occupational hazards, responses less than 39% were regarded as low, those between 40-59% were regarded as moderate level of knowledge while 60-69% were regarded as high level. Responses above 70% were termed very high level of knowledge. The same applied to their level of practice of preventive measures. The Chi-Square statistics was utilized to test the null hypotheses at 5% level of significance and at the appropriate degree of freedom.

Participants in this study were given all the information regarding the study and they gave oral consent before they were recruited into the study. The participants were asked not to write their names and the name of the abattoirs in order to ensure confidentiality.

3. Results

Research Question 1: What are the occupational hazards prevalent in these abattoirs?

Table 1 below shows the prevalence of occupational hazards; physical had 25.8%, musculoskeletal 22.4%, ergonomic 19.8%, chemical 12.9%, biological 10.3% and mechanical 8.6%.

Table 1 Prevalence of Occupational Hazards among Abattoir Workers

S/N	Items	Frequency	%
1	Physical hazards	30	25.8
2	Chemical hazards	15	12.9
3	Biological hazards.	12	10.3
4	Mechanical hazards.	10	8.6
5	Musculoskeletal hazards	26	22.4
6	Ergonomic hazards	23	19.8
	Total	116	100

Research Question 2: What is the level of knowledge possessed by abattoir workers in Anambra State on the occupational health hazards in their work place?

Table 2 shows the percentage knowledge score of the respondents in each of the six items which ranges from 28.4% to 71.6%. The result shows that the 6 items had percentage score below 39% for correct responses which were regarded as low knowledge. The findings show that knowledge of behavioral risk factors of occupational health hazards has 35(31.9%), knowledge of the predisposing factors of occupational health hazards has 34 (29.3%). About the meaning of occupational health hazard, 32(27.6%) reported they know the meaning. From the results, 30 (25.9%) are knowledgeable about the protective devices that are used in the abattoir. However, 28(24.1%) knew the importance of taking adequate precautionary measures while 25(21.6%) knew about the effects of occupational health hazards. The ground average of (71.6%) for incorrect responses confirmed their low level of knowledge.

Table 2 Abattoir Workers Level of Knowledge on Occupational Health Hazards

S/N	Items	Correct Response	%	Incorrect Response	%
1	Meaning of occupational health hazards	32	27.6	84	72.4
2	Knowledge of behavioural risk factors of occupational health hazards	35	31.9	81	68.1
3	Knowledge of the predisposing factors of occupational health hazards.	34	29.3	82	69.8
4	Knowledge of the effects of occupational health hazards.	25	21.6	91	78.4
5	The importance of taking adequate precautionary measures.	28	24.1	78	67.2
6	Knowledge of protective devices used in the abattoir	30	25.9	86	74.1
	Total	32	28.4	84	71.6

Less than 39% = low knowledge, 40-59% = moderate knowledge, 60-69% = high level knowledge

Research 3: What is the workers’ level of practice of preventive measures to avoid occupational health hazards in their work place?

Table 3 shows the percentage practice score of the respondents in each of the five items which ranges from 18.1% to 29.3%. The result shows that all the 6 items had percentage score below 30% which is the minimum scale for good practice. The findings shows that 34(29.3%) took precautions against physical hazards, 33(28.4%) practice proper hand hygiene. About 30(25.9%) make proper use of protective devices, 27(23.3%) took precautions against physical hazards while only 23(19.8%) protect themselves against airborne hazards by wearing face mask. Those who have available protective devices were only 21 (18.1%). These findings show that the preventive practices of most of the workers are not comprehensive and deviated markedly from policy guidelines.

Table 3 Abattoir Workers Level of Practice of Preventive Measures for Occupational Health Hazards

S/N	Items	Practiced Correctly	%	Not Practiced Correctly	%
1	Availability of protective devices	21	18.1	95	81.9
2	Proper use of protective devices	30	25.9	86	74.1
3	Precaution against physical hazards	34	29.3	82	70.1
4	Protection against chemical hazards	27	23.3	89	76.7
5	Protection against airborne hazards	23	19.8	93	80.2
6	Proper hand hygiene practices	33	28.4	83	71.6
	Total	28	24	88	76

Hypothesis 1: There is no statistically significant difference between the male and female workers in their level of knowledge of occupational hazards.

Table 4 shows the calculated Chi-square value of 4.16 for occupational health hazard knowledge among abattoir of specialization is statistically significant ($X^2_{Cal} = 4.16 > t\text{-Cal} = 3.841$; $df = 1$ at $P < 0.05$). Hence, the result indicates that the male and female workers' level of knowledge of about occupational hazards in Anambra State differ significantly; therefore, the null hypothesis was rejected.

Table 4 Relationship between the male and female workers' level of knowledge of about Occupational hazards

Variables	Correct Answer	Incorrect answer	Total	Level of sign	X ² Cal	Table value	Df	Decision
Males	22	50	72	0.05	4.16	3.841	1	Rejected
Females	18	26	44					
Total	40	76	116					

Hypothesis 2: There is no statistically significant difference between the male and female workers in their practice of preventive measures of occupational hazards.

Table 5 shows that the calculated Chi-square value (X^2_{Cal}) of 3.12 is less than the table Chi-square value ($t\text{-Cal}$) of 3.841. Therefore, the null hypothesis of no significance difference ($X^2_{Cal} = 3.12 < t\text{-Cal} = 3.841$; $df = 1$ at $P < 0.05$) is not rejected indicating that there is a significance difference between the level of practice of preventive measures of occupational health hazards by male and female abattoir workers in Anambra State.

Table 5 Relationship between male and female workers' practice of preventive measures of occupational health hazards

Variables	Correct Answer	Incorrect answer	Total	Level of Sign	X ² Cal	Table value	Df	Decision
Male	32	40	72	0.05	3.12	3.841	1	Accepted
Female	15	29	44					
Total	47	69	116					

4. Discussion

The result of the study revealed that abattoir workers in Anambra State had low level of knowledge of occupational health hazards associated with their work place. The finding was in contrast with assertions by Owumi [11] and Falana [12] who observed that many Nigerian workers in large scale industries do not have knowledge of occupational health hazards associated with their job. This disparity could be attributed to different managerial attitude of employers towards workers' welfare especially in meat industries.

The second finding was on the average, which showed that the workers also have low level of practice of preventive measures. Such may be attributed to the availability of protective devices in these abattoirs. Analysis of hypothesis revealed that male and female abattoir workers do not differ significantly in their practice of preventive measures against occupational health hazards.

There was no significant difference between the male and female workers on the level of knowledge of precautionary measures against occupational health hazards. This finding does not agree with Eze [13] who observed that gender has a lot of influence on the level of knowledge a worker can acquire, this also differs from Ladou [14] who pointed out that female workers learn fast, can retain information longer but that they also take a lot of risks at work because they do not have adequate knowledge of the consequences of their action

5. Conclusion

It should be noted that each occupation has its own peculiar problems due to presence of different hazards which may be physical, chemical or mechanical in nature. The findings of this study showed that abattoir workers in Anambra had low level of knowledge of occupational health hazards and low level of practice of preventive measures against occupational health hazards. The level of knowledge possessed by the male abattoir workers differ significantly from the female worker while there was no significant difference in the level of practice of preventive measures between the male and female abattoir workers.

Recommendations

Following the above analysis on the knowledge and practice of occupational health hazards among abattoir workers in Anambra State, the following recommendations were made.

- There is need to organize workshops and seminars periodically for all the categories of abattoir workers by health educators to enlighten them on hazards associated with their workplace.
- Environmental health officers should show strong commitment to occupational health and safety of abattoir workers by monitoring the activities of these set of workers.
- Efforts should be made by management to provide adequate protective devices and training needed for the safety of abattoir workers so that optimum performance will be ensured.

Compliance with ethical standards

Acknowledgments

We wish to acknowledge the Directors of abattoir workers in Anambra State for their immense support.

Disclosure of conflict of interest

All authors of this article report no conflicts of interest throughout the work.

Statement of informed consent

Approval to carry out this study was obtained from Head of Department of Nursing, Nnamdi Azikiwe University Awka, Anambra State and Directors of abattoir workers in Awka South LGA of Anambra State. The researcher obtained a letter of introduction as an approval for the research from the Department of Nursing, Faculty of Health Sciences, Nnewi Campus before proceeding to abattoir in Awka South LGA of Anambra State. Informed consent was also given by the participants.

References

- [1] Stevenson A. Abattoir. Oxford English Dictionary. Oxford: Oxford University Press. 2013.
- [2] Driscoll T, Takala J, Steenland K, Corvalen C, and Fingerhut M. Review of estimates of the global burden of injury and illness due to occupational exposures. *American Journal of Industrial Medicine*. 2015; 48:491–502.
- [3] Kolvic BO. Occupational hazard among health worker: Tuberculosis and other aerosol: BK Journal. 2006; 6:10 300 – 302.
- [4] Centers for Disease Control and Prevention (CDC). Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program. Atlanta, GA: CDC. 2010.
- [5] Ann SM, Frisco C, Isam TK, Ahmed NA. The role of education and training levels of slaughterhouse workers in the cross contamination of carcasses. *International Journal of Postharvest Technological Innovation*. 2006; 1(2):142–154.
- [6] International Labour Organization (ILO) *Occupational Hazards Elimination*. Geneva: International Labour Office. 2012.
- [7] Banjo TA, Onilude AA. & Amoo, A. O. Occupational health hazards among abattoir workers in Abeokuta. *Academia Arena*. 2013; 5(10):29–36.

- [8] Susonic BK, Balcon ZK, Zocin BF. Occupation infections among abattoir workers in Israel. *Journal of Occupational Health*. 2007; 4:50–53.
- [9] Nwanta JA, Onunkwo JI, Ezenduka VE, Phil-Eze PO, Egege S. CAbattoir operations and waste management in Nigeria: A review of challenges and prospects. *Sokoto Journal of Veterinary Science*. 2008; 7(2): 61-67.
- [10] Lawan MK, Bello M, Kwaga JKP, Raji MA. Evaluation of physical facilities and processing operations of major abattoirs in North-western states of Nigeria. *Sokoto Journal of Veterinary Sciences*. 2013; 11(1): 56-61.
- [11] Falana F. *Legal positions and dimensions in Occupational Health in Nigeria*. Ibadan: Emmi Press. 2013.
- [12] Eze N. *Human Resources Management in Africa*. Lagos: Zomex Press. 2015.
- [13] Owumi B. *The hospital work Environment: A study of occupational Hazards associated with nursing as an occupation*. Ibadan: Emmi Press. 2012.
- [14] Ladou J. *Current Occupational & Environmental Medicine (4th Ed)*. McGraw-Hill professional. 2016.