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OCCUPATIONAL HAZARD CONTROL NEEDS OF SLAUGHTERHOUSE WORKERS IN BAYELSA STATE, NIGERIA

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Abstract

This study examined the occupational hazard control needs of slaughterhouse workers in Bayelsa State, Nigeria. The study was guided by four objectives and four research questions. The descriptive research design was adopted with a population which comprised 1,003 slaughterhouse workers in Bayelsa State. The sample size for the study was 502 which was selected using a proportionate random sampling technique. Data was collected using a structured questionnaire with a reliability coefficient of 0.95. Data collected were analyzed with the aid of Statistical Products for Service Solution (SPSS V-23) using bivariate and multivariate regression statistics at 0.05 level of significance. The hazards control equipment needs are: helmet (85.5%), face shield (85.5%), nasal mask (68.8), safety boot (63.6%), eye goggle (67.0%), hand glove (67.6%), ear plug and muff (70.2%) and fire extinguisher (65.2%). The hazard control training needs are: taking part in fire and emergency drill (76.9%), participating in a toolbox meeting (75.9%), taking part in hazards control training (75.9%), and attending workshop meetings (50.8%). However, only 33.4% had hazard control practice need. It was concluded that, slaughterhouse workers in Bayelsa State had hazard control needs in specific areas such as training and hazard control equipment needs which must be met by conscious effort to avert the effect of occupational hazards inherent in the job. It was recommended among others that, Slaughterhouse site supervisors should design and implement hazard control training and retraining programmes for the workers at regular intervals.

Keywords:

Hazard control needs, slaughterhouse workers, training.



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INTRODUCTION

Slaughterhouses can be breeding sites for pathogens if adequate hazard control measures are not put in place. The Centres for Disease Control and Prevention (CDC) (2017) 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 developing countries. In the same vein, the World Health Organization (WHO) (2015) noted that occupational hazards are the major source of morbidity and mortality among all workers in slaughterhouses since many of the workers are exposed to many hazardous situations in their daily practice. Mainly due to overexertion and wrong postures during the lifting and moving of animal feed bags and shoveling of waste (International Labour Organization [ILO] 2017). About 61% of infectious organisms affecting man today the zoonotic; and slaughterhouse facilities act as an important interface between human health, animal health, and environmental health (Ryu et al., 2017). Despite the various recognized risks, a report from Banjo et al. (2013) showed that no country has a system in place to track vital occupationally acquired infections in slaughterhouses in their entity; underreporting makes a large number of occupational infections that occur each year largely unknown; including data on occupational health hazards among the abattoir workers (Abdullahi et al. 2016). However, in Nigeria, Johnson and Etokidem (2019) reported that the most commonly reported workplace hazards were knives (93.6%), bones (57.3%), and slippery floors (24.8%). The most common health problems were knife cuts (87.3%), cuts from bones (50.3%), and neck pain (36.9%).

Hazards must be controlled in order to maintain a healthy and sanitary work environment. According to Anupama and Pratibha (2015) occupational hazard control entails the different means of reducing, minimizing, or mitigating a workers exposure to hazards. The means are engineering control, administrative control, and the use of Personal Protective Equipment (PPE). In the words of Yangho et al. (2016), occupational hazards control refers to approaches geared toward the reduction of the incidence of occupational injuries and diseases and they include engineering controls, protective equipment, safer machinery and processes, and greater adherence to regulations and labour inspections. In the words of the authors, PPE is the least effective way to protect workers because it does not eliminate or reduce the hazard; it only places a barrier between the worker and the hazard. Occupational hazard control refers to a series of processes involved in mitigating hazardous conditions; and in the hierarchy of controls, the exposure controls are most effective at the source of the hazards and least effective at the worker (that is, if such measure is adopted by the worker) and that the controls are often listed in order of effectiveness (from most to least), ranging from elimination, substitution, engineering, administrative, and PPE with elimination being the best control practice or substitution (Gorman et al., 2014). Similarly, Freund (2018) stated that occupational hazards control are methods put in place to reduce the hazards in a workplace and ensure the worker is protected from such hazards. And that, there is a system of strategies called the "Hierarchy of Controls," which prioritizes control methods that try to remove or reduce the hazard which is, engineering controls, including enclosure, redesign, automation, ventilation, or robotics, are also effective and reliable methods of eliminating worker exposure to hazards. When engineering controls are not feasible, the focus shifts from the control of the hazard to risk reduction or risk avoidance strategies. Administrative controls, such as limiting exposure time, training, changing work practices, and operational and maintenance procedures, can reduce exposure to healthcare hazards. Adequate staffing is important for controlling hazards in several ways, including limiting the amount of exposure to hazards like lifting, patient handling, violence, stress, cleaning, and maintenance activities that reduce hazards. Adequate time must be allotted to the job to prevent incidents caused by overuse, rushing, or taking shortcuts.

Occupational hazards are the major cause and source of morbidity and mortality among all workers especially slaughterhouse workers since they are animal workers and are exposed to many hazardous situations in their daily practice depending on the work type (Driscoll in Johnson et al., 2016). Occupational infections in the slaughterhouse contracted by butchers could be caused by iatrogenic or transmissible agents including bacteria, viruses, fungi, parasites, and toxins from the organism. Health monitoring and inspection would be required to control hazards in a situation of any identifiable diseases or health effects like the case of abattoir houses and workers as it is the to occupational exposure (Johnson et al., 2016). However, it is worth noting that both hazard control and safety compliance could be linked to training the workers have had previously.

A slaughterhouse is a place where animals are killed to nourish meat. Contextually, an abattoir is a place where animals are slaughtered and meat is produced. Abattoir management existed principally to give fitting conditions for butchering domesticated animals and control waste spills. Studies by Adonu et al. (2017) revealed that a requisite abattoir management programme is essential for proper operation and safe meat production which includes good manufacturing practices and standard operating procedures. This is necessary to reduce the aftermath of poor handling and implementation of hygiene practices by abattoir staff. The abattoir management services include proper waste disposal and safety practices. For instance, in the words of Ekpo (2019) these slaughterhouses are deleterious to human health. Ranging from musculoskeletal pains, noise exposure, respiratory problems due to exposure to offensive odours, back pain, and injuries from sharp objects (Johnson et al., 2016). Slaughter activities are associated with health hazards that could predispose to occupational diseases or aggravate existing ill health.

Ideally, there should be a division in the slaughterhouse between the dirty (killing, bleeding) and clean (eviscerating and splitting) operations to prevent carcass contamination. Yet, reports have shown that slaughterhouses performed batch slaughtering. This is where an animal is killed, bled, skinned, eviscerated, and split in the same spot (Food and Agricultural Organization [FAO] 2010). International guidelines specify that hot and cold water should be readily accessible for cleaning and that equipment and workers' hands should be washed with soap and hot water (FAO, 2004). This process requires piped water facilities that are only available in a few (3%) slaughterhouses. There was a lack of water, hand washing facilities, and soap in some slaughterhouse types. Hand washing is predominantly used to protect the meat from contamination, but also protects workers against directly transmitted bacterial pathogens such as *Salmonella* sp (Brown et al., 2011).

In Bayelsa State, Nigeria, it was observed that workers of slaughter establishments, not all are trained and inexperienced in handling meat and hardly comply with safety measures thereby at the risk of biological, chemical, physical, and ergonomic hazards. The government of Bayelsa State had not organized training and inadequate provision of safety materials, sanitary facilities, and equipment among others. Non-implementation of sanitation laws, irregular meat examination, and inspection before marketing, lack of safety gadgets, untrained personnel, and poor establishment of slaughter facilities have marred the productivity and service of workers in the slaughterhouse to this extent, hazards are always present in the slaughterhouses but there is total neglect to comply with adopted safety measures or practices to mitigate exposure. The researcher observed area of hazard control needs and safety practices have not been resolved and upheld by scholars and stakeholders. However, the researcher was motivated to carry out this study to prefer products for this set of workers. Therefore, this study examined hazard control needs of slaughterhouse workers. The objectives of the study were to:

1. identify the hazard control equipment needs of slaughterhouse workers in Bayelsa State;

2. investigate the hazard control training needs of slaughterhouse workers in Bayelsa State;
3. investigate the hazard control knowledge needs of slaughterhouse workers in Bayelsa State;
4. identify the hazard control practice needs of slaughterhouse workers in Bayelsa State;

The study was guided by the following research questions:

1. What are the hazard control equipment needs of slaughterhouse workers in Bayelsa State?
2. What are the hazard control training needs of slaughterhouse workers in Bayelsa State?
3. What are the hazard control knowledge needs of slaughterhouse workers in Bayelsa State?
4. What are the hazard control practice needs of slaughterhouse workers in Bayelsa State?

Concept of Hazard Control

The concept of occupational hazards control differs but all is indicative of the reduction of workers' exposure to hazards in the work setting. Three primary means of reducing employee exposure to occupational hazards were identified by Anupama and Pratibha (2015) which include: engineering hazard control, work practice, and administrative controls. Engineering hazard controls may be defined as an installation of equipment or physical facilities including, if necessary, the selection and arrangement of the experimental equipment. Engineering controls remove the hazard, either by initial design specifications or by applying methods of substitution, minimization, isolation, or ventilation. Engineering controls are the most effective hazard control methods, especially when introduced at the conceptual stage of planning when control measures can be integrated more readily into the design. They, tend to be more effective than other hazard controls (administrative controls and personal protective equipment) because they remove the source of the hazard or reduce the hazard rather than lessen the damage that may result from the hazard. They are also less dependent on the chemical user who, unfortunately, is subjected to all of the frailties that befall humans (e.g., forgetfulness, preoccupation, insufficient knowledge).

The Nigeria Institute of Safety Professionals (NISP) (2018) in a different view, outlined various ways occupational hazards can be controlled which include hazardous processes of production e.g. dust should be located a distance away from a larger number of workers on duty while those whose schedule of duty is on such areas should be protected with PPEs. Complete closure of hazardous processes such as the production process, which is highly dangerous to health and is carried out under a protective enclosure. For example, radioactive substances. Substitution of hazardous materials: hazardous materials or operations which are dropped for less hazardous materials or operations. Efficient ventilation: for free passage of air in the workplace. This can be enhanced by the use of electric fans and air conditioners. Reduction of period of exposure to hazardous substances: this is the essence of shift duties by workers. The management monitors the exposure of workers by placing them on shift duties, which provides for off-duty periods. This enables workers to enforce from hazardous conditions they come in contact with during operations or productions. Personal hygiene: this is very essential both at home and in the place of work to be free from diseases and germs. Thorough washing of the body and clothes are very essential to achieve this. Application of a wet process of production: this is the sprinkling of water to control the rise of dust during work. Sanitation in the workplace: this entails regular disposal of refuse and general cleanliness of the worksite to keep it free from disease vectors and offensive odours. Supervision of workers at work: safety supervisors should carry out regular checks on workers at their duty posts to ensure proper use of safety devices. Supervisors are advised to use the persuasive method of approach to enforce this. Medical supervision: every worker should be entitled to periodic medical examinations to check the inception of occupational disease. Use of PPEs: this is the use of protective equipment to safeguard workers

against known hazards in the workplace. This is very effective if properly used. The use of PPEs must be supervised to get a desirable result.

Another form of occupational control considered is work practice controls. This involves altering how a task is performed. Some fundamental and easily implemented work practice controls include: changing existing work practices to follow proper procedures that minimize exposures while operating production and control equipment; inspecting and maintaining process and control equipment regularly; implementing good housekeeping procedures; providing good supervision; and mandating that eating, drinking, smoking, chewing tobacco or gum, and applying cosmetics in regulated areas be prohibited (Health & Safety Administration, 2018). Another form mentioned by the author was administrative control which consists of managerial efforts to reduce hazards through planning, information and training (e.g. hazard communication), written policies and procedures (i.e., the chemical hygiene plan), safe work practices and environmental and medical surveillance e.g. workplace inspections equipment preventive maintenance, and exposure monitoring.

Hazard Control Needs

Needs refers to major requirements in any setting. A need is a gap between what is known and what should be known. The council on clinical affairs (2012) defined needs as deficits in health that call for curative, control or eradication measures; they are conditions that require medical management, health care intervention, and/or ants of specialized services or programmes. The deficiency between the condition and desired condition must be measured to appropriately identify the need. To identify a need, there must be an assessment. Needs assessment as posted by Zizlik (2010) is a systematic process for determining the gap between existing conditions and wanted conditions. Hazards control needs, ore, is a deficit in mitigation practices against hazards in an occupational setting.

In the context of this study, hazards control needs entail the gap between the ideal situation and the current situation which indicates a lack or a requirement for further actions. Need is defined as a requirement which is lacking. The hazard control needs of the workers in abattoir are determined in this study by establishing the existing situation with regards to hazard control equipment, training, knowledge and hazard control practice.

Methodology

The descriptive research design was adopted with a population which comprised of one thousand and three (1,003) slaughterhouse workers in the eight Local Government Areas in Bayelsa State (Bayelsa State Ministry of Agriculture, 2021). The sample size for the study was 502 which was 50% of the population. Using the formula: $n = 50/100 \times 1003$. However, 10% was added to the sample size to give room for non-responses, making the total distributed questionnaire to be 552.

A two-staged sampling technique was used to select the sample size, using proportionate sampling technique and simple random sampling technique. At the first stage, the proportionate sampling technique was used to determine the number of workers to be selected from each of the six slaughterhouses and at the secondary stage, the simple random sampling technique was used to select the respondents from the slaughter houses. Data was collected using a structured questionnaire with a reliability coefficient of 0.95. Data collected were analyzed with the aid of Statistical Products for Service Solution (SPSS V-23) using bivariate and multivariate regression statistics at 0.05 level of significance.

Results – The results of the study are shown below

Table 1: Percentage distribution of hazards control equipment needs of slaughter house workers in Bayelsa State

S N	Hazards control equipment	Yes F(%)	No F(%)	Total F(%)	Decision
1	Coverall or apron	470(93.9)	32(6.4)	502(100)	Not needed
2	Helmet	72(14.5)	429(85.5)	502(100)	Needed
3	Face shield	100(19.9)	402(80.1)	502(100)	Needed
4	Nasal mask	157(31.2)	347(68.8)	502(100)	Needed
5	Safety boots	188(37.4)	314(62.6)	502(100)	Needed
6	Eye goggle	166(33.0)	336(67.0)	502(100)	Needed
7	Hand glove	163(32.4)	339(67.6)	502(100)	Needed
8	Ear plugs and muff	150(29.8)	352(70.2)	502(100)	Needed
9	Fire extinguisher	175(34.8)	327(65.2)	502(100)	Needed
	Overall	182(36.3)	320(63.7)	502(100)	Needed

Table 1 presented the percentage distribution of hazards control equipment needs of slaughterhouse workers in Bayelsa State. The result showed that overall, there was need for hazard control equipment (63.7%). The hazards control equipment needs are: helmet (85.5%), face shield (85.5%), nasal mask (68.8), safety boot (63.6%), eye goggle (67.0%), hand glove (67.6%), ear plug and muff (70.2%) and fire extinguisher (65.2%). Thus, the hazards control equipment needs are: helmet, face shield, face shield, safety boot, eye goggle, hand glove, ear plug and muff and fire extinguisher.

Table 2: Hazard control training needs of slaughterhouse workers in Bayelsa State

SN	Hazard control training	Good F(%)	Poor F(%)	Decision
1	Attended hazard control training and retraining programmes	30(6.0)	472(94.0)	Need
2	Took part in fire and emergency drill	116(23.1)	386(76.9)	Need
3	Participated in a toolbox meeting	121(24.1)	381(75.9)	Need
4	Took part in hazards control training	121(24.1)	381(75.9)	Need
5	Attended workshop meetings where hazards control was deliberated	247(49.2)	255(50.8)	Need

6	Trained on how to ensure safety before start working in the slaugh	454(90.4)	48(9.6)	No need
Grand mean		182(36.3)	320(63.6)	Need

Table 2 revealed the hazard control training needs of slaughterhouse workers in Bayelsa State. The result showed that, the respondents had hazard control training needs (63.6%). The hazard control training needs are: taking part in fire and emergency drill (76.9%), participating in a toolbox meeting (75.9%), taking part in hazards control training (75.9%), and attending workshop meetings (50.8%). Thus, the hazards control training needs of slaughterhouse workers in Bayelsa State are: taking part in fire and emergency drill, participating in a toolbox meeting, taking part in hazards control training, and attending workshop meetings.

Table 3: Hazard control knowledge needs of slaughterhouse workers in Bayelsa State

SN	Hazards control knowledge	Correct F(%)	Incorr F(%)	Decision
1	Adulterated carcasses and meat can cause illness	472(94.0)	30(5.0)	No need
2	Abattoir should be constructed in a manner that allows sanitary operation and thorough cleaning, there should be a source of water for easy cleaning	463(92.4)	39(7.6)	No need
3	Water of at least 180°F (82°C) should be available to sanitize equipment and tools after cleaning.	459(91.6)	43(8.4)	No need
4	Equipment, knives, and utensils that have contacted diseased carcasses should be cleaned and sterilized before they are used again.	473(94.4)	29(5.6)	No need
5	Waste-water drainage, with proper trapping and sewage disposal, should be adequate to maintain the abattoir in a sanitary condition	462(92.2)	40(7.8)	No need
6	The presence of any of the followings; noise, dust fibre, heat, vibration, exposure to brightness of light can affect your health in the workshop	470(93.8)	32(6.2)	No need
7	Ventilation should be sufficient to assure that edible product areas are free of harmful odour	470(93.8)	32(6.2)	No need
8	Improper arrangement of tools after work can result to serious injury	422(84.2)	80(15.8)	No need
9	Work overload without break can result to breakdown in health	459(91.4)	43(8.6)	No need
10	Lifting of heavy machine and tools are the causes of waist pain and general body weakness	465(92.6)	37(7.4)	No need
11	Access of flies, rodents, and other vermin should be prevented	456(90.8)	46(9.2)	No need

12	Constant exposure of the eye without using equipment, to roast animal can lead to eye defect	459(91.6)	43(8.4)	No need
13	It is not necessary to put coverall, safety boot and hand gloves in all welding work	438(87.4)	64(2.6)	No need
Overall		459(91.6)	43(8.4)	No need

Table 3 presents the hazard control knowledge needs of slaughterhouse workers in Bayelsa State. The result showed that majority of the respondents (91.6%) had good knowledge of hazards control. Thus, slaughterhouse workers in Bayelsa State had no need for hazard control knowledge.

Table 4: Hazard control practice needs of slaughterhouse workers in Bayelsa State

SN	Items	Good	Poor	Decision
		F(%)	F(%)	
1	Arranged materials to be used very well in the abattoir	474(94.4)	28(5.6)	No need
2	Arranged materials and keep them in a safe place after use	472(94.0)	30(6.0)	No need
3	Ensured that knives and other sharp objects are well guarded	473(94.2)	29(5.8)	No need
4	Used a fire extinguisher, alarm, hydrant pipes and water can in case of a fire breakout	419(83.5)	83(16.)	No need
5	Invited environmental officers for a control inspection	335(66.7)	167(33.3)	No need
6	Went for monthly general health assessments to ascertain my health status	355(70.7)	147(29.3)	No need
7	Went for health talks on hazard control needs.	330(65.7)	172(34.3)	No need
8	Maintained cleanliness in the abattoir by sweeping and cleaning the surrounding	427(85.1)	75(14.9)	No need
9	Displayed warning signs in restricted areas in the abattoir	116(23.1)	386(76.9)	Need
10	Replaced faulty equipment in the workplace	348(69.3)	154(30.7)	No need
11	Used a waste bin and trash basket in the slaughterhouse	432(86.1)	70(13.9)	No need
12	Ensured there is adequate ventilation in the slaughterhouse	444(90.6)	58(9.4)	No need
Overall		385(76.6)	117(33.4)	No need

Table 4 presents the hazard control practice needs of slaughterhouse workers in Bayelsa State. The result showed that the main hazard control practice need was display of warning signs in restricted areas in the slaughterhouse (76.9%). Overall, only 33.4% had hazard control practice need, with more than three quarter (76.6%) having no need for hazard control practice. Therefore, the hazard control practice needs of slaughterhouse workers in Bayelsa State was display of warning signs in restricted areas in the slaughterhouse.

Discussion of findings

The finding of this study in Table 1 revealed that the hazards control equipment needs are: helmet (85.5%), face shield (85.5%), safety boot (63.6%), eye goggle (67.0%), hand glove (67.6%), ear plug and muff (70.2%) and fire extinguisher (65.2%). This finding is surprising because it was anticipated that the important hazard control equipment which are made available. By implication, the workers will suffer the effect of hazard exposure in their health. The finding of this study is in keeping with that of Selvam and Krithika (2010) where hazard control equipment needs such as helmet and safety boot were among the top three personal protective equipment needed among the workers. This finding corroborates the report of the Bureau of Statistics (2015) that workers had need for hazards control equipment as majority were not having such equipment, helmet, face shield, safety booth and eye goggle.

This similarity found between the present study and previous ones might be due to the homogeneity of the study. The finding of this study is at variance with that of Sah et al. (2015) where majority (96%) of the respondents indicated that they had no need for personal protective equipment. There is the possibility that, the respondents in the previous study were strictly monitored on their personal protective equipment in order to avoid the cost of accidents and damages incurred, in the present study, workers in the slaughterhouses were not supervised with regards to their personal protective equipment but the focus was on the successful slaughter of the animals and quick sale of the butchered animals.

The finding of this study in Table 2 revealed that the hazard control training needs are: taking part in fire and emergency drill (76.9%), participating in a toolbox meeting (75.9%), taking part in hazards control training (75.9%), and attending workshop meetings (50.8%). This finding is also not expected because such trainings are very important to be able to quickly bring to bear on any hazardous condition. Being void of such training implies that workers may not be well acquainted with fire drills and hazards control, in which case, if there is any emergency arising from any fire explosion, there will be huge damage done before the arrival of fire service. The finding of this study is in line with that of Lawan et al. (2013) whose study in abattoirs in North-western states of Nigeria revealed that the workers in slaughterhouse had hazard control training need. The finding of this study is also in line with that of Aiki-Raji et al. (2014) which showed that the workers in slaughterhouse had hazard control training need.

The finding of this study is also in line with that of Adesokan and Raji (2014) which revealed that the workers in slaughterhouse had hazard control training need. The finding of this study is also in line with that of Yakubu et al. (2016) whose study among abattoir workers in Kano State Metropolitan revealed that majority of the abattoir workers received hazard control training. The similarity found between the present study and the previous ones could be attributed to the homogeneity of the study population. This finding is at variance with that of Raleigh (2017) where larger proportion of workers adopted high engagement training on hazard control. The reason attributed to this variation was that the previous study used a very small sample size compared to the sample used in the present study, and data were collected through experiment whereas in the present study, data were collected using copies of the questionnaire.

The result in Table 3 showed that majority of the respondents (91.6%) had good knowledge of hazards control, hence low hazard control knowledge need. This finding is encouraging though surprising because of the high hazard control training need of the workers. Conversely, the

commitment of the mass media in disseminating information on health and general well-being might be implicated for the good knowledge on hazard control found. The finding of this study is in consonance with that of Yenealem *et al.* (2020) whose study among meat handlers in Gondar Town revealed that majority had good knowledge of hazards control. The finding of this study gives credence to that of Onyeneho and Hedberg (2013) which showed good knowledge of hazards control. The finding of this study is also in line with that of Yakubu *et al.* (2016) whose study among abattoir workers in Kano State Metropolitan revealed that majority of the abattoir workers had hazard control knowledge. The finding of this study is similar to that of Albert *et al.* (2014) where knowledge on hazard was found to be good. The finding of this study also corroborates that of Ulang *et al.* (2014) where more of the respondents were found to have good knowledge on hazard control.

The finding of this study also gives credence to that of Adesokan and Sulaimon (2014) whose study among slaughterhouse workers in Nigeria which showed good knowledge of hazard control among the respondents. The finding of this study is also in line with that of Adesokan and Raji (2014) which revealed that the workers in slaughterhouse had hazard control training need. The finding of this study is in keeping with that of Sah *et al.* (2015) where it was reported that, all the workers had some basic knowledge about hazard control. The contribution of various knowledge promoting materials in the society today may be implicated for the similarities found in the previous and present study. To buttress this, it has been observed that, the society is fast growing in the aspect of knowledge and there is the expectation that we are in an information age hence, the knowledge level of workers. The finding of this study is at variance with that of the finding of the study is at variance with that of Lawan *et al.* (2013) whose study in abattoirs in North-Western states of Nigeria which revealed that the respondents had high hazards control knowledge need. The finding of this study is also at variance with that of Aiki-Raji *et al.* (2014) which showed that the workers in slaughterhouse had hazard control knowledge need as such hazards control measures were unknown to them. The divergence in the study location could explain for the variations found in both studies.

The result in Table 4 showed that the main hazard control practice need was display of warning signs in restricted areas in the slaughterhouse (76.9%). Overall, only 33.4% had hazard control practice need, with more than three quarter (76.6%) having no need for hazard control practice, because of high hazards control practice. This finding was not surprising because it was anticipated that the good knowledge of hazard control possessed by the respondents was translated to practice. The finding of this study is also in line with that of Yakubu *et al.* (2016) whose study among abattoir workers in Kano State Metropolitan revealed that less than half of the abattoir workers had hazard control practice need. The finding of this study is in consonance with that of Yenealem *et al.* (2020) whose study among meat handlers in Gondar Town revealed that majority had good hazards control practice. The finding of this study also give credence to that of Adesokan and Sulaimon (2014) whose study among slaughterhouse workers in Nigeria showed high practice of hazard control among the respondents. The finding of this study is also in line with that of Lawan *et al.* (2013) whose study in abattoirs in North-western states of Nigeria revealed hazards control practice need among the respondents. The finding of this study is similar to that of Sah, *et al.* (2015); and Selvam and Krithika (2010) where more of the respondents claimed to always provide control measures for hazards.

The finding of this study slightly differs from that of the Bureau of Statistics (2015) were a higher proportion actively employ hazard control practices and use safe and appropriate equipment to control hazards (98%). The finding of the study differs from that of Komba *et al.* (2012) on hazard control practices and occurrence of zoonotic conditions in cattle at slaughter in Morogoro Municipality, Tanzania which showed that more than half of the respondents had hazard control practice need. The

finding of this study is not in line with that of Adesokan and Raji (2014) which revealed that the workers in slaughterhouse had hazard control practice need. The difference might be attributed to the larger sample size used in the previous study as compared to the one used in the present study.

Conclusion

Based on the findings of the study, it was concluded that, slaughterhouse workers in Bayelsa State had hazard control needs in specific areas such as training and hazard control equipment needs which must be met by conscious effort to avert the effect of occupational hazards inherent in the job.

Recommendations

The following recommendations were made based on the findings of the study:

1. Slaughterhouse site supervisors should design and implement hazard control training and retraining programmes for the workers at regular intervals.
2. Safety officer, different from the site manager, should be employed on site to specifically plan, monitor and ensure adherence to hazard control measures on site to minimize occupational hazards exposure.
3. The managers of each slaughterhouse should collaborate with safety officers to give a pep talk everyday to the workers on how to control the hazards inherent in the job before they start work each day. This may increase their consciousness on how to control the hazards they are faced with.
4. Slaughterhouse workers should always make deliberate effort to use the appropriate personal protective equipment or wears to control hazard for any job they perform.

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