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SOCIO-DEMOGRAPHIC DETERMINANTS OF HAZARD CONTROL NEEDS OF SLAUGHTERHOUSE WORKERS IN BAYELSA STATE, NIGERIA

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ABSTRACT

This study investigated the socio-demographic determinants of occupational hazard control needs among slaughterhouse workers in the Bayelsa States, Nigeria. Four research questions and four hypotheses were stated to guide the study. The descriptive research design was adopted with a population which comprised of one thousand and three (1,003) slaughterhouse workers in Bayelsa State (Bayelsa State Ministry of Agriculture, 2021). The sample size for the study was 552. A two-staged sampling technique was used to select the sample size, using proportionate sampling technique and simple 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 result showed that only age was statically significant both at the bivariate (p = 0.00) and multivariate analysis (p = 0.02); educational status was significant only at the bivariate (p = 0.04), while years of work experience was significant at the multivariate analysis (p = 0.00). The result showed that on bivariate analysis, all the demographics, age (p = 0.00), education (p = 0.00) and years of experience (p = 0.00) were significant. On multivariate analysis, only education was statically significant (p = 0.004), whereas, age (p = 0.474) and years of work experience (p = 0.537) were not significant. on bivariate and multivariate analysis, all the demographics, age (p = 0.00), education (p = 0.00) and years of experience (p = 0.00) were statistically significant. It was concluded that, the socio-demographic determinants of hazard control need among slaughterhouse workers in Bayelsa State were age, educational status and years of work experience. It was recommended that, slaughterhouse site supervisors should design and implement hazard control training and retraining programmes for the workers at regular intervals with special consideration for workers' age, educational background and years of work experience.

KEYWORDS

Hazards, Control Needs, Slaughterhouse, Educational Qualification and Experience.

INTRODUCTION

Hazards are inevitable in every occupation, though the potency differs but, compliance with safety measures is crucial to the control of such hazards. The Centers 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 lifting and moving of animal feed bags and shovelling of waste (International Labor Organization [ILO] 2017). About 61% of infectious organisms affecting man today are 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%).

The workers in slaughterhouses like every other occupation could be exposed to different hazards. According to Banjo et al. (2013), the workers in the slaughterhouse are exposed to various kinds of hazards which could be physical, chemical, biological, or ergonomic. A physical hazard is anything in the environment that can cause bodily harm to an individual. Relating this to the workers in a slaughterhouse, it can be referred to as anything in the abattoir environment that can cause bodily harm to the workers. Harmse et al. (2016) stated that workers in slaughterhouses are exposed to physical hazards such as noise, cold, vibration, and physical injuries; and ergonomic hazards such as overexertion, manual and repetitive work like meat hanging and cutting awkward positions, and lifting of heavy objects which can lead to musculoskeletal disorders (MSD) caused by an affectation of muscles, tendons, nerves and joints. They may also sustain physical injuries from cuts from knives, slips, and falls (Abdullahi et al., 2016). This necessitates training among the workers to help them control hazards adequately.

Training is principal and especially in the boost on awareness of safety practices and hygiene. Fariba et al. (2018) asserted that educational training and creating motivation are essential to promote safety compliance. Studies by Nyamakwere et al. (2017) buttressed those who had received training revealed a significantly greater willingness to safety and management service ($P<0.05$) and a greater willingness to report illness than untrained workers ($P<.005$). Bagawandas (2019) illustrated that there was a significant association between practice regarding training in abattoirs ($p<0.05$), and that majority of workers with training regarding hygiene and safety in slaughterhouses are likely to do well in compliance. Having good training before engaging in a job is important to practising safety but, even those who are not well trained before joining the trade can acquire some sort of training as the number of their years in the work increases.

Work experience is a vital factor for safety compliance because it helps one to be exposed to different techniques and technologies needed to improve the safety and management of abattoir service. It is the period in which slaughterhouse workers have been working in abattoirs. Those of them who had been in an abattoir for about 10 years may likely have good knowledge and positive attitude regarding

abattoir management service and safety practices as compared with others who had less than five years of work experience. Khanaland Poudele (2017) reported that butchers who had been working for a long duration have a fair knowledge and good practice of abattoir management and safety (AOR=3.04) than new butchers. Enem (2017) further buttressed those who spent above five years carrying out hygiene practices and using safety practices such as personal protective equipment but about 90% of them had not received any training/workshop. Bagawandas (2019) added that an abattoir with few years of working experience has a poor practice of safety and could not comply with adopted measures to reduce or control hazards as others with many years of work duration.

This variation in the meat industry is largely due to a lack of private sector investment and inadequate regulation of the trade as there is often a deficit of suitable and/or affordable equipment for the processing and transportation of meat (National Council for Law, 2012).Also, Bustillo-Lecompte and Mehrvar (2015) posited that laws and regulations, which are supposed to govern the workers, have failed to ensure their safety, by protecting the workers against the hazard and risks they are facing in the slaughterhouses. The worker's' rights end up being neglected which can cause them to suffer from the risks evolving in the slaughterhouse. Many injuries and accidents experienced in slaughterhouses cannot be prevented. Some of the problems encountered by the workers include the speed at which the workers slaughter the animals. Animals are killed and the process can end up causing injuries to workers in the slaughterhouse. In industries where the workload is high, more animals are killed which ends up increasing the risk of injuries to the workers. More hazard injuries caused by the slaughterhouse hazards end up not being reported to the authorities since workers are afraid to report this type which might cause them to lose their jobs (Reis & Moro, 2012). Thus, they must give more attention to safety compliance.

In Bayelsa State, the few slaughterhouses seen are meant mainly for meat processing but some of them are unregulated facilities, without inspection and veterinary services. Though the magnitude of the hazards may not be so obvious, there is a need to give attention to control and safety compliance. In recent years, authorities fail to report on injuries resulting from hazards and potential risks in the slaughterhouses since the workers do not report such cases, they end up enduring working for long hours and continuous pain to be able to live above their poverty level and provide a decent life for their families (Dozier, 2017). Yet, observations have shown that more than half of slaughterhouses reported that workers did not were personal protective clothing to control hazards. Thus, the researcher deemed it necessary to examine the socio-demographic determinants of occupational hazard control needs among slaughterhouse workers in the Bayelsa States, Nigeria. The following research questions were answered:

1. What are the hazard control equipment needs of slaughterhouse workers in Bayelsa State based on age, educational qualification, and years of work experience?
2. What are the hazard control training needs of slaughterhouse workers in Bayelsa State based on age, educational qualification, and years of work experience?
3. What are the hazard control knowledge needs of slaughterhouse workers in Bayelsa State based on age, educational qualification, and years of work experience?

What are the hazard control practice needs of slaughterhouse workers in Bayelsa State based on age, educational qualification, and years of work experience?

Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance:

1. There is no significant relationship between socio-demographic factors (age, educational qualification, and years of work experience) and hazard control equipment needs of slaughterhouse workers in Bayelsa State.
2. There is no significant relationship between socio-demographic factors (age, educational qualification, and years of work experience) and hazard control training needs of slaughterhouse workers in Bayelsa State.
3. There is no significant relationship between socio-demographic factors (age, educational qualification, and years of work experience) and hazard control knowledge needs of slaughterhouse workers in Bayelsa State.
4. There is no significant relationship between socio-demographic factors (age, educatio qualification, and years of work experience) and hazard control practice needs slaughterhouse workers in Bayelsa State.

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 × 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: Multivariate logistic regression showing relationship between respondents' socio-demographic status and hazard control equipment needs of slaughterhouse workers in Bayelsa State

Variable	Bivariate analysis			Multivariate analysis		
	Odds Ratio	95% CI for OR Lower Upper	p-value	Odds Ratio	95% CI for OR Lower Upper	p-value
Age	0.55	0.32 - 0.98	.00*	0.87	0.74 – 1.03	0.02*
Education	0.50	0.36 - 0.68	.04*	1.32	1.03 – 1.70	0.11
Experience	0.85	0.45 – 1.61	.96	0.72	0.58 – 0.89	0.00*

*Significant. p<0.05

Table 1 showed the relationship between hazard control equipment needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics. The result showed that only age was statically significant both at the bivariate (p = 0.00) and multivariate analysis (p = 0.02); educational status was significant only at the bivariate (p = 0.04), while years of work experience was significant at the

multivariate analysis (p = 0.00). Since, not all the variables were significant, the null hypothesis which stated that, there is no significant relationship between hazard control equipment needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics was not rejected.

Table 2: Multivariate regression showing relationship between hazard control training needs of slaughterhouse workers in Bayelsa State and their socio-demographic characteristics

Variable	Bivariate analysis			Multivariate analysis		
	Odds Ratio	95% C.I for OR Lower Upper	p-value	Odds Ratio	95% CI for OR Lower Upper	p-value
Age	2.48	1.73 – 3.57	.00*	1.057	0.91 – 1.23	.474
Education	2.00	1.45 – 2.74	.00*	1.292	1.08 – 1.53	.004*
Experience	1.26	1.18 -1.33	.00*	1.249	0.62 – 2.53	.537

*Significant. p<0.05

Table 2 showed the relationship between hazard control training needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics. The result showed that on bivariate analysis, all the demographics, age (p = 0.00), education (p = 0.00) and years of experience (p = 0.00) were significant. On multivariate analysis, only education was statically significant (p = 0.004), whereas, age (p = 0.474) and years of work experience (p = 0.537) were not significant. Therefore, the null hypothesis which stated that, there is no significant relationship between hazard control training needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics was not rejected.

Table 3: Multivariate regression showing relationship between hazard control knowledge needs of slaughterhouse workers in Bayelsa State and their socio-demographic characteristics

Variable	Bivariate analysis			Multivariate analysis		
	Odds Ratio	95% C.I for OR Lower Upper	p-value	Odds Ratio	95% CI for OR Lower Upper	p-value
Age	52.00	7.18 – 376.14	.00*	29.94	4.07 – 219.96	.00*
Education	5.83	2.45 – 13.86	.00*	5.67	2.38 – 13.51	.00*
Experience	20.50	4.95 – 84.75	.00*	8.94	2.07 – 38.55	.00*

*Significant. p<0.05

Table 3 showed the relationship between hazard control knowledge needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics. The result showed that both on bivariate and multivariate analysis, all the demographics, age (p = 0.00), education (p = 0.00) and years of experience (p = 0.00) were statistically significant. Therefore, the null hypothesis which stated that, there is no significant relationship between hazard control knowledge needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics was rejected.

Table 4: Multivariate regression showing relationship between hazard control practice needs of slaughterhouse workers in Bayelsa State and their socio-demographic characteristics

Variable	Bivariate analysis			Multivariate analysis		
	Odds Ratio	95% C.I for OR Lower Upper	p-value	Odds Ratio	95% CI for OR Lower Upper	p-value
Age	0.04	0.01 – 0.16	.00*	0.07*	0.02 – 0.30	.00*

Education	0.11	0.04 – 0.30	.00*	0.11*	0.04 – 0.31	.00*
Experience	0.02	0.01 – 0.17	.00*	0.05	0.01 – 0.37	.00*

*Significant. p<0.05

Table 4showed the relationship between hazard control practice needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics. The result showed that both on bivariate and multivariate analysis, all the demographics, age (p = 0.00), education (p = 0.00) and years of experience (p = 0.00) were statistically significant. Therefore, the null hypothesis which stated that, there is no significant relationship between hazard control practice needs of slaughterhouse workers in Bayelsa State and socio-demographic characteristics was rejected.

Discussion of findings

The result of the tested hypothesis showed that both age (p = 0.00), educational status was significant at the bivariate (p = 0.04), while years of work experience was significantly related to hazard control equipment needs at the multivariate analysis (p = 0.00). This finding could also be explained by the facts the socio-demographic characteristics of individuals are indicators to any health or health-related behaviour. By implication, socio-demographic characteristics of workers must be considered when hazard control equipment are made available. Consequently, when such are ignored, it can deter the use of such equipment. The finding of this study is in line with that of Banjo et al. (2013) whose study among abattoir workers in Abeokuta revealed a statistically significant influence of education, age and years of work experience. 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 equipment need with more aged 31-40 years, lower level of education and longer years of working experience. The homogeneity of the study population could be implicated for the similarities found between the both studies as they were all focused on workers in slaughterhouse.

The result showed that, hazard control training need was more among those aged 40-49 years (73.4%), those who had no formal education (75.6%) and those who had 10-14 years (74.1%) years of work experience. This finding could also be explained by the facts the socio-demographic characteristics of individuals are indicators to any health or health-related behaviour. By implication, training for workers should be design with consideration for the socio-demographic characteristics of the workers. Consequently, when such are not design to suit the socio-demographic characteristics of the workers, the impact of the training may not be adequately felt on the workers. 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 with more aged 31-40 years, lower level of education and longer years of working experience. 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 hazard control training need was more among those aged 21-40 years, those with secondary education and those that had <10 years of work experience. The homogeneity of the study population could be implicated for the similarities found between the both studies as they were all focused on workers in slaughterhouse.

The result showed that, hazard control knowledge need was more among those aged 40-49 years (10.9%), those who had no formal education (14.6%) and those who had 10-14 years (15.1%)

years of work experience. By implication, socio-demographic characteristics of workers must be considered when designing any learning activities for the workers. Consequently, every worker may benefit from such knowledge driving activity adequately. his finding could also be explained by the facts the socio-demographic characteristics of individuals are indicators to any health or health-related behaviour. 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 knowledge need with more aged 40-50 years, lower level of education and longer years of working experience. The finding of this study also give credence to that of Adesokan and Sulaimon (2014) whose study among slaughterhouse workers in Nigeria which showed a significant based on years of work experience. 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 higher age had better knowledge of hazard control. The finding of this study is also in line with that of Kehinde et al. (2020) which showed a statistical significant relationship between knowledge of hazard control and age ($P < 0.001$), years of work experience ($P < 0.001$) and educational level ($P < 0.001$). The homogeneity of the study population could be implicated for the similarities found between the both studies as they were all focused on workers in slaughterhouse.

The result showed that, hazard control practice need was more among those aged 30-39 years (7.0%), those who had no formal education (9.8%) and those who had 10-14 years (9.4%) years of work experience. By implication, socio-demographic characteristics of workers must be considered when making provision for practice of hazard control. Consequently, more workers will practice hazard control, their socio-demographic characteristic notwithstanding. 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 practice need with more aged 31-40 years, lower level of education and longer years of working experience. The finding of this study also give credence to that of Adesokan and Sulaimon (2014) whose study among slaughterhouse workers in Nigeria which showed a significant based on years of work experience. 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 hazard control practice need was more among those aged 21-40 years, those with secondary education and those that had <10 years of work experience. The finding of this study is also in line with that of Kehinde et al. (2020) which showed a statistical significant relationship between hazard control practice and age ($P < 0.001$), years of work experience ($P < 0.001$) and educational level ($P < 0.001$). The homogeneity of the study population could be implicated for the similarities found between the both studies as they were all focused on workers in slaughterhouse.

Conclusion

Based on the findings of the study, it was concluded that, the socio-demographic determinants of hazard control need among slaughterhouse workers in Bayelsa State were age, educational status and years of work experience.

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 with special consideration for workers' age, educational background and years of work experience.
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 to both old and young workers.

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 should be done in such a way that even those with low educational level will comprehend.

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