Original Article

Prevalence of self-reported occupational diseases/injuries amongst poultry farmers in Kaduna North local government area, Kaduna State

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Abstract

Background: A healthy worker is a productive worker and an asset to the organisation and the country at large. Occupational health and safety in Nigeria is in a poor state; with no comprehensive occupational health monitoring system for work-related diseases and injuries. Work-related accidents and diseases continue to be a serious problem in both developed and developing countries like Nigeria. Poultry farmers, by the nature of their job, are susceptible to occupational and environmental hazards on a daily basis.

Aim: The aim of the study is to determine the prevalence of occupational hazards amongst poultry farm workers in Kaduna North local government area, Kaduna State.

Methodology: This cross-sectional descriptive survey was carried out using semi-structured questionnaires to obtain information from 70 respondents selected by multi-stage sampling technique. Data were analysed based on descriptive statistics, Chi-square and Fisher's exact test using SPSS version 21. The results were presented in tables and figures.

Results: Majority (75.7%) of the respondents had experienced an occupational injury/disease at work; with the most common (45.7%) being cough. There was a statistically significant relationship between work experience, highest level of education and experience of occupational injury or disease in the past year (0.0015) and (0.004), respectively.

Conclusion: In view of the findings from this study, all employees should be continually informed of the hazards they will encounter in the course of their job so that even more experienced workers realise that if necessary precautions are not taken, they will susceptible to the hazards.

Keywords: Kaduna North, occupational disease, occupational injury, poultry farmers

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INTRODUCTION

Workers make up half of the world's population and are the major contributors to economic and social development.[1] A healthy worker is a productive worker and an asset to the organisation and the country at large.[2] However, in spite of the availability of effective interventions to prevent occupational hazards in the workplace, large gaps exist between and within

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countries with regard to the health status of workers and their exposure to occupational risks. Only a small minority of the global workforce has access to occupational health services.[1] Employers have a duty to ensure that the basic rights of their workers with regards to health and safety are protected. These include; ensuring a healthy and safe work space, carrying out preventive measures to reduce the rate of occupational accidents and/or diseases, protection and promotion of health at work and ensuring all employees are aware of the potential hazards in the workplace.[2]

Occupational health and safety in Nigeria is in a poor state; with no comprehensive occupational health monitoring system for work-related diseases and injuries. Work-related accidents and diseases continue to be a serious problem in both developed and developing countries like Nigeria.[2] It has been well established that the work environment should not present the risk of injury or disease. However, this is not the case particularly in the developing world.[3] The agricultural workforce is one of the largest worldwide with a population of about 1.1 billion people. It therefore stands to reason that it contributes significantly to the economy of countries in the developed and developing world. Farming is a high-risk occupation owing to the physical, biological, chemical and mechanical hazards faced by workers while carrying out their day to day activities.

Occupational health infrastructures are underdeveloped to meet the needs of workers. The need for effective occupational health services is on the increase. The International Labour Organisation (ILO) instruments on occupational health services provide a valid basis for the significant development of occupational health services, and by each country as it sets policy objectives to ensure the health and safety of workers in the country.[4] Occupational health services in Nigeria when well-regulated will amongst other benefits; reduce mortality and thereby increase life expectancy; reduce occupational diseases/injuries; improve overall health index and boost economy.[5]

Deaths and injuries take a particularly heavy toll in developing countries, like Nigeria, where a large part of the population is engaged in activities, such as agriculture, fishing and mining.[6] The poor practice of occupational health and safety measures is related to workload and time pressure.[7] Poultry farm workers are at a great risk of occupational injuries and diseases because they spend the most time in poultry farms with a substantial exposure to the occupational hazards in the farm. The workers who are at increased risk are the poultry caretakers, farm managers and flock supervisors. Another category of workers at risk includes poultry catchers, who harvest the birds for transportation to processing plants.[8] Poultry farmers, by the nature of their job, are susceptible to occupational and environmental hazards on a daily basis because, conditions at the poultry farm expose workers to multiple agents affecting the skin, respiratory, gastrointestinal and musculoskeletal systems.[9] The atmosphere in poultry farms usually contains significant levels of agricultural dust and toxic gases, which put the workers at a health risk.[8] The new and untrained ones are usually at a greater risk of exposure to occupational hazards. Furthermore, those who live near poultry farms, hatcheries, and processing plants can also be exposed to health hazards through air, water and soil.[10] To address these problems, both employers and employees have to cooperate to improve the working environment.[11]

Records of occupational diseases are poor, primarily because industries do not report cases to the relevant government agency.[12] As a result, there is lack of comprehensive data in the area of occupational diseases/injuries.[13] This study was carried out to determine the prevalence of occupational diseases/injuries amongst poultry farm workers. The findings from this study will provide a baseline list of diseases/injuries which poultry farmers in this study area are exposed to for future research.

METHODOLOGY

Study area

The study was carried out in Kaduna North local government area (LGA) in the central part of Kaduna State, located within the savannah belt of Nigeria. The inhabitants of the areas are mainly of Hausa, Fulani, Yoruba, Igbo, Gbagyi, Adara, Ham, Atyap, Bajju and Agworok ethnicity. The population has a wide range of occupations. However, agriculture is a common source of income. It is either the primary or secondary source. The LGA is further divided into 11 political wards. There are 102 poultry farms registered with the Poultry Association of Nigeria. The number of employees per farm range from 1 to 5.

Study design

This was a descriptive, cross-sectional study.

Study population

The study population included poultry farm workers who worked in poultry farms registered with the Poultry Association of Nigeria, in Kaduna North LGA of Kaduna State for at least a year (to ensure enough time has passed for workers to experience occupational diseases/injuries). Poultry farm workers who were not directly involved with handling the birds were excluded from the study.

Sampling technique

It was a multistage sampling technique:

- Stage 1 (selection of LGA): A list of the 23 LGAs in Kaduna state was made, 1 LGA was randomly selected by balloting
- Stage 2 (selection of farms): A line listing of all the poultry farms was done in the study area. The farms to be studied were randomly (simple random sampling) selected from the list of poultry farms by balloting. A total of 70 farms were selected from the LGA. The list of farms from the selected wards was obtained from the Poultry Association of Nigeria
- Stage 3 (selection of farm workers): All the farm workers (who met the inclusion criteria) from each of the selected farms were eligible for the study. Farmers were selected by simple random sampling. One farmer was selected from each farm by balloting.

Study methods

Pretested, interviewer-administered, semi-structured questionnaires were used to get socio-demographic data and data on the prevalence of occupational diseases/injuries amongst farm workers.

Data analysis

Data collected was entered, validated and analysed using Statistical Package for Social Sciences (IBM Corporation, Armonk, New York, USA) software version 21. Quantitative data were analysed as mean and standard deviation. Categorical data (such as tribe and highest level of education) were presented as frequencies and proportions; Chi-squared and Fisher's exact tests were carried out to test for association between variables. The level of significance was set at $P < 0.05$.

Ethical consideration

Approval to carry out this study was obtained from the Research and Ethics Committee of Ahmadu Bello University Teaching Hospital. Permission to conduct the study was also sought from the Kaduna North LGA, the ward heads and farm owners. The study participants were informed about the purpose of the study and were also informed that they could voluntarily withdraw from the study at any time. Written and verbal consent was obtained from all the participants before the questionnaires were administered to them.

RESULTS

A total of 70 questionnaires each were administered to the respondents, all of which were completely filled (giving a response rate of 100%). Over half (51.4%) of the respondents in this study were in the 20–29-year-old age group. Majority of them were Hausa (68.8%) and Muslim (94.3%) with 58.6% having only Quranic education [Table 1]. Most of the respondents (55.7%) had between 4 and 6 years working experience and 74.3% of them spent between 8 and 9 h at work daily [Table 2]. Majority (75.7%) of the respondents had experienced occupational injury at work [Figure 1]; with the most common (45.7%) illness experienced being respiratory in nature i.e., cough [Figure 2]. There was a statistically significant relationship between work experience, highest level of education and experience of occupational injury or disease in the past year (0.0018) and (0.004), respectively [Table 3].

DISCUSSION

Majority of the respondents in this study had experienced diseases or injuries related to this industry. Studies carried out in Abeokuta, South-West, Nigeria and Nepal showed that 69.6% and 69% respectively, of the respondents had experienced at least one form occupational hazard.[11,14] This is in contrast to studies carried out in Ogun State, South-West Nigeria and Malaysia where 37.9% and 31.4% of the respondents had experienced occupational injuries or diseases.[15,16] The disparity experienced could be attributed to the fact that majority of the respondents in these studies have a higher level of education than the

Table 1: Socio-demographic profile of the respondents (*n*=70)

Variable	Category	Frequency (%)
Age group (years)	<20	3 (4.3)
	20-29	36 (51.4)
	30-39	26 (37.1)
	≥40	5 (7.2)
Ethnic group	Hausa	48 (68.6)
	Fulani	17 (24.3)
	Yoruba	2 (2.9)
	Igbo	1 (1.4)
	Others	2 (2.9)
Religion	Islam	66 (94.3)
	Christianity	4 (5.7)
Marital status	Single	12 (17.1)
	Married	58 (82.9)
Highest level of education	Quranic	41 (58.6)
	Primary	19 (27.1)
	Secondary	10 (14.3)

Table 2: Work profile of the respondents (*n*=70)

Variable	Frequency (%)
Work experience (years)	
<3	17 (24.3)
4-6	39 (55.7)
7-9	8 (11.4)
≥10	6 (8.6)
Daily hours of work (h)	
<8	4 (5.7)
8-9	52 (74.3)
10 h and above	14 (20.0)

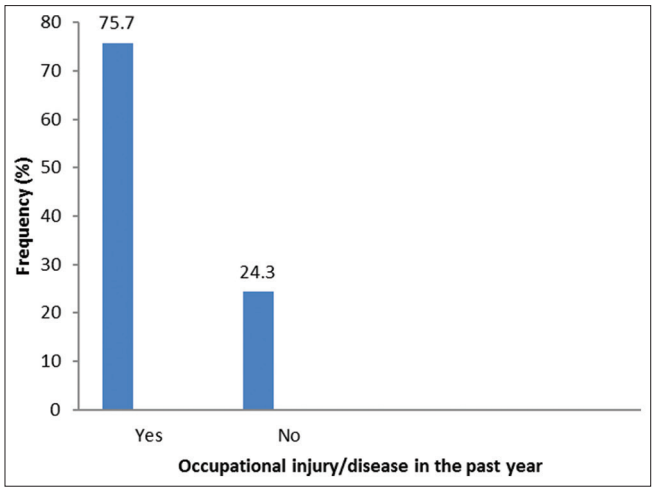

Figure 1: Distribution of farmers who have ever fallen sick because of their work (*n* = 70)

Table 3: Relationship between respondents' work experience, daily hours of work and highest level of education and experience of occupational injuries/diseases (*n*=70)

	Experience of occupational injury/ disease in the past year		Fisher's exact	*P*
	Yes	No		
Work experience (years)				
<3	15	2	15.344	0.0015
4-6	33	6		
7-9	3	5		
≥10	2	4		
Daily hours of work				
<8	2	2	5.441	0.059
8-9	43	9		
≥10	8	6		
Highest level of education				
Quranic	31	10	10.843	0.004
Primary	12	7		
Secondary	2	8		

respondents in this study. Studies have shown there is a statistically significant relationship between educational levels and the experience of occupational diseases/ injuries.[17,18] The high prevalence of injuries/diseases experienced by respondents in this study could contribute to decreased productivity, increased days out of work and increased out-of-pocket spending on healthcare.

The most common symptoms experienced by the respondents were respiratory in nature such as cough. This is not surprising considering all the respondents in the study work in deep litter farms where a lot of the activities carried out cause dust to be raised. This is similar to a study done in Sharkia Governate, Egypt, where 41.8% of the respondents had experienced respiratory symptoms.[8] It is also similar to a study carried out in Abeokuta, South-Western Nigeria where 41.7% of the respondents experienced cough.[11]

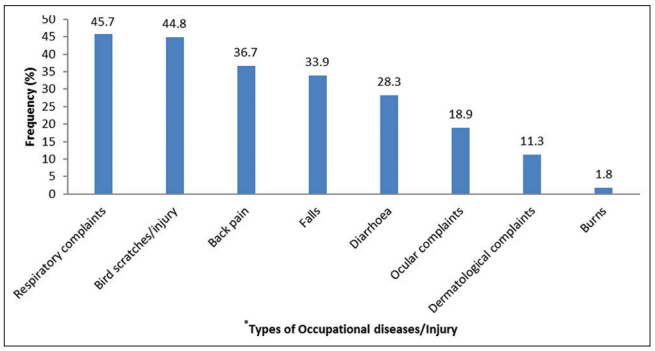

Figure 2: The prevalence of the various types of occupational diseases/ injury amongst respondents (*n* = 70) *multiple response question

These frequencies are to be expected because of the level of dust generated in deep litter poultry farming.[11]

Injuries were also commonly experienced by the respondents in this study. Of the respondents who participated in a study conducted in Argentina, 43.5% had experienced some form of injury in the past year. Occupational injuries are a common occurrence in jobs which require unskilled labour with long hours of exposure to hazardous materials.[14] Injuries will cause a reduction in worker productivity, this leads to a lower earning power, further impoverishing the worker who is already of a lower socioeconomic group.[19] He is therefore unable to afford the basic necessities such as food, healthcare and education.

Almost a fifth of the respondents in this study complained of ocular irritations in the past year. A study conducted in Lahore, Pakistan, revealed that 16.9% of the respondents had experienced eye irritation.[20] This is similar to a study in Abeokuta, South-Western Nigeria and Sharkia Governate, Egypt, where 17% and 22.7%, respectively, of the respondents had eye irritation.[8,11] Studies have shown that there is poor use of PPEs (personal protective equipment) amongst farmers in developing countries. Poor utilisation of PPEs means that the workers are exposed to hazards resulting in the occurrence of occupational diseases or injuries.

Back pain was another common complaint (36.7%) amongst the respondents who had experienced occupational illnesses in the past year. A previous study in Lahore, Pakistan, similarly showed that 38% of poultry farm workers complained of back pain. This is likely due to over-exertion (due to the long working hours required) and wrong posture. Most poultry farm workers in developing countries, like Nigeria have not received training on occupational health and safety nor have their employers informed them of the possible hazards they might encounter during their work and as such they are unaware

of some of the hazards they face on a daily basis.[21] This will lead to the occurrence of occupational illnesses or diseases at a higher rate than those who have had some training.[22]

As shown in this study, there is a statistically significant relationship between years of work experience and the experience of an occupational diseases and or occupational injuries. Studies have shown that new employees are more likely to be careful in carrying out their duties than older employees who are less likely to take necessary precautions when carrying out their duties.[22] The older workers feel like they are less likely to experience occupational illnesses because they think they know all the potential hazards and as such are less likely to be careful in executing their duties.

There was a statistically significant relationship between highest level of education and the occurrence of occupational diseases and or injuries. A person who is educated a more likely to have come across some health and safety tips in the course of their schooling and will adhere to safety instructions.[23] A study carried out in Edo state showed that with increasing level of education, workers tend to have more knowledge on hazards in their workplace as well as health and safety because they have more access to information.[24]

It is inherent to note the limitations in a sample selection from a population with an incomplete sampling frame due to poor registration practices of poultry farmers in Kaduna North LGA. As such it limits this study from making generalisations to all farms in the area. Therefore, the study findings need to be interpreted with caution. However, the study provides insights on the prevalent occupational injuries and/or diseases that can occur amongst poultry farm workers.

CONCLUSION

Poultry farm workers by virtue of their job are exposed to various hazards which at the very least could cause illness or injury; and could be life threatening in some instances. Majority of the respondents experienced occupational injuries/illnesses such as cough, back pain and ocular problems in the past year. This was associated with educational level of the workers which in majority of the cases was the lack of formal education. The occurrence of occupational illness/injury was also associated with years of work experience. In view of this, it is essential that the government puts in great effort to achieve inclusive and quality education for all (SDG 4) because education is one of the most powerful and proven vehicles for sustainable development. All employees should be continually be informed of the hazards they will encounter in the course of their job so that even more experienced workers realise that if necessary, precautions are not taken, they will susceptible to the hazards.

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Conflicts of interest

There are no conflicts of interest.

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