KIU Journal of Social Sciences Copyright©2020
Kampala International University ISSN: *2413-9580*; 6(2): 287–292

Assessment of Health Hazards and Challenges among Poultry Workers in Egbeda Local Government Area of Oyo State, Nigeria

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Abstract. There are many factors that could lead to health hazards among the workers in the poultry business which invariably hamper their production and productivity over time. Hence, a study of assessment of health hazards/challenges among poultry workers in Egbeda local government area of Oyo State, Nigeria was conducted. Purposive sampling was used for selection of 6 villages from the study area while 80 respondents were selected with simple random sampling. Data was analyzed with both descriptive statistics (frequency distribution and simple percentages) and inferential statistics (pearson product moment correlation). The findings revealed some common health hazard challenges experienced as neck pains (53.8%), back pains, (45%), leg pains (41.3%) and general body pains (35%) among the poultry workers. In addition, the findings showed that most respondents in the study area contracted health hazards through injury (68.8%), poor working environments (62.5%) and unhygienic environment (55%). Furthermore, strategies dominantly used in managing the environmental hygiene/health were proper hygiene (81.2%), use of disinfectants (80%), vaccination (76.2%) and physical cleaning and clearing of wastes/dirt's management (70%). Furthermore, the result revealed that there is significant correlation between management strategies and common hazards experienced by poultry workers in the study area ($r = -0.481$, $p < 0.05$). In conclusion, the findings revealed that the poultry workers were predisposed to a number of common health hazards/challenges. It is however recommended that the extension officers should disseminate necessary information management strategies for poultry health hazard. The community health officers should enforce and educate the poultry workers on proper hygiene practices to prevent epidemic in their work environment.

Keywords: Poultry Workers, Health Hazards Challenges, Occupational Work Safety

1. Introduction

Historically the poultry industry is not just labour intensive but also a hard intensive industry like other industries (including apparel and electronics) with cumulative trauma disorders (CTD'S) among the workers (Kitalyi, in FAO 1998). Many different methods are used for rearing poultry. Production systems range from small, village-level scavenging poultry flocks (Kiltayi in FAO 1998) from which few poultry enter the formal market system, to integrated intensive operation in which large companies control all aspects of the production and marketing chain upstream and downstream from production units (Tyson foods 2006). Between lies a range of systems from individual farms practicing to industrial type of production (Sim et al., 2006) to flocks of ducks reared on paddy fields (Gilbert et al., 2006) which are often transported long distances to graze on recently harvested fields. Poultry workers involved in poultry breeding, farming, loading and transport of poultry birds processing facilities face a number of potential health hazards. Exposure to chemicals such as ammonia or disinfectants and detergents used in poultry farms are possible hazard as well as exposure to poultry dust, both inorganic and organic. Poultry production systems are complex, multi-layered and deal with perishable or shelf-life products. It is common for feed mills, hatcheries, farms and processing plants to be owned or managed and/or managed by the same company. Effective recognition

of hazards and informal assessment of risks has long been the basis of progress in the industry (Cross, 1996). Health hazard is an inherent feature of modern poultry production. Production systems are complex and both the intermediate products (hatching eggs, day old chicks e.t.c) and products (meat and eggs) are perishable. The bulk of experts in the poultry profession is at the commercial specialization rearing birds for egg and meat while a small population are breeders (Vose, 1996). Occupational infections include parasitic diseases which can limit the range of applied diagnostic and certification procedures only to diseases induced by pathogenic agents or by exposures occurring in the occupational environment (Lipinska et al., 2011). In some cases, it becomes difficult or even impossible to identify the real cause of patients' complaints. Occupation bio hazard are infectious agents or hazardous biological materials that exert harmful effects on workers' health either directly or indirectly in the working environment through waste pollutants, micro-organisms, virus or toxins (Wkipedia, 2010). The occupational infectious diseases are commonly found as part of a systematic infection involving the respiratory organs in immune compromised workers. Biological or etiological causes of disease are on the increase and have its source from occupational factors (Liu et al, 2010). Two main groups of biological agents of occupational hazard are allergenic and/or toxic agents forming bioerosols, causing occupational diseases of the respiratory tract and skin, primarily in agricultural workers, and agents causing zoonosis and other infectious diseases that spread by tick or insect vectors through various exposures routes. Bioerosols are biological particles of organic dust and or droplets suspended in the air such as viruses, bacteria, toxin, fungi, secondary metabolites of fungi, and particles of faeces, bodies of mites and insects and feathers, and urine of birds. They often induce disorders of the respiratory system or skin (Lawniczek, 2010). However, agricultural production has a lot of risk than businesses in other sectors of economy (Hardeaker et al., 2004). The risky nature in agricultural production may be attributed to several factors beyond the control of the producers. Such factors include environmental factors, vagaries of nature, diseases, insect infestations, general economic and market conditions contribute to the price, yield or net return variability of agricultural producers. The sources of risk in agriculture are numerous and diverse (World Bank, 2005; Dupaigre et al., 2006). Therefore, there are many serious safety and health hazard in the poultry industry such noise pollution, dangerous equipment, slippery floors, musculoskeletal disorders and hazardous chemicals (including ammonia that is used as refrigerant). This entire health hazard can affect poultry workers physically and psychologically as a result of harm and risk detrimental to the industry leaving her goal unachieved. Since workers have a right to a safe work place, there must be provision of safe and healthy environment for them. But poultry workers are infected with diseases as a result of poor management and lack/inadequate information on bio-security measures. Health hazards assessment is the identification of potential threats to poultry industry. There are some hazards which ravage the poultry industry as a result of not identifying and examining the activities in the vicinity of the farm. Therefore the need of identifying hazards, the pathways for their entry into poultry industry and provision of measures to reduce risk. The specific objectives of the study are to identify poultry management systems used by the respondents; identify the common health hazard challenges experienced by the respondents; and assess the strategies of managing health hazard challenges. This study therefore, hypothesized that strategies for management of hazards do not control the common health challenges among poultry workers in the study area.

2. Methodology

This study was carried out in Egbeda local government area of Oyo state, Nigeria. Egbeda local government headquarters is in the town of Egbeda. It has an area of 191km² and a population of 281,573 of the 2006 census. Egbeda geographical coordinates are 7° 22' 0'' North, 4° 3' 0'' East. Egbeda local government is sub-divided into 10 wards: Erunmu, Ayede/ Alugbo/ Koloko, Owo bale/kasumu, Olodan/ajiwogbo, Olodo/kumapayi I, Olodo II, OlodoIII, Osegere/awaye, EgbedaOlode/Alakia and Olubadan estate. The target population of the study was poultry workers in Egbeda local government area of Oyo state. The sampling procedure was 30% selection of ten wards (Erunmu, Olodo/kumapayi and Egbeda) through purposive sampling in Egbeda local government and in each of the selected wards, 2 villages were randomly selected. The sample size was 80 poultry workers in Egbeda local government area. Data collection was with the aid of a well-structured questionnaire and personal interview guide. The data collected was analyzed with descriptive and inferential (Pearson product moment correlation) statistics.

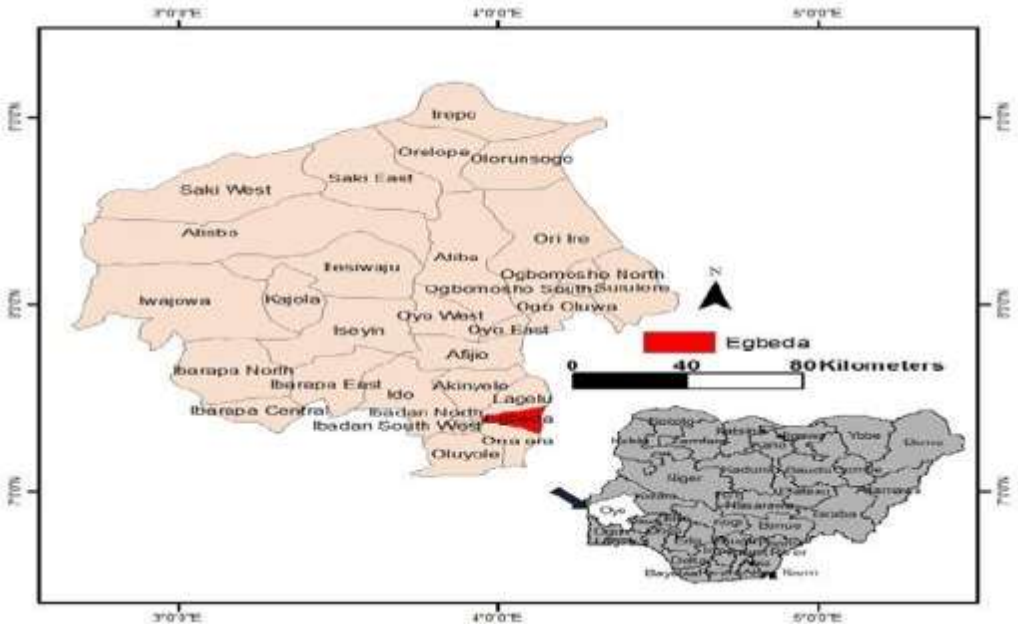

Figure 1: Map of Oyo State showing the study area Egbeda Local Government Area

3. Result and Discussion

Table 1: Management system of poultry in Egbeda Local Government

Variable	Frequency	Percentage
Management system		
Battery cage	35	43.8
Deep litter	24	30.0
Both	21	26.2
Types of birds raised		
Layers	20	25.0
Broilers	14	17.5
Cocks	13	16.2
Layers and broilers	19	23.8
Broilers and cocks	13	17.5
Feeding method		
Manual	64	80
Automatic	16	20
Water supply method		
Manual	43	53.8
Automatic	37	46.2

Management Systems of Poultry in Egbeda Local Government

Table 1 showed that 43.8% practice battery cage system, 30% practice deep litter system. The result also showed that 25% of respondents in the study area raise layers, 14% (broilers) while 23.8% reared both. The poultry feeding and drinking systems are predominantly done manually by the respondents in the study area with about 80% and 53.8% respectively. These results from the research work were an attestation that the predominant management system implored by those that are into poultry in the study area is battery cage and they are into raising of layers birds. Also from the feeding and giving of water to the birds which are done mostly manually if work ethics are not followed can lead to the ways by which the workers get these health hazards. This finding negates that of Chrysostome et al., (2002) who proposed that small holder chicken production in Bangladesh is best raised in battery cages. Kinh (2006) also established that intensive system has been established in the country but that feeding system is faced by many problems in Vietnam.

Table 2: Common health hazards/challenges experienced by poultry workers

Health hazard (%)	Always (%)	Occasional (%)	Never (%)	Ranking
Neck pains	53.8	21.2	25	1
Back pains	45	36.2	18.8	2
General body pains	35	45	20	4
Waist and thigh pains	28.8	43.8	27.5	5
Leg pains	41.3	37.5	31.3	3
Measles	16.3	30	53.8	13
Rashes	10	27.5	62.5	16
Eczema	10	27.5	62.5	17
Profuse sneezing	26.3	43.8	30	7
Catarrh /cold	27.5	52.5	20	6
Asthma	12.5	33.8	53.8	14
Cough	23.8	48.8	22.8	8
Stomach ache	23.8	45.0	31.3	9
Dysentery	12.5	20	67.5	15
Fever	22.5	57.5	20	10
Diarrhea	10	33.8	56.3	18
Loss of appetite	17.5	52.5	30	12
Shortness of breath	20	40	40	11

Common health hazards/challenges experienced by poultry workers

Table 2 revealed that majority of the respondent experienced some health problems such as neck pains (53.8%), back pain (45%) and leg pains (41.3%). The respondents occasionally experienced common health problems such as fever (57.5%), loss of appetite (52.5%), catarrh (52.5%), coughing (48.8%), general body pains (45%), stomach ache (45%), profuse sneezing (43.8%) and waist and thigh pains (43.8%). The table also showed the ranking of common health problems experienced by poultry workers in the study area with the use of weighted score. Series of body pains ranked between 1^{st} - 5^{th} positions, respiratory infections ranked between 6^{th} – 8^{th} while other infections 9^{th} – 18^{th}. This shows that carrying heavy loads of feed and inhalation of endo-toxins and other microscopic organism found in air is a gateway to these predominant health problems among poultry workers in the study area. The result of this study in regards to the work of "The Bureau of labor statistics (2016) Raleigh, North Carolina, found out that over-exertion, repetitive movements result in leg pain, lifting of materials, body movement injuries, exposure to harmful substances, contact with objects or equipment and musculo-skeletal disorders are common health hazards usually faced by poultry workers in North Carolina, United States of America.

Table 3: Degree of experiencing various health problems by poultry workers

Variables	Frequency	Percentage	Mean
High	51	63.4	15.9
Low	29	36.6	

Table 3 revealed the degrees of various health challenges experienced by poultry workers in Egbeda local government area of Oyo State, Nigeria. The Table showed that majority of the respondents (63.4%) experienced one form of health problems or the other. This implies that many of these poultry workers were seriously ill at one time or the other due to the farming operational system over time.

Table 4: Distribution of strategies used in managing health hazard problems

Strategies	Frequency	Percentag	Ranks
Proper hygiene	68	81.2	1
Quarantine	53	66.2	5
Physical management	56	70	4
Use of protective wear	47	58.8	7
Use of disinfectants	64	80	2
Daily inspection	48	60	6
Vaccination	61	76.2	3
Respiratory equipment	42	52.5	9
Use of low dust material	44	55	8

Strategies used in managing health hazard problems

Table 4 showed the strategy used in managing health problems in the study area. The result revealed that (81.2%) used proper hygiene as a means of managing health problems this means that with the use or maintaining proper hygiene contracting health hazard can be well managed, other strategies are; use of disinfectants (80%), vaccination (76.2%), physical management (70%), quarantine (66.2%), daily inspection (60%), use of protective wears (58.8%), use of low dust material (55%) and the use of respiratory equipment (52.5%). This is also in line with the work of (Adam et al., 2011) whose findings also showed that vaccination, hand washing (categorized as proper hygiene) was predominant among poultry farmers for managing health hazard in his study area.

Table 5: Level of strategies used in managing health hazards

Variables	Frequency	Percentage	Mean
High	53	67.2	6.0
Low	27	33.8	

Table 5 above categorized the strategies used in managing common health hazard problems. It revealed that majority of the poultry workers (67.2%) manage common health problems with the health strategies. This implies that majority of the poultry workers found these management strategies effective to a large extent.

Hypothesis testing

The result from Table 6 on test of hypothesis showed that there is significant effect of management strategies used on common health hazard experienced by poultry workers in the study area ($r=-0.481$, $p<0.05$). This finding is in agreement with the study of Adedeji (2011) who revealed that preventive measures (management strategies) and drugs are positively significant to management of health challenges among poultry workers. This implies that increase in management strategy reduces common health hazard problems.

Table 6: Relationship between common health challenges and control strategies used

Variables	r-value	p-value	Decision
Managing strategies vs Common health challenges	-0.481	0.000	Significant

Level of significance at 5%; **Source: Data analysis, 2016**

4. Conclusion

Results from the empirical findings showed high occurrence of common health hazard experienced by poultry workers in Egbeda Local Government area of Oyo State, Nigeria. The common health hazards experienced by the poultry workers were pains from various parts ranging from neck (53.8%), back (45%) and leg (41.3%). The findings however depicted that methods used in management strategies for common health hazards has significant effect on common health hazard available in the study area.

5. Recommendation

Community health workers in the study area should enforce the practice of quality health management strategies among poultry owners in the industry. Organization such as Poultry Association of Nigeria (PAN) should organize trainings on means of combating risk and hazard which emanates from poultry work/ production. First aid facilities should be available within the poultry farms to provide primary treatments for the workers whenever they are affected.

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