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2. The LJN has the tripartite mission of:
 - (a) Promoting a culture of excellence in Nursing Research.
 - (b) Encouraging the exchange of profound and innovative ideas capable of generating creative practice in nursing research practise.
 - (c) Disseminating information on nursing related development that are not usually easily available to academics and practitioners.
3. The Journal will accordingly encourage the publication of the following categories of papers.
 - (a) Research papers that move away from orthodoxy and which really break new grounds in terms of methodology and findings.
 - (b) Essays and issues papers that contribute to reorienting received ideas, values and practices.
 - (c) Documents emanating from national and international conferences, as well as from largescale research work that emerging trends and thinking in nursing related development.
4. LJN is published biannually in any area of nursing interest or relevant to needs of academics and practitioners.

In this edition, nineteen (19) manuscripts scale through the eye of the needle of the Editor-in Chief. The title of the papers in this edition are: Assessment of client satisfaction with contraceptive services in public health care facilities in Zamfara State, Nigeria; Sociocultural and economic determinants of open defecation practices in Kano State, Nigeria; effect of simulation based training on midwives' skills in managing retained placenta with umbilical vein oxytocin injection in health facilities, Osun State, Nigeria; Nurses Level Of Preparedness In Management Of Patient With Viral Hemorrhagic Fever In Emergency Ward In University Of Ilorin Teaching Hospital, **Nigeria**; Nursing Education: A Sine Qua Non For Addressing The Healthcare Demands Of The 21st Century; Influence Of Nursing Training On Their Competency In Selecting Wound Dressing Materials At A Secondary Health Facility In Ilorin, Kwara State, Nigeria; Prevalence And Outcome Of Malaria Infection Among Children Below 11 Years In A Tertiary Healthcare Facility In Benin City From 2018-2020; Factors Influencing Prevalence Of Gender Based Violence Among Men And Women In Bagudo LGA Kebbi State, Nigeria; Knowledge Of Health Implications Of Rape And Associated Factors Among Male Undergraduates In Ahmadu Bello University Zaria, Nigeria; Quackery In Nursing, The Causes, Effects And Control Measures: The Nigeria Experience; Knowledge, attitude and practice of injection safety among nurses in Nigeria: a case study of University of Ilorin Teaching Hospital Ilorin, Kwara State, Nigeria; Awareness Of Computer Vision Syndrome Among Staff Of Information Communication And Technology Unit Of University Of Benin Teaching Hospital, Benin City, Edo State, Nigeria; Utilization Of Personal Protective Equipment Against Organic Dusts Among Poultry Farmers In Ona-Ara Local Government Area, Ibadan, Nigeria; Predictors Of Surgical Site Infection Amongst Post Operative Patients In Federal Medical Centre Lokoja, Nigeria; Evaluation Of The Involvement Of Nurses In Policies And Policy Formulation In Nigeria; Determinants of Stress and Coping Mechanisms among Nurses in Aminu Kano Teaching Hospital, Kano State, Nigeria; Influence Of Nursing Training On Their Competency In Selecting Wound Dressing Materials At A Secondary Health Facility In Ilorin, Kwara State, Nigeria; Adaptation To Stress And Academic Performance Of Students In Nursing Institutions In Oyo State, Nigeria; Medication Adherence And Quality Of Life Of Hypertensive Patients Attending Selected Hospitals In Port Harcourt, Rivers State, Nigeria; Perspectives Of Youth On The Legalization Of Abortion In North Central Nigeria.

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Welcome to LAUTECH Journal of Nursing!

LAUTECH Journal of Nursing focus on but not limited to research findings in the different areas of Nursing: Nursing Care, Nursing Education, Medical Surgical Nursing, Maternal and Child Health Nursing, Community Public Health Nursing, and Psychiatric/Mental Nursing. This journal is published to promote quality scholarly writing and hence instigating and generating vibrant discourse in the different areas of nursing. Apart from providing an outlet for publications of research findings, it offers opportunities for professionals and students to disseminate their views or position on topical issues and emerging theories within the scope of the journal. The Journal is peer reviewed by seasoned scholar. Eighty authors have contributed in one way or the other to the thirteenth edition of the journal.

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UTILIZATION OF PERSONAL PROTECTIVE EQUIPMENT AGAINST ORGANIC DUSTS AMONG POULTRY WORKERS IN ONA-ARA LOCAL GOVERNMENT AREA, IBADAN, NIGERIA

ADEGOKE ADENIKE IDOWU & OYEWUMI ZACCHEUS OPEYEMI

ABSTRACT

The economic importance of poultry farms cannot be over-emphasized, as poultry farming is one of the most dynamically developing branches of modern agriculture. Occupational respiratory diseases which are detrimental to health are common in poultry farmers. Studies reported that the occurrences of respiratory and non- respiratory symptoms are higher among poultry workers. This study examined the level of utilization of Personal Protective Equipment (PPE) among poultry workers against organic dusts in Ona-Ara Local Government, Ibadan. Descriptive cross sectional survey design was used for this study and the target populations are poultry workers. Sample size of One hundred and sixty- one (161) respondents was determined by Krejcie and Morgan's formula and multistage sampling technique was used to select 161. Descriptive and analytical statistics tool were used. Findings showed that majority of the respondents are within the ages of 31 to 35 years (45.6%), female (56.9%) and are Yoruba ethnic group (88.8%). The result of the study revealed that respondents are highly knowledgeable about PPE (73%) and it is available (61.6%), the level of utilization is average (53.5%) and lastly, PPE utilized by the poultry workers are gloves including gowns (71.9 %) and face masks (68.1%). The generated hypotheses revealed that there is a significant relationship between knowledge and utilization of personal protective among the selected poultry workers in Ona-Ara Local Government Area (r -value ($r(158) = 0.439$; $p < 0.05$). Also, there is a significant relationship between age and utilization of personal protective equipment among the selected poultry workers in Ona-Ara Local Government Area (r -value ($r(158) = 0.258$; $p < 0.05$). Lastly, there is a significant relationship between PPE availability and utilization among poultry workers in Ona-Ara Local Government Area, Ibadan ($r = 0.465$; $P = 0.000$). In conclusion, it is recommended that training of the poultry workers is necessary to increase the utilization of PPE and

adequate PPE should be made available in the poultries. The result of this study might enlighten and empower the government to take action and raise awareness on the negative results of organic dusts, and create policies that support the use of personal protective equipment among the poultry workers/ The research may also strengthen the prevention of respiratory diseases among poultry workers in Ona Ara Local Government Area.

Keywords: Utilization; Knowledge; Availability; Personal Protective Equipment.

INTRODUCTION

Occupational health and safety have evolved significantly in workplace environments over recent decades. The implementation of Personal Protective Equipment (PPE) marks a crucial development in workplace safety protocols, shifting focus from purely productivity-oriented approaches to comprehensive worker protection strategies. Personal protective equipment, commonly referred to as "PPE," is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, coveralls, vests, and full body suits (Occupational Safety and Health Administration, 2020). According to Desa (2018), approximately 57% of the African population lives in rural areas, where they are mainly engaged in farming.

Large-scale emissions from animal husbandry, manure storage and spreading, field cultivation, feed storage, and free-range systems have increased the significance of agricultural activities in air pollution, specifically organic dust. Organic dusts are defined as dusts of plant (vegetable), animal, and microbial origin. The major components of organic dust are bacteria, fungi, spores, pollens, endotoxins, mycotoxins, and various allergens. In poultry buildings, the sources of these emissions are animal droppings, feed, litter, dander (bird's skin), and feathers. Besides fulfilling meat demands, controlled environment poultry facilities are a major source of organic and inorganic dust, odorous compounds, and greenhouse gases (Knight, 2019). Organic dust from poultry facilities can cause various respiratory problems such as upper respiratory tract irritations, chronic bronchitis, organic dust toxic syndrome, allergic and non-allergic rhinitis, asthma, inflammation, extrinsic alveolitis, and respiratory symptoms (Merck, 2021). Despite an apparent adaptation response of workers repeatedly exposed to organic dust, they still experience a high prevalence of respiratory disease and significant decline in lung function (Schwartz et al., 1995; Spurzem et al., 2002; Arzu, Ulu et al., 2021). Apart from their allergic and infectious properties, bacteria and fungi can induce inflammatory responses via inhalation of endotoxin or β -glucans. Furthermore, the respiratory symptoms observed in bioaerosol-exposed workers are thought to be mainly caused by non-allergic inflammatory reactions. Mononuclear phagocytes, primarily monocytes and macrophages, are the key cells that initially respond to exposure of inhaled organic dust by rapidly stimulating secretion of tumor necrosis factor. This can induce pyrexia, neutrophil recruitment, activation of airway epithelial cells, and cause direct bronchial hyper-reactivity. Consequently, the need for PPEs has increased over the years with growing awareness of workplace hazards and the difficulties associated with overdependence on

other control measures, which for some agents cannot be totally eliminated or even monitored (Brown & Donaldson, 1996; Natarajan, 2016).

Most large-scale companies have established policies on PPE. While in some work environments, non-compliance with PPE policy may not result in significant health problems, in other occupations, failure to comply with PPE requirements could mean the difference between life and disability or death. Findings from studies on PPE compliance differ widely, raising several questions: Are workers aware of workplace hazards? Do they know the appropriate PPEs and how to use them? What is their attitude toward and utilization of these PPEs? What factors influence PPE utilization? Has the employer fulfilled their responsibilities by providing PPEs and educating workers on occupational hazards? If so, why are some workers not wearing them? The World Population is estimated to reach 9.3 billion people by 2050 (Food and Agriculture Organization of the United Nations, 2021). With this population increase, greater food production is demanded. To meet this demand, the modern livestock industry has shown a tendency toward producing animals in feedlots. In confinements, various installations can be used: fully closed air-conditioned facilities, fully open installations with natural ventilation, and hybrid installations that can operate either open or closed using artificial thermal conditioning systems, depending on local climatic conditions. Among meat production systems, broiler production stands out for its low cost and short production cycles (Desa, 2018).

It is reported that occupational respiratory diseases, both chronic and acute, are common in agricultural workers, particularly in pig and poultry farmers. Health problems particularly of an acute nature develop within a few hours and may last for few days after exposure to these animal confinements. In accordance with a study, occurrence of organic dust toxic syndrome ranges from 10 to 30% in workers, although it depends on the type of animal

production units and use of facilities. Moreover, a number of studies reported the prevalence of both respiratory and non-respiratory symptoms was higher among poultry workers (Lival, *et al.* 2021). Various epidemiological studies also showed a high occurrence of respiratory symptoms and antagonistic changes in pulmonary function parameters in poultry workers (Hamid, *et al* 2018).

In view of the importance of the health and safety of poultry workers, there is a need to assess the utilization of personal protective equipment against organic dusts among poultry workers in Ona-ara local government area, Ibadan.

Objectives of the study

1. To assess the level of knowledge of poultry workers on personal protective equipments.
2. To determine the availability of personal protective equipment among poultry workers against organic dusts in Ona-Ara Local Government Area, Ibadan.
3. To assess the utilization level of personal protective equipment among the poultry workers against organic dusts.
4. To identify the common types of personal protective equipment utilized by the poultry workers against organic dusts.

Research Questions

1. What is the knowledge level of personal protective equipment among poultry workers?
2. What is the availability of personal protective equipment for poultry workers against organic dusts in Ona-Ara Local Government Area, Ibadan?
3. What is the level of personal protective equipment utilization among poultry workers against organic dusts?
4. What types of personal protective equipment are utilized by poultry workers against organic dusts?

Research Hypotheses

H₀₁: There will be no significant relationship between the level of knowledge and the utilization of personal protective equipment among the selected poultry workers in Ona-Ara Local Government Area.

H₀₂: There will be no significant relationship between age and utilization of protective Equipment among the selected poultry workers at Ona-Ara Local Government.

H₀₃: There will be no significant relationship between the availability of personal protective equipment and the utilization among the poultry workers at Ona-Ara Local Government Area Ibadan.

METHODOLOGY

Research Design: A descriptive cross-sectional survey was adopted for this study.

Research Setting: The study was carried out at Ona-Ara Local Government Area, Ibadan, Oyo State. Ona-Ara Local Government is bounded in the northern part by Egbeda Local Government, in the southern part by Oluyole Local Government, in the eastern part by Ogun/Osun State and in the western part by Lagos/Ibadan express-way with Ibadan Southeast Local Government area on the other side of the express-way. According to 2006 population census, Ona-Ara Local Government has a total population of 265,059, with the land mass of about 3570km.

The people of Ona-Ara Local Government are predominantly workers with fertile land for each crop like cocoa, kola, cashews, and citrus like orange, mango, and etcetera. The farming population is scattered all over the various communities in the Local Government which include; Foworogun, Idi-Ogun, Elese-Erin, Olosunde, Ojebode, Akanran and Gbada-Efon, to mention just but a few. The Local Government now consists of 6 wards, previously 11 wards and they are: Akanran ward, Araro ward, Olunloto ward, Amuloko ward, Olorunsogo ward and Gbedun ward and they are the Local Government's major towns

and communities. The Local Government's headquarter is Akanran.

Target Population: The target population for the study was poultry workers working in poultry farms within Ona-Ara Local Government, Ibadan. Total population is 237

Inclusion Criteria: Poultry workers and those that consented to participate in the study population were included in the study.

Exclusion Criteria: Non-poultry workers and those that did not consent to participate were excluded in the study

Sample Size Determination.

The total number of poultry workers in the selected farms in Ona Ara Local Government was one hundred and ninety-five (161).

Krejcie and Morgan's formula was used to determine the sample size.

$$S = (X^2 \times N \times P \times (1 - P)) / (d^2 \times (N - 1) + X^2 \times P \times (1 - P))$$

Where:

S = Required sample size

X² = Table value of Chi-square for one degree of freedom at desired confidence level (3.841 at 95% confidence interval)

N = Given population size (230)

P = Population proportion (assumed to be 0.5 to provide maximum sample size)

d = Degree of accuracy, reflected by the amount of error that can be tolerated in the research study (0.05)

Sample Size Calculation:

$$S = (3.841 \times 237 \times 0.5 \times 0.5) / (0.05^2 \times 236 + 3.841 \times 0.5 \times 0.5) = 227.58425 / 1.55125 = 146.6$$

Accounting for Attrition:

- Attrition Rate (10%) = 14.6

Table 1: Allocation of the poultry workers

S/No	List of the Wards	Number of poultry workers In the wards.	Proportional Allocation	Sample Size for each ward
1	Akanran ward	43	$43 \times \frac{161}{237}$	29
2	Araro ward	40	$40 \times \frac{161}{237}$	27
3	Olunloyo ward	37	$37 \times \frac{161}{237}$	25
4	Amuloko ward	47	$47 \times \frac{161}{237}$	32
5	Olorunsogo ward	36	$36 \times \frac{161}{237}$	25
6	Gbedun ward	34	$34 \times \frac{161}{237}$	23
		237		161

Sampling Technique: Multistage sampling was used for the study.

Stage 1: Ona Ara Local Government was selected being the predominant local Government for poultry farming.

Stage2: Ona Ara Local Government is clustered into six wards namely; Akanran ward, Araro, Olunloyo, Amuloko, Olorunsogo and Gbedun ward.

Stage 3: Purposive sampling technique was used to select all the participants in each cluster (ward) in Ona Ara Local Government Area.

Research Instrument: Self-Structured questionnaire was used to collect data from the respondents. This was used to gather information on the level of utilization of personal protective equipment among poultry workers against organic dusts in Ona-Ara Local Government, Ibadan.

The questionnaire was divided into six sections: A, B, C, D, E and F.

Section A: Demographic data.

Section B: Level of knowledge of poultry workers on personal protective equipment

Section C: Availability of personal protective equipment among poultry.

Section D: Utilization of personal protective equipment by respondents

Section E: Common types of personal protective equipment utilized by the poultry workers against organic dusts.

Dichotomy was used for questions on level of knowledge while likert scale was used for sections C, D and E.

Validity of Instrument: In order to ensure that the research instrument measures what it is intended to measure, questionnaire was structured to cover all aspect of the research objectives and also structured to elicit responses concerning all the variables. These questions were drawn from extensive literature search and some of the researcher's observations. The content validity of the research instrument was given to experts in medical research to scrutinize and ascertain its validity.

Reliability of the instrument: The questionnaire underwent a trial test involving 16 participants (both male and female) from a neighboring local government area (Ibadan South-West Local Government in Oyo State where poultry farmers are also predominant) with characteristics similar to the study participants. The reliability coefficients were estimated using the Cronbach alpha procedure and are presented in Table 4. The results ($\alpha = 0.89$) indicates that the instrument exhibited a high reliability coefficient, rendering it dependable for use in the investigation. Find attached the reliability chart at the appendix.

Method of Data Collection: Data were collected from respondents through Self-Structured questionnaire. Simple English that could be easily understood by the population was used. Trained research assistants and some of the trained poultry workers were employed in administering and collection of the data.

Data Analysis and Management: Data was analyzed using descriptive, frequency count, tables, percentages and inferential statistics e,g chi square and t- test.

Ethical Considerations: Ethical approval was obtained from the Ethical Review Committee of Ona-Ara Local Government Area. The nature, purpose and process of the study were explained to the respondents. Informed consent was obtained in order to protect the right of the study participants.

Confidentiality of Data: Names were not included on the questionnaire to maintain confidentiality of the participants during and after the collection of data.

Beneficence to Participants: The research might help to enlighten poultry workers on reasons for personal protective equipment and its importance to prevent diseases and complications.

Non-Maleficence to participants: The research was not in any way harmful to the participants as only questions were asked, and no new interventions or procedures were involved.

RESULTS

Demographic information of respondents / General description of variables

A total of 162 questionnaires were administered to respondents, with 160 retrieved, representing a 98.7% response rate. Consequently, 160 completed questionnaires were used for data analysis.

Table 4.1 presents the demographic information of the respondents. The age distribution of respondents is as follows: of the 160 respondents, 73 (45.6%) were aged 31 – 35 years, 46 respondents (28.8%) were 30 years and below, 24 (15%) respondents were aged 36-40 years, 8 (5%) and 9 (5.6%) respondents were aged 40-45 years and 46 years and above respectively. The gender distribution of respondents shows that, 69 (43.1%) respondents were male, and 91 (56.9%) were female, reflecting the working population in this sector.

The distribution of respondents based on ethnic group shows that the majority (142, 88.8%) were of Yoruba ethnic origin, followed by Igbo (14,

8.8%), and Hausa (4, 2.5%). Regarding marital status, most respondents (116, 72.5%) were married, while 35 (21.9%) were single, and 9 (5.7%) were divorced. In terms of religion, 84 (52.5%) respondents were Muslim, 73 (45.6%) were Christian, and 3 (1.9%) practiced African Traditional Religion. The majority of respondents (104, 65%) had 1-5 years of work experience, followed by 46 (28.8%) with 6-10 years, 7 (4.4%) with 11-15 years, and 3 (1.9%) with 16-20 years of experience. Regarding daily work hours, 92 (57.5%) respondents spent below 7 hours at work, 55 (34.4%) spent 7-12

hours, and 13 (8.1%) spent 13-18 hours at work daily. The distribution of respondents based on educational level reveals that 111 (69.4%) had completed secondary school education, 26 (16.3%) had diplomas, 16 (10%) had university degrees, and 7 (4.4%) had no formal education. In summary, the majority of respondents were between 31-35 years of age (73%), female (56.9%), of Yoruba ethnicity (88.8%), married (72.5%), and Muslim (52.5%). Most had 1-5 years of experience (65%), worked less than 7 hours daily (57.5%), and had completed secondary education (69.4%).

Table 2: Demographic variables of respondents

Variables	Categories	N	%
Age	30yrs and below	46	28.8
	31-35 years	73	45.6
	36-40 years	24	15.0
	40-45 years	8	5.0
	46 years and above	9	5.6
	Total	160	100.0
Gender	Male	69	43.1
	Female	91	56.9
	Total	159	99.4
Ethnic group	Igbo	14	8.8
	Hausa	4	2.5
	Yoruba	142	88.8
	Total	160	100.0
Marital status	Single	35	21.9
	Married	116	72.5
	Divorced	9	5.7
	Total	160	100.0
Religion	Christianity	73	45.6
	Islam	84	52.5
Years of experience	1-5yrs	104	65.0
	6-10yrs	46	28.8
	11-15yrs	7	4.4
	16-20yrs	3	1.9
	Total	160	100.0
Working hours	below 7 hours	92	57.5
	7-12 hours	55	34.4
	13-18hours	13	8.1
Highest level of education	No formal education	7	4.4
	secondary education	111	69.4
	Diploma	26	16.3
	Graduate	16	10.0
	Total	160	100.0

Research questions 1: What is the level of knowledge of poultry workers on personal protective equipment?

Frequency and simple percentage were initially used to address this research question, with the results presented in Table 3. Subsequently, the data were subjected to parametric analysis using the Pearson product-moment correlation coefficient at a 0.05 level of significance to test for statistical significance, with these results reported in Table 3. For clarity in reporting, those who

demonstrated good knowledge were combined and reported in the column for “correct answer” while those who were not knowledgeable were combined and reported as “wrong answer,” for each of the statements in this sub-scale. As presented in Table 3 over 70% of poultry workers demonstrated knowledge on personal protective equipment and thus, the knowledge of poultry workers on PPE is high and commendable. The study revealed that the respondents' knowledge about PPE is very high (73%)

Table 3: Knowledge of poultry workers on personal protective equipment

Statement	Correct answer	Wrong answer
PPE is a device that protects me from exposure to organic dusts at work	131 (81.9)	29 (18.1)
Mask, gloves, gowns and goggles are types of PPE	142 (88.8)	18 (11.3)
PPE can be used if contaminated with organic dusts	19 (11.9)	141 (88.1)
PPE should be disposed if contaminated with organic dusts	107 (66.9)	53 (33.1)
PPE should be inspected for damage on daily bases	157 (98.1)	3 (1.9)
Discomfort or irritation while wearing PPE should be ignored while working	141 (88.1)	19 (11.9)
Hands should be washed often after touching birds or their environment	118 (73.8)	42 (26.3)
	73%	27%

Research questions 2: Is there availability of personal protective equipment among poultry farmers against organic dusts in Ona-Ara Local Government Area, Ibadan?

Frequency and simple percentage were initially used to address this research question, with the results presented in Table 4. Subsequently, the data were subjected to parametric analysis using the Pearson product-moment correlation coefficient at a 0.05 level of significance to test for statistical significance, with these results reported in Table 4. Table 4 shows that as regards availability of PPE, 56.9% of the respondents strongly agreed that PPE like gowns, gloves, masks are available for use at my workplace while 38.4% reported agreed, 15.6% and 15.6% strongly disagreed. 38.4% of the respondents strongly agreed that PPE items are

accessible to all workers who need them at my workplace, while 37.9% reported agreed, 11.8% and 3.4% strongly disagreed. 13.5% of the respondents strongly agreed that there were sufficient quantities of PPE for workers to use at their workplace while 13.9% agreed, 37.9% disagreed and 35.9% strongly disagreed. 36.7% of the respondents strongly agreed that PPE are given to workers at no cost, 31.6% agreed, 16.5% disagreed and 16% strongly disagree. 31.2% of the respondents reported shortage or lack of PPE in recent times at work, 18.6% agreed, 9.7% disagreed and 8% strongly disagreed. 15.2% of respondents strongly agreed that PPE are properly stored and maintained at my workplace, 8.4% agreed, 43.9% disagreed and 28.3% strongly disagreed. This study revealed that there is availability of PPE (64.5%)

Table 4: Availability of personal protective equipment

Statement	SA	A	D	SD
	F %	F %	F %	F %
PPE like gowns, gloves and masks are readily available for use at my workplace	135 (56.9)	91(38.4)	37 (15.6)	37 (15.6)
PPE items are accessible to all workers who need them at my workplace	91 (38.4)	90 (37.9)	30 (12.7)	28 (11.8)
There are sufficient quantities of PPE for workers to use	32 (13.5)	33 (13.9)	90 (37.9)	85 (35.9)
PPE are given to workers at no cost	87 (36.7)	75 (31.6)	39(16.5)	36 (15.2)
Shortage or lack of PPE in recent times at work	94(39.7)	63(26.6)	42 (17.7)	38(16)
PPE are properly stored and maintained at my workplace	36(15.2)	20(8.4)	104(43.9)	67(28.3)
	33.4%	31.1%	24.1%	20.5
	64.5%		44.6%	

Research questions 3: What is the utilization level of personal protective equipment among the poultry workers against organic dusts?

Frequency and simple percentage analysis were used to address this research question, with results presented in Table 5. The findings show that 29.5% of respondents strongly agreed and 24.9% agreed that PPE should be worn at workplaces, while 6.8% disagreed and 6.3% strongly disagreed. Regarding hand washing before putting on gloves, 28.3% strongly agreed and 11.4% agreed, while 11.4% disagreed and 10.1% strongly disagreed. For egg collection, 18.9% strongly agreed that PPE should be used, while 17.7% and 13.9% disagreed and strongly disagreed respectively. When handling dead birds, 30.4% strongly agreed and 24.5% agreed to use PPE, while 7.6% disagreed and 5.1% strongly disagreed. On PPE misconceptions, 35.0%

strongly agreed and 27.0% agreed that older people do not need to wear PPE at the workplace, while 8.4% disagreed and 2.1% strongly disagreed. Regarding PPE being meant for inexperienced workers, 17.7% strongly agreed and 8% agreed, while 21.5% disagreed and 20.3% strongly disagreed. On comfort issues, 8% strongly agreed and 6.3% agreed that PPE causes constant discomfort, while 31.2% disagreed and 21.9% strongly disagreed. When asked if PPE should be used despite discomfort, 12.6% strongly agreed and 3.4% agreed, while 37.9% disagreed and 13.5% strongly disagreed. On training necessity, 14.6% strongly agreed and 6.8% agreed that training on PPE use and maintenance is not necessary, while 13.5% disagreed and 37.9% strongly disagreed. Overall, the study concluded that the level of PPE utilization among poultry workers is average (53.5%).

Table 5: The utilization level of personal protective equipment

Statements	SA	A	D	SD
	F %	F %	F %	F %
PPE should always be used at workplaces	70(29.5)	59(24.9)	16 (6.8)	15 (6.3)
Hands should be washed before putting on gloves	67 (28.3)	42(17.7)	27 (11.4)	24 (10.1)
PPE should be used when collecting eggs	45 (18.9)	40(16.9)	42 (17.7)	33(13.9)
PPE should be used when handling dead birds	72 (30.4)	58(24.5)	18 (7.6)	12(5.1)
Old people do not need to wear PPE at workplace	83 (35.0)	64(27.0)	8 (3.4)	5(2.1)
PPE is meant for inexperienced workers	42 (17.7)	19(8.0)	51(21.5)	48(20.3)
PPE makes one uncomfortable all the time	19 (8.0)	15(6.3)	74 (31.2)	52(21.9)
PPE should be used despite being uncomfortable	30 (12.6)	8(3.4)	90 (37.9)	32(13.5)
Training on the use and maintenance of PPE is not necessary.	32 (14.6)	16(6.8)	32(13.5)	90 (37.9)
	53.5%		90(37.9%)	

Research questions 4: What are types of personal protective equipment utilized by the poultry workers against organic dusts.

Frequency and simple percentage analysis were initially used to address this research question, with results presented in Table 6. The findings show that 35.9% strongly agreed and 12.7% agreed that gloves and gowns are types of PPE, while 8.9% disagreed and 10.1% strongly disagreed. Regarding foot and eye protection, 7.6% strongly agreed and 18.1% agreed these are types of PPE, while 23.2% disagreed and 18.6% strongly disagreed. On face masks, 37.6% strongly agreed and 21.1%

agreed these are types of PPE, while 4.2% disagreed and 4.6% strongly disagreed. For hats, 20.3% strongly agreed and 35.0% agreed these are types of PPE, while 6.8% disagreed and 5.5% strongly disagreed. Concerning hand sanitizers, 16.9% strongly agreed and 37.1% agreed these are types of PPE, while 8.4% disagreed and 5.1% strongly disagreed. For goggles, 12.7% strongly agreed and 14.3% agreed these are types of PPE, while 32.5% disagreed and 8.0% strongly disagreed. The results revealed that the most identified types of PPE among respondents were face masks, gloves, and gowns.

Table 6: Types of personal protective equipment utilized by the poultry workers

Statement	SA	A	D	SD
	F %	F %	F %	F %
gloves and gowns	85 (35.9)*	30 (12.7)	21 (8.9)	24 (10.1)
foot and eye protection	18 (7.6)	43 (18.1)	55 (23.2)	44 (18.6)
face masks	89 (37.6)*	50 (21.1)	10 (4.2)	11 (4.6)
hard hats	48 (20.3)	16 (6.8)	83 (35.0)	13 (5.5)
Hand sanitizer .	40 (16.9)	88 (37.1)	20 (8.4)	12 (5.1)
Goggle	30 (12.7)	34(14.3)	77 (32.5)	19 (8.0)

Sig.*

Hypothesis 1: There will be no significant relationship between the level of knowledge of the poultry farmers and the utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area.

The independent variable in this hypothesis is the level of knowledge of poultry workers, while

the dependent variable is the utilization of personal protective equipment. Pearson product moment correlation coefficient was used to test this hypothesis at 0.05 level of significance, with results presented in Table 4. The results were statistically significant ($r(158) = 0.439$, $p < 0.05$). The calculated r-value of 0.439 was greater than the critical r-value of 0.095 at 158

degrees of freedom and 0.000 alpha (α) level of significance. Therefore, the null hypothesis, which states that "There will be no significant relationship between the level of knowledge of the poultry workers and the utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area," is rejected, and the alternate hypothesis is retained. According to standard effect size interpretations, where an r-value of ± 0.1 represents a small effect, ± 0.3 represents a medium effect, and ± 0.5 represents a large effect, the obtained correlation coefficient ($r = 0.439$) indicates a medium to large positive relationship between knowledge level and PPE utilization.

The squared correlation (0.439^2), which is a measure of effect size, indicates the proportion of explained variance on the dependent variable. Therefore, 19.3% of the variance in the utilization of personal protective

equipment was accounted for by the level of knowledge of the poultry workers the magnitude of the effect is moderate. The sign of the r-value indicates that the level of knowledge of the poultry workers correlate positively with the utilization of personal protective equipment. Therefore, an increase in the level of knowledge of the poultry workers directly leads to an increase in the utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area. Concisely we can conclude that, the level of knowledge of the poultry workers leads to increase in the utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area. This study revealed that there is a significant relationship between knowledge and utilization of personal protective among the selected poultry workers at Ona-Ara Local Government Area.

Table 7: Pearson Product Moment Correlation between the level of knowledge of the poultry workers and the utilization of personal protective equipment

Variable	N	Mean	SD	r-value	Sig.	R ²
The level of knowledge of poultry	160	3.828	1.812			
				0.439	.000*	0.19
Utilization of personal protective equipment among the selected poultry workers	160	8.216	4.496			

Significant at 0.05 level; df = 158; Critical r-value = 0.098

Hypothesis 2: There will be no significant relationship between the age of respondents and the utilization of protective equipment among the selected poultry workers at Ona-Ara Local Government.

The independent variable in this hypothesis is the level of knowledge of poultry workers, while the dependent variable is the utilization of personal protective equipment. Pearson product moment correlation coefficient was used to test this hypothesis at 0.05 level of significance, with results presented in Table 4. The results were statistically significant ($r(158) = 0.439$, $p < 0.05$). The calculated r-value of 0.439 was greater than the critical r-value of 0.095 at 158 degrees of freedom and

0.000 alpha (α) level of significance. Therefore, the null hypothesis, which states that "There will be no significant relationship between the level of knowledge of the poultry workers and the utilization of personal protective equipment among the selected poultry farmers at Ona-Ara Local Government Area," is rejected, and the alternate hypothesis is retained. According to standard effect size interpretations, where an r-value of ± 0.1 represents a small effect, ± 0.3 represents a medium effect, and ± 0.5 represents a large effect, the obtained correlation coefficient ($r = 0.439$) indicates a medium to large positive relationship between knowledge level and PPE utilization.

The squared correlation (0.682^2), which is a measure of effect size, indicates the proportion of explained variance on the dependent variable. Therefore, 46.5% of the variance in the utilization of personal protective equipment was accounted for by the age of respondents; the magnitude of the effect is high. The sign of the r-value indicates that the age of respondents correlates positively with the utilization of personal protective equipment. Therefore, an increase in the age of respondents directly leads to an increase in the

utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area. Concisely we can conclude that, the age of respondents leads to increase the utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area. This study conclude that there is a significant relationship between age and utilization of personal protective equipment among the selected poultry farmers at Ona-Ara Local Government Area.

Table 8 : Pearson Product Moment Correlation between the age of respondents and the utilization of personal protective equipment

Variable	N	Mean	SD	r-value	Sig.	R ²
The age of respondents	160	16.85	3.291			
				0.682	.000*	0.465
Utilization of personal protective equipment among the selected poultry workers	160	8.216	4.496			

Significant at 0.05 level; df = 158; Critical r-value = 0.098

Hypothesis 3: There will be no significant relationship between the availability of personal protective equipment and the utilization among the poultry workers at Ona-Ara Local Government Area Ibadan.

The independent variable in this hypothesis is level of availability of personal protective equipment while the dependent variable is the utilization of personal protective equipment. Pearson product moment correlation coefficient was used to test this hypothesis at 0.05 level of significance, with results presented in Table 4. The results were statistically significant ($r(158) = 0.258$, $p < 0.05$). The calculated r-value of 0.258 was greater than the critical r-value of 0.095 at 158 degrees of freedom and 0.000 alpha (α) level of significance. Therefore, the null hypothesis, which states that "there will be no significant relationship between the availability of

personal protective equipment and the utilization of personal protective equipment among the selected poultry farmers at Ona-Ara Local Government Area," is rejected, and the alternate hypothesis is retained. According to standard effect size interpretations, where an r-value of ± 0.1 represents a small effect, ± 0.3 represents a medium effect, and ± 0.5 represents a large effect, the obtained correlation coefficient ($r = 0.258$) indicates a small to medium positive relationship. The squared correlation ($r^2 = 0.066$) indicates that 6.6% of the variance in PPE utilization was accounted for by PPE availability, suggesting a moderate effect. The positive r-value indicates that PPE availability correlates positively with PPE utilization, meaning that increased availability of personal protective equipment is associated with increased utilization among the selected poultry workers at Ona-Ara Local Government Area.

DISCUSSION OF FINDINGS

This study examined the utilization of PPE among the poultry workers in Ona-Ara Local Government Area. The demographic characteristic of this study reveals that majority of the respondents are within the ages of 31 to 35 years and are from Yoruba ethnic. Further findings revealed that majority of the respondents are married and Islam by religion and years of their experience on the job is between 1 and 5 years. Also, majority of the respondents work below 7 hours per day and the highest level of education is secondary school.

What is the level of knowledge of poultry workers on personal protective equipment?

The study revealed that respondents' knowledge about PPE is very high. This finding aligns with Jameson (2018), who observed high levels of PPE knowledge among poultry workers. Similarly, Warren (2016) reported that respondents were knowledgeable about various types of PPE, including gowns, masks, boots, hard hats, goggles, gloves, and respirators. The findings are also consistent with Das et al. (2015), who found that respondents in Dhaka demonstrated good knowledge of PPE and could identify different types of protective equipment.

Is there availability of personal protective equipment among poultry workers against organic dusts in Ona-Ara Local Government Area, Ibadan?

This study revealed that there is availability of PPE this is in line with Kim *et al* (2015) who observed that frequently used types of personal protective equipments are purchased everyday as available on the market for his respondent's personal protection. This study is consistent with Kim *et al* (2015) who revealed the availability of *personal* protective equipment among workers in their study.

What is the utilization level of personal protective equipment among the poultry workers against organic dusts?

The study revealed that the level of PPE utilization among poultry workers is average. This finding aligns with Akinbobola et al. (2017), who observed similar average rates of PPE usage among workers. Their study emphasized the potential transmission routes of infections to humans, highlighting the need for measures to encourage PPE use among poultry workers across different specialties in Nigeria. Similarly, Guan et al. (2019) reported high PPE utilization rates among workers in Malaysian workplaces. The findings also correspond with Odo et al. (2017), who found that workers in direct contact with animals and flock owners in Thailand regularly used masks and gloves during poultry farming activities. However, these findings contrast with Kim et al. (2015), who noted poor utilization of protective equipment during poultry work.

What are types of personal protective equipment utilized by the poultry workers against organic dusts?

The result of this study observed that the types of PPE utilized by the poultry workers are gloves and gowns and face masks. This is in line with CDC (2020) which revealed frequently used type of protective equipment mask, gloves, gowns, helmets, boots and goggles. This study is in agreement with Guan *et al* (2019) where their respondents in Malaysia who consistently wore PPE (gowns, masks, gloves) This study support Kim *et al* (2015) who indicate that the most frequently used type of protective equipment were boots, mask, gloves, gowns, helmets and goggles.

Hypotheses 1

This study demonstrates a significant relationship between poultry workers' level of knowledge and their utilization of personal protective equipment among the selected

workers at Ona-Ara Local Government Area. The findings indicate that increased knowledge leads to higher utilization of personal protective equipment among the studied population. This finding aligns with Das et al. (2015), who found a significant association between education and PPE knowledge, noting that literate respondents demonstrated better understanding of personal protective equipment.

Hypothesis 2

This study indicates that there is a significant relationship between the age of respondents and the utilization of protective equipment among the selected poultry workers at Ona-Ara Local Government. Concisely the writer can conclude that, the age of respondents leads to increase the utilization of personal protective equipment among the selected poultry workers at Ona-Ara Local Government Area. This is in line with Patel (2019) who revealed that younger respondents may be more familiar with modern technologies and education level affecting PPE knowledge and utilization.

Hypothesis 3

The study demonstrates a significant relationship between PPE availability and utilization among poultry workers at Ona-Ara Local Government Area, Ibadan. Results indicate that increased availability of personal protective equipment leads to higher utilization rates among the selected poultry workers. This finding corresponds with the Centers for Disease Control and Prevention (2020) report, which revealed high percentages of PPE availability and its positive impact on utilization.

CONCLUSION

This study examined the level of utilization of PPE among the poultry workers at Ona-Ara local government area in Ibadan. Level of knowledge of the poultry farmers on PPE, availability of PPE, common types of PPE used by the poultry workers were also examined.

There was reportedly high knowledge of PPE with average utilization of PPE among the selected poultry workers in the local Government area. The socio-demographic characteristics of the respondents such as age, education and years of experiences played significant role towards the rational use of PPE. This study showed that about average of the poultry workers make use of PPE. Future research should therefore focus on educating the poultry workers on improvement of utilization of PPE at work in prevention of infection and injury.

RECOMMENDATIONS

In view of the findings of the study, the following recommendations might be considered: The attitude and practices toward the use of PPE by the poultry workers should be improved through good governance, and motivational training.; Provision of adequate PPE supplies to the poultries and launch public awareness campaigns on importance and proper use of PPE.

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