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AN ASSESSMENT OF KNOWLEDGE OF FARMING-RELATED HAZARDS AND PRECAUTIONARY PRACTICES OF FARMERS IN KWARA STATE, NIGERIA

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ABSTRACT

This study assessed knowledge of farming-related hazards and precautionary practices of farmers in Kwara State, Nigeria. A total of 160 respondents were selected using a multi-stage random sampling technique. The statistical techniques used for analysis were frequency count, percentages, Pearson Product Moment correlation (PPMC) and Kruskal wallis ranking. The results show common agricultural production to include maize, yam and cassava. Results also revealed that general body pain (mean=1213.24), poor/careless use of farm tools (mean=119.41), sickness/ill health (mean=1193.01), inhaling of dusts from the air (mean=1122.65) and long distance trekking to farm (mean=1114.08) were the top known hazards among farmers in the study area. Field coat/overall (mean=701.69) ranked 1st, rubber boot/old canvas (mean=692.28) ranked 2nd, use of gloves (mean=646.76) ranked 3rd were the common protective equipment used by farmers in the study area. Other precautionary practices such making of environment clean of debris and sharp objects and cutting of trees/sticks deep into roots to prevent pointed and sharp edges were indicated by 100% of the respondents. Findings further revealed that major constraints to use of protective equipments include; not aware of it importance (80.0%), not convenience while working (62.5%), I was not trained (58.8%). The Pearson Product Moment Correlation analysis showed that precautionary practices such as field coat/ overall, cap/Hat, nose mask and eye goggle were statistically significant to farmers knowledge of farming-related hazards. The study therefore recommends the need for education and training of farmers and farm workers to increase their knowledge and practices of farm related occupational hazards in the study area.

Keywords: knowledge, precautionary practices, farmers, Kwara state.

INTRODUCTION

Millions of Nigerian who live in the rural areas of the country feed and earn their income from farming and farm-related activities. Most of the farmers still practice small scale farming with the use of crude implements to carry out their farming activities. Studies had revealed that rural farmers in Nigeria are exposed to occupational hazards (Idio and Adejare, 2013; Adedeji et al. 2011; Olowogbon 2011). In fact, some modern agricultural practices such as pesticide poses threat to health of farmers when inappropriately handled (Ajayi and Akinnifesi, 2007).

Several literature have found link between farmers' health and their efficiency. Egbetokun et al. (2012) study on impact of health on agricultural technical efficiency in Nigeria, found that one percent improvement in the health condition of the farmers will increase efficiency by 21 percent. Similarly, Hawks and Ruel (2006) noted that in agricultural communities, poor health of farmers reduces their income, efficiency, and productivity. Donald (2006) opined that health capital is affected by a number of preventable diseases such as malaria fever, HIV/AIDS, farm injuries, cholera fever, schistosomiasis, diarrhoea, respiratory diseases and skin disorders.

Knowledge is a social construct (Freire, 2011). Knowledge process was developed by Nonaka and Takenuchi in 1995 that data develops into information and information develops into knowledge and this develops into wisdom. The acquisition of knowledge begins with the process of receiving or acquiring new information. This is usually done through visual, aural, and tactile signals that a person receives through his or her senses. One of the primary components of knowledge acquisition is that people are born without knowledge and that it is gained during a person's lifetime (Wiesen, 2013). Similarly, knowledge of farming-related hazards is expected to be acquired from farming experience (Adesoji and Kerere, 2013). Adesoji and Kerere, (2013) further reshape the process to add that experience is also very important in this process since it plays a vital role in the transformation of data to wisdom. When knowledge is put into practice it develops into experience and experience matures into wisdom.

Data ⟶ Information ⟶ Knowledge + practice ⟶ Experience ⟶ Wisdom

When farmers are faced with health threatening illness/symptoms, accessibility of health care facilities could play a critical role to fight the menace. Studies have indicated effects of condition of health care accessibility among farmers. Killen (2005) indicates that rural farmers in Nigeria incur heavy losses due to poor health through expensive healthcare fees and the menace of fake drugs. (Adesiji et al. 2012) found that far distance from provider, bad road status, high cost of transportation, low source of information and high rate of gender bias (male domination) constituted problems faced by rural farmers in accessing health centers facilities. Badilescu-Biga (2013) identified that knowledge gap is a key element in adoption of innovation; while adoption is defined as a five mental process all prospective customers go through from learning to acceptance or rejection of a new product.

Despite the growing literature of good health of farmers' as one of the determinants to sustainability of agricultural production and improved productivity, studies have differently established that farmers in Nigeria do not adhere to methods on the use of pesticides, hence expose themselves to environmental hazards (Lawal *et al.,* 2005 and Ogunjimi and Farinde, 2012). Holding to the fact that agriculture is fundamental to good health while good health plays an important role in

agricultural production; in term of quality labour (Hawks and Ruel (2006) prompted this study to assess the knowledge level of farm-related health hazards and precautionary practices. The main objective of the study was to assess the knowledge of farm-related hazards and precautionary practices of farmers in Kwara State, Nigeria. The specific objectives of the study are to; (i) describe the knowledge level of farm-related hazards among farmers, (ii) examine protective equipment and other precautionary practices used by farmers, and (iii) identify constraints to effective use of protective equipment among farmers.

METHODOLOGY

The study was conducted in Kwara State in the North-Central zone of Nigeria. The capital of the state is Ilorin, which lies 306 km northeast Lagos and 500 km southwest of Abuja. Kwara State is bounded in the north by Niger state, in the south by Osun State, in the east by Kogi State and in the west by Oyo state and has an international boundary with Benin Republic. There are sixteen Local Governments Areas (LGAs) in the state namely Asa, Baruten, Edu, Ekiti, Ifelodun, Ilorin-East, Ilorin-West, Irepodun, Isin, Kaima, Moro, Offa, Oke-Ero, Oyun and Patigi.

The population of the study comprised of all farmers in Kwara State. A two stage random sampling was adopted for this study. Stage I involved a random selection of sixteen communities, one from each of the sixteen LGAs in Kwara State. The selected communities were Malete, Alapa, Fufu, Eegbejila, Oke-oyi, Aiyedun, Osi, Oko, Omupo, Edidi, Offa, Ipe, Lafiaji, Kpada, Kaima, and Okuta. Stage II involved a random selection of 10 farmers from each of the communities selected. A total of one hundred and sixty (160) respondents were selected as sample size for the study.

Primary data used for this study was collected with the aid of structured interview schedule within the period of March 2010 to April 2010. The questions were structured in a manner that presented respondents with fixed responses alternatives and divided into sections each attempting to obtain information on the objectives of the study from respondents. This was done to ensure focussed, relevant and easy to code responses that aided analysis of results. A total of 160 interview schedules were administered in the period of six weeks. The interview was done personally by the researchers with the assistance of trained individuals across the 16 LGAs of the state.

Knowledge of farmers on farm-related hazards were measured with the use of 3 point likert-type scale as highly knowledge =4, Moderate knowledge =3, Low knowledge =2, No knowledge =1.

Descriptive statistical tools used were; frequency count, percentage, and range and Kruskal-Wallis one-way Analysis of variance (ANOVA) by ranks. Pearson Product Moment Correlation (PPMC) was used to test for hypothesis stated above. The computation formula, r is given as:

RESULTS AND DISCUSSION

Farmers Knowledge of farm-related Hazard

Table 1 indicates that majority (54.1%) of the respondents acknowledged with strong agreement that snakes, rodents and insect's bites can cause serious injury to farmers and livestock, although a handful percentage 5.0% disagree with the statement. Also, higher percentage (68.8%) strongly agreed that falling down from tree can put an end to farming activities. About 83.8% of the respondents strongly agreed that general body pain can force farmers to take days off from farm. Little below average (49.4%) strongly agreed and agreed respectively that poor/careless handling of agrochemicals can leads to skin rashes while only 0.6% disagreed. Majority (74.8%) of the respondents strongly agreed as the remaining 25.2% also agreed that long distant trekking to farm can affect farmers working capacity 25.2% agreed. More than half (54.1%) strongly agreed that wearing of boot can prevent cuts. About half (50.0%) of the respondents strongly agreed that poor hygiene by farmers by eating with infected hands can results in ill health. Majority (82.4%) also acknowledge with strong agreement that poor /careless use of farm tools can results to injuries as 17.6% agreed to the statement. Most (81.3%) of the respondents acknowledge with strong agreement that sickness/ill health may result to death or delay farmers' involvement in farming activities with only 0.6% disagreeing with the statement.

Results of Kruskal-Wallis ranking in table 1 showed that general body pain was ranked first, followed by poor/careless use of farm tool 2nd, sickness/ill health 3rd, inhaling of dust from air 4th, long distance trekking to farm 5th, falling down from tree 6th, wearing boot to prevent cut 7th, snake and insect bites 8th, poor hygiene when eating 9th, and poor handling of agrochemical 10th. The chi square (X^2) was 135.841 and statistically significant at 1%

level implying that the respondents' knowledge of farm hazards were significant ones and statistically different from one another.

Protective Equipment and Other practices used by Respondents

Frequency distribution of protective equipment used by respondents in table 2 revealed that field coat/overall was ranked first, rubber boot/old canvas (2^{nd}), gloves (3^{rd}), cap/hat (4^{th}), rain coat (5^{th}), Nose mask (6^{th}), and Eye goggles (7^{th}). The poor use of goggles may be attributed to inconvenience of use by respondents. The chi square (x^2) was 497.95 and statistically significant at 1% level implying that the safety equipment used were significant methods and statistically different from one another.

Results illustrated in table 3 shows that making of environment clean of debris, sharp objects, cutting of trees/sticks deep into roots to prevent pointed and sharp edges were indicated by all (100%). Similar findings of highest adopted environmental preventive measures were hygiene practices on the farm and use of disease resistant varieties was reported by Famuyiwa, *et al.,* (2014). Other precautionary practices by majority include; making of fire place around the farm to prevent fire accident (98.7%), pruning of pointed branches of trees during farm operation (97.5%), making of signs to indicate where traps are (96.9%), burning of insect and birds nest to prevent insect stings and spread of diseases (96.9%). Results presented in table 4 revealed that major constraints to use of protective equipments include; not aware of it importance (80.0%), not convenience while working (62.5%), I was not trained (58.8%).

Hypothesis of the study: there is no significant relationship between farmers' knowledge of occupational hazards and the precautionary measure adopted.

The correlation analysis presented in table 5 shows that precautionary measures ruber boot/ canvas, gloves, rain coat, eye goggles were statistically not significant to knowledge of farmers of farming-related hazards. These results is similar to the findings of Badcock-walter (2004) who claimed that knowledge does not equal to change and Uwagboe (2010) who in a study discovered that farmers who were trained on Integrated Pests Management (IPM) did not adhere to the practice.

Only precautionary measures such as field coat/overall (0.172*) and nose mask (0.165*) were statistically significant at 5% level of significant with farmers' knowledge on occupational hazards. The relationship were positive which implies that increase in farmers knowledge on occupational hazards will increases the use of field coat/overall and Nose mask by respondents. Table 5 further showed that Cap/Hat (0.243**) was statistically significant at 1% level of significant with farmers' knowledge on farm hazards.

Table 1: Famers' knowledge on farming hazards

Farming –related hazards	High knowledge (%)	Moderate knowledge (%)	Low knowledge (%)	No knowledge (%)	Kruskal-Wallis mean	Rank
Falling down from tree	68.8	25.0	0.0	5.0	1038.94	6
Snake and insects bites	54.1	45.9	0.0	0.0	911.58	8
General body pain	83.8	16.3	0.0	0.0	1213.24	1
Poor handling of agrochemicals	49.4	49.4	0.6	0.6	859.44	10
Wearing boot can prevent cuts	54.1	41.5	0.6	3.8	999.08	7
Poor hygiene when eating	50.0	43.8	4.4	1.9	896.50	9
Inhaling of dusts from the air	74.8	25.2	0.0	0.0	1122.65	4
Long distance trekking to farm	74.2	25.2	0.0	1.3	1114.08	5
Poor/careless use of farm tools	82.4	17.6	0.0	0.0	1199.41	2
Sickness/ill health	81.3	18.2	0.0	0.6	1193.01	3
Chi-square value			135.841			
Df			12			
Asymp. Sig.			0.001			

Note: 1 – 10, implies lowest to highest rank

Table 2: Protective Equipment used by Respondents

Use Protective Equipment by farmers	*Kruskal-Wallis mean score*	*Rank*
Field coat/overall	701.69	1
Gloves	646.76	3
Rubber boot/old canvas	692.28	2
Rain coat	631.00	5
Cap/ hat	645.62	4
Nose mask	418.52	6
Eye goggles	178.87	7
Chi-square (X^2)	497.95	
D.f	6	
Asymp. Sig.	0.001	

Note: 1 – 7 implies highest to lowest rank

Table 3: Precautionary measures activities used by Respondents

Precautionary measures	*Frequency*	*Percentage*
Making of environment clean of debris and sharp objects	160	100.0
The use of herbs to prevents ailment such as malaria/fever	133	83.1
The use of oracles or sacrifices for protection	3	1.9
Pruning of pointed branches of trees during farm operation	156	97.5
Burning of insect and birds nest to prevent insect stings and spread of diseases	155	96.9
Making of fire place around the farm to prevent fire accident	158	98.7
Cutting pointed and sharp edges trees	160	100.0
Making of signs to indicate where traps are	145	96.9
The use of first aid in the farm site	33	20.6
The use of herbs to treat injury	121	75.6
Destruction of agro-chemical container after use	120	75.0
Storage of agro-chemicals in special store outside the house	118	73.8
Washing of hands with soap before eating	139	86.9
Wearing of protective clothing or gadgets	106	66.3
Do not see the need	1	0.6

Table 4: Perceived constraints to use of protective wear

Constraints	*Frequency*	*Percentage*
They are too expensive	54	33.8
Not convenience while working	100	62.5
Not easily available	48	31.0
I was not trained	94	58.8
Not aware of it importance	128	80.0
Our culture did not support it	5	3.1

Table 5: Correlation estimate of relationship between farmers' knowledge and precautionary measures adopted by respondents

Precautionary measures	*Correlation coefficient*	*Probability*	*Decision*
Field coat/ overall	0.172(*)	0.030	Significant
Ruber boot/ canvas	0.014	0.863	Not significant
Gloves	0.036	0.649	Not significant
Rain coat	0.077	0.332	Not significant
Cap/Hat	0.243(**)	0.002	Significant
Nose mask	0.165(*)	0.037	Significant
Eye goggle	0.002	0.981	Not significant

*Correlation is significant at the 0.05level (2-tailed)

**Correlation is significant at the 0.01level (2-tailed)

CONCLUSION AND RECOMMENDATION

In conclusion, the study shows that general body pain, poor/careless use of farm tools, sickness/ill health and inhaling of dusts from the air were the common known hazards among farmers in the study area. Findings also revealed that field coat/overall, gloves, ruber boot/old canvas were common preventive equipment used by

respondents. Major precautionary practices by majority include: making of environment clean of debris, sharp objects, cutting of trees/sticks deep into roots to prevent pointed and sharp edges, making of fire place around the farm to prevent fire accident, pruning of pointed branches of trees during farm operation, making of signs to indicate where traps are, burning of insect and birds nest to prevent insect stings and spread of diseases. Major constraints to use of protective equipments include; not aware of it importance, not convenience while working, I was not trained. The study therefore recommends the need for education and training of farmers and farm workers to increase their knowledge and practices of farm related occupational hazards in the study area.

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