HEALTH STATUS OF RURAL WOMEN AGRO-FOOD PROCESSORS IN ODOGBOLU LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

Aminu, F. O. [1*], Balogun, E.O.S.[1] and Falola, O. A. [2]

[1]Department of Agricultural Technology, School of Technology, Yaba College of Technology, Epe Campus, P. M. B. 2011, Yaba, Lagos State, Nigeria

[2]Department of Agricultural Science, College of Vocational and Technology Education, Tai Solarin University of Education, P. M. B. 2118, Ijagun, Ogun State, Nigeria.
folaafe02@gmail.com 08036027236

ABSTRACT

Health promotes efficiency in production since it has direct effect on the producers, hence poor health impairs agricultural system. Poor health could lead to decreased working days, worker's capacity, ability to explore diverse innovation and farming practices. This study was therefore carried out to assess the health status of rural women agro-food processors in Odogbolu Local Government Area, Ogun state, Nigeria. A survey research method was employed for the study and primary data were collected from one hundred and twenty respondents (120) through the use of a interview scheduled using multistage sampling techniques. Descriptive statistics and logit regression model were used for the study analysis. The results of the study revealed that most (83.5%) of the women were involved in more than one processing activities in the study area. A vast majority (91.67%) of the respondents experienced back pain while 87.5 percent reported headache as their common health problem. The result also revealed that self-medication was the highest mode of treatment due to distance to health facility centres. Findings from the logit regression analysis revealed that age ($p<0.05$), *education ($p<0.05$), time spent ($p<0.01$), training ($p<0.01$) and wearing of protective garments ($p<0.01$) were the significant determinants of health status of the women processors* in the study area. *The study therefore concluded and recommended that women agro-food processors should be trained to become aware of the implication of processing activities on their health. There is need for government to make health care affordable and be within the reach of the farming community.*

Keywords: Agro-food, health, women, processors, rural

INTRODUCTION

The process of agricultural production and the output it generates can contribute to both good and poor health among the producers as well as the entire society. Being an agricultural producer is a determinant of health relative to income and labour (Corinna and Ruel, 2006). The importance of health as a form of human capital cannot be under estimated. Good health and productive agriculture are important in the economy of any nation especially in the fight against poverty. Health enhances work effectiveness and the productivity of an individual through increase in physical and mental capacities. Health affects agricultural system by affecting the health of the producers. Poor health will result in loss of work days or decrease worker's capacity, decrease

innovation ability and ability to explore diverse farming practices and by such makes farmers to capitalize on farm specific knowledge (Ajani and Ugwu, 2008).

Women around the world are important workforce in many countries and among the key players in agricultural production. Besides playing the role as housewives i.e., they are responsible for cooking, cleaning, sewing, mending, child-bearing and child-caring and other household chores; women also contribute to the household income. An estimated 50% of agricultural workforce comprise of female farmers, this number is even higher in developing countries (61%) and least developed countries (79%) (Begum and Yasmeen, 2011). Women in rural areas participate in different crop production and food processing operation as well as animal husbandry and dairy activities along with burden of household work and management. For example, in cassava processing, women carry out special tasks such as peeling, washing, soaking/fermenting, sieving, frying and drying while the men carry out other hard jobs they considered too laborious for women such as grating, dewatering/pressing, bagging, and storing (Sabo, 2006). According to Adekoya *et al.* (2000) and Nik and Nik (2015), women in the riverine areas, help their husbands returning from the sea to unload, sort, degut, and net mending. The women in that area also assist the men in processing, distributing and marketing of fishes. Thy also carry out different activities, either they use hand/feet or some age old tradition tools to carry out the work which does not suit their ergonomic character and these are always done in very arduous field condition. As a result, output is lower due to many health problems leading to low wages (UNDP, 2014).

Studies have shown that majority of women in developing countries lives in rural areas where traditional agriculture is prominent and social conditions dictate that they should marry young and have large families. These conditions coupled with limited opportunities for education and lack of access to health services are harmful to women's health (ref). Apart from diseases associated with their work, women have some peculiar problems that are associated with their sex and some cultural activities that have negative effect on their health (ref). Studies by Greenlen, *et al.* (2003) reported that agricultural occupations or exposure to pesticides may impair female fertility. Taking into consideration the need to achieve food sufficiency, if the health status of women are not checked, it can become a set back to their productivity. Rural women are key agents for development, they play a catalytic role towards achievement of transformational economic, environmental and social changes required for sustainable development. Due to these and many others, there is a need for research into the influence of agro-food processing activities on the health status of women. Consequently, the study addressed the following objectives;

i. identify the agro-food processing activities practised by the women in the study area;
ii. identify health problems and Health Management Techniques of the women agro-food processors in the study area;

iii. determine the factors influencing the health status of the women processors;
iv. describe the coping strategies adopted by the women agro-food processors during ill health.

METHODOLOGY

Study Area

The study area is Odogbolu Local Government Area of Ogun state, Nigeria. It was created on the 21st September, 1991 with its headquarters at Odogbolu. It shares boundaries on its Northern fringes with Ijebu-North Local Government Area, in the East with Ijebu-Ode Local Government Area, in the west with Ikenne Local Government Area and in the South with Epe Local Government Area in Lagos State. The LGA is located at latitude 65°0' N and longitude 34°6'E in the North-western part of the state. The Local Government comprises 15 wards. The area occupies a land mass of 541 km² and a population of 12,123 (NPC, 2006). It consists of tropical rain forest and a small stretch of derived savannah. The people in this area are mainly agrarian, engaged in farming, hunting, fishing, agro-food processing, lumbering and handicraft. Most of the inhabitants are involved in agriculture although a great percentage of them have other occupations. Some of the food crops grown around the area are yam, cassava, maize, rice and vegetables, most of which come from the major agricultural areas in the LGA.

Sampling Procedure

Odogbolu Local Government Area of Ogun State was chosen because of its location in the rainforest region and the availability of food crop farmers and processors. Also, studies on food crop farmers in the study area especially as regards issues focusing on agro-food processing are scarce in the literature; an attempt to fill this void provides a basis for Odogbolu as the study area. The study was a cross-sectional survey using structured interview guides for Focus Group Discussion and questionnaires for individual farming households. A total of 120 women agro-food processors were selected in a multistage random sampling technique. In the first stage, 10 wards were randomly selected using ballot system from the 15 wards in the Local Government. In the second stage, a community per ward was randomly selected. In the final stage, 12 women agro-food processors were randomly selected for interview to culminate into the 120 total samples used for the study. Data on socio-economic characteristics of the women, agro-food processors, their entrepreneurial activities, health status, health management techniques and coping strategies were collected.

Data Analysis Techniques

Descriptive statistics such as mean, frequency, percentage and charts were employed to describe the socio-economic characteristics of the rural women agro-food processors. their entrepreneurial activities, health problems, health management techniques and coping strategies adopted by the respondents in times of ill health.

Logit Regression Model was used to determine the socio-economic factors influencing the health status of the women processors in the study area. The logit model postulates that the probability (P_i) that an individual will fall sick is a function of an index Z_i.

Z_i is also the inverse of the standard logistic cumulative function of P_i

i.e., $P_i [y = 1] = f[Z_i]$

The probability of a woman falling sick is given by:

$$P_i [y = 1] = \frac{1}{1+e^{zi}}$$

The probability of been healthy is given by:

$Q_i [y=0] = 1 – P_i [y = 1]$

Since,

$$I = P_i [y = 1] = \frac{1}{1 + e^{zi}}$$

$$e^{zi} = \frac{P_i [y = 1]}{1 – P_i[y = 1]}$$

The dependent variable (y_i) is a dummy. It takes the value of 1 if the individual falls sick and 0 if otherwise. Because the dependent variable is binary, the Ordinary Least Square (OLS) techniques is inappropriate (Scott *et al.*, 1977), hence the use of the logistic regression in which the probability of falling sick (P_i) by an individual is calculated from its Z_i values.

$Z_i = b_o + b_1x_1 + b_2x_2 + b_3x_3 + \ldots\ldots\ldots + b_nx_n$

Where:

b_0 = constant

X_1 = Age of processors (years)

X_2 = Educational level (years)

X_3 = Household size (No of people)

X_4 = Processors experience (years)

X_5 = Time spent working/day (hours)

X_6 = Undergone training (dummy)

X_7 = Primary occupation (dummy)

X_8 = Wear Personal Protective Equipment (PPE) (dummy)

μ = Error term

RESULTS AND DISCUSSION

Agro-Food Processing Activities Practised by the Women

Figure 1 shows the various agro-food processing activities practised by the women in the study area. The result revealed that most (83.5%) of the women were involved in more than one processing activity in the study area. The prominent ones were garri processing (54.17%), fufu/laafun making (34.31%) and palm oil processing (40%). These are identified products whose raw materials were mostly produced in the study area. The findings agree with Onyeneke (2015) who opined that these products were essential output of the agricultural sector, which are available in the locality signifying that entrepreneurial development provide ready markets and incentive for continuous value addition of these agricultural products. Other entrepreneurial activity of the sampled women agro-food processors were moi-moi making (10%), beans cake frying (22.5%), plantain chips (10.83%), potato chips (9.17%) and wara (cow milk) processing (8.33%).

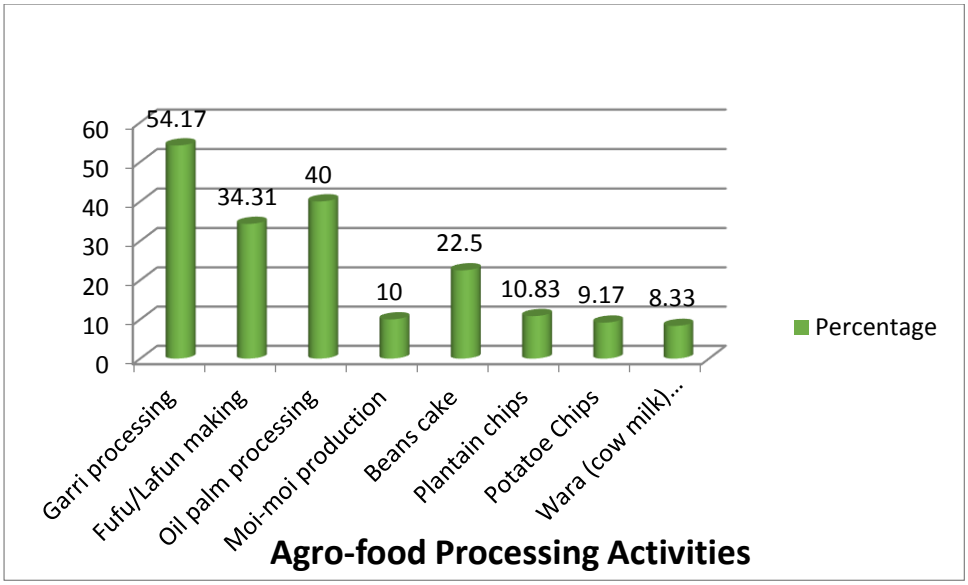

Figure 1: Agro-food processing activities practised by women in the study area

Health Problems of the Women Agro-food Processors in the Study Area

Table 1 presents the various health problems the women encountered as a result of their involvement in agro-food processing activities. The result showed that the prominent health problems were back pains experienced by 91.67 percent of the respondents, headache (87.5%), physical injuries such as cuts, burns, bruise, fracture etc. (84.17%), malaria (79.16%), dermatitis (71.67%), cough (65%) and diarrhoea (60%). Other health problems included rheumatism (55.83%), eye infections (55%), blood pressure related problems (34%) and asthma (17.5%) while the reproductive health problems encountered by the women were miscarriage (15%) and still birth (5%). This finding is in line with Anga and Anga (2015) who reported in a similar study in Cross River State that, women complained of regular body pain, 97% suffered from malaria and headache while 91% and 45% suffered from fever and other related health problems respectively. The finding is also in consonance with International Food Policy Research Institutes (IFPRI, 2006), that the higher incidences of skeletal muscular and postural health problems such as joint pains, back pains are perhaps indicative of work-related health hazards.

Table 1: Common Health Problems of the Women Processors ***N = 120***

Health Problems	Frequency	Percentage
Dermatitis	86	71.67
Headache	105	87.5
Asthma	21	17.5
Physical injuries	101	84.17
Miscarriage	18	15
Still birth	6	5
Back pains	110	91.67
Malaria	95	79.16
Blood pressure problems	42	34
Eye infections	66	55
Cough	78	65
Rheumatism	67	55.83
Diarrhoea	72	60

Source: Field Survey, 2017 *** Multiple Responses**

Health Management Techniques (HMT) Adopted by the Women Processors

Table 2 presents information on the choice of Health Management Techniques. It shows that the main treatment sources were: self-medication, herbal and clinic/hospitals. About 37.5% of the sampled women used home-based care of self-medication, 20.8% used traditional means of herbal medicine, 18.3% used the modern health facilities of hospitals and health centres/clinics and 19.2% combined drugs and herbs for their treatments while 4.2% did nothing at all. This suggests that self-medication is still the highest mode of treatment among sampled women and this may be informed by the affordability of the treatment types. The women gave the reasons for low patronage of government clinics/hospital as the distance to these facilities and the time consuming bureaucracy involved before a patient can be attended to by doctors. This finding confirms those of Ekong and Olowu (2002) and Angba and Angba (2015) that sustaining women's participation in health-related projects is difficult largely because their primary concern is the welfare and nourishment of their children and their husband, they give high priority to income generating activities.

Table 2: Health Management Techniques (HMT) Adopted by the Women Processors

Choice of HMT	Frequency	Percentage
Do Nothing	5	4.2
Self-medication	45	37.5
Used herbs	25	20.8
Visited clinics/hospital	22	18.3
Used both herbs and drugs	23	19.2

Source: Field Survey, 2017

Factors influencing the health status of the women processors

Table 3 shows that the significant determinants of health status of the women processors were age ($p<0.05$), education ($p<0.05$), time spent ($p<0.01$), training ($p<0.01$) and wearing of protective garments ($p<0.01$). The age of the women processors was found to have a positive significant relationship with the probability of falling sick at 5% alpha level. This implies that the older women processors were prone to illness than the younger ones. A year increase in the age of the women will increase the probability of falling sick by 21.9%. This finding agrees with Ayinde *et al*, (2015) that the body's immune system becomes weak with age. Also found positive was the time the women processors spent working per day. An hour increase in the time spent working by the women will increase their probability of falling sick by 26.4 percent.

The educational level of the women processors was found to have an inverse significant relationship with the probability of falling sick. This implies that the lower the level of education of the women processors, the higher the probability of falling sick. The result on Table 3 also revealed that training of the women processors had a negative significant relationship with the probability of falling sick. This implies that women processors who did not undergo any training are more likely to fall sick than their trained counterparts.

The wearing of protective garments also had a negative significant relationship. This implies that the probability of falling sick increases with women not wearing personal protective garments. This finding is in consonance with those of Osewa *et al.* (2013) and Aminu *et al.*, (2016) that lack of protective garment exposes farm workers to eye irritation, dermatitis, respiratory disorder and stomach upset, chemical and pesticide poisoning, cough, snake bites, etc. As shown in Table 3, the log likelihood value of the model is -45.383. The chi-square value of 73.979 is statistically significant at 1% level. This shows the overall goodness of fit of the model. It also implies that the explanatory variables are collectively significant in explaining the determinants of health status of the women processors in the study area.

Table 3: Logit regression showing the factors influencing the health status of the women processors

Variable	Coefficient	S.E.	T-ratio	Marginal effects
Constant	-3.468	2.131	-2.972	-0.813
Age	0.542**	0.121	2.316	0.219
Education	-0.354**	1.092	-2.223	-0.219
Household size	0.008	0.015	1.389	0.018
Experience	0.623	2.601	0.276	0.078
Time spent working	4.812***	1.463	3.725	0.264
Training	-0.076***	0.021	-2.742	-0.584
Occupation	0.435	0.265	0.931	0.083
PPE	-1.562***	0.356	-4.837	-0.549
Log likelihood function: -45.383				
Chi-square:	73.979***			

Source: Field Survey, 2017 ***** ***Sig. at 1%, **Sig. at 5%.***

Coping strategies adopted by the women processors during illness

The respondents employed various coping strategies to cope with the adverse effect of illness during their processing activities. Table 4 showed that 8.33% of the women agro-food processors coped by hiring labour, 45% coped by using family labour, 20% of the sampled women spent part of their savings during illness. They thus preferred to delay processing activities until they recover because of distrust of labourers whom they could have hired as alternative coping strategy. While 26.67% of the women preferred to collect advance payment from their intending customers with a promise to sell their products to them after recuperating. This finding agrees with Aminu and Ayinde (2014) that intra-household labour substitution was the most adopted coping strategy among fisher folks' household in Lagos State.

Table 4: Coping strategies adopted by the women processors during illness

Coping Strategy	Frequency	Percentage
Hired labour	10	8.33
Use family labour	54	45
Use savings	24	20
Collect advance payment from customers	32	26.67

Source: Field Survey, 2017

CONCLUSION AND RECOMMENDATIONS

The study concluded that the rural women agro-food processors in the study area encountered a lot of work related health problems and resulted to self-medication as their most common mode of treatment. Among their major health problems were back pains, headache, physical injuries, malaria, dermatitis, cough and diarrhoea. Based on the findings of the study, it is recommended that, women agro-food processors should be trained to become aware of the implication of processing activities on their health, how to operate modern processing equipment and handle by-products from cassava and palm fruits processing as well as the importance of wearing personal protective garment. There should also be an effective and integrated extension system that will produce a synergy between health and agriculture. Furthermore, government hospitals/clinics should be built within the communities and the existing ones adequately staffed to reduce the incidence of self-medication and bureaucracy in these facilities.

REFERENCES

Adekoya, B. B., Olanuga, A. O., Adeleye, O. A., Atansanwo, T. O., Beckley, B. G., Idowu, A. A. and Kudoro, O. A. (2000). "Agro-Economic and Demographic Assessments of the fisher folks in the major Biotopes in Ogun State, Nigeria" Proceeding of the annual National Conference of the Fisheries Society of Nigeria held in Hill Station Hotel, Jos. (19th-24th March, 2000) in press-FISON, Apapa.

Ajani, O. I. Y., and Ugwu, P. C. (2008). Impact of Adverse health on Agricultural Productivity of Farmers in Kainji Basin North-Central Nigeria using a Stochastic Production Frontier Approach. *Trends in Agricultural Economics*, 1 (1):1-7.

Aminu, F. O. and Ayinde, I. A. (2014). Effect of disease burden on catch efficiency among small scale fisher folks' households in Lagos State,

Nigeria. *Trop. Agric. (Trinidad)* 91(1):27-37.

Aminu, F. O., Akerele, D. and Sanusi, R. A. (2016). Health Implication of Agricultural Child Labour: Evidence from Ondo State, Nigeria. *African Journal of Gender and Development*, 3(1): 85-98.

Angba, C. W. and Angba, A. O. (2015). The Status of Rural Women's Health and Cassava Output in Nigeria. *American Journal of Health Sciences*, 6(1): 37-44.

Ayinde, I. A., Aminu, F. O. and Akerele, D. (2015). Economic Effect of Malaria on Fish Production in a coastal area of Nigeria. *Agricultura Tropica Et Subtropica*, 48 (1-2): 30-36.

Begum, R. and Yasmeen, G. (2011). Contribution of Pakistani women in agriculture: Productivity & constraints. *Sarhad Journal of Agriculture*, 27 (4). 637–643.

Corinna, H and Ruel, M. T. (2006). Understanding the links between Agriculture and Health. Published by International Food Policy Research Institute, Brief 1 of 16.

Ekong, E. W. and Olowu, T. A. (2002). Women's access to agricultural production resources in Akwa Ibom State. *Nigerian Journal of Rural sociology*, 4(1), 60-62.

Greenlee, A. R., Arbuckle-T. E. and Chyou, P. H. (2003). Risk factors for female infertility in an agricultural region. *Epidemiology*, 14(4):429-436.

International Food Policy Research Institutes (2006). Understanding the links between agriculture and health focus is brief 7 of 16. Florida; University of Florida Press.

Nik, R. and Nik, M. M. (2015). Empowerment of Rural Women in the Agriculture Community through Women Development Programs. Malaysian Agricultural Research and Development Institute (MARDI) ap.fftc.agnet.org.

National Population Commission (2006). Report of National Population Commission Submitted to the Federal Ministry of Interior, Federal Government of Nigeria, Abuja. www.population.gov.ng/index.phpaccessedoctober30,2011.

Osewa, S. O., Alamu, O., Okonkwo, H. O., Adetiloye, I. S. and Ajayi, D. A. (2013). Occupational Hazards and Safety Practices of Cocoa Farmers in Obokun Local Government Area of Osun State. *Greener Journal of Agricultural Sciences*, 3(12), 823-828.

Oyeneke, R. U. (2015). Women's Participation in Entrepreneurial Activities in Okigwe Agricultural Zone of Imo State, Nigeria. Cambridge Business & Economics Conference, July 1-2, Cambridge, UK.

Scott, L.C., Smith, L.H. and Rugellings, B. (1977). Labour Force Markets. *American Journal of Agricultural Economics*, 5(2): 60

United Nation Development Project (2014). Sustaining Human Progress: Reducing Vulnerabilities and Building resilience. Human Development Report 2014.