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**Assessment of Rural Women Farmers' Knowledge on Selected Soya Bean Products and  
Accessibility to Nutrition Education Sources in Ekiti State, Nigeria**

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# **Assessment of Rural Women Farmers' Knowledge on Selected Soya Bean Products and Accessibility to Nutrition Education Sources in Ekiti State, Nigeria**

## **ABSTRACT**

This study assessed the accessibility to nutrition education sources and level of knowledge on soya bean products as alternative/cheap source of protein by rural women. Multistage sampling procedure was utilized in selecting 234 respondents in the study area. Interview schedule and focus group discussion was used to collect information from the rural women. Data was analysed through descriptive statistics (percentages, frequencies and means) and inferential statistics (Analysis of variance). The results showed that the women had access to nutrition education on soya beans mostly through; family and friends ( $\bar{x}$ = 0.82), local health centres ( $\bar{x}$ = 0.78), radio ( $\bar{x}$ = 0.80) and television ( $\bar{x}$ = 0.71) programmes. The women had overall 'below average' knowledge on the products. There was no significant difference in the knowledge scores of the women across the three products (soya milk, *iru* and cake) ( $F$ = 0.167,  $p \geq 0.05$ ). The result of the bivariate analysis indicated that local health centres ( $P = 0.035$ ) and Women in Agriculture ( $P = 0.019$ ) were nutrition education sources whose accessibility had significant relationship with the level of soya bean product knowledge of the rural women. There is urgent need for aggressive campaign on soya product nutrition education programme in order to increase the knowledge on this important and cheap protein source.

**Keywords:** *Knowledge, Nutrition-education, Protein-Energy Malnutrition (PEM), soya bean, women-farmers*

## **INTRODUCTION**

Nutrition has a great impact on the development, growth, survival of every child and the productive life of human as a whole (Mitchodigni, *et al.*, 2017). Despite this fact, nutrition related issues and food insecurity remains one of the endemic challenges staring the face of most Sub-Saharan Africa countries. According to Global Nutrition Report [GNR] (2020), the global experience is the case of having one in every nine people in the world hungry, and one in every three been overweight or obese. Many countries experience the double burden of malnutrition and under nutrition coexisting with overweight, obesity and other diet-related non-communicable diseases (NCDs). Nigeria is not exempted from this global crisis despite her possessing abundance of rich soils that favours agriculture and production of diverse foods. In the report, Nigeria was mentioned among the countries on track of achieving one out of the ten 2025 global nutrition targets. According to UNICEF (2020), 144 million children are affected with stunting, 47million affected with wasting and 38.3million affected by overweight.

Protein–Energy Malnutrition (PEM) and micronutrient deficiency are very common diseases affecting children in the developing world (FAO, 2015; Ocheke and Thandi, 2015; Ozoka, 2018). PEM is common in Nigeria, presenting itself in form of marasmus, kwashiorkor, or marasmic-kwashiorkor, which causes mortality and morbidity in children below the age of five (Abubakar *et al.*, 2017; Saka *et al.*, 2018). Hence, protein remains an important macro-nutrient in the human diet. Interventions to prevent malnutrition range from promoting breastfeeding to food supplementation, food fortification, bio diversification, and dietary diversification, through home gardens to small livestock production (Abubakar *et al.*, 2017). Therefore, a unique, cheaper and common means of dietary diversification from the common plant protein source (bean) and animal protein sources (milk, fish, egg and meat) for children and adults in the world is the consumption of Soya beans (Kumar *et al.*, 2017). Soy Protein occurs naturally in Soybean and is known to have many benefits to health being an alternate source of protein for those people who do not eat meat (Fasiha *et al.*, 2018).

The importance of Soy protein is crucial considering its importance in infant feeding formulas (Baby milk), particularly for those infants who are intolerant to cow milk protein, and also because of its role as a protein substitute for vegetarians (Dervries and Phillips, 2015; Kundu, Dhankhar, and Sharma, 2018). Also, the health relevance of soy bean consumption in human diets ranges through its potency in lowering the risk factors for cardiovascular disease (Dan *et al.*, 2017; Ramdath, 2017; Ritcher *et al.*, 2015; Marventano *et al.*, 2017), its evidence for potential hypertension-improving action (Nishibori *et al.*, 2017; Padhi *et al.*, 2015; Borgi *et al.*, 2016) and several other health benefits (Noriko and Kenji, 2016; Dervries, and Phillips, 2015). Soybean is not cooked and eaten like other beans but is instead processed into various products for improved palatability and nutritional benefits. In Nigeria it is mainly processed into soy milk, soy cake and soya *iru*. Soymilk is rich in nutrients and isoflavones, and could greatly promote nutrition and health (Niyibituronsa, 2019).

Despite the abundance and availability of this promising plant protein (soy beans) in Nigeria, under nutrition and PEM is still very pronounced in the country. Hence, the pathetic state of nutrition in Nigeria and many other developing countries has accentuated the concept of nutrition education. This follows the need to give priority to policies and programs that improve mothers' ability to provide optimal care for young children, especially during the period from pregnancy to a child's second birthday (Haddad *et al.*, 2015; Fadare *et al.*, 2019) and even the adolescent girls and women in general. In Nigeria the importance of nutrition education to mothers cannot be ignored based on gender role attached and the necessity of their proper food consumption at several periods. This opportunity gives mothers educational and knowledge resources in relation to food choices, feeding and health seeking behaviour.

The vulnerable; children (especially those between 6 months and five years), the elderly, pregnant and lactating women are often predisposed to these challenges based on several factors such as poverty, epidemics and famine. However, in most cases like that of some rural areas in Nigeria, ignorance and lack of knowledge on dietary diversification and alternative consumptions has led to the menace of categorizing many rural families among the malnourished. According to Christian *et al.* (2016), caregivers' nutrition knowledge and attitudes may influence the variety of foods available in the household and the quality of children's diets.

Several targets have been set by different agencies, organization and bodies such as; Food and Agriculture Organization (FAO), World Food Programme (WFP), United Nations Children's Fund (UNICEF), World Health Organization (WHO), Agricultural Development Programme (ADP), relevant Federal and State Ministries and many Non-Governmental Organizations in Nigeria in educating rural women on nutrition as a means of ameliorating the perturbing issue of nutrition and food insecurity in Nigeria, through focus on food selection, food consumption and lifestyle. Regardless of this effort, there is still seemingly a gap between the access and knowledge of the women to nutrition education on soybeans. It is on this basis that this study seeks to assess the rural women's access to nutrition education and their knowledge on soybeans products in Ekiti State, Nigeria.

### **Objectives of the Research:**

The research specifically;

1. ascertained the socio-economic characteristics of the rural women;
2. examined the accessibility to nutrition education sources; and
3. assessed the knowledge of rural women on some soya beans products.

### **Research Hypothesis:**

**HO<sub>1</sub>:** There is no significant difference in the knowledge level of respondents across the selected soya beans products (Soya milk, iru and cake)

**HO<sub>2</sub>:** There is no significant relationship between the accessibility to sources of nutrition education and the knowledge of soya bean products

## **MATERIALS AND METHOD**

### **Study Location**

The study was carried out in Ekiti State, Nigeria. Ekiti State is located in the South Western part of Nigeria. The State is located between longitude 5° 15' 00" E and latitudes 7° 40' 00" N. Ekiti state is made up of 16 local government areas with a population of 2,384,212 (2006 census). The climate of the state is tropical with two seasons, which is the raining (April-October) and the dry season (November-march), and the temperature ranges between 21<sup>0</sup>C and 28<sup>0</sup>C with high humidity. The climate is favourable for agriculture. The main cash crops cultivated in the State are cocoa, oil palm, rubber, cashew and kolanut while arable crops produced in the state include; rice, beans, plantain, yam and cocoyam.

### **Sampling Technique and Sample Size**

Respondents were drawn from a population of all rural women farmers in the state through a multistage proportionate sampling procedure. In the first stage, simple random technique was used to select three (3) local government areas (LGA); one from each senatorial district. The local government that were selected in stage 1 were: Ido-Osi LGA from Ekiti North Senatorial District, Irepodun/Ifelodun LGA from Ekiti Central Senatorial District and Ekiti South West LGA from Ekiti South Senatorial District. In the second stage, three (3) rural communities were randomly selected each from the three (3) local governments. The communities that were selected in the second stage are listed in Table 1. The third stage involved random selection of 20% of registered rural women farmers in each community as shown in Table 1. A total of two hundred and thirty-four (234) rural women farmers constituted the sampling size for this study.

Table 1: *Sampling Frame*

S/N	Communities	No of registered Women Farmers	Selected sample
1	Igbole Ekiti	100	20
2	Ora Ekiti	110	22
3	Ayetoro Ekiti	105	21
4	Bolorunduro	120	24
5	Oke ijebu,	100	20
6	Ogotun Ekiti	200	40
7	Araromi	125	25
8	Isinbode	100	20
9	Omuo Ekiti	210	42
Total		1170	234

Source: Field Survey, 2019

### **Instrument of Data Collection**

Data was collected through validated interview schedule and questionnaire. Additional information was collected through focus group discussion (FGD). A group of five respondents were selected in a community per each Local Government for the FGD.

### **Measurement and Analysis of Variables**

Rural women's access to soya bean products information from nutrition education sources was measured using two-point scale of accessible (1), and Not accessible (0). If the estimated mean score is greater than 0.5 cut off point, it implies high accessibility while a mean score lower than 0.5 denotes low accessibility. The women's knowledge on soya beans products was measured by asking relevant multiple-choice questions on soya milk, *iru* and cake. Twenty (20) questions were asked respectively on each product. Scalar-scoring method was used in generating the score from the multiple-choice question. The questions had four possible answers (A-D), from which one is correct. Respondents were scored 1 point for correct response and zero point for wrong responses. The total knowledge score was used to rank the level of knowledge to high (14-20), average (7-12) and low (0-6) knowledge scores for each product.

Overall, there were 60 questions in the knowledge assessment question. Hence, the total highest possible score was 20 points per product and 60 points on an aggregate (pooled knowledge score). For the pooled knowledge, those respondents who obtained knowledge score 45 - 60 were

considered as having high knowledge level, those who had between 30 and 44 points were considered as having average knowledge level, those who had between 15 and 29 points were considered as having below average knowledge level while those who had score ranging from 0 to 14 were considered as having low knowledge level. The data collected was analysed with the statistical package for social scientist (SPSS) version 22. Mean, frequency count and percentages were used as descriptive statistics while the difference in the knowledge of various soya beans products was tested using Analysis of Variance (ANOVA)

## **RESULTS AND DISCUSSION**

### **Socio-economic Characteristics of the Respondents**

The result in Table 2 shows that the mean age of the respondents was 42 years. This implies that most of the women engaged in farming in the State were at their active productive age and possess the needed physical strength to farm. This result is similar to the findings of Owoeye and Toluwase (2020) who reported that the average age of rural women farmers in Ekiti State was 40 years. Also, majority (80.3%) of the women practiced Christianity and had an average household size of 6 persons, which supports the report of the Nigerian Bureau of Statistics (2016) that Nigeria's average household size was 5.9 in rural and 4.9 persons in urban areas. A study in Ondo state (from which Ekiti state was created) by Odefadehan (2017) had similar results which put the rural farmers who were Christians as 76.3%.

The respondents had good educational level, with majority (92.3%) having attained one form of formal education or the other. Only 7.7% had no formal education. The women that completed primary school and secondary school respectively were 52.1% and 18.8% respectively. Rural women in Ekiti State are not excluded from formal education, hence the propensity to high health information literacy (Femi and Oyinade, 2017) This will enhance higher self-efficacy for preventive care practices and compliance to nutrition related regimens. Table 2 further reveals that the mean number of children was 3, the average age of first child was 15 years and the average age of last child was 7 years. This implies that most of the women still has their last child at the late childhood development stage and as such, soybeans nutrition education is relevant to the sampled population as a cheap source of protein for the children.

The average farm size of the respondents was 1.7 acres. This implies that most of the women do not have farm size more than 2 acres, this corroborates the findings of Adams (2017) in a similar study who found that majority of women involved in farming in Nigeria had farm size not more than two acres. Also, the mean annual income of the women was ₦261, 406 in table 2. (literature needed)



**Table 2: Distribution of rural women according to socio-economic characteristics (n=234)**

<b>Demographic characteristics</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Mean</b>
<b>Age</b>			
20-34	60	25.6	42 .1years
35-49	114	48.7	
50-64	44	18.8	
65-79	16	6.8	
<b>Religion</b>			
Christianity	188	80.3	
Islam	40	17.1	
Traditional	6	2.6	
<b>Household size</b>			
1-5	108	46.2	6 persons
6-10	110	47.0	
11-15	16	6.8	
<b>Education Level</b>			
No formal education	18	7.7	
Primary school attempted	12	5.1	
Primary school completed	122	52.1	
Secondary school attempted	36	15.4	
Secondary school completed	44	18.8	
Tertiary education	2	0.9	
<b>Number of Children</b>			
0-3	130	55.6	3 children
4-7	104	44.4	
<b>Age of first child</b>			
1-15	132	56.4	15 years
16-30	66	28.2	
31-45	22	9.4	
above 45	14	6.0	
<b>Age of last child</b>			
1-10	180	76.9	7 years
11-20	32	13.7	
21-30	20	8.5	
31-40	2	0.9	
<b>Farm size</b>			
0-2	154	65.8	1.7 acres
3-5	70	29.9	
Above 5	10	4.3	
<b>Annual Income</b>			
1-199,999	114	48.7	₦261, 406
200,000-399,999	58	24.8	
above 399,999	62	26.5	

*Source: Field Survey, 2019*

### **Accessibility of Nutrition Education on Soya Beans Products**

The result in Table 3 reveals the access of respondents to nutrition education on soya bean products from various nutrition education sources. It shows that Family and friends ( $\bar{x}= 0.82$ ) was the leading source through which the women access information/education on soya bean products. This implies that women often use informal sources to obtain education on nutritional issues. This result could be attributed to the esteemed norm and culture of the sampled population which upholds generational transfer of knowledge, training and education (nutrition education inclusive) through parents, friends and families. This result supports the assertion of Wijesinha-Bettoni *et al.* (2014) that reasonable number of people in Nigeria had access to family/friends on Nutrition Education. This is close to Odefadehan *et al.* (2013) which discovered family and friends as number two main source of health information among households in South West Nigeria.

Radio was also highly-ranked ( $\bar{x}= 0.80$ ) source of nutrition education to the rural women. This is because the women claimed to listen to nutrition education programmes on radio. During the focus group discussion (FGD) the respondents mentioned some of the programs (*agbeloba* and *ilera loro*) aired on the state radio station. Furthermore, local health centre ( $\bar{x}= 0.78$ ) was identified also as one of the primary means through which the rural women accessed nutrition education. This was because health workers usually educate the women on nutritional benefits and sources of different classes of food especially protein. This takes place most times during pre-natal and postnatal programs as ascertained during FGD. This could be because of the trust and perceived validity of this source of nutrition education information as opined by Quaidoo *et al.* (2018) that local health centre/ health care professionals are one of the most reliable source of nutrition education for rural people.

In addition, television ( $\bar{x}= 0.71$ ) programmes were one of the sources through which rural women access nutrition education. This source entails the audio and visuals which is accessed in a cheap manner and without much stress. It is a mass method of obtaining information and education at the same time. Also, the respondents indicated that religious programmes ( $\bar{x}= 0.68$ ) were another major source of accessibility to nutrition education. This implies that the rural women obtain relevant education on nutrition related issues, including soya bean through programmes organized by churches, mosques or traditional worship centres.

**Table 3: Distribution of Rural Women according to Accessibility of Nutrition Education on Soya Beans from various Sources (n=234)**

Nutrition education sources	Accessible (%)	Not accessible (%)	Mean
Family and Friends	82.1	17.9	0.82
Radio	80.3	19.7	0.80
Local health centre	77.8	22.2	0.78
Television	70.9	29.1	0.71
Religious programs	67.5	32.5	0.68
Agricultural Development Project's Women in Agriculture (ADP-WIA) unit.	48.7	51.3	0.49
Other governmental organization. e.g. ministry of women affairs and others.	43.6	56.4	0.44
Community based organization(s)	36.8	63.2	0.37
Group meetings	34.2	65.8	0.34
Non-Governmental Organizations (NGOs)	31.6	68.4	0.31
Political parties	30.8	69.2	0.31
Ministry of health	30.8	69.2	0.30
Ministry of Agriculture,	29.9	70.1	0.29
Programs organized by groups and association you belong	29.1	70.9	0.29
News paper	28.2	71.8	0.28
Hand bill	28.2	71.8	0.28
Posters	26.5	73.5	0.27
Programs organized by local community	24.8	75.2	0.25
Magazine	24.8	75.2	0.25
Pamphlet	23.1	76.9	0.23
Outside broadcast van	14.5	85.5	0.15

*Source: Field Survey, 2019*

### **Rural Women's Knowledge on Soya Bean Products**

Table 4 reveals that 44.4% of the respondents had average knowledge on soya milk, 37.6% had high knowledge while 17.9% had low knowledge on soya milk. Similarly, 34.2% of the respondents had average knowledge on soya *iru*, 33.3% had low knowledge while the remaining 32.5% had high knowledge on soya *iru*. However, in contrast to the knowledge of respondents on

soya milk and soya *iru*, very few (9.4%) of respondents had high knowledge on soya cake while the remaining 51.3% and 39.3% had average knowledge and low knowledge on soya cake respectively.

Furthermore, based on the calculated mean knowledge score for each product, the respondents had below average knowledge of soya *iru* ( $\bar{x}$ = 9) and for soya cake ( $\bar{x}$ = 7) but a bit above average for Soya milk ( $\bar{x}$ = 11). This implies that the respondents were most knowledgeable about soya milk as nutritional (food) derivative of soya beans compared to the other two (soya *iru* and soya cake) considered in the study. This could be because soya milk is the most emphasized product of soya beans by most nutrition educators, since it is in the liquid form which is most suitable for children’s consumption. The higher mean score of soya milk was ascertained during focus group discussion that they use it as an alternative to cow milk in infant feed formulation and also used by adults to prepare tea. It was also claimed that they usually add it to *Kunun* drink (local drink made from corn).

**Table 4**  
**Distribution of Respondents according to their Knowledge Levels on Soya Bean Products**

Soya bean products	Knowledge levels			
	High knowledge (14-20 score) %	Average knowledge (7-13 score) %	Low knowledge (0-6 score) %	Mean knowledge score
Soya milk	37.6	44.4	17.9	11
Soya Iru	32.5	34.2	33.3	9
Soya cake	9.4	51.3	39.3	7

*Source: Field Survey, 2019*

- Lowest obtainable point = 0 point
- Highest obtainable points = 20 points

Figure 1 pictorially summarized the aggregated/ pooled knowledge level of the respondents on the three soya bean products. The result shows that 43.6% had average knowledge (30-44 points), 41.0% had below average knowledge (15-29) while 12.8% and 2.6% had low knowledge (0-14 points) and high knowledge (45-60 points) respectively. The mean knowledge score on aggregate for

the three products was 27 points. This implies that the average knowledge of most respondents on the three products was below average. The result suggests that majority of the women in the study area are not very knowledgeable about soya bean products.

- Lowest obtainable point = 0 point
- Highest obtainable points = 60 points
- Mean score = 27 points

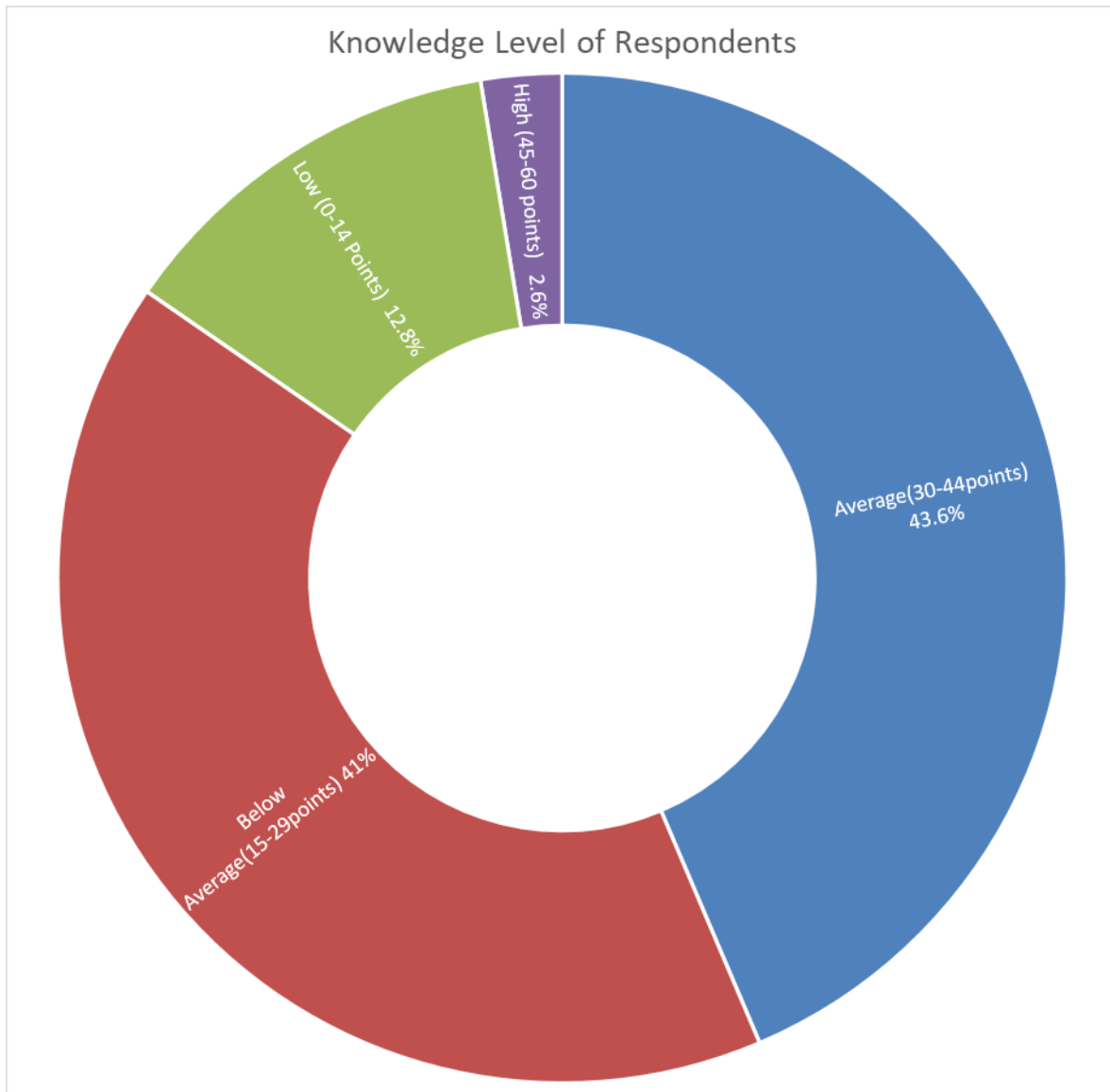


Fig.1: Knowledge level of the respondents on the three soya products (pooled scores)

### Hypothesis Testing

*HO<sub>1</sub>: There is no significant difference in the knowledge level of respondents across the selected soya beans products (Soya milk, iru and cake)*

Table 5 presents the ANOVA test of difference in the knowledge of various soya beans products. The results show that there was no statistically significant difference between the knowledge of soya milk ( $F = 0.24, P = 0.784$ ), soya Iru ( $F = 0.67, P = 0.515$ ) and soya cake ( $F = 2.71, P = 0.071$ ) across the Three products This implies that there is no statistical difference in the mean of knowledge of the rural women on soya milk, soya *iru* and soya cake as a product of soya beans Furthermore, the test result in Table 5 reveals that there was also no significant difference ( $F = 0.17, P = 0.846$ ) in the aggregate knowledge of the three soya bean products from each product. This means that the pool of the knowledge scores of the three products still resulted in no statistically significant difference. This means that the mean of the knowledge scores does not vary across the three products' levels of knowledge.

**Table 5**  
**Difference in the knowledge of soya beans products.**

		ANOVA				
		Sum of		Mean		
		Squares	Df	Square	F	Sig.
Total knowledge milk	Between Groups	12.525	2	6.262	.243	.784
	Within Groups	2932.261	114	25.722		
	Total	2944.786	116			
Total knowledge Iru	Between Groups	52.945	2	26.472	.668	.515
	Within Groups	4516.918	114	39.622		
	Total	4569.863	116			
Total knowledge cake	Between Groups	151.835	2	75.917	2.709	.071
	Within Groups	3195.088	114	28.027		
	Total	3346.923	116			
Overall knowledge of all products	Between Groups	39.570	2	19.785	.167	.846
	Within Groups	13505.678	114	118.471		
	Total	13545.248	116			

Source: Computed from Field Data, 2019

\*Significant at  $p \leq 0.05$

***HO<sub>2</sub>: There is no significant relationship between the accessibility to sources of nutrition education and the knowledge of soya bean products***

The Bivariate analysis showed that accessibility to local health centres ( $P = 0.035$ ), women in agriculture ( $P = 0.019$ ), newspapers ( $P = 0.002$ ), magazines ( $P = 0.002$ ) as sources of information on

soya bean products were significantly associated with the level of soya bean product knowledge of the respondents (Table 6). This implies that a relationship exists between the accessibility of local health centre as an information source and the knowledge level. This could be because the rural women get accurate information from this source of information, compared to other sources since this is one of their primary mandates. This supports the findings of Kundu *et al.* (2020) who found in their study that health care workers if accessed as a source of nutrition education/information, has a significant association with the knowledge level on nutrition.

The result also evidently showed that accessibility to women in Agriculture programme of ADP (WIA) as nutrition education source is also significant ( $p= 0.019$ ) with the knowledge level of the respondents. The WIA programmes has trained women in the past on home economics in which nutrition education is a component. This shows that those who participated will be exposed to the correct and reliable information about soya beans product as such the WIA programmes determines the knowledge level of the women farmers on the selected soya beans products. Newspapers and magazines also were significant sources with knowledge, this shows that access to these two sources have effects on the knowledge possessed by the respondents.

**Table 6: Bivariate Analysis of Accessibility to Nutrition Education Sources and Soya Bean Products Knowledge (n=234)**

<b>Accessibility to Soya Bean Products Information Source</b>	<b>Soya Bean Product Knowledge Score</b>		
	<i>Low score</i>	<i>High score</i>	<b>P-value</b>
<b>Local health centre</b>			
Accessible	98 (71.0)	84(87.5)	0.035*
Not Accessible	40 (29.0)	12 (12.5)	
<b>Religious programme</b>			
Accessible	98 (71.0)	60 (62.5)	0.333
Not Accessible	40 (29.0)	36 (37.5)	
<b>Non-governmental organizations</b>			
Accessible	44 (31.9)	30 (31.2)	0.942
Not Accessible	94 (68.1)	66(68.8)	
<b>Ministry of health</b>			
Accessible	46 (33.3)	26 (27.1)	0.471
Not Accessible	92 (66.7)	70 (72.9)	
<b>Ministry of Agriculture</b>			
Accessible	40 (29.0)	30 (31.2)	0.792
Not Accessible	98(71.0)	66(68.8)	
<b>Agricultural development programme (ADP). Women in Agriculture (WIA)</b>			
Accessible	70 (50.7)	44(45.8)	0.019*
Not Accessible	68(49.3)	52 (54.2)	
<b>Programs organized by groups and association belonged to</b>			
Accessible	34 (24.6)	34(35.4)	0.207
Not Accessible	104 (75.4)	62(64.6)	
<b>Programs organized by local community</b>			
Accessible	40 (29.0)	18 (18.8)	0.207
Not Accessible	98(71.0)	78 (81.2)	
<b>Political parties</b>			
Accessible	54 (39.1)	18(18.8)	0.603
Not Accessible	84 (60.9)	78 (81.2)	
<b>Other governmental organization e.g. Ministry of women affairs and others</b>			
Accessible	60 (43.5)	42(43.7)	0.977
Not Accessible	78 (56.5)	54(56.3)	
<b>Radio</b>			
Accessible	112(81.2)	76 (79.2)	0.790
Not Accessible	26(18.8)	20 (20.8)	
<b>Television</b>			



Accessible	94 (68.1)	72(75.0)	0.420
Not Accessible	44 (31.9)	24(25.0)	

**Table 6 (Continued)**

<b>Accessibility to Soya Bean Products Information Source</b>	<b>Soya Bean Product Knowledge Score</b>		
	<i>Low score</i>	<i>High score</i>	<b>P-value</b>
<b>News paper</b>			
Accessible	24 (17.4)	42 (43.7)	0.002*
Not Accessible	114 (82.6)	54(56.3)	
<b>Magazine</b>			
Accessible	20 (14.5)	38(39.6)	0.002*
Not Accessible	118 (85.5)	58 (60.4)	
<b>Pamphlet</b>			
Accessible	26(18.8)	128(29.2)	0.192
Not Accessible	112 (81.2)	68(70.8)	
<b>Outside broadcast van</b>			
Accessible	14(10.1)	20 (20.8)	0.107
Not Accessible	124 (89.9)	76(79.2)	
<b>Posters</b>			
Accessible	28(20.3)	34(35.4)	0.068
Not Accessible	110 (79.7)	62(64.6)	
<b>Hand bill</b>			
Accessible	38(27.5)	28 (29.2)	0.847
Not Accessible	100 (72.5)	68(70.8)	
<b>Community based organization(s)</b>			
Accessible	44(31.9)	42(43.7)	0.190
Not Accessible	94 (68.1)	54 (56.3)	
<b>Family and friends</b>			
Accessible	114 (82.6)	78 (81.2)	0.851
Not Accessible	24 (17.4)	18(18.8)	

Source: Field Survey, 2019

*\*Significant at  $p \leq 0.05$*

## **CONCLUSION AND RECOMMENDATIONS**

The study has revealed that respondents accessed nutrition education from diverse sources. The pooled knowledge score of the soya products showed that the women possess below average knowledge level. Therefore, there is need to embark on aggressive nutrition education campaign to increase the knowledge of the rural women farmers so that they will not miss out in these cheap sources of protein. Focus should be on how to strengthen health extension and WIA programmes as these two sources were significant with knowledge.

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