

## **Original Research Article**

# **Gender-centric Assessment of Food Literacy among Staff of Obafemi Awolowo University, Ile-Ife, Nigeria.**

### **ABSTRACT**

**Aim:** This study investigated and elucidated gender-specific patterns in food literacy.

**Study design:** A cross-sectional pilot study with a stratified random sampling technique was adopted. A self-administered questionnaire was used to collect data on five domains of food literacy; nutritional knowledge, food preparation skills, ability to plan daily meals, ability to practice healthy eating, and ability to select healthy foods.

**Place and Duration of Study:** Obafemi Awolowo University campus Ile – Ife, Nigeria, between September and December 2019.

**Methodology:** About 203 teaching and non-teaching staff were selected using a multistage stratified random sampling technique representing about 10% of the total population of staff. Bivariate logistic regression was used to determine the likelihood of high food literacy. The predicted probability of high food literacy was for females.

**Results:** The results showed the mean age was  $45.38 \pm 10.98$ . Mean food literacy score was  $84.15 \pm 6.20$ . A minimum of one out of three scored high in food literacy skill set except in food preparation in which less than 20% scored high. Food preparation skills ( $r = 0.294$ ,  $p < 0.01$ ), daily meal planning ( $r = 0.202$ ,  $p < 0.01$ ), and ability to select healthy food ( $r = 0.206$ ,  $p < 0.01$ ) had a positive and significant relationship with nutritional knowledge. No significant difference in the nutritional knowledge of males and females. Age, gender and work sector had a positive and significant relationship ( $p < 0.05$ ) with food literacy. Females were likely to be rated higher in food literacy than males (OR = 0.647, 95%CI = 0.367 – 1.143).

More males practised healthy eating than females (OR = 0.905, 95%CI = 0.686 -1.195).

**Conclusion:** Higher nutritional knowledge does not translate to healthy dietary practices. Food literacy programmes such as educational programmes, community initiatives, and policy changes to promote a better understanding of nutrition should be intensified, especially with emphasis on healthy practice.

**Keywords:** Dietary Practice, Nutritional Awareness, Gender, Nigeria,

### **1. INTRODUCTION**

Food literacy is just emerging as a crucial concept <sup>[1]</sup>. Backed by the recognition that we all eat, food literacy is gaining traction in an era of rising crises associated with food ranging from consumption of “junk food” <sup>[2]</sup> to food preparation methods <sup>[3]</sup>. For the world to be healthy, there is a need for an intentional approach. Food literacy is regarded as an important food skill set to improve dietary behavior of people. It includes the positive relationship built through social, cultural, and environmental experiences with food enabling people to make decisions that support health <sup>[4]</sup>.

Unhealthy food habit can be detrimental to health because it involves the consumption of diets high in refined carbohydrates, sodium, saturated fat, and calories <sup>[5,6]</sup>. Choice of food is influenced by hunger, food cravings, appeal of food, time considerations, convenience of food, food availability, eating behaviors (including the culture or religion of the family), benefits of foods (including health), situation-specific factors, mood, body image, habit, cost, media, and vegetarian beliefs. Major barriers to eating healthy diets are a lack of sense of urgency about personal health in relation to other concerns, and taste preferences for other foods <sup>[7]</sup>.

A lot of people use food to show forth their societal class, some use it to forge friendship, display their creativity and others use it to achieve lifetime goals<sup>[8]</sup>. In order to address a broad range of factors affecting eating behaviour, food literacy must be considered. In addition, particular circumstances that are common in today's everyday life - e.g. being rushed, having too little sleep and experiencing psycho-social stress - make people even more vulnerable to making unhealthy food decisions<sup>[8]</sup>. Food literacy describes a gamut of food-related skills, knowledge and attitudes that promote personal health and wellbeing<sup>[9]</sup>.

Adequate food literacy is associated with a healthier diet, smaller portions and a reduction in processed and fast foods. On the other hand, insufficient food literacy is associated with an absence of food skills like cooking and food preparation, which are believed to hinder healthy dietary practices and can produce significant environmental and societal consequences<sup>[10]</sup>. The definitions researchers have provided for food literacy have varied greatly and continue to develop according to new research. Currently, there is no consensus definition of food literacy; although some definitions are cited more frequently than others, the term is often used contingent on the context of the research<sup>[11,12]</sup>. The concept of food literacy developed by Vidgen and Gallegos<sup>[13]</sup> is one of the most cited definitions and approaches to describing food literacy in academic research<sup>[14]</sup>. Vidgen and Gallegos<sup>[13]</sup> described food literacy as, "the scaffolding" that empowers individuals, households, communities, or nations to protect diet quality through change and strengthen dietary resilience over time.

The theoretical foundation on which this study was based is the Theory of Planned Behaviour (TPB), which was adapted as used in a study conducted by Hui *et. al.*<sup>[15]</sup>. TPB reasoned action holds that the intention (motivation) to perform a certain behavior is dependent on whether individuals evaluate the behavior as positive. TPB holds that all behaviour is not executed under purposeful control and that behaviors lie on a continuum from total control to complete lack of control.

Food literacy is multifaceted and it is composed of a collection of inter-related knowledge, skills, and behaviours required to plan, manage, select, prepare, and eat food to meet needs and determine intake. Hence, for this study, five food literacy skill set were investigated in a university community, and comparison was made by gender. It was hypothesized that a significant relationship existed between nutritional knowledge and food literacy. Therefore, this study aimed to investigate and elucidate gender-specific patterns in food literacy among the staff at Obafemi Awolowo University (OAU), focusing on the analysis of skills, knowledge, and practices. By examining various dimensions of food literacy, the study seeks to contribute valuable insights into the disparities that may exist in the realm of nutritional awareness and behaviour within the university community."

## 2. METHODOLOGY

### 2.1. STUDY AREA

This study was carried out in Obafemi Awolowo University (OAU), Ile-Ife, Osun State. Ile-Ife is an ancient town in South Western Nigeria. Obafemi Awolowo University, a Federal Government-owned and operated tertiary institution is built on about 5,000 acres of a total of 13,000 acres of University-owned land. The university consists of 2 colleges, 13 faculties, 103 departments, 2,000 staff members, and a student population of about 35,000<sup>[16]</sup>. The University staff is divided into teaching and non-teaching staff; the teaching staff comprises the lecturers, while the non-teaching staff are the laboratory attendants, secretaries, portals of halls of residence, library attendants, cleaners and security men.

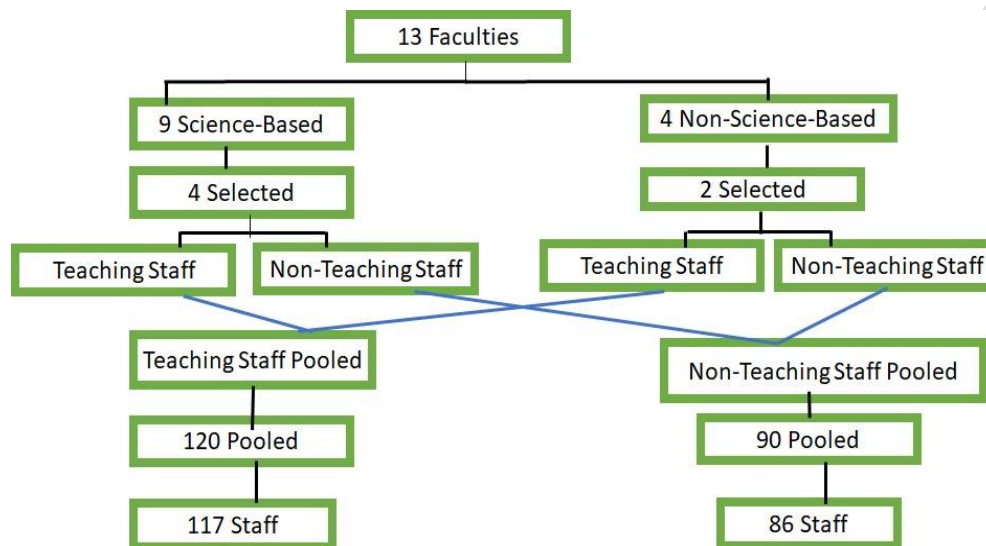
### 2.2. STUDY DESIGN

A descriptive cross-sectional pilot study using quantitative data to determine the gender disparities in food literacy among staffs of OAU Ile-Ife Nigeria. The inclusion criteria were teaching and non-teaching staff who have been in employment for a minimum of five years and reside in Ile-Ife. The exclusion criteria

considered females who were pregnant or nursing mothers and also those who had health challenges that warranted dietary modification.

### 2.3. SAMPLE SIZE AND SAMPLING TECHNIQUE

The sample size for the study was two hundred and three (203) was calculated using **Research Advisor**, which was taken at 95% confidence and 5% margin of error <sup>[17]</sup>. We adopted a multistage stratified random sampling technique (**Figure 1**). The thirteen (13) faculties in OAU were grouped into nine (9) science and four (4) non-science oriented. Four (4) faculties were selected from the science-oriented and two (2) from the non-science faculties using a simple random technique (ballot). Each group was divided into teaching and non-teaching staff. The teaching staff from both science and non-science-oriented faculties were pooled together; 120 people were interviewed, while 90 were interviewed from the pool of non-teaching from both faculty orientations. Later, only 117 and 86 respondents were included in the final analysis after the removal of outliers.



**Fig 1: Multi-stage Stratified Random Sampling Technique**

### 2.4. RESEARCH INSTRUMENT

A self-administered structured questionnaire comprising six sections was used. Section one measured the socio-demographic characteristics of the staff, and sections two to five covered the food literacy set skills; nutritional knowledge, food preparation skills, daily food planning; ability to practice healthy eating, and ability to select healthy foods. The instrument was subjected to test-retest to measure the replicability of results and reliability, which was conducted in May/June 2019. A reliability coefficient of 0.68 was recorded.

### 2.5. DATA COLLECTION PROCEDURE

The data for the study was collected in the first semester of the academic session, which was between September and December 2019. The respondents signed a consent form to participate in the study and were asked to fill out the questionnaire.

### 2.6. MEASUREMENT OF VARIABLES

Nutritional knowledge assessment utilized a 4-Likert scale, encompassing responses such as strongly agree, agree, disagree, and strongly disagree. The questionnaire featured a combination of positive and negative statements, with positive questions scored as strongly agree=4, agree=3, disagree=2, and strongly disagree=1. Conversely, negative questions were scored in reverse. The nutritional knowledge section comprised twelve statements, with a maximum attainable score of 48n points. Food preparation

skills, daily food planning, ability to practice healthy eating, and ability to select healthy food were evaluated using "Yes" and "No" questions, incorporating both positive and negative statements (9, 4, 6, and 7 statements, respectively).

Characteristics	Freq	%
-----------------	------	---

Positive questions were scored as Yes=2 and No=1, while negative questions were scored in reverse. Food literacy skills were then dichotomized into high and low categories based on mean values. Mean values for each food literacy skill were calculated, and respondents scoring above the

mean were classified as high, while those below were categorized as low.

## 2.7. DATA ANALYSIS TECHNIQUE

The data collected were analyzed using descriptive statistics; frequency, percentage, means, and standard deviations and inferential statistics; Pearson's correlations, Chi-square test, and Logistics regression in the statistical software package IBM SPSS, version 22. Differences between the two groups were tested using chi-square tests for dichotomous variables. Relationships between two variables were tested using correlation analysis ( $r$ ). The association between socio-demographic characteristics and food literacy, nutritional knowledge and other food literacy skill sets was analysed using binary logistic regression. The odd ratios and 95% confidence interval were used to predict the probability of the likelihood of having high food literacy among female. Data were disaggregated by gender. A  $P$ -value of  $<0.05$  was considered statistically significant.

## 3. RESULTS AND DISCUSSION

### 3.1. Results

#### 3.1.1. Socio-Demographic Characteristics of Participants

**Table 1: Characteristics of the participants**

<b>Age (years)</b>		
≤45	89	44
>45 (RC)	114	56
<b>Sex</b>		
Male	113	56
Female (RC)	90	44
<b>Work Sector</b>		
Teaching	117	57
Non-Teaching(RC)	86	42
<b>Faculty orientation</b>		
Science-oriented	136	67
Non-science-oriented(RC)	67	33
<b>Household type</b>		
Monogamy	195	96
Polygamy (RC)	8	4
<b>Family type</b>		
Nuclear	186	92
Extended (RC)	17	8
<b>Household size</b>		
Large (>5)	127	63
Not Large (≤5) (RC)	76	37
<b>Income/month (naira) (\$)</b>		
≤50,000 (\$57)	32	15
>50,000 (\$57)	171	84

Mean age = 45.38±10.98; Mean household size = 5.12±1.65; RC = Reference category

The study included 203 staff. The mean age was 45.38±10.98 with those greater than 45 years being a little above half (56.2%). More males (113) than females (90) consented to participate in the study, out of which, 57.6% were academic staff and 67.0% were from science-oriented faculties. Majority (96.1%) had monogamous household type and 91.6% had nucleus family type. Those who earned income above the poverty threshold of \$57 (~50,000 naira) per month was 84.3%. (Table 1).

### 3.1.2. Food Literacy

**Table 2: Nutritional Knowledge of Staff of OAU**

**n =203**

	<b>SA %</b>	<b>A %</b>	<b>D %</b>	<b>S %</b>	<b>Mean ± SD</b>
<b>Nutritional Knowledge Statements</b>					
Diet does not affect human health	8.4	5.4	13.3	72.9	3.51±0.93
There are six classes of nutrients	8.9	8.9	45.8	36.5	3.10±0.896

A balanced meal has appropriate nutrient distribution	0.5	3.0	30.0	66.5	3.63±0.57
Lots of fresh fruit and vegetable is good for health	0.5	0.5	24.1	74.9	3.73±0.486
Lot of sugar is good for health	1.5	3.4	29.6	65.5	3.59±0.633
Variety food is good for health	3.4	0.8	48.8	36.9	3.19±0.763
A high fat diet is good for health	3.4	8.4	43.3	44.8	3.30±0.765
Lot of grains and legumes is not good for health	5.4	27.6	44.3	22.7	2.84±0.835
Daily lean protein consumption is good for health	3.9	11.8	58.1	26.1	3.06±0.732
Animal fat reduction is good for health	5.9	7.4	41.4	45.3	3.26±0.836
Milk and dairy products are good for health	3.9	13.3	58.6	24.1	3.03±0.731
Consuming beans and beans products is good for one's health	1.5	4.4	49.3	44.8	3.37±0.643

*Grand Mean ± SD = 39.62±4.13; SA – Strongly agree, A – Agree, D – Disagree, SD – Strongly disagree*

(Table 2) offers a comprehensive view of the nutritional knowledge of the participants, capturing both the distribution of responses for individual statements and an aggregate measure of their overall understanding of nutrition. Overall mean and standard deviation calculated across all the statements is 39.62±4.13.

**Table 3: Food Literacy Skill Set**

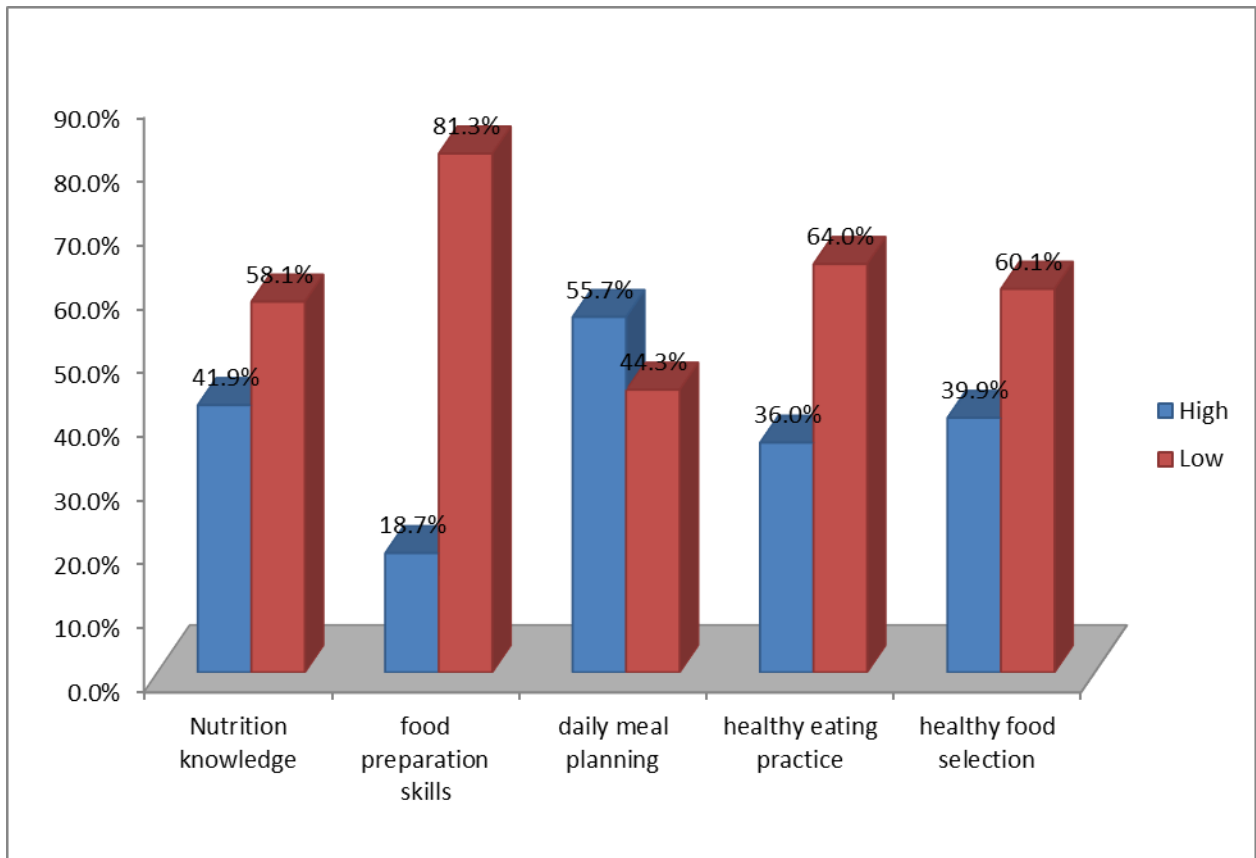
Food Literacy Skill Set	Yes	No	Mean ± SD
<b>(A) Food Preparation Skills</b>			
I can prepare fresh vegetables in different ways	85	118	1.9 ± 0.4
I find it difficult to prepare a meal with more than five fresh	19	184	1.8 ± 0.4

ingredients			
I am able to prepare fresh fish in different ways	83	120	1.8 ± 0.4
I am able to prepare a meal using fresh ingredients only	69	134	1.7 ± 0.5
I am able to see, smell or feel the quality of fresh foods	89	114	1.9 ± 0.3
I parboil rice and throw away the water before I complete the cooking	63	140	1.4 ± 0.5
I shred or cut vegetable into piece before adding hot water	82	121	1.2 ± 0.4
I allow vegetable to stay for a long time in hot water before I complete the cooking	17	186	1.8 ± 0.4
I take the food groups into consideration	76	127	1.8 ± 0.4
I take into account what I will eat later in the day when I am about to eat a particular meal	70	133	1.7 ± 0.5
When I have something to eat, I reflect on what I have eaten earlier that day	67	136	1.7 ± 0.5
I buy food ingredients ahead to ensure I eat what I want to eat	83	120	1.8 ± 0.4
Grand Mean	13.45 ± 1.31		
(B) Daily Food Planning			
I take the food groups into consideration	76	127	1.8 ± 0.4
I take into account what I will eat later in the day when I am about to eat a particular meal	70	133	1.7 ± 0.5
When I have something to eat, I reflect on what I have eaten earlier that day	67	136	1.7 ± 0.5
I buy food ingredients ahead to ensure I eat what I want to eat	83	120	1.8 ± 0.4
Grand mean	8.31 ±1.33		
(C) Ability to Practice Healthy Eating			
I eat breakfast every day	68	135	1.7 ± 0.5

I choose foods that are in line with my mood	27	176	1.7 ± 0.5
Fruits and vegetables are healthy snacks	93	110	2.0 ± 0.3
Healthy snacks should be taken along at all time	92	111	2.0 ± 0.3
I check the nutritional labels of products	82	121	2.0 ± 0.3
I compare the nutritional labels of different products	79	124	1.8 ± 0.4
<b>Grand Mean</b>	<b>10.88 ± 1.13</b>		
<b>(D) Ability to Select Healthy Foods</b>			
I eat deep-fried products often	20	183	1.8 ± 0.4
I take carbonated drinks regularly	18	185	1.8 ± 0.4
I eat flour products regularly	32	171	1.7±0.5
I eat fruits and vegetables every day	68	135	1.7±0.5
I take milk and milk product every day	29	174	1.3±0.5
I add sugar to my tea always	24	179	1.8±0.4
I add salt to food on the table	12	191	1.9±0.3
<b>Grand mean</b>	<b>11.91 ± 1.47</b>		

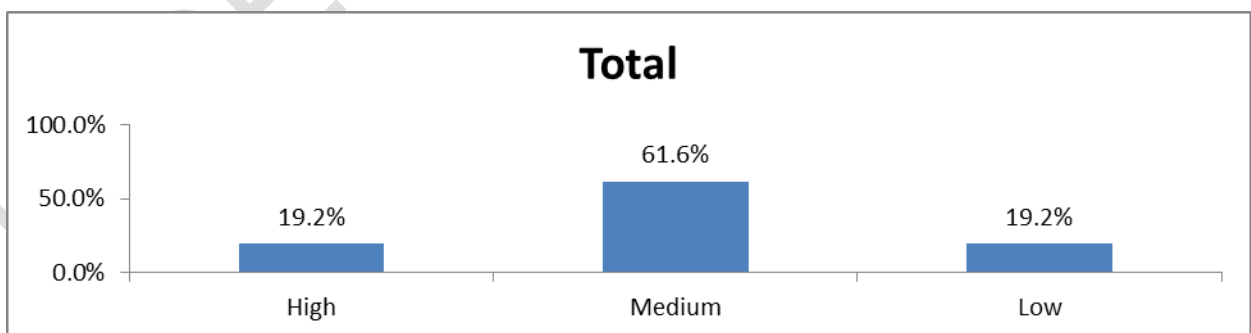
Other food literacy skill sets analyzed includes food preparation skills, daily meal planning, healthy eating practice, and healthy food selection (Table 3). Result showed the mean scores were food preparation skill ( $13.45 \pm 1.31$ ), daily food planning ( $8.31 \pm 1.33$ ), ability to practice healthy eating ( $10.88 \pm 1.13$ ) and the ability to select healthy food ( $11.91 \pm 1.47$ ).





**Figure 2: Food Literacy Skill Set**

The results for the food literacy skill set showed that more than half of the respondents (58.1%) had low nutritional knowledge, majority were rated low in food preparation skills (81.3%), healthy eating practices (64.0%), and healthy food selection (60.1%). About 45.0% were rated low in daily meal planning (Figure 2). In all, those who were rated both high and low in food literacy were 19.2% (Figure 3).



**Figure 3: Food Literacy Score**

**Table 4: Logistic Regression Analyses of Factors Associated with Food Literacy Among OAU Staff**

Characteristics	OR	95%CI for Exp. B		P-value
		Lower	Upper	
<b>Age (years)</b>				
≤45	0.384	0.206	0.714	0.002**
>45 (RC)	-	-	-	-
<b>Sex</b>				
Male	0.483	0.260	0.898	0.02**
Female (RC)	-	-	-	-
<b>Work Sector</b>				
Teaching	1.978	1.045	3.744	0.03**
Non-Teaching (RC)	-	-	-	-
<b>Faculty orientation</b>				
Science-oriented	1.103	0.579	2.101	0.8
Non-science-oriented (RC)	-	-	-	-
<b>Household type</b>				
Monogamy	2.052	0.415	10.137	0.4
Polygamy (RC)	-	-	-	-
<b>Family type</b>				
Nuclear	1.586	0.522	4.815	0.4
Extended (RC)	-	-	-	-
<b>Household size</b>				
Large (>5)	1.615	0.908	2.873	0.1
Not Large (≤5) (RC)	-	-	-	-
<b>Income/month (naira) (\$)</b>				
≤50,000 (\$57)	0.568	0.266	1.214	0.2
>50,000 (\$57) (RC)	-	-	-	-

\*\*Significant at  $p < 0.05$ ; Mean age =  $45.38 \pm 10.98$ ; Mean household size =  $5.12 \pm 1.65$ ; RC = Reference Category

The analysis in (Table 4) considered several demographic and socio-economic characteristics. Regarding age, individuals aged 45 and below demonstrated a significantly higher likelihood of possessing food literacy, with an odds ratio (OR) of 0.384 (95% CI: 0.206, 0.714,  $P = 0.002$ ). In terms of gender, male staff members exhibited a lower odds ratio (OR = 0.483, 95% CI: 0.260, 0.898,  $P = 0.02$ ), suggesting a significant association with higher food literacy compared to their female counterparts. The work sector also played a role, with teaching staff showing nearly twice the odds of having higher food literacy compared to non-teaching staff (OR = 1.978, 95% CI: 1.045, 3.744,  $P = 0.03$ ). Faculty orientation, household type, family type, household size, and income per month did not demonstrate statistically significant associations with food literacy. In summary, this logistic regression analysis suggests that age, gender, and work sector are potential factors influencing food literacy among OAU staff, providing valuable insights into the dynamics of food literacy within this demographic.

**Table 5: Correlation Analysis Showing Relationship between Four of the Food Literacy Skill Set and Nutritional Knowledge**

Food Literacy Skill Set	r	r <sup>2</sup>	% determination	p-value
Food Preparation Skills	0.294	0.086	8.64	0.000**
Daily Food Planning	0.202	0.041	4.08	0.004**
Ability to Practice Healthy Eating	0.206	0.042	4.24	0.003**
Ability to Select Healthy Foods	0.862	0.743	74.30	0.000**

(Table 5) illustrates the correlation between various food literacy skill set and nutritional knowledge. There was a significant relationship at  $P = 0.05$  between food preparation skill ( $r = 0.294$ ), daily food planning ( $r = 0.202$ ), ability to practice healthy eating ( $r = 0.232$ ). Notably, the ability to select healthy foods shows a very strong positive correlation ( $r = 0.862$ ) with nutritional knowledge, explaining 74.30% of the variance. Additionally, food preparation skills, daily food planning, and the ability to practice healthy eating also exhibit positive correlations, each contributing to a certain percentage of the determination in nutritional knowledge. These findings shed light on the interplay between specific skills and individuals' nutritional knowledge.

**Table 6: Cross-Tabulation of Food Literacy by Gender**

Food Literacy	n	%	n	%	Chi-square	p-value
	Male		Female			
	113		90			
Nutrition knowledge						0.97

<b>High</b>	46	41	39	43	10.012	
<b>Low</b>	67	59	51	57		
Food preparation skills						0.49
<b>High</b>	21	19	17	19		
<b>Low</b>	92	81	73	81	6.428	
Ability to plan daily meal						0.12
<b>High</b>	62	55	51	57		
<b>Low</b>	51	45	39	43	8.795	
Ability to practice healthy eating						0.47
<b>High</b>	42	37	31	34		
<b>Low</b>	71	63	59	66	4.570	
Ability to select healthy foods						0.009**
<b>High</b>	31	27	50	56		
<b>Low</b>	82	73	40	44	17.194	

\*\* Significant at  $P = 0.05$

Further analysis was done to disaggregate data between males and females. Chi-square tests were conducted to examine the independence of food literacy and gender, with the associated  $P$ -values as shown in Table 6. The result shows that females were rated higher in the food literacy skill set except in the ability to practice healthy eating, where males (37 %) were rated higher than females (34 %). For the ability to select healthy foods, there is a significant association between food literacy and gender, as indicated by the Chi-square value of 17.194 and a  $P$ -value of 0.009. The other food literacy categories (nutrition knowledge, food preparation skills, ability to plan daily meals, and ability to practice healthy eating) do not show a significant association with gender.

**Table 7: Logistic Regression of Odds Ratio and 95% CIs for Food Literacy by Gender.**

Food Literacy Skills	OR	95%CI for Exp. B		P-value
		Lower	Upper	
Nutrition knowledge	0.976	0.905	1.052	0.527
Food preparation skills	1.144	0.902	1.451	0.266
Ability to plan daily meals	1.093	0.858	1.394	0.471
Ability to practice healthy eating	0.905	0.686	1.195	0.483
Ability to select healthy foods	1.388	1.110	1.736	0.004**

Food Literacy Score	0.647	0.367	1.143	
Constant	0.009	-	-	0.042

*\*\* Significant at  $P < 0.05$ , Note: Predicted probability of high food literacy for female*

The odds ratio (OR) represents the odds of having high food literacy for different food literacy skills and the food literacy score, comparing females to males (Table 7). In the logistic regression analysis by gender, the ability to select healthy foods stands out as significantly associated with high food literacy for females, with an odds ratio of 1.388 (95% CI: [1.110, 1.736],  $P = 0.004$ ). The other food literacy skills and the overall food literacy score do not show significant associations with gender. This analysis provides insights into the gender-specific relationships between various food literacy skills and the likelihood of having high food literacy. In all, females were likely to be rated higher in food literacy than males (OR = 0.647, 95%CI = 0.367 – 1.143).

### 3.2. DISCUSSION

Food literacy has emerged as a term to describe the everyday practicalities associated with healthy eating. The term is increasingly used in policy, practice, research, and by the public. There are five domains; planning; management; selection; preparation; and eating<sup>[13]</sup>, although there is a need to expand the scope<sup>[18,19]</sup>. Nutritional knowledge forms the backbone of all nutrition decisions made by humans. It is postulated that the higher the nutritional knowledge, the higher the chances of making healthy food choices<sup>[20, 21, 22, 23]</sup>.

In this current study, more than half of the participants were rated low in four out of five domains of food literacy investigated. This corroborated the study in Turkey<sup>[24]</sup> and a systematic review of articles published in that domain<sup>[25]</sup>. However, in a study conducted in Italy,<sup>[26]</sup> Lagos<sup>[27]</sup> and Western Nigeria<sup>[28]</sup>, good nutritional knowledge was recorded but did not translate to healthy eating<sup>[29]</sup>. This reflects the gaps in their understanding and practice. The gap between “knowledge” and “practice” needs to be bridged. Lack of basic knowledge about nutrition such as an understanding of essential nutrients, portion control, and the nutritional value of different foods are fundamental to making informed and healthy food choices. This could potentially pose a challenge to eating right.

For food preparation skills, those who struggle with basic cooking techniques may rely on processed or convenience foods, which can be less nutritious and contribute to poor dietary habits<sup>[28, 30, 31]</sup>. According to some studies, there is an association between cooking knowledge and healthier dietary practices<sup>[32]</sup> and nutrient retention in vegetable cooking<sup>[3]</sup>. This also implies that greater cooking knowledge makes for healthier dietary practices, therefore it is of little surprise that healthy eating practices and healthy food selection were both low among the staff as their food preparation skill, which is an outcome of cooking knowledge was also low.

In this current study, more of the participants rated high in the ability to select healthy food. This is exhibited in a combination of positive habits and a supportive environment. Having clear health and wellness goals motivates individuals to make healthy choices whether it's weight management, improved energy levels, or overall well-being, having a purpose can drive healthy decisions.

The percentage of those who scored high in the aggregate food literacy score was low. This is in tandem with similar studies reported in a systematic review<sup>[33]</sup> and Nigeria<sup>[34]</sup>. Low food literacy often leads to poor dietary choices, contributing to an increased risk of various health issues such as obesity, cardiovascular diseases, diabetes, and nutritional deficiencies. Understanding the nutritional value of foods is essential for maintaining overall health and preventing chronic conditions. Food literacy contributes to an individual's overall quality of life and well-being. A lack of understanding about nutrition can impact energy levels, cognitive function, and emotional well-being, influencing daily functioning and life satisfaction.

In this study, some demographic characteristics such as age, sex, and work sector significantly influenced food literacy. This contradicted another study, which showed that socio-demographic characteristics such as age, level of education, and employment status did not significantly contribute to food literacy, while

household size had a significant relationship with food literacy<sup>[35]</sup>. On the contrary, household size did not significantly influence food literacy in this current study. Consequently, the odds show those with larger household size were twice more likely to have higher food literacy. This could be because the larger the household size, the higher the probability of having someone in the household who is knowledgeable.

There is no significant relationship between income and food literacy. Within income groups, there can be significant diversity in individuals' financial habits and priorities. Some individuals with lower incomes may prioritize spending on nutritious foods, while some with higher incomes may not necessarily make healthier food choices. In a study conducted in South Africa, young mothers relied on elderly women for the provision of childcare and nutritious foods for children; however, they demonstrated some resistance to traditionally feminized forms of food preparation<sup>[36]</sup>. Across cultural contexts, men are expected to play supportive roles especially related to financial, and logistical support<sup>[37]</sup>. Furthermore, when pregnant women earned more or the same as their spouses, their calorie and micronutrient intakes increase<sup>[24]</sup>.

Teaching staff were more food literate than non-teaching staff in this study. This could be because teaching staff may have more access to academic resources, including journals, research articles, and educational materials, which can contribute to their knowledge about food and nutrition. This access to information may be more readily available than for non-teaching staff.

The significant relationship between nutrition knowledge and other food literacy skill set showed that as nutrition knowledge increases, other food literacy attributes are also expected to increase. This is in accordance with a study in South Africa, which showed that meal procurement of households is affected by their nutrition knowledge<sup>[38]</sup>. Increasing food literacy may contribute to healthy food practice, which includes selecting and eating healthy foods.

To one's chagrin, more males practice healthy eating than females. **Some men may be more focused on fitness and muscle-building goals, leading to a perception that they prioritize healthy eating. This can include a diet rich in protein and nutrients to support physical activity and muscle development.** In the African context, men dictate the food they prefer and that is what the women cook. In Nepal, calorie and micronutrient intake was higher among males, which is an indication of better healthy eating practices than among pregnant women and mothers-in-law<sup>[39]</sup>.

#### 4. CONCLUSION

In conclusion, the current study demonstrates the level of food literacy among the staff of a university community. Moving forward, efforts to promote healthy eating should focus on inclusivity, education, and breaking down societal norms that dictate rigid expectations based on gender. Nutrition education programs should be accessible to all, emphasizing the importance of individualized dietary choices. Additionally, media representations and public health campaigns should strive to portray a more inclusive and diverse image of healthy living, acknowledging that well-informed decisions about food are not bound by gender but are, instead, a reflection of individual empowerment and informed choices on the path to overall well-being.

Recognizing the seriousness of low food literacy underscores the importance of implementing educational programs, community initiatives, and policy changes to promote a better understanding of nutrition. By addressing the root causes of poor food literacy, societies can work towards improving overall health outcomes and fostering a culture of informed and healthy eating.

## **CONSENT**

Informed consent was obtained from respondents with assurance of confidentiality.

## **ETHICAL APPROVAL**

Approval for the study was sought from the Health Research and Ethics Committee of the Institute of Public Health, Obafemi Awolowo University, Ile-Ife. Permission was also sought from the Deans of the different faculties to interview the staffs.

UNDER PEER REVIEW

## REFERENCES

- [1.] Sumner Jennifer. Food Literacy and Adult Education: Learning to Read the World by Eating. *Can J for the study of Adult Educ.* 2013; 25 (2).
- [2.] Bakare KO, Olumakaiye MF. Fast Food Consumption Pattern and Body Weight Status of among Students of Obafemi Awolowo University, Ile-Ife, Nigeria. *African J of Food, Agric Nutr and Dev.* 2016; 16(4): 11185-11198.
- [3.] Olumakaiye MF. Evaluation of Nutrient Contents of Amaranth Leaves Prepared Using Different Cooking Methods. *Food and Nutr Sc.* 2011; 2: 249-252.
- [4.] Cullen Tracy, Janelle Hatch, Wanda Martin, Joan Wharf Higgins, Rosanna Sheppard. Food Literacy: Definition and Framework for Action. *Can J of Diet Pract and Res.* 2015; 76(3): 140-145. <https://doi.org/10.3148/cjdpr-2015-010>
- [5.] Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, et al. The global obesity pandemic: shaped by global drivers and local environments. *Lancet (London).* 2011; 378(9793), 804–14. [https://doi.org/10.1016/S0140-6736\(11\)60813-1](https://doi.org/10.1016/S0140-6736(11)60813-1).
- [6.] Sotos-Prieto M, Bhupathiraju SN, Mattei J, Fung TT, Li Y, Pan A, Willett WC, Rimm EB, Hu FB. Association of Changes in Diet Quality with Total and Cause Specific Mortality. *The New Eng. J. of Med.* 2017; 377, 143-153, <https://doi.org/10.1056/NEJMoa1613502>.
- [7.] Neumark-Sztainer Dianne, Mary Story, Cheryl Perry, Mary Anne Casey: Factors Influencing Food Choices of Adolescents: Findings from Focus-Group Discussions with Adolescents. *J of the Am Diet Asso.* 1999; 99 (8).
- [8.] Poelman MP, Dijkstra, SC, Sponselee H, Kamphuis CBM, Battjes-Fries, MCE, Gillebaart M, Seidell JC. Towards the measurement of food literacy with respect to healthy eating: The development and validation of the self-perceived food literacy scale among an adult sample in the Netherlands. *Int J of Behav Nutr and Physi Act.* 2018; 15(1), 54-55, <http://doi.org/10.1186/s129660180687-z>.
- [9.] Grubb M, Vogl CR. Understanding Food Literacy in Urban Gardeners: A Case Study of the Twin Cities, Minnesota. *Sustainability.* 2019; 11(1), 2617-2618. <http://doi.org/10.3390/su11133617>.
- [10.] Krause CG, Beer-Borst S, Sommerhalder K, Hayoz S, Abel T. A short food literacy questionnaire (SFLQ) for adults: Findings from a Swiss validation study. *Appetite.* 2018; 120, 275–280, <https://doi.org/10.1016/j.appet.2017.08.039>.
- [11.] Velardo S. The nuances of health literacy, nutrition literacy, and food literacy. *J of Nutr Educ and Behav.* 2015; 47(4), 385-389. <https://doi.org/10.1016/j.jneb.2015.04.328>.
- [12.] Vidgen HA. ed. Food Literacy: Key Concepts for Health and Education. 2016;. New York, NY, USA: Routledge.
- [13.] Vidgen HA, Gallegos. Defining food literacy and its components. *Appetite.* 2014; 76, 50-59.
- [14.] Truman E, Lane D, Elliott C. Defining food literacy: A scoping review. *Appetite.* 2017; 116, 365-371. [Doi:10.1016/j.appet.2017.05.007](https://doi.org/10.1016/j.appet.2017.05.007).
- [15.] Sommestad Teodor, Hallberg Jonas. A Review of the Theory of Planned Behaviour in the Context of Information Security Policy Compliance. *IFIP Adv in Info and Comm Tech.* 2013; 405. 10.1007/978-3-642-39218-4\_20.



[16.] Obafemi Awolowo University. <https://oauife.edu.ng/research>. Accessed 28/06/2020.

[17.] Research Advisor. Sample Size Table. 2006. <https://www.research-advisors.com/tools/SampleSize.htm>. Accessed: 10/2/2019.

[18] Perry EA, Thomas H, Samra HR, Edmonstone S, Davidson L, Faulkner A, Petermann L, Manafò E, Kirkpatrick SI. Identifying attributes of food literacy: a scoping review. *Public health nutrition*. 2017 Sep;20(13):2406-15.

[19] Truman E, Lane D, Elliott C. Defining food literacy: A scoping review. *Appetite*. 2017 Sep 1;116:365-71.

[20.] Olumakaiye MF, Popoola BR and Oyewale B. Nutrition education positively influenced the use of food labels on pre-packaged foods and purchase decision among young people in Obafemi Awolowo University Community, Nigeria. *South Asian J. Food Technol. Environ*. 2019; 5(1): 797-806.

[21] Vaitkeviciute R, Ball LE, Harris N. The relationship between food literacy and dietary intake in adolescents: a systematic review. *Public health nutrition*. 2015 Mar;18(4):649-58.

[22] Krause C, Sommerhalder K, Beer-Borst S, Abel T. Just a subtle difference? Findings from a systematic review on definitions of nutrition literacy and food literacy. *Health promotion international*. 2018 Jun 1;33(3):378-89.

[23] Murakami K, Shinozaki N, Livingstone MB, Yuan X, Tajima R, Matsumoto M, Masayasu S, Sasaki S. Associations of food choice values and food literacy with overall diet quality: a nationwide cross-sectional study in Japanese adults. *British Journal of Nutrition*. 2023 Apr 5:1-1.

[24] Hakli G, As E, Ucar A, Özdoğan Y, Yilmaz MV, Özçelik AO, Lu MS, Lu FP, Akan LS. Nutritional knowledge and behavior of adults: Their relations with sociodemographic factors. *Pakistan Journal of Nutrition*. 2016 Jun 1;15(6):532.

[25] Barbosa LB, Vasconcelos SM, Correia LO, Ferreira RC. Nutrition knowledge assessment studies in adults: a systematic review. *Ciencia & saude coletiva*. 2016;21:449-62.

[26] Turconi G, Rossi M, Roggi C, Maccarini L. Nutritional status, dietary habits, nutritional knowledge and self-care assessment in a group of older adults attending community centres in Pavia, Northern Italy. *Journal of human nutrition and dietetics*. 2013 Feb;26(1):48-55.

[27] Olatona FA, Airede CA, Aderibigbe SA, Osibogun A. Nutritional knowledge, dietary habits and nutritional status of diabetic patients attending teaching hospitals in Lagos, Nigeria. *Journal of Community Medicine and Primary Health Care*. 2019 Oct 16;31(2):90-103.

[28.] Akinmoladun OF, Oluyede OJ, Femi FA, Olaitan OO, Nesamvuni CN. Association between nutrition knowledge, lifestyle, dietary practices and nutritional status among civil servants in western Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*. 2021;21(10):18824-38.

[29.] Kigaru DMD, Loechl C, Moleah T. et al. Nutrition knowledge, attitude and practices among urban primary school children in Nairobi City, Kenya: a KAP study. *BMC Nutr*. 2015; 1, 44. <https://doi.org/10.1186/s40795-015-0040-8>.

[30] McGowan L, Caraher M, Raats M, Lavelle F, Hollywood L, McDowell D, Spence M, McCloat A, Mooney E, Dean M. Domestic cooking and food skills: A review. *Critical reviews in food science and nutrition*. 2017 Jul 24;57(11):2412-31.

[31] Reicks M, Trofholz AC, Stang JS, Laska MN. Impact of cooking and home food preparation interventions among adults: outcomes and implications for future programs. *Journal of nutrition education and behavior*. 2014 Jul 1;46(4):259-76.

- [32.] Leal FMdR, de Oliveira BMPM, Rodrigues SSP. Relationship between cooking habits and skills and Mediterranean diet in a sample of Portuguese adolescents. *Perspectives in Public Health*. 2011; 131, 283–287.
- [33.] Spronk I, Kullen C, Burdon C, O'Connor H. Relationship between nutrition knowledge and dietary intake. *Br J Nutr*. 2014 May 28;111(10):1713-26. doi: 10.1017/S0007114514000087. Epub 2014 Mar 13. PMID: 24621991.
- [34.] Miller LMS, Cassady DL. The effects of nutrition knowledge on food label use. A review of the literature. *Appetite*. 2015; 92, 207-216.
- [35.] Begley A, Paynter E, Butcher LM, Dhaliwal, SS. Effectiveness of an Adult Food Literacy Program. *Nutrients*. 2019; 11(4), 797. Doi:10.3390/nu11040797.
- [36.] Erzse A, Goldstein S, Tugendhaft A, Norris SA, Barker M, Hofman KJ, INPreP Group. The roles of men and women in maternal and child nutrition in urban South Africa: A qualitative secondary analysis. *Mat and Child Nutr*. 2021; 17(3), 13161.
- [37.] Mukuria AG, Martin SL, Egondi T, Bingham A, Thuita F. Role of social support in improving infant feeding practices in Western Kenya: A quasi-experimental study. *Global Health Pract*. 2016; 4(1), 55–72. <https://doi.org/10.9745/GHSP-D-15-00197>
- [38.] Myeza Nokuthula, Selepe Mosa, Shongwe Nokuthula. Food Preparation Practices and Nutrition Knowledge of Household Caregivers in Southern Kwazulu Natal. *Int J Sustan Dev*. 2015; <http://dx.doi.org/10.2139/ssrn.2676541>.
- [39.] Harris-Fry, HA, Paudel P, Shrestha N. et al. Status and determinants of intra-household food allocation in rural Nepal. *Eur J Clin Nutr*. 2018; 72, 1524–1536. <https://doi.org/10.1038/s41430-017-0063-0>.