

RESEARCH ARTICLE

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# Dietary Knowledge and Practices among Non-Medical Staff at Babcock University in Ogun State, Nigeria

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## Abstract

**Objective:** Good nutrition is important in promoting health and is dependent on the quality of food eaten. Little has been researched on the dietary practices among the workforce in Nigeria. This study aimed at assessing the dietary knowledge, practices, and factors influencing dietary practices and work productivity among the non-medical staff of Universities.

**Methods:** This is a descriptive cross-sectional survey of 398 non-medical staff of Babcock University who were selected using the multi-stage sampling technique. Data were analyzed using the Statistical Package for Social Sciences (SPSS 21) to compute frequency distributions, means, and standard deviations. Nutritional knowledge, dietary practices, and barriers to work productivity were assessed. Inferential statistical analysis was conducted using Pearson's correlation coefficient.

**Results:** The mean age among respondents was 38.68±11.04, with the majority being female 54.6%. of the respondents (61.1%) of Yoruba origin, about three percentiles (66%) were members of staff while (34%) were faculty members. The computed level of knowledge and dietary-based practices scores were (2.57±0.61) and (3.64±1.44) respectively, indicating poor knowledge and dietary practices, while the barriers that influence work productivity among workers (11.34±5.286) were high at 87.2%. No significant association was found between nutritional knowledge and dietary practices of staff and faculty ( $p=.154$ ), but a significant association was found between dietary practices and work productivity of staff and faculty ( $p=.019$ )

**Conclusion:** Health education and promotion of good nutrition should be incorporated in the workplace, interventions that will improve work productivity among workers are also encouraged. This will culminate in a well-fed and healthy workforce.

**Keywords:** Nutrition, Knowledge, Dietary practice, Staff, Work productivity

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## Plain English summary

Adequate dietary knowledge and good dietary practice are important in living a healthy life and maintaining optimum work productivity. This study provides an insight into dietary knowledge and practice among the non-medical staff of Babcock University, Nigeria. We found that the dietary knowledge and practice were poor, and barriers to work productivity were high. This study suggested that good nutrition should be promoted at the workplace through health education.

## Background

Many factors contribute to productivity in the workplace. One of such factors often neglected in the equation of attaining optimum workplace performance is food. While food is an essential component in adopting and maintaining a healthy lifestyle, it must be taken in the right proportion suitable for meeting the daily energy requirement especially in the workplace where many spend at least one-third of their daily hours (1, 2).

Nutrition is simply defined as the process of taking in food and using it for metabolism, growth, and repair (3). The need for proper nutrition cannot be overemphasized. In 2018, it was estimated that 820 million people did not get enough to eat (4). Similarly, the World Health Organization has stressed that the world is facing a double burden of malnutrition which includes undernutrition and overnutrition especially in low-and-middle-income countries (5). A study also reported poor nutritional status among citizens of many African countries, Nigeria inclusive (6). Proper dietary habit has been defined as the habitual decisions made by people regarding the food, they consume which should include all the classes of food in the right proportion (7). If this is done, the World Health Organization has observed that it will culminate in more productivity which will create more opportunities, thus breaking the cycles of poverty (5).

Poor dietary practices have been linked with poor productivity at work just as the International Labour Organization has stressed that poor diet on the job accounts for 20% of loss of productivity (8). Similarly, a report showed that unhealthy eating is linked with a 66% increase in loss of productivity (9). Not only will unhealthy eating habits reduce work productivity, but it has also been associated with conditions like diabetes, hypertension, osteoporosis, cardiovascular diseases and some cancers (10).

It is important to note that nutritional requirements vary from one individual to another (11). For instance, the nutritional requirement for a child will differ from that of an athlete, depending on the level of productivity. Similarly, that of a pregnant woman will be different from that of a middle-aged person. Productivity at work has been shown to decrease as a result of poor nutrition, and this

contributes to feelings of tiredness, sluggishness, thus leading to inadequate energy for the body to function optimally (5, 11). Similarly, long hours of works without adequate portions of well-balanced meals will contribute to inefficiency and low work output, thus meeting the Key Performance Index (KPI) becomes a challenge for a work environment, and overall daily activity (12).

One of the ways to reduce intake of less nutritious foods is proper dissemination of information and clear labeling of products (13). Moreover, the demands of a workplace, in addition to poor nutritional health can lead to adverse psychological and physical health effects, consequently, hindering workplace productivity (12).

With these in mind, the study aimed to ascertain knowledge, dietary practices, and factors influencing dietary practices and work productivity among non-medical staff at Babcock University. We hypothesized that there is no significant relationship between nutritional knowledge and dietary practices of non-academic staff and faculty and between dietary practices and work productivity of members of staff of the University. Findings from this study will assist in developing interventions to promote optimal dietary practices concerning work productivity among the study population, the local and international communities.

## Methods

### *Study design*

This research was a descriptive cross-sectional study.

### *Study Area*

Babcock University is a private Christian University owned and operated by the Seventh-day Adventist Church in Nigeria. It is located equidistant between Ibadan and Lagos. The school which is located in Ikenne local government is bounded in the North by Remo North local government, south by Sagamu local government, in the east by Odogbolu and Ijebu North-East local governments, and in the west by Obafemi Owode local government. The schools of learning in Babcock University include the School of Science and Technology, Veronica

Adeleke School of Social Sciences, School of Management Sciences, School of Computing and Engineering Sciences, College of Health and Medical Sciences, School of Education and Humanities, School of Law and Security Studies, School of Nursing Sciences, School of Public and Allied Health, and Academic Library. The divisions of the Staff members include Presidency Division, Academic Administration Division, Management Services Division, Financial Administration Division, Student Development Services Division, and Subsidiaries.

#### *Study Population*

This study included male and female academic and non-academic members of the staff of Babcock University. Inclusion criteria included those who were at least 18 years of age, and those who have worked for nothing less than 12 months in the university, while those who were working part-time were excluded from the study.

#### *Sampling Technique*

All faculties except the College of Health and Medicine were purposively selected for this study. A random sampling technique was used to select departments from the faculties through a balloting system. Afterward, a convenience sampling technique was used to select members of staff from the relevant departments.

#### *Sample size estimation*

The sample size was calculated using the Cochran formula (14). A total of 384 respondents was obtained. 5% attrition rate was considered making 403 respondents. A total of 398 questionnaires were eventually retrieved.

#### *The instrument for Data collection*

Data were collected using a self-designed questionnaire, pre-tested and the calculated Cronbach's alpha coefficient was 80%. The questionnaire was divided into four sections namely:

Section A: Socio-demographic characteristics. This included the age (as at last birthday), gender, school, ethnicity, and respondents' level of education.

Section B: Knowledge of nutrition. This section elicited the respondent's level of knowledge on nutrition information. Questions like "fruits must be taken before and after a meal" and "porridge,

yam, bread are energy-rich foods?" were asked with options of 'Yes' and 'No'. Knowledge questions had 10 items and knowledge score was computed from the item questions; 0-3 as poor, 4-6 as average, and 7-10 as good knowledge respectively with mean and standard deviation score of  $2.57 \pm 0.61$ .

Section C: Dietary Practice section had 10 items and the practice score was computed from the item questions; with a mean and standard deviation of  $3.64 \pm 1.44$ . This section was on a Likert Scale with questions like frequency of reading food labels, eating breakfast, eating three square meals, seeking out nutrition information, and snacking on food. Always was scored as 4, Often as 3, Sometimes as 2, and Never as 1 on a scale of 1-4. Scores  $\geq 25$  were considered good practice and scores  $< 25$  were considered bad practice.

Section D: This section assessed barriers influencing work productivity. This was scored on a scale of 1-10 with 13 factors listed for the respondents to choose from. Barriers influencing work productivity were assessed with scores 0-4 scored as low, 5-9 as average, and 10-13 as high.

#### *Instrument reliability*

The instrument was pretested among 20 participants in a similar population (Olabisi Onabanjo University, Ogun State) to determine the reliability of the instrument, Cronbach's Alpha test for internal consistency was 0.73.

#### *Data Management and Analysis*

Data were analyzed using IBM Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics such as percentage representations, charts, tables, and figures were used to present the results while the Pearson correlation coefficient was used to determine the relationship between the variables.

#### **Results**

The mean age of respondents was  $38.68 \pm 11.04$ , the majority of the respondents were females (54.6%) compared to their male (45.4%) counterparts. Most of the respondents were of Yoruba (61.1%) origin. Members of staff that participated in this study were (66%) while (34%) were faculty members. Educational status revealed that the majority are learned with 87% having tertiary education (see table 1).

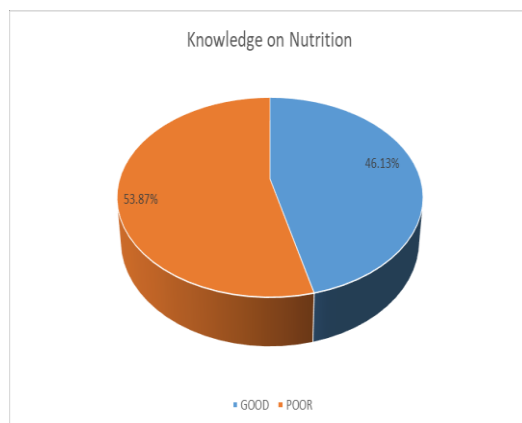
**Table 1. Frequency of Demographic Variables**

Variables	Respondents in this study N=398	
	Frequency (n)	Percentage (%)
<b>Age (in years)</b>		
20 – 29	45	12.23
30 – 39	156	42.40
40 – 49	113	30.70
50 – 59	46	12.50
60 – 69	08	02.17
<b>Gender</b>		
Male	167	45.40
Female	201	54.60
<b>Marital Status</b>		
Single	99	26.90
Married	248	67.40
Widowed	15	04.10
Divorced	06	01.60
<b>Years of work</b>		
1-10	283	76.90
11-20	69	18.80
21-30	16	04.30
<b>Ethnicity</b>		
Yoruba	225	61.10
Igbo	104	28.30
Hausa	08	02.20
Others	31	08.40
<b>Educational Status</b>		
No formal education	15	04.10
Primary	18	04.80
Secondary	15	04.10
Tertiary	320	87.00

Mean Age = 38.68±11.04

More than half (53.87%) of the respondents had poor knowledge of nutrition while 46.13% had good knowledge of nutrition (see figure 1). The mean score for dietary practice is (3.64±1.443). The mean score signifies a poor dietary practice. Dietary practices measured among the respondents indicate that 49.4% of the

respondents seek out nutrition information while 67.2% of the respondents read food labels before buying. Meanwhile, 71.8% do take breakfast and 83.4% claim to consume carbohydrates. More so, 32.3% of the respondents do not snack on foods, while 90.5% do not take alcohol (see table 2).

**Figure 1: Knowledge on nutrition**

**Table 2 Dietary Practices**

Variables for Consideration	Respondents in this Study N=398	
	Frequency (n)	Percentage (%)
I read food labels before buying at the mall or market	247	67.2
I eat breakfast every day	264	71.8
I complete three square meals per day	137	37.2
I do not take alcohol	333	90.5
I snack on food	249	67.7
How frequently do you consume carbohydrates?	207	83.4
How frequently do you consume protein?	287	78.0
How frequently do you consume vitamins?	256	69.5
How frequently do you consume fats and oil?	236	64.1
How frequently do you seek out nutrition information?	182	49.4

Table 3 indicates that many factors are influencing work productivity among workers at Babcock University: income (57.9%), stress

(58.7%), work environment (54.6%), food eaten at work (59.5%) while lifestyles choices and depression account for 52.2% respectively.

**Table 3: Barriers to Work Productivity: Correct responses**

Variables for Consideration	Respondents in this Study, N=398	
	Frequency (n)	Percentage (%)
Income	213	57.9
Dietary pattern	173	47.0
Stress	216	58.7
Absenteeism	112	30.4
Health Related conditions	207	56.3
Work Environment	201	54.6
Sickness	129	35.0
Sleep hours	195	52.9
Food	219	59.5
Workplace Health Promotion	192	52.2
Lifestyle Choices	192	52.2
Depression	131	35.6
Inadequate Facilities	210	57.0

Table 4 shows that the level of knowledge computed mean and standard deviation score ( $2.57 \pm 0.61$ ) indicates that the knowledge of what constituted dietary practices in this study was

poor (25.7%), dietary practices as observed was also poor ( $3.64 \pm 1.443$ ) at 36.4% while barriers to work productivity was high ( $11.34 \pm 5.286$ ) at 87.2%.

**Table 4: Descriptive Summary of Composite Statistics**

Variables	Maximum point scale	Mean	Standard deviation	Standard Error of Mean	Prevalence %
Knowledge	10	2.57	0.61	0.032	25.7
Dietary practices	10	3.64	1.443	0.075	36.4
Work productivity	13	11.34	5.286	0.276	87.2

*Hypothesis One:*

There is no significant relationship between nutritional knowledge and dietary practices of

Babcock University staff. The study shows a perfect fit model and positive correlation (+1) and a coefficient of 0.75 translating to the magnitude of the relationship at  $p=.154$ . Therefore, we fail to

reject the null hypothesis. Hence, there is no significant relationship between knowledge and dietary practices of Babcock University staff (Table 5).

**Table 5: Correlation between knowledge and dietary practices**

Variables	Pearson correlation (r)	Correlation Coefficient ( $r^2$ )	p-value
Knowledge on Nutrition	1	0.75	0.154
Dietary practices	1		
Work productivity	1	0.037	0.019
Dietary practices	1		

#### *Hypothesis Two:*

There is no significant relationship between dietary practices and the work productivity of Babcock University staff. The study shows a perfect fit model and positive correlation (+1) and a coefficient of 0.037 translating to the magnitude of the relationship at  $p=.019$ . Therefore, the null hypothesis is hereby rejected. Hence, there is a significant relationship between dietary practices and work productivity of Babcock University staff (see Table 5)

#### **Discussion**

Evidence from this study showed poor knowledge of nutrition by Babcock University staff. This was not expected as non-academic and academic members of staff of the University ought to have a good knowledge of their nutrition, especially the highly educated staff members even as 87% of the respondents in this study had tertiary education. This finding is similar to a study on nutrition-related knowledge conducted in the United States among teaching staff, which showed that only 3.0% of teachers correctly answered at least 4 questions on nutrition (15). This was similar to the finding among Head Start Teachers in Texas where none of the teachers could correctly answer all the five questions on nutrition (16). This highlights the need for nutritional educational interventions among the staff of educational institutions (17). This was supported by research that confirmed the need for intensive nutrition education to emphasize the importance of adopting good dietary practices among students, staff, and faculty members (18). In this current study, the respondents had poor dietary practices. This was similar to a study conducted among University staff in Southeast Nigeria that found that 69.0% took unhealthy snacks daily (19). Similarly, another study conducted among 57 teachers in Brazil revealed an excessive consumption of lipids (20). Poor dietary practices found in these studies highlight

the need for interventions that should be targeted at correcting these practices. On alcohol consumption, we found that 9.5% of the respondents in our study consume alcohol. Alcohol consumption was also found among 8.5% of the 423 urban schoolteachers in a school in Ibadan, southwest Nigeria (21). This suggests the need for adequate health education for staff of educational institutions on the danger of alcohol consumption.

The findings from this study suggest that some factors such as income, stress, etc. influence work productivity, supporting a similar study conducted in Calabar confirming the impact of stress on nutrition and productivity among workers (22). Additionally, other factors like health and dietary practices act as barriers to work productivity. Research has suggested that numerous workplace interventions have shown significant improvements in employees' health and work productivity (23).

This study has equally shown that there is no relationship between nutritional knowledge and dietary practice, as opposed to a study conducted in Ireland among a randomly selected working population which indicated that higher nutritional knowledge is associated with better dietary practices, indicating a significant relationship between nutritional knowledge and dietary practices (24). Our finding was also at variance with a systematic review which found a significant, positive but weak association between knowledge on nutrition and dietary intake (25). However, this study showed a significant relationship between dietary practices and work productivity. Similarly, a study conducted in Turkey confirmed this finding, suggesting that there is a link between good dietary practice and high work productivity (26).

#### *Strength and Limitation*

This study has provided an insight into the dietary knowledge and practices in a tertiary institution in Southwest Nigeria. The findings could help the

school administration, the local and international population in the design of interventions that will be aimed at improving nutritional knowledge and dietary practices to improve work productivity. However, since this study was based on self-report, it is subject to social desirability bias as the respondents might tend to under-report poor dietary practices. Therefore, this limitation should be considered when interpreting this finding.

### Conclusion and Recommendation

The study has shown that the majority of the respondents have poor knowledge of nutrition. It is suggested that there should be nutrition awareness programs. Workplace health promotion such as health talks, group discussions on nutrition should be incorporated into the school system.

### Declarations

#### *Ethics Consideration*

Ethical approval was obtained from the Babcock University Health Research Ethical Committee (BUHREC617/17) before the commencement of the research. Confidentiality and anonymity were ensured. Informed consent was obtained from the study participants before data collection and the voluntary nature of the study was stressed.

#### *Consent for publication*

The authors hereby give consent for the publication of this work under the Creative Commons CC Attribution. Non-commercial 4.0 license.

#### *Availability of data and materials*

All data generated or analyzed in this study are included in this article and are available at any request.

#### *Competing interests*

No competing interests.

#### *Funding:*

None

#### *Authors' contributions*

Study design: OOE, MJO, AM  
Data collection: AM, MBT, AE, CCF  
Data analysis: OOE, MJO, AM  
Study supervision: OOE, AK, CCF  
Manuscript writing: AO, AE, UEN, MBT, FDD, OTD  
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