

DETERMINANTS OF FOOD PREFERENCES AMONG UNDERGRADUATES IN EDO STATE: IMPLICATIONS FOR HEALTH EDUCATION

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Abstract

Food preferences of undergraduates tend to shift towards convenience, affordability and social influences as they transit towards independent living. This study therefore sought to investigate the determinants of food preferences among undergraduates of universities in Edo state and its implication for health education. The descriptive survey research design was adopted for the study with a sample size of four hundred and ninety five (495) respondents from three universities drawn from federal, state and private clusters. Items were raised to elicit responses on food preferences of undergraduates including the determinant factors influencing their choices as well as their level of knowledge on healthy nutrition. The survey revealed that snacks, starchy and convenience foods such as noodles were preferred over other healthy options such as unripe plantain, vegetables and fruits. The main drivers of food choices among others for the students were media/advertisement (83.4%), cost (77.0%), availability (69.7%), convenience (67.1%) and stress (57.4%) Almost half of the students (49.5%) were quite knowledgeable about what constitutes a healthy diet. However, this knowledge did not reflect in their food preferences as other factors highlighted above were observed as more effective determinants. The findings suggest that there should be targeted health education programmes to promote healthy eating among undergraduates. Such programmes should take into the psychological and socio-cultural environment where these students live and make their choices. It also highlights the need for institutions to initiate food policies that promote availability and affordability of healthy food choices on campus.

Introduction

In the last few decades the remarkable changes in standard of living in many nations world over has had its effect on food choices and consumption patterns (Vijayakumaran & Amalina, 2018). Nutrition is an important component for every individual but particularly key for young people as their transition to independent adulthood which usually coincides with University years should be marked with the development of good eating habits to ensure a healthy adult life (Otemuyiwa & Adewusi, 2012; El-mani et al., 2020; Ismail et al., 2022). Food preference refers to the choice individuals make from available food list or menu (Purohit & Sharma, 2017). Food selection and pattern among individuals usually involve an interplay between several complex factors and considerations.

People differ in their choices based on their biological and psychological dynamics as well as social and cultural milieu. As young people live home and become responsible for their lifestyle choices as well as dietary habits, their food choices often shift towards convenience, affordability social influences and food knowledge (Deliens et al., 2014;

Ogundele et al., 2023). Many students fail to consume certain foods because they lack nutritional knowledge of the food values, thus, they may ignorantly avoid these foods because of personal factors (taste, time, and convenience), environmental factors (availability and accessibility including cost of products) and socio-cultural factors (family and peer influences as well as media advertisements) (Deliens et al., 2014; Almoraie, Saqaan, Alharthi, et al., 2021; Ogundele et al., 2023). These choices which may likely continue into adult life have significant implications for their overall health, well-being and academic performance (Sholeye, Omisore & Animasahun, 2021).

Academic activities such as tests, fieldwork, assignments and examinations may also force students to modify their eating habit as they can be quite challenging, stressful and time-consuming (El-mani et al., 2020; Ogundele et al., 2023). These activities may force them to skip meals and indulge in unhealthy snacking which may likely affect their productivity as well as expose them to chronic diseases and other health challenges (El-Mouty, 2016). Findings from a study in Kuwait reported high preference for sandwiches among college students. Vegetables, fruits, proteins, rice and pasta were consumed moderately while fried foods and pastries still featured prominently in the diet of some students (Alkandari et al., 2023).

Several studies have revealed that sensory appeal, convenience and cost were the most significant drivers of food choices among young people (Ogundele et al., 2023). A study in Benghazi showed that mass media, parental control and peer influence (44.0%, 39.8% and 13.7% respectively) did not affect student's eating behaviour. However, time to prepare healthy meals, food appearance, poor knowledge of food value, stress associated with exams, social life, student's emotions were quite significant (El-mani et al., 2020).

Despite this growing concern, there is still lack of comprehensive understanding of the factors influencing undergraduate food preferences, particularly in the context of health education. This study will therefore provide relevant information on undergraduate food preferences highlighting the complex interplay between individual, social and environmental factors, underscoring the need for tailored health education strategies to foster healthy dietary habits. It is on this premise the study sought to investigate the food preferences and influencing factors among undergraduates in Edo state, exploring the intersections between dietary choices, health awareness and educational interventions. The research answered the following questions:

- What are the food preferences of undergraduates in universities in Edo State?
- What are the factors influencing food preferences among undergraduates in universities in Edo State?
- What is the level of knowledge on healthy nutrition among undergraduates in universities in Edo State?

Methodology

This study looked at undergraduate's food preferences and its implication for health education. The study was conducted among students from three universities in Edo State. The multi-stage sampling technique was adopted in selecting the respondents. The schools were first clustered into the three senatorial districts in Edo-state and from each cluster one

university was picked to specifically reflect school ownership, Edo South (University of Benin: Federal), Edo central (Ambrose Alli University: State) and Edo North (Edo University: Private). In the next stage, the faculties in the various institutions were also clustered into health related and non-health related from which two faculties were selected using simple random sampling technique from each of the clusters. In the last stage proportionate sampling technique was applied to select 5% of the students from each of faculty to make up the 495 respondents for the study

Data was collected in approximately one month after permission was gotten from management of the various institutions. A self-administered questionnaire was distributed to the respondents with their informed consent. The questionnaire consisted of three sections, section A looked at the demographic information of the respondents (sex, age, institution and course category). In section B, respondents were provided with various food items from which they were requested to indicate their preference based on the number times the food was consumed in a week. Section C and D considered the factors influencing food preferences among undergraduates as well as their knowledge of healthy nutrition respectively.

Descriptive statistics of frequency counts and percentages was used to compute information on undergraduate's food preferences and feeding patterns including factors influencing food preferences. While t-test was conducted to compare mean values of undergraduate food preference based on sex.

Results and Discussion

Table 1: Demographic information of respondents

| Items | Frequency | Percentage |
|---|-----------|------------|
| SEX | | |
| Male | 240 | 48.5 |
| Female | 255 | 51.5 |
| AGE | | |
| 15-18 | 124 | 25.1 |
| 19-22 | 278 | 56.2 |
| 23-26 | 76 | 15.3 |
| Above 26 | 17 | 3.4 |
| INSTITUTIONS | | |
| University of Benin, Benin City (Federal) | 189 | 38.2 |
| Ambrose Alli University, Ekpoma (State) | 251 | 50.7 |
| Edo University, Iyahmo (Private) | 55 | 11.1 |
| COURSE CATEGORY | | |
| Health Related | 237 | 47.9 |
| Non- health Related | 258 | 52.1 |

The table above shows that 48.5% male and 51.5% female students participated in the study. The age range of the respondents was between 15-26years with a mean age of ± 20.1 years. However about 3.4% were above 26years while 25.1%, 56.2% and 15.3% were between 15-18years, 19-22years and 23-26years respectively. Based on their institutions, 38.2% participated from a federal university (University of Benin), 50.7% from state University (Ambrose Alli University) and 11.1% from a private university (Edo University). The number of students from the non-health related discipline was slightly higher (52.1%) than those from the health related discipline (47.9%).

Table 2: Food Preferences of Undergraduates in Edo State Universities

| S/n | Types of Food | Never | 1-3 Times | 4-6 Times | Everyday | Total |
|-----|--------------------------------|------------|------------|------------|------------|-------------|
| 1 | Rice | 2(0.4%) | 189(38.2%) | 226(45.7%) | 78(15.7%) | 495(100.0%) |
| 2 | Swallow | 30(6.0%) | 302(61.0%) | 94(19.0%) | 69(14.0%) | 495(100.0%) |
| 3 | Beans | 87(17.6%) | 235(47.5%) | 78(15.7%) | 95(19.2%) | 495(100.0%) |
| 4 | Yam | 67(13.5%) | 273(57.2%) | 128(25.9%) | 27(5.4%) | 495(100.0%) |
| 5 | Maize | 102(20.6%) | 258(52.1%) | 112(22.6%) | 23(4.7%) | 495(100.0%) |
| 6 | Sweet Potato | 45(9.1%) | 298(60.2%) | 110(22.2%) | 42(8.5%) | 495(100.0%) |
| 7 | Irish Potato | 309(62.4%) | 98(19.8%) | 69(13.9%) | 19(3.9%) | 495(100.0%) |
| 8 | Pasta(Indomie, Spaghetti, etc) | 45(9.1%) | 82(16.6%) | 279(56.4%) | 89(17.9%) | 495(100.0%) |
| 9 | Unripe Plantain | 144(29.1%) | 245(49.5%) | 67(13.5%) | 39(7.9%) | 495(100.0%) |
| 10 | Ripe Plantain | 48(9.7%) | 97(19.6%) | 294(59.4%) | 56(11.3%) | 495(100.0%) |
| 11 | Bread | 47(9.5%) | 128(25.9%) | 212(42.8%) | 108(21.8%) | 495(100.0%) |
| 12 | Snacks(Meatpie, Egg roll, etc) | 38(7.7%) | 97(19.6%) | 256(51.7%) | 104(21.0%) | 495(100.0%) |
| 13 | Fruits | 76(15.4%) | 212(42.8%) | 189(38.2%) | 18(3.6%) | 495(100.0%) |
| 14 | Vegetables | 97(19.5%) | 178(40.0%) | 189(38.2%) | 31(6.3%) | 495(100.0%) |
| 15 | Meat | 122(24.6%) | 190(38.4%) | 103(20.8%) | 80(16.2%) | 495(100.0%) |
| 16 | Fish | 65(13.1%) | 110(22.2%) | 223(45.1%) | 97(19.6%) | 495(100.0%) |

Table 2 reveals the food preferences of undergraduates in universities in Edo State. It can be deduced from the table that the following foods were consumed more frequently (4-6times) by undergraduates: rice (45.7%), beans (47.5%), pasta such as indomie, spaghetti, macaroni (56.4%), ripe plantain (59.4%) bread (42.8%) and snacks (51.7%). Other foods Slightly (1-3times) consumed were swallow such as eba, santana, starch, semovita (61.0%), sweet potato (62.4%), yam (57.2%), maize (52.1%), unripe plantain (41.5%), fruits (42.8%) and vegetables (40.0%). Irish potato was never consumed by 62.4% of the students while a significant number consumed bread (21.8%) and snacks (21.0%) on a daily basis. Starchy grains, roots and tubers constituted the major meals of the students in the study, this was equally the position in a similar study in South-western Nigeria (Otemuyiwa & Adewusi, 2014). High consumption of these foods by students could be as a result of their availability as they seem to be the staple foods in Nigeria.

There was also high and very frequent consumption of fried foods and snacks. This was also identified in some other studies (Almoraie, Saqaan, Alharthi, et al., 2021). The proliferation of snacks and fast food vendors on most campuses has increasingly reduced

the quest for affordable choices of nutritious meals. Students consider these choices to be easily accessible, affordable and convenient. The protective effect of fruits and vegetables against non-communicable diseases cannot be overemphasized. However findings from this study indicate that daily consumption of fruits (15.4%) and vegetables (19.5%) among respondents in this study low was quite low compared with World Health Organization recommendation of 400g (about five servings) per day. This was also the case in AlKandari et al., (2023) where 40.3% of the students reported eating fruits and vegetables 1-2 times/week and about 11.0% who indicated that they never eat fruits and vegetables as well as that reported by Ismail, et al., (2022) where only one-third of the respondents consumed fruits and vegetables daily. These findings indicates that most undergraduates may be consuming below the recommended portion of fruits and vegetables and by implication may lack some of the essential vitamins as reflected other studies (Otemuyiwa & Adewusi, 2014; Sulaiman,, Mohamad & Ismail, 2021).

Table 3: Determinants of food preferences among undergraduates in Edo State

| S/n | Factors | Male | Female | Total |
|-----|---------------------|-------------|-------------|-------------|
| 1 | Sensory Appeal | 87 (36.3%) | 126 (49.4%) | 213 (43.0%) |
| 2 | Health concern | 125 (52.1%) | 152 (59.6%) | 277 (56.0%) |
| 3 | Cost | 185 (77.1%) | 196 (76.9%) | 381 (77.0%) |
| 4 | Convenience | 176 (73.3%) | 156 (61.2%) | 332 (67.1%) |
| 5 | Media/Advertisement | 198 (82.5%) | 215 (84.3%) | 413 (83.4%) |
| 6 | Availability | 167 (69.6%) | 178 (69.8%) | 345 (69.7%) |
| 7 | Dietary knowledge | 104 (43.3%) | 112 (44.0%) | 216 (43.6%) |
| 8 | Peer influence | 129 (53.8%) | 138 (54.1%) | 266 (53.7%) |
| 9 | Values/Beliefs | 109 (45.4%) | 113 (44.3%) | 222 (44.8%) |
| 10 | Stress | 131 (54.6%) | 153 (60.0%) | 284 (57.4%) |
| 11 | Mood | 62 (25.8%) | 120 (47.1%) | 182 (36.8%) |

Key: >50% - Determinant; <50% - Non-determinant

The study has demonstrated that the quest for food is not sole hinged on the desire to satisfy hunger, but is an interplay between several factors. The determinants of food preferences among undergraduates as indicated in table 3 are nutritional value/health concern (56.0%), cost (77.0%), convenience (67.1%), media/advertisement (83.4%), availability (69.7%), familiarity (53.7%) and stress (57.4%). Several studies within and outside Nigeria also support these views (Otemuyiwa & Adewusi, 2014; El- mani et al., 2020;. Ogundele et al., 2023; Powell et al., 2022). Knowledge of nutritional value and influence of food on health are important components of nutrition education.

This study has shown that nutritional value and health concerns play an important role in food preferences of undergraduates and further supports the views of Ogundele et al., (2023) that students are aware of the nutritional values of food but may decide to make their choices based on other factors such as peer influence, convenience, availability and

cost. Dietary knowledge was a major factor for students in this study for making their food choices. This concern was also identified in some other studies (El-mani et al., (2020;) where the poor nutritional knowledge of students largely influenced their food choices. Intervention programmes targeted at improving the nutritional knowledge of students should be organized by various institutions to address this problem.

The study indicated that male and female students had similar views in terms of determinants of food preferences. However they differed slightly based on convenience, 73.3% for males and 61.2% for females as well as mood, 25.8% for males and 47.1% for females. The food environment largely controlled by media and advertisement as well as peers and parental influences is a significant determinant of food preference for adolescents as inferred from this study and also demonstrated in other studies (Almoraie et al., 2024). The increasing number of fast food outlet on our campuses promoting processed foods rich in fats and sugars buttress the influence of food environment on food choices made by adolescents (Arslan, Aslan & Hatipoglu, 2023; Gabriel et al, 2024). Also, the current economic situation in the country has highlighted the importance of cost as one of the major determinant of food preferences. On campus cost and convenience are twin factors that promote snacking and other convenience food. This was deduced from this study and also highlighted in other studies (). It is therefore suggested that efforts to control the food environment should target social media handles as veritable tools to market healthy food choices that are cheap, convenient and readily available within and around the university environment.

Table 4: Knowledge level of healthy nutrition among undergraduates in universities in Edo State

| S/n | Level of knowledge | Frequency | Percentage |
|-----|--------------------|-----------|------------|
| 1 | High knowledge | 246 | 49.5 |
| 2 | Average knowledge | 129 | 26.1 |
| 3 | Low knowledge | 121 | 24.4 |

Key: 0-8 Low knowledge; 9-16 Moderate knowledge; 17-25 High knowledge.

The level of knowledge on healthy nutrition among undergraduates in Edo state was quite encouraging with almost half of the students (49.5%) having high knowledge as seen in table 4. This was also the case in some other studies (Dada, Oyewole, Desmennu (2020); Mogeni &Ouma, 2022). It was however not in consonance with a similar study in Puerto Rico, where over 60% of the students had inadequate nutritional knowledge (Medina et al; 2020). Though knowledge may be considered as the starting for adopting healthy behaviours, the role of other factors should not be overlooked. Strategic health education should target behavior change communication to motivate healthy food options among students.

Conclusion and Recommendations

The findings of this study provide valuable information on food preferences of undergraduates in Edo State. The results indicate that starchy foods, snacks and other

convenience foods were preferred over other healthy options. Although, almost half of the students had high level of knowledge of healthy nutrition, an interplay of several factors such as media/advertisement, cost, convenience, stress and peer influence predominantly influence their food preferences.

This study therefore has several implications for health education and promotion among undergraduates; we therefore recommend that Institutions should develop programmes addressing healthy meal planning and nutrition. Such programmes should not only be targeted at improving nutritional knowledge but must also consider other socio-economic and psychological factors influencing food choices. Furthermore, there should be training of student ambassadors to promote healthy food options on campus, these options should be readily available and affordable. Finally, institutions should review and revise food policies to promote healthy options by effective monitoring of the food environment.

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