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Reasons for consumption, frequency and effects of empty calories among some higher institution students in Sokoto

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Abstract:

Empty calories are calories obtained from foods and drinks that provide high energy but little or no nutritional value such as vitamins, minerals, proteins and fibre. Examples include sugary drinks, sweets, pastries, chips, noodles, and fast foods. This study assessed the reasons for consumption, frequency of consumption and perceived effects of consumption of empty calories among some higher institution students in Sokoto, Nigeria. A descriptive cross-sectional survey design was used. A total of 211 students were selected from higher institutions in Sokoto. Data were collected using a structured questionnaire and analysed using frequency, percentage and Chi-square goodness-of-fit test. Results showed that taste was the major reason for consumption 86 (40.8%), followed by cheap 54 (25.6%), easy to prepare 46 (21.8%) and accessible 25 (11.8%). On frequency of consumption, majority of the respondents rarely consumed empty calories 122 (57.8%), followed by sometimes 46 (21.8%), frequently 22 (10.4%) and daily 21 (10.0%). On perceived effects, fatigue was the most reported 78 (37.0%), followed by nausea 46 (21.8%), insomnia 28 (13.3%), insatiation 24 (11.4%), stomach pain 23 (10.9%) and sadness 12 (5.7%). All three variables were statistically significant ($p < 0.05$), indicating that the differences observed were not due to chance. The study concluded that despite the low frequency of consumption, taste and affordability drive the consumption of empty calories among students, and fatigue is the major perceived effect. Nutrition education and promotion of healthy affordable alternatives are recommended.

Keywords: *Empty calories, Consumption, Students, Sokoto, Nutrition, Fatigue*

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INTRODUCTION

Nutrition is vital in health, wellbeing and academic performance of students. However, people nowadays are having a drastic change in dietary pattern, coupled with increasing shift from healthy foods to the empty calories (ECs) (Vidya et al., 2015; Berkley, 2023).

Empty calories are food group that provide energy in large amount (in form of calories) but supply little or no nutrients to the body; thus, affecting health, growth, and development of consumers (Hamish & Angus, 2019; Horowilz et al., 2023; Shamsol et al., 2023).

Students and teachers at higher institutions are vulnerable to ECs for many reasons. They are busy, have limited income, and other problems therefore more prone to empty calories. The cheapness, flavor, and accessibility of students to empty calories, encourage them to rely on empty calories and possibly be affected by health effects (Khalid et al., 2020; Jack, 2023).

Regular consumption of the empty calories stuffs is linked to health problems like obesity, fatigue, tooth decay, poor mental health (such as dizziness, poor concentration, and poor cognition), cardiovascular problem, and diabetes, among others (Nagothi, 2021, Michigan WIC Program, 2022, Mageswari et al., 2021; Lane et al., 2024).

Indeed, assessing the pattern of empty calories consumption among students in higher institutions will aid in binging -up better initiatives to curb the trend and salvage the situation (Meena et al., 2023). This study assessed the reasons for consumption, frequency of consumption and perceived effects of consumption of empty calories among some higher institution students in Sokoto, Nigeria.

MATERIALS AND METHODS

Study area

The study here was conducted in Sokoto, Sokoto State, Nigeria.

Study design

The design utilized for this study was purely cross-sectional survey.

Study population and sample size

The study population comprises the entire students in higher institutions in Sokoto State, Nigeria. A total of 221 students properly filled and returned the distributed questionnaire for this study. The questionnaire was having section for demographic information, and section for reasons for consumption of empty calories, pattern (frequency) of empty calories consumption, and perceived health effects of empty calories consumption according to the submission of the participants involved in the study.

Data management

The collected questionnaire were analysed for frequency and percentage, and chi square test was carried out.

RESULTS AND DISCYSSION

Table 1Reasons for consumption of empty calories among some higher institutions students in Sokoto, Nigeria

Reasons for consumption	Frequency	Percentage
Taste	86	40.8
Easy to prepare	46	21.8
Cheap	54	25.6
Accessible	25	11.8
Total	211	100.0

Table 1 shows the reasons for taking empty calories as submitted by the respondents. The respondents stated reasons including, easy Yi prepare, taste, cheap, accessibility; but "taste" was the highest reason posited. The finding is in relationship with other work revealing the reasons for taking ECs in a higher institution in Sokoto performed by Tukur et al. (2026). Similarly, Malatji et al. (2023) decried for the same factors that encourage the intake of junk foods (ECs) among students in secondary schools in South Africa.

Table 2Frequency of consumption of empty calories among some higher institutions students in Sokoto, Nigeria

Frequency of consumption	Frequency	Percentage
Daily	21	10.0
Sometimes	46	21.8
Frequently	22	10.4
Rarely	122	57.8
Total	211	100.0

Table 2 shows frequency of intake of ECs among students in higher institutions in Sokoto. Majority (57.8%) rarely take empty calories, but a very concern rate arises as 10.0% take empty calories daily, and 21.8% take empty calories "sometimes." This was dissimilar to the pattern found by Tukur et al. (2026); and that of Sarkingobir (2026).

Table 3Perceived effects of consumption of empty calories among some higher institutions students in Sokoto, Nigeria

Perceived effects of consumption	Frequency	Percentage
Nausea	46	21.8
Fatigue	78	37.0
Stomach pain	23	10.9
Sadness	12	5.7
Insatiation	24	11.4
Insomnia	28	13.3
Total	211	100.0

Table 3 shows the effects perceived from empty calories consumption as submitted by students in higher institutions in Sokoto. The effects include, nausea, fatigue, insatiation, insomnia, sadness; and therewith, the highest was "fatigue." The effects revealed in this study are of great tendency to cause problem because they are withdrawal problems that may incite people to look for more of the empty calories and in turn likely causing addiction (Tukur et al., 2026). However, the effects can also be instrumentalized in health education according to Health Behavior Model to desist people from the empty calories. The finding here is in similar trend to the effects reported by Tukur et al. (2026).

CONCLUSION

The study concluded that taste and cheapness are the major reasons for consumption of empty calories among higher institution students in Sokoto. Although most students rarely consume empty calories, a significant proportion still consumes them daily or frequently. Fatigue was identified as the major perceived effect, followed by nausea and insomnia. There is need for nutrition education to create awareness on the dangers of empty calories and to encourage consumption of affordable, nutritious alternatives like fruits, vegetables, beans, groundnuts and whole grains.

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