



A Survey on Balance Diet and Eating Habits among Tertiary Education Students in Katsina Local Government Area, Katsina

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ABSTRACT

This study investigates the dietary patterns and eating habits among tertiary education students in Katsina Local Government Area, Katsina State. With an increasing concern about the nutritional status of young adults, particularly students, understanding their dietary behaviors becomes crucial for promoting overall health and well-being. The research employs a survey methodology, utilizing structured questionnaires distributed among a representative sample of tertiary education students in the local government area. The data collected from three selected institutions are analyzed to explore the types of foods consumed, frequency of meals, adherence to balanced diet guidelines and factors influencing dietary choices. Additionally, the study examines the awareness and knowledge levels regarding balanced nutrition among students. Findings from this research provide perceptions into the prevailing dietary patterns and shed light on potential areas for intervention and educational programs aimed at promoting healthier eating habits among tertiary education students in Katsina Local Government Area, Katsina State.

1. Introduction

In contemporary society, dietary habits play a pivotal role in the overall well-being and academic performance of individuals, particularly tertiary education students. The transition from adolescence to adulthood, coupled with the demands of academic life, makes it essential to examine the dietary patterns and eating habits prevalent among students in tertiary institutions. Katsina Local Government Area in Katsina State presents an intriguing setting for such a survey, offering acumens into the nutritional choices and lifestyle behaviors of the student population. As tertiary education institutions continue to attract students from diverse backgrounds, the dietary preferences and habits of this demographic have become increasingly important to understand. The availability of various food options, coupled with the influence of cultural, social, and academic factors, contributes to the formulation of students' eating habits. This investigate into the dietary landscape of tertiary education students in Katsina Local Government Area, shedding bright on their adherence to balanced diets, nutritional knowledge and the impact of lifestyle choices on their overall health. By examining these aspects, the study seeks to contribute valuable insights that can inform strategies for promoting healthier eating habits among students and fostering a conducive environment for academic success. Understanding the factors that influence students' dietary choices is crucial not only for individual health but also for addressing broader issues such as the rising prevalence of lifestyle-related diseases. This survey endeavors to provide a comprehensive overview of the current state of balance diet adherence and eating habits among tertiary education students in Katsina, contributing to the development of targeted interventions and educational programs aimed at promoting healthier lifestyles within the academic community.

Unhealthy eating practices are recognized as a significant health issue, contributing to various health problems such as Type 2 diabetes, cancer, and cardiovascular issues in developing nations (World Health Organization, 2003). Nutrients derived from consumed food undergo metabolic processes in the digestive system, ultimately being absorbed at a cellular level in the body (Gibney et al., 2009). Optimal nutrition plays a pivotal role in promoting health, overall well-being, normal development, and a high quality of life (Gibney et al., 2009). Conversely, under-nutrition, over-nutrition, and malnutrition are associated with suboptimal health outcomes (Gibney et al., 2009), leading to chronic diseases such as cardiovascular disease, Type-2 diabetes, cancer, osteoporosis, and anemia (Lytle et al., 2002). a dietary pattern associated with alterations in the mental and emotional states of students (Gustafson, 2010). University students, comprising a youthful population pursuing common academic goals in a specific location, experience newfound independence upon admission, potentially leading to suboptimal eating habits. Understanding what, when, and how students eat becomes crucial in fostering healthy lifestyles and dietary habits among this demographic (Goel, 2006; Rashad and Grossman, 2004). Nutrition holds particular importance for university students, given the unique challenges and opportunities associated with their academic journey (Erten et al., 2006). (Alphonsus, et al. 2013) highlighted that adolescent urban schoolgirls in Benin City, Nigeria, exhibited concerning eating habits such as meal skipping, frequent consumption of fast foods, soft drinks, and low intake of fruits and vegetables.

1.1 Influential Factors Shaping Dietary Patterns Among tertiary institution Students

Various factors play a crucial role in influencing dietary consumption patterns, including eating habits, perceived knowledge about nutrition, income status, cultural beliefs, and socioeconomic and geographical limitations. Diets characterized by high energy content, elevated fat and sugar intake, and reduced consumption of fiber-rich foods and complex carbohydrates contribute significantly to the prevalence of non-communicable diseases such as heart problems, stroke, kidney diseases, diabetes mellitus, hypertension, osteoporosis, and cancer (Hamam et al., 2017). Additionally, university students often prefer coffee, tea, and soda over fruit juice or plain water to maintain their fluid balance. High coffee consumption has been associated with various health risks, including stroke, coronary heart disease, heart failure, liver cirrhosis, urinary tract infection, and stomach upset (Poole et al., 2017). Conversely, fruit juices serve as rich sources of vitamin C, carotenoids, and polyphenols, offering health-promoting benefits (Benton and Young, 2019). Despite these considerations, students face numerous barriers hindering their adherence to healthy dietary practices. These barriers may stem from factors such as inadequate physical activity, lack of awareness, and environmental influences (Malibari, 2016; Al-Hazzaa et al., 2011). Challenges include a lack of skills in choosing healthy diets, negative coping strategies for stress during study periods, disinterest in preparing healthy foods, and sporadic assessments of nutritional status (Raber et al., 2016; Abraham et al., 2018). Moreover, the availability and variety of food options significantly impact students' food preferences. Commonly reported factors influencing student diets include difficulty in preparing healthy food, the ease of junk food preparation, limited availability of healthy food items, the palatable taste of unhealthy options, enticing advertising of unhealthy diets, and the high cost of nutritious foods (Hilger et al., 2017). Consequently, promoting qualitative changes in food consumption and encouraging the adoption of healthy dietary practices among university students becomes a challenging task.

1.2 Tertiary institution Students' Dietary Habits and the Need for Intervention

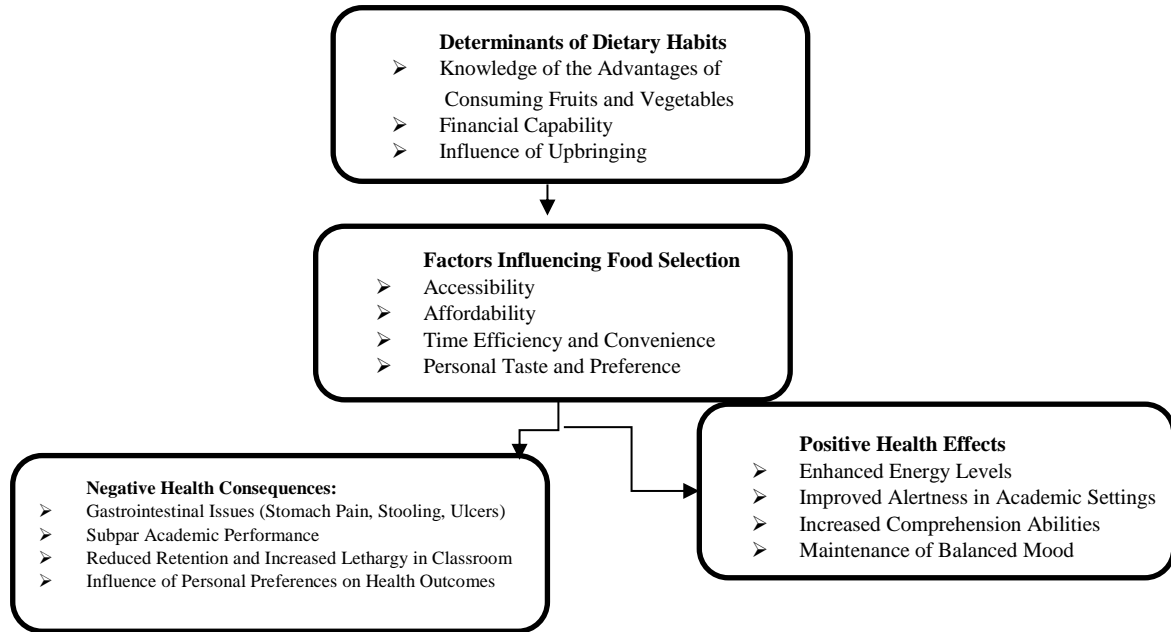
Establishing healthy dietary habits in the student years is crucial for their long-term well-being. Research conducted by Amal et al. in 2020 highlighted the inadequacy of students' eating habits, identifying key barriers such as the easy accessibility of fast food, the high cost of nutritious foods, time constraints, and a tendency to opt for convenience over health. Interestingly, peer pressure was found to be the least influential factor in promoting unhealthy eating. The study also explored the correlation between students' understanding of a healthy diet and their characteristics. Results indicated that single students, those in the preparatory to second-year academic levels, and those enrolled in nutrition courses demonstrated higher awareness of healthy dietary practices. Additionally, maintaining a normal BMI was identified as an indicator of a healthy nutritional status. The association between body mass index (BMI) and academic discipline, particularly enrollment in a nutrition course, was investigated. The findings underscored the importance of educational choices in influencing dietary awareness and practices among university students. Recognizing the long-lasting impact of university dietary practices, it is emphasized that these habits play a pivotal role in shaping future dietary behavior and food consumption. Studies by Hardcastle et al. (2015) and Ashton et al. (2015) underline the significance of this period in habit formation. Given that students represent the future of the nation, there is a societal expectation for them to possess ample knowledge about dietary patterns and adopt appropriate dietary practices. In line with this, the Ministry of Health in the Kingdom of Saudi Arabia introduced food-based dietary guidelines (FBDG) in 2012, aiming to promote healthier diets and induce lifestyle changes across the population (Moradi-Lakeh et al., 2017).

1.3 Understanding the Crucial Link Between Students' Eating Habits and Health

The correlation between students' eating habits and their health is a subject that cannot be overstated, as emphasized by Ogadimma et al. (2019). Therefore, it is imperative to raise awareness not only about the importance of cultivating healthy eating habits but also to underscore, through collaborative efforts involving government agencies, nutritionists, and individuals, the significance of consistently and consciously consuming a balanced diet, especially among undergraduate students. The recommendation extends beyond students to the broader populace, emphasizing the need for careful consideration of food choices. Choices should not be solely driven by availability or convenience; instead, individuals should critically assess the nutritional content of their food. Rather than indulging in junk foods, students should be enlightened about the vital role of fruits and vegetables in maintaining good health. In a country like Nigeria, where an abundance of diverse vegetables with rich nutritional value is readily available, there should be a concerted effort to promote their consumption. During the period of gaining independence, individuals, especially university students, tend to shape their eating preferences, opting for frequent dining out and being influenced by peer groups. Consequently, there is a tendency to consume foods regarded as unhealthy, such as fizzy drinks and fast food. The prevailing mindset among most youth regarding eating habits is often characterized by a lack of consideration for nutritional value or the necessity of a balanced diet eating based on what is visible, wherever and whenever.

1.4 Conceptual Framework:

Within this project section, there is a preliminary conceptualization of essential variables derived from the research objectives. It examines the correlation between suboptimal nutrition stemming from students' food choices and the lack of awareness regarding the health benefits of food, highlighting their combined impact on overall health outcomes.

Figure 1. Conceptual Framework showing relationship between feeding and health

1.5 Objectives of the Study

The aim of the research is to investigate the dietary patterns and eating habits of tertiary education students in Katsina Local Government Area, Katsina State, with the following objectives

- i. To Evaluate the dietary habits of tertiary education students in Katsina Local Government to determine the prevalence of balanced diets.
- ii. Examine the factors influencing students' eating habits, including cultural, economic, and lifestyle factors.
- iii. Develop educational interventions to promote a balanced diet and healthy eating habits among tertiary education students in the area.

2. Method of the Research

2.1 The Research Design

This study adopts a descriptive cross-sectional research design. A quantitative approach is employed to collect numerical data on dietary patterns and eating habits. The target population includes tertiary education students in Katsina Local Government Area. And stratified random sampling technique was employed to ensure representation from various tertiary institutions.

2.2 Method of Data collection

One hundred and fifty (150) Structured questionnaires was distributed among the selected participants of the tertiary institutions which include Hassan usman Katsina polytechnic, Alqalam University Katsina and Federal college of education Katsina. The questionnaire cover areas such as dietary preferences, nutritional knowledge, sources of information and lifestyle factors influencing eating habits.

2.4 Data Processing and Analysis

Descriptive statistics such as frequencies, percentages, means and standard deviation was used to analyze the data. Using statistical package for social sciences (SPSS) Version 23.0.

3. Results and Discussion

The personal data of the respondent include: Gender, Age of the respondent, Educational level, field of study of the respondent and residential status of the respondents.

Table 1: Demographic profile of the respondents

Gender of the respondent	Frequency	Percentage	Mean	Standard deviation
Male	57	45.6%	1.54	0.500
Female	80	54.4%		
Total	147	100%		
Age of the respondents				
18-24	98	66.7%	1.42	0.651
25-34	36	24.5%		
35-Above	13	8.8%		
Total	147	100%		
Education level				
Undergraduate	129	87.8%	1.12	0.329
Postgraduate	18	28.0%		
Total	147	100%		
Field of study				
Humanities	45	30.6%	2.52	1.273
Science	24	16.3%		
Social science	47	32.0%		
Management science	19	12.9%		
Engineering	12	8.2%		
Total	147	100%		
Residential status				
On campus	60	40.8%	1.59	0.493
Off campus	87	59.2%		
Total	147	100%		

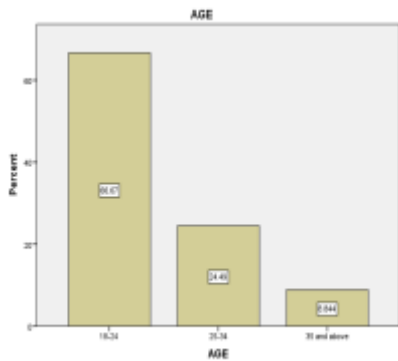


Figure 1: chart representing the age of the respondent

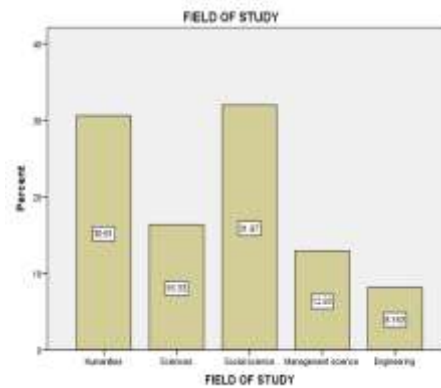


Figure 2: chart representing the field of study of the respondent

Table 1 represent the demographic breakdown which reveals interesting insights into the sample population. In terms of gender, females represent a slightly higher proportion (54.4%) compared to males (45.6%). This could indicate a slightly higher participation or interest among females in surveys related to dietary habits and healthy eating, which could be valuable for targeted interventions or educational programs aimed at improving overall health and nutrition. Regarding age groups, the majority of respondents fall within the 18-24 category, constituting 66.7% of the sample. This suggests that younger adults, typically tertiary education students, are more likely to engage in surveys related to dietary habits. Understanding the dietary patterns and preferences of this age group is crucial for promoting healthy eating habits early on, which can have long-term benefits for their overall health and well-being. In terms of education levels, undergraduate students make up the vast majority (87.8%) of the sample, with postgraduates comprising the remaining 12.2%. The distribution across fields of study reveals diversity, with the highest representation in social sciences (32.0%) followed by humanities (30.6%). Understanding the dietary preferences and challenges across different academic disciplines could help tailor educational initiatives to resonate more effectively with students from diverse backgrounds, ensuring that interventions are inclusive and relevant to the entire student population.

Data presentation Analysis and Discussion

Questions	Rarely	%	Occasionally	%	Frequently	%	Very frequently	%	Always	%
How often do you consume fruits	9	6.1	65	42.2	60	40.8	2	1.4	11	7.5
How frequently do you include protein sources (meat, beans, nuts) in your diet?	54	36.7	64	43.5	11	7.5	9	6.1	9	6.1

Table 2: Consumption of fruits and vegetables and protein in daily meals

The frequency of consuming fruits and vegetables among tertiary education students in Katsina Local Government varies, with the majority falling into the "Occasionally" category at 44.2%. This suggests that while fruits and vegetables are part of their diet, they are not consumed consistently on a daily basis. This finding highlights an opportunity for educational programs to emphasize the importance of incorporating fruits and vegetables into daily meals to ensure a balanced diet. Encouraging students to increase their intake of fruits and vegetables can lead to improved overall health outcomes, including better nutrition and reduced risk of chronic diseases.

Interestingly, only a small percentage of respondents reported consuming fruits and vegetables "Very frequently" (1.4%) or "Always" (3.4%). This indicates that there is room for improvement in promoting healthier eating habits among tertiary education students. Educational interventions could focus on raising awareness about the benefits of consuming fruits and vegetables regularly, providing practical tips for incorporating them into meals, and addressing barriers such as cost, accessibility, and convenience. By encouraging students to prioritize fruits and vegetables in their daily diets, these interventions can contribute to the development of lifelong healthy eating habits.

The frequency of including protein sources such as meat, beans, and nuts in the diet of tertiary education students in Katsina Local Government varies, with the majority falling into the "Occasionally" category at 43.5%. This suggests that while protein sources are part of their diet, they are not consumed consistently on a daily basis. This finding highlights a potential area for improvement in promoting balanced nutrition among students. Since protein is essential for various bodily functions and overall health, educational programs could emphasize the importance of incorporating protein-rich foods into meals more regularly to meet nutritional needs and support optimal health. Interestingly, a significant proportion of respondents reported consuming protein sources "Rarely" (36.7%), indicating a notable gap in their dietary habits. This suggests a potential lack of awareness or access to adequate protein sources among tertiary education students in the region. By promoting a more consistent intake of protein-rich foods, these interventions can contribute to improving overall dietary quality and supporting the health and well-being of students.

Which of the following factors most influences your food choices?

	Frequency	Percent
Cultural Preferences	4	2.7
Economic constraint	85	57.8
Valid Taste preferences	19	12.9
Health consideration	39	26.5
Total	147	100.0

Table 3. Most factors influencing food choices

The data indicates that economic constraints play a significant role in influencing the food choices of tertiary education students in Katsina Local Government, with 57.8% of respondents citing it as the primary factor. This finding suggests that financial limitations may dictate the types of foods students are able to afford and consequently consume. Economic constraints can lead individuals to prioritize cheaper, less nutritious options over healthier alternatives, potentially compromising their overall dietary quality and health outcomes. Addressing these economic barriers through initiatives such as subsidized meal programs, student discounts at local markets, or financial literacy workshops could help alleviate the financial burden and empower students to make healthier food choices within their budget constraints. Health considerations were also cited as a notable factor influencing food choices, with 26.5% of respondents indicating it as a primary influence. This highlights a positive trend among students who prioritize their health when making food decisions. Educational programs that raise awareness about the importance of nutrition for overall health and well-being, as well as provide information on the nutritional value of different food choices, can further empower students to make informed decisions that prioritize their health. By addressing both economic constraints and promoting health-conscious decision-making, interventions can support students in adopting healthier dietary habits and improving their overall nutritional status.

Rate the impact of lifestyle factors (e.g., work schedule, extracurricular activities) on your eating habits

	Frequency	Percent
Valid Not influential	4	2.7
Slightly influential	8	5.4
Neutral	25	17.0
Influential	33	22.4
Highly influential	77	52.4
Total	147	100.0

Table 4: lifestyle factors on eating habits

The data reveals that lifestyle factors such as work schedule and extracurricular activities have a significant impact on the eating habits of tertiary education students in Katsina Local Government, with 52.4% of respondents indicating that these factors are "Highly influential." This suggests that students' busy schedules and commitments outside of their academic studies significantly influence their dietary choices and eating patterns. The demanding nature of their schedules may lead students to prioritize convenience over nutritional quality, opting for quick and often less healthy food options that require minimal preparation. This finding underscores the importance of considering lifestyle factors when designing interventions to promote healthier eating habits among students, as strategies must be tailored to accommodate their busy schedules and address the challenges they face in making nutritious food choices. Additionally, a notable proportion of respondents (22.4%) reported that lifestyle factors are "Influential" on their eating habits, indicating that while not as dominant as for others, these factors still play a significant role in shaping their dietary behaviors. This suggests that there may be varying degrees of influence among students, with some experiencing greater challenges in maintaining healthy eating habits due to their lifestyle factors compared to others. By addressing the influence of lifestyle factors on eating habits, interventions can empower students to make more informed choices and cultivate sustainable behaviors that promote overall health and well-being.

Are you aware of the importance of a balanced diet for overall health?

	Frequency	Percent
Valid Yes	141	95.9
No	6	4.1
Total	147	100.0

Table 5. Importance of a balanced diet for overall health

The data in table 5 demonstrates a high level of awareness among tertiary education students in Katsina Local Government regarding the importance of a balanced diet for overall health, with 95.9% of respondents indicating that they are aware of this significance. This indicates a positive trend towards understanding the fundamental role that nutrition plays in maintaining optimal health and well-being. With the majority of students recognizing the importance of a balanced diet, there is a foundation upon which to build educational interventions and programs aimed at promoting healthier eating habits. By reinforcing this awareness and providing students with practical knowledge and skills to implement balanced dietary practices, interventions can further empower them to make informed choices that support their overall health and wellness.

However, it's worth noting that a small proportion of respondents (4.1%) reported not being aware of the importance of a balanced diet for overall health. While this percentage is relatively low, it still signifies a gap in knowledge among a subset of students. Addressing this gap through targeted educational

initiatives and awareness campaigns can help ensure that all students have access to essential information about nutrition and its impact on health. By reaching out to those who may be less informed, interventions can promote inclusivity and equity in promoting healthy eating habits among tertiary education students, ultimately contributing to better health outcomes for the entire student population.

How willing are you to participate in educational programs promoting healthy eating habits?

	Frequency	Percent
Not interested at all	78	53.1
Slightly interested	44	29.9
Neutral	11	7.5
Interested	11	7.5
Very interested	3	2.0
Total	147	100.0

Table 6: Educational programs promoting healthy eating habits

The data of Table 6 indicates a range of willingness among tertiary education students in Katsina Local Government to participate in educational programs promoting healthy eating habits. A significant proportion of respondents (53.1%) expressed that they are "Not interested at all" in participating in such programs. This suggests a potential challenge in engaging this segment of the student population and highlights the importance of understanding and addressing barriers to participation. Interventions aimed at promoting healthy eating habits may need to consider strategies to enhance motivation and interest among students who initially express low willingness to participate, such as tailoring program content to align with their interests and needs or offering incentives for participation. On the other hand, a notable portion of respondents (29.9%) expressed some level of interest in participating, with 7.5% indicating they are "Interested" and 2.0% reporting they are "Very interested." While these percentages are lower than ideal, they still signify a potential opportunity to engage a subset of students who are open to participating in educational programs promoting healthy eating habits. By capitalizing on this interest and providing engaging and relevant programming, interventions can effectively reach and impact students who are more receptive to adopting healthier dietary practices. Additionally, efforts to raise awareness about the benefits of participating in such programs and addressing potential misconceptions or barriers to engagement may further increase interest and participation rates among students.

What type of educational interventions do you think would be most effective in promoting balanced diets among students?

	Frequency	Percent
Workshops	3	2.0
Cooking classes	67	45.6
Informational pamphlets	58	39.5
Online resources	19	12.9
Total	147	100.0

Table 7. Most Interventions effective in promoting balanced diets among students

From Table 7. The data suggests that cooking classes are perceived as the most effective type of educational intervention for promoting balanced diets among tertiary education students in Katsina Local Government, with 45.6% of respondents indicating this preference. This preference aligns with the practical nature of cooking classes, which provide hands-on experience and skill-building opportunities for students to learn how to prepare nutritious meals. By equipping students with cooking skills and knowledge about healthy food choices, cooking classes can empower them to make healthier dietary decisions and incorporate balanced meals into their daily routines. Additionally, cooking classes have the potential to foster a sense of autonomy and confidence in students' ability to prepare their own meals, which can contribute to sustained behavior change and improved dietary habits over time. Informational pamphlets were also identified as a popular choice for educational interventions, with 39.5% of respondents expressing a preference for this type of intervention. Informational pamphlets offer a convenient and accessible way to deliver educational content about nutrition and balanced diets to students. They can serve as valuable resources for providing evidence-based information, practical tips, and guidance on making healthier food choices.

4. Conclusion

In conclusion, the research provides valuable perceptions into the nutritional practices of this demographic. The findings of this study carry several implications for the well-being, academic performance, and overall health of tertiary education students in Katsina local government

The survey revealed diverse dietary patterns among tertiary education students, highlighting both positive and potentially concerning trends in their eating habits. This information is crucial for understanding the factors influencing food choices and nutritional intake. The study also uncovered potential health implications associated with certain eating habits, such as the prevalence of imbalances or deficiencies in the students' diets. These findings underscore the need for targeted health interventions to address nutritional gaps and promote overall well-being. Then also, Correlations between eating habits and academic performance were explored, emphasizing the intricate link between nutrition and cognitive function. The study suggests that interventions aimed at improving dietary choices could positively impact students' academic achievements.

5. Recommendation

Based on the current findings, several recommendations can be made to address identified issues and promote healthier eating habits among the target population the stake holders should :

1. Implement comprehensive nutritional education programs within tertiary institutions to increase students' awareness of the importance of a balanced diet.
2. Advocate for the integration of nutrition-related topics into the curriculum of tertiary education programs.
3. Collaborate with campus cafeterias to improve the availability of nutritious food options. Encourage the inclusion of balanced meals, fresh fruits, vegetables and whole grains. Provide nutritional information on menu items to guide students in making healthier choices.
4. Launch campaigns promoting a holistic approach to a healthy lifestyle. Emphasize the importance of regular physical activity, sufficient sleep and stress management in conjunction with maintaining a balanced diet. Engage students in fitness programs or sports activities.
5. Establish peer support programs where students can share their experiences, challenges and success stories related to maintaining a balanced diet. Encourage a sense of community and mutual encouragement to foster positive behavior change.

7. Foundation for Future Research

The survey serves as a foundational exploration, providing a baseline for future research endeavors. Subsequent studies can build upon these findings, delving deeper into specific aspects of dietary behaviors, tracking changes over time, and assessing the effectiveness of interventions.

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