

Analysis on The Perspective of Educated Adults in Edo State, Nigeria. On The Benefits of Fruits and Vegetables on The Brain

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Submitted : 23 May 2023 ; Published : 14 June 2023

Citation: Aluyor, P. (2023). Analysis On The Perspective Of Educated Adults In Edo State, Nigeria. On The Benefits Of Fruits And Vegetables On The Brain. J N food sci tech, 4(2):1-4.

Abstract

This study focused on the perspective of literate adult in Edo South senatorial zone. On the benefits of fruits and vegetable on the brain, Descriptive survey design was used in the conduct of the study. The population for the study was all Educated adults in Edo South Local Government. The sample size for the study is two hundred and forty six using random sampling techniques. A structured questionnaire consisting of twenty items was developed and used for data collection. Data were analyzed using mean. The finding of the study include the following: The respondents agreed that fruit and vegetables have different benefits to the brain, but they disagreed that some fruits and vegetables can play certain roles to the brain found in literature. Based on the findings, it was recommended among others that, there is need for Government to enlighten the public through social media on the benefits of fruits and vegetable to the brain.

Introduction

Fruits and vegetables contain vitamins, minerals, fibre and plant chemical. Fruits contain seed, while vegetables consists roots, stems, and leaves, fruits are sweet or sour, while vegetables are savory and mild. Fruits and vegetables are considered in dietary guidance because of their high concentrations of dietary fiber, vitamins minerals and plant chemicals, intake of fruits and vegetables have associated with, chronic diseases, such as cardiovascular diseases, osteoporosis, respiratory, problems as well as mental health. (PEM & JEE. WOW, 2015). Fruits and vegetables are power houses of nutrition supplying concentrated and tasty sources of macro and micro nutrients that can help reduce stresses and slow age-related decline in brain function because they supply vitamin C, potassium and vitamin B, niacin. Deficiency in above vitamins lead to symptom such as poor concentration, depression, a niacin deficiency can lead to memory loss (Douglas, 2020) vegetable oils, nuts and seeds are the main dietary sources of vitamin E, while fruits and vegetables are the primary sources of vitamin C. Human trials of varying doses of vitamins E and C including low, supplemental, and pharmacologic, have found that these nutrients may improve immunity, vascular function, ad brain performance. An optimal intake of these nutrients has been associated with decreased risk of developing cognitive impairments associated with aging (Martin et al., 2002).

Brain health is becoming an increasingly important research, especially in the older adult population as it is estimated that

diagnosis of Alzheimer's disease (AD) will triple by 2060, improved intake of fruits and vegetables can help alleviate many diseases and directly impact the brain. (Cheng et al., 2014) (Roizman, 2018). Spinach, broccoli, and other green leafy vegetables contribute a lot to boost IQ level, they are the power house for all nutrients and vitamins that are essential for the development of the brain, they have high levels of iron to help restore energy and improve red blood cells function. Walnuts and almonds are great for storing memory, high concentration and proper function of the brain. (Shaktawat, 2021).

Cucumbers are rich in a flavonoid called fisetin, Fisetin is an anti-inflammatory flavonoid present in cucumber, is known to be important to brain health, Eating cucumber protect nerve cells from the decline due to aging and will improve memory. (Prakason, 2017) Avocados improve blood supply and oxygenation to the brain, Healthy unsaturated fats in avocados help keep the brain cell membranes flexible, avocados are packed with healthy monounsaturated fats that support healthy blood flow and information carrying nerves in the brain. Avocados contain copper, foliate, vitamin E and Vitamin C. Strawberry contains vitamins and minerals, they are low – cabrie fiber rich and abundant in antioxidants and polyphenols. Potassium in straw berries improved cognitive function by increasing blood flow to the brain. Harvard research shows that

higher consumption of flavonoids particularly from blueberries and strawberries reduced rates of cognitive decline in older people (Nadgeve, 2021).

Sunflower contain vitamin E, vitamin E offers protection against brain decline. The choline and selenium found in sunflower seeds are beneficial for the brain function and memory. Sunflower seeds are rich in vitamin B6. It improves concentration, and enhances memory (Scharman, 2017) sunflower seeds are a great source of tryptophan an essential amino acid that is converted into serotonin in the brain, serotonin is a neurotransmitter that helps regulate mood, sleep and appetite. These seeds also contain other nutrients that are crucial for brain function including vitamin E and magnesium (Sharfiq, 2013). Certain fruits such as oranges, bell peppers, guava, kiwi, tomatoes, and strawberries contain high amounts of vitamin c, helps prevent brain cells from becoming damaged, and supports overall brain healthy. (Alharbi et al., 2016).

Potassium and foliate are additional vital nutrients from oranges, potassium supports heart function and muscle mass, this mineral also acts as a natural diuretic to reduce blood pressure and counter fluid retention. While, foliate supports the brain and nervous system, and adequate amounts protect against depression and memory problems (Sass, 2020). Carrots improves brain health and prevent the deterioration of cognition, carrots contain flavonoid luteolin which improves brain health, the more orange the carrot is, the higher the carotene levels, carotene prevent the deterioration of cognition (Whitaker, 2020).

Cashew nuts help in improving brain function, chemobrain is a term for the adverse effects of chemotherapy induced brain deterioration. Studies have shown the beneficialeffect of cashew nuts on neurochemicals linked to brain functions (Singh, 2023). Beta carotene and lycopene in tomatoes, support cognitive function. These two anti-oxidantshave a role in protecting the brains from cellular damage. Any food that

is high in antioxidants such as tomatoes, is good for the brain because it help counter the effect of free radicals and other damaging molecules in the body (Lawrence, 2022). Gehlich et al.(2017) also confirmed in their study, that fruits and vegetables consumption improved mental and cognitive healthier in older adults from nor Western developing countries.

Purpose of the study

The purpose of the study is to investigate perspective of Adults in Edo South Local Government on the benefits of fruits and vegetables on the healthy brain specifically the study:

- examine the benefits of fruits and vegetables on brain.
- examine the benefits of specific fruits and vegetables on healthy brain.

Research Questions

- What are the benefits of fruits and vegetables on the brain.
- What are the benefits of specific fruits and vegetables on the brain.

Methodology

Descriptive survey design was adopted in the conduct of the study. The population for the study was all educated adults in Edo South Senatorial zone. The sample size for the study is two hundred and forty six using random sampling techniques; A structured questionnaire consisting of twenty items was developed and used for data collection. It was subjected to face validation by two experts in vocational and technical Education, Ambrose Alli University, Ekpoma. Test-retest was used for the study, pearson product moment correlation coefficient was used to obtain reliability co-efficient of 0.82. Mean was used to analyze the data. Any item that have mean scores above 2.50 was interpreted as Agreed while any item that have mean scores below 2.50 was interpreted as Disagreed.

Findings

Research Question 1: What are the benefits of fruits and vegetables on the brain?

S.No.	Items	SA	A	D	SD	\bar{X}	Remark
1	Fruits and vegetables contain carbohydrates where brain gets energy to function well.	27	141	27	51	2.23	Disagreed
2	Fruits and vegetable are paramount to brain development.	87	147	12	0	3.21	Agreed
3	Fruits and vegetables contains nutrients which are very important to the brain.	69	117	42	18	2.54	Agreed
4	Vegetables high in potassium promotes healthy brain	30	135	48	33	3.16	Agreed
5	Several vegetable juices with leafy greens boost your vitamin K intake which, protect the brain	57	147	24	18	2.72	Agreed
6	Vitamins and minerals found in fruits and vegetables are important substance for the functioning of the brain.	84	141	15	6	3.16	Agreed
7	Vegetables provide vitamin C, which protect your brain cells from oxidative stress	81	120	33	12	2.78	Agreed
8	Lack of intake of fruits and vegetables can affect IQ level	66	114	42	24	2.46	Disagreed
9	Eating fruits help in boosting the brain power	63	168	9	6	3.07	Agreed
10	Fruits improve brain functioning	96	129	18	3	3.13	Agreed

Table 1: Means score of the respondents on the benefits of fruits and vegetable on the brain.

Table 1 show that the items 2, 3, 4, 5, 6, 7 9 and 10 have their mean above 2.50, implies that the respondents agreed with the items stated on the table, while item 1, and 8 have their grade mean below 2.50, implies that the respondents disagreed with the items stated on the table.

Research Question 2: What are the benefits of specific fruits and vegetables to the brain.

S/N	ITEMS	SA	A	D	SD	\bar{X}	Remark
1	Cucumbers improves memory	30	135	66	15	2.13	Disagreed
2	Avocado improves brain functioning.	78	135	21	12	2.91	Agreed
3	Blueberries help to fight memory loss	51	126	45	24	2.36	Disagreed
4	Strawberries improved cognitive function by increasing blood flow to the brain	129	69	36	12	2.94	Agreed
5	Vitamin C in fruits and vegetables prevent brain cells from becoming damaged	159	45	33	9	3.13	Agreed
6	Sunflower seeds contain nutrients that are crucial for brain function	48	123	42	33	2.28	Disagreed
7	Orange juice improves cognitive function	129	93	15	9	3.23	Agreed
8	Avocados improve cognitive function and prevent blood clots in the brain	150	54	24	18	3.10	Agreed
9	Carrots have nutrients that improves brain health	135	90	12	9	3.29	Agreed
10	The nutrient in tomatoes protect our brain from damage	141	51	33	21	2.91	Agreed

Table 2: Mean of the respondents on the benefits of specific fruits and vegetables on the brain

Table 2 show that the items 2,4, 5, 7, 8, 9 and 10 have their means above 2.50, implies that the respondents agreed with the items stated on the table, while item 1, 3 and 6 have their grade level below 2.50 implies that the respondents disagreed with the items stated on the table.

Discussion of Findings

The findings of this study revealed that the respondents agreed that fruits and vegetables are paramount to brain development, fruits and vegetables contains nutrients that are very important to the brain, also the vitamins and minerals found in fruits and vegetables are important substance for the functioning of the brain. The respondents disagreed with the fact that fruits and vegetables contain carbohydrates that can make brain to function properly and that lack of intake of fruits and vegetables do not affect IQ level. This findings was in line with the opinion of (Douglas, 2020) who stated that fruits and vegetables are power houses of nutrition supplying both macro and micronutrients that slow-age related decline in brain function because the supply vitamin c, potassium and vitamin B, and Niacin, Deficiency in above vitamins can lead to symptom such as poor concentration, depression, niacin deficiency can lead to memory loss.

The findings of (Shaktawat, 2021) who stated that green leafy vegetables contribute a lot to boost IQ level, they are the powerhouse for all nutrients and vitamins that are essential for the development of the brain, disagreed with the findings of the respondents which stated that lack of intake of fruits and vegetables do not affect IQ level.

The findings also revealed that the respondents agreed that Avocado improve brain functioning, Strawberries improve cognitive function by increasing blood flow to the brain, orange juice improves cognitive function, carrots improves brain health and that the nutrients in tomatoes protect our brain from damage. This was in agreement with the findings

of (Nagdeve, 2021) who stated that avocados improve blood supply and oxygenation to the brain, Healthy unsaturated fats in avocados help keep the brain cell membranes flexible.

The findings was also in line with (Sass, 2020) who stated that potassium and foliate are additional vital nutrients in oranges, foliate supports the brain and nervous system, and adequate amounts protect against depression and memory problem. The findings also in line with (Whitaker, 2020) who stated that carrots improves brain health and prevent the deterioration of cognition, carrots contain flavonoid luteolin which improves brain health, the more orange the carrots is, the higher the carotene levels.

The findings also revealed according to respondents response that cucumbers does not improve the brain, that blue berries does not help to fight memory loss, also, that sunflower seed do not contain nutrients that are crucial for brain function. The findings is not in line with (Prakasan, 2017) who stated that cucumbers are rich in a flavonoid called fisetin, which is known to be important to brain health, eating cucumber protect nerve cells from decline due to aging and will improve memory.

The finding is not also in agreement with (Scharman, 2017) who stated that sunflower contain vitamin E, Vitamin E offers protection against brain decline, the choline and selenium found in sunflower seeds are Beneficial's for the brain function and memory.

Conclusion

The study has investigated the perspective of literate adults on the benefits of fruits and vegetables on the brain. Based on the finding of the study. It has been proven that fruits and vegetables have great impact on the brain. It was also proven that the respondents do not have the understandings of the benefits some specific fruits and vegetables on the brain.

Recommendation

Based on the findings of this study, the following recommendations were made;

1. There should be more enlightenment on the benefits of fruits and vegetables on the brain.
2. Government should educate the public on the benefits of fruits and vegetables on the brain through media.
3. Mothers should ensure they include fruits and vegetable to their meal always.
4. Individuals should form the habits of eating those fruits and vegetables that help the brain to function proper always.

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