https://doi.org/10.48047/AFJBS.6.12.2024.3838-3849

African Journal of Biological Sciences

Journal homepage: http://www.afjbs.com

Research Paper Open Access

# Investigating the Influence of Dietary Habits on Human Health Across Various Age Groups: A Comprehensive Analysis

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**Article History**
Volume 6, Issue 12, 2024
Received: 02 Jun 2024
Accepted: 25 Jun 2024
doi:
10.48047/AFJBS.6.12.2024.3838-3849

**Abstract**

Food serves as essential fuel for the human body, providing vital nutrients such as vitamins, minerals, fibre, protein, and antioxidants. Numerous studies have established a positive correlation between healthy dietary habits and improved health outcomes. This study offers a novel perspective by examining how the impact of dietary habits on overall health varies by age and gender. The research focuses on individuals aged 16 and above, exploring how meal frequency, meal types, and the interval between meals influence health across different age groups. Data were collected through a structured survey and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21. Descriptive and inferential statistics were employed to identify patterns and significant associations. Preliminary findings indicate that dietary habits significantly affect health outcomes, with variations observed across different age groups and genders. This comprehensive analysis provides valuable insights for healthcare professionals and policymakers to develop age-specific and gender-specific dietary recommendations aimed at improving overall health.

**Keywords**:- Food, Vitamins, Minerals, Protein, Antioxidants, Dietary Habits, Human Health, Age Groups, SPSS.

## Introduction

The relationship between food intake and overall health has been a subject of extensive research, with various studies examining how meal frequency and the duration between meals influence health outcomes. This review focuses on the impact of these factors on different age groups: young adults (18-40), middle-aged adults (40-60), and older adults (above 61).

## Literature Review

Young Adults (18-40)

Metabolism and Weight Management: Several studies suggest that higher meal frequency can enhance metabolism and aid in weight management. A study by Smith et al. (2010) foundthat consuming smaller, more frequent meals may help regulate blood glucose levels and reduce

the risk of obesity in young adults .
Nutrient Intake: Higher meal frequency is also associated with better nutrient distribution throughout the day, which can improve overall nutrient intake and reduce the risk of nutrient deficiencies (Gibney & Vorster, 2001) .

Middle-Aged Adults (40-60)

Cardiovascular Health: Research indicates that meal frequency can impact cardiovascular health. A study by Mekary et al. (2013) showed that increased meal frequency is linked to a lower risk of coronary heart disease in middle-aged adults .
Metabolic Health: Increased meal frequency has been associated with improved insulin sensitivity and reduced risk of type 2 diabetes, which is particularly relevant for this age group (Jenkins et al., 2011).
Older Adults (Above 61)

Digestive Health: For older adults, frequent small meals can aid in digestion and nutrient absorption. A study by Morley (2001) emphasized the importance of meal frequency in maintaining energy balance and preventing malnutrition in the elderly.
Cognitive Function: Frequent eating has been linked to better cognitive function in older adults, as it helps maintain steady glucose levels crucial for brain health (Lamport et al., 2014) .
Duration Between Meals and Health
Young Adults (18-40)
Appetite Control: The duration between meals plays a critical role in appetite regulation. Shorter intervals between meals can help control hunger and prevent overeating (Leidy et al., 2010) .
Physical Performance: Regular meal intervals can support sustained energy levels, which is essential for physical performance and daily activities (Tipton & Wolfe, 2004) .
Middle-Aged Adults (40-60)

Blood Sugar Management: Middle-aged adults benefit from shorter meal intervals to manage blood sugar levels effectively. Studies have shown that consistent eating patterns help stabilize glucose levels, reducing the risk of metabolic syndrome (Dunbar et al., 2015).
Weight Control: Regular eating intervals can aid in weight control and prevent metabolic slowdown, which is crucial as metabolic rates tend to decline with age (Westerterp-Plantenga et al., 1999) .
Older Adults (Above 61)

Nutritional Status: Maintaining shorter intervals between meals helps ensure adequate caloric and nutrient intake, which is vital for older adults who may have reduced appetite (Wilson et al., 2001).
Energy Levels: Frequent meals with shorter intervals can help maintain energy levels and prevent fatigue, supporting better overall health and functionality (Morley, 2001) .

**Objectives:**
To study the impact of the frequency of food intake on overall health in different age group people.
To examine the impact of the type of food on overall health of different age group people.

**Research Methodology**
The study is based mainly based on Primary data. Data is collected from people of different age groups. Data collection instrument used is structured questionnaire. Convenience sampling

method is used to select the respondents of the study. Target population of the study includes people located in different countries and regions. Questionnaire was distributed and shared through google form link. From these 233 completely filled responses were received. Data is analyzed using Statistical Package for Social Science 21(SPSS 21).

**Hypothesis**

H01:- There is no significant impact of frequency of food intake on overall health of different age group people

H02:- There is no significant impact of type of food on overall health of different age grouppeople

**Data Analysis and Hypothesis Testing**

**Descriptive Statistics**

**Sugar Level * Age Crosstabulation**

Count

| | | Age | | | | Total |
|---|---|---|---|---|---|---|
| | | Between 16 to 30 Years | Between 31 to 45 Years | Between 46 to 60 Years | Above 61 Years | |
| Sugar Level | Non Diabetic | 84 | 51 | 52 | 5 | 192 |
| | Pre Diabetic | 2 | 3 | 10 | 5 | 20 |
| | Diabetic | 0 | 5 | 12 | 4 | 21 |
| Total | | 86 | 59 | 74 | 14 | 233 |

**Age * Meal Frequency * Sugar Level Crosstabulation**

Count

| Sugar Level | | | Meal Frequency | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | |
| | Age | Between 16 to 30 Years | 3 | 20 | 44 | 16 | 1 | 84 |
| | | Between 46 to 60 Years | 0 | 17 | 29 | 5 | 1 | 52 |
| | | Between 31 to 45 Years | 1 | 12 | 30 | 6 | 2 | 51 |
| | | Above 61 Years | 0 | 2 | 2 | 1 | 0 | 5 |
| | | Total | 4 | 51 | 105 | 28 | 4 | 192 |
| | | Between 16 to 30 Years | 1 | 1 | 0 | | 0 | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pre Diabetic | Age | Between 31 to 45 Years | 0 | 2 | 1 | | 0 | 3 |
| | | Between 46 to 60 Years | 0 | 3 | 6 | | 1 | 10 |
| | | Above 61 Years | 0 | 5 | 0 | | 0 | 5 |
| | | Total | 1 | 11 | 7 | | 1 | 20 |
| Diabetic | Age | Between 31 to 45 Years | | 4 | 1 | 0 | | 5 |
| | | Between 46 to 60 Years | | 6 | 5 | 1 | | 12 |
| | | Above 61 Years | | 3 | 1 | 0 | | 4 |
| | | Total | | 13 | 7 | 1 | | 21 |
| Total | Age | Between 16 to 30 Years | 4 | 21 | 44 | 16 | 1 | 86 |
| | | Between 31 to 45 Years | 1 | 18 | 32 | 6 | 2 | 59 |
| | | Between 46 to 60 Years | 0 | 26 | 40 | 6 | 2 | 74 |
| | | Above 61 Years | 0 | 10 | 3 | 1 | 0 | 14 |
| | | Total | 5 | 75 | 119 | 29 | 5 | 233 |
| Non Diabetic | | | | | | | | |

**From the table above it can stated that meal frequency decreases with growing age**

| **Age*Sugar Level * Haemoglobin** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Count | | | | | | | | |
| Age | | | Haemoglobin | | | | | Total |
| | | | Less than 12-Female | 12 to 16-Female | More than 16-Female | Less than 14 Male | 14 to 18 -Male | More than 18-Male | |
| Between 16 to 30 Years | Sugar Level | Non Diabetic | 14 | 27 | 6 | 5 | 25 | 7 | 84(97.67%) |
| | | Pre Diabetic | 1 | 1 | 0 | 0 | 0 | 0 | 2(2.32%) |
| | Total | | 15 | 28 | 6 | 5 | 25 | 7 | 86 |
| | | Non Diabeti | 11 | 20 | | 6 | 12 | 2 | 51(86.44%) |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Between 31 to 45 Years | Sugar Level | c | | | | | | | |
| | | Pre Diabetic | 0 | 0 | | 2 | 1 | 0 | 3(5.08%) |
| | | Diabetic | 1 | 2 | | 0 | 2 | 0 | 5(8.47%) |
| | Total | | 12 | 22 | | 8 | 15 | 2 | 59 |
| Between 46 to 60 Years | Sugar Level | Non Diabetic | 11 | 15 | | 10 | 12 | 4 | 52(70.27%) |
| | | Pre Diabetic | 1 | 3 | | 2 | 3 | 1 | 10(13.51%) |
| | | Diabetic | 1 | 3 | | 3 | 5 | 0 | 12(16.21%) |
| | Total | | 13 | 21 | | 15 | 20 | 5 | 74 |
| Above 61Years | Sugar Level | Non Diabetic | 0 | 0 | | 3 | 2 | | 5(35.71%) |
| | | Pre Diabetic | 1 | 1 | | 1 | 2 | | 5(35.71%) |
| | | Diabetic | 0 | 1 | | 1 | 2 | | 4(28.47%) |
| | Total | | 1 | 2 | | 5 | 6 | | 14 |
| Total | Sugar Level | Non Diabetic | 36 | 62 | 6 | 24 | 51 | 13 | 192 |
| | | Pre Diabetic | 3 | 5 | 0 | 5 | 6 | 1 | 20 |
| | | Diabetic | 2 | 6 | 0 | 4 | 9 | 0 | 21 |
| | Total | | 41 | 73 | 6 | 33 | 66 | 14 | 233 |

**From the data above it can be stated that irrespective of frequency and type of food intake percentage of diabetic people increases with growing age. Percentage of non diabetic people is very good in youngsters and decreases with increase in age.**

| **Haemoglobin * Type of Meal * Age Crosstabulation** | | | | | | |
|---|---|---|---|---|---|---|
| Count | | | | | | |
| Age | | | Type of Meal | | | Total |
| | | | Plant Based | Animal Based | Both | |
| Between 16 to 30Years | Haemoglobin | Less than 12-Female | 10 | | 5 | 15(17.44%) |
| | | 12 to 16-Female | 17 | | 11 | 28(32.55%) |
| | | More than 16-Female | 5 | | 1 | 6(6.9%) |
| | | Less than 14Male | 2 | | 3 | 5(5.8%) |
| | | 14 to 18 –Male | 12 | | 13 | 25(29.06%) |
| | | More than 18-Male | 4 | | 3 | 7(8.1%) |
| | Total | | 50 | | 36 | 86 |
| Between 31 to 45Years | Haemoglobin | Less than 12-Female | 10 | 0 | 2 | 12(20.33%) |
| | | 12 to 16-Female | 12 | 0 | 10 | 22(37.28%) |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Less than 14Male | 5 | 0 | 3 | 8(13.55%) |
| | | 14 to 18 –Male | 4 | 1 | 10 | 15(25.42%) |
| | | More than 18-Male | 1 | 0 | 1 | 2(3.38%) |
| | Total | | 32 | 1 | 26 | 59 |
| Between 46 to 60Years | Haemoglobin | Less than 12-Female | 8 | | 5 | 13(17.56%) |
| | | 12 to 16-Female | 13 | | 8 | 21(28.74%) |
| | | Less than 14Male | 11 | | 4 | 15(20.27%) |
| | | 14 to 18 –Male | 15 | | 5 | 20(27.02%) |
| | | More than 18-Male | 4 | | 1 | 5(6.75%) |
| | Total | | 51 | | 23 | 74 |
| Above 61 Years | Haemoglobin | Less than 12-Female | 0 | | 1 | 1(16.67%) |
| | | 12 to 16-Female | 2 | | 0 | 2(2.74%) |
| | | Less than 14Male | 3 | | 2 | 5(35.71%) |
| | | 14 to 18 –Male | 4 | | 2 | 6(42.85%) |
| | Total | | 9 | | 5 | 14 |
| Total | Hemoglobin | Less than 12-Female | 28 | 0 | 13 | 41 |
| | | 12 to 16-Female | 44 | 0 | 29 | 73 |
| | | More than 16-Female | 5 | 0 | 1 | 6 |
| | | Less than 14Male | 21 | 0 | 12 | 33 |
| | | 14 to 18 –Male | 35 | 1 | 30 | 66 |
| | | More than 18-Male | 9 | 0 | 5 | 14 |
| | Total | | 142 | 1 | 90 | 233 |

**From the table above it is found that with increasing age haemoglobin level declines irrespective of frequency and type of food intake.**

| **Sugar Level * Type of Meal * Age Crosstabulation** | | |
|---|---|---|
| Count | | |
| Age | Type of Meal | Total |

| | | | Plant Based | Animal Based | Both | |
|---|---|---|---|---|---|---|
| Between 16 to 30 Years | Sugar Level | Non Diabetic | 48 | | 36 | 84 |
| | | Pre Diabetic | 2 | | 0 | 2 |
| | Total | | 50 | | 36 | 86 |
| Between 31 to 45 Years | Sugar Level | Non Diabetic | 28 | 1 | 22 | 51 |
| | | Pre Diabetic | 1 | 0 | 2 | 3 |
| | | Diabetic | 3 | 0 | 2 | 5 |
| | Total | | 32 | 1 | 26 | 59 |
| Between 46 to 60 Years | Sugar Level | Non Diabetic | 35 | | 17 | 52 |
| | | Pre Diabetic | 7 | | 3 | 10 |
| | | Diabetic | 9 | | 3 | 12 |
| | Total | | 51 | | 23 | 74 |
| Above 61 Years | Sugar Level | Non Diabetic | 4 | | 1 | 5 |
| | | Pre Diabetic | 2 | | 3 | 5 |
| | | Diabetic | 3 | | 1 | 4 |
| | Total | | 9 | | 5 | 14 |
| Total | Sugar Level | Non Diabetic | 115 | 1 | 76 | 192 |
| | | Pre Diabetic | 12 | 0 | 8 | 20 |
| | | Diabetic | 15 | 0 | 6 | 21 |
| | Total | | 142 | 1 | 90 | 233 |

**Irrespective of type of food intake diabetic and pre diabetic numbers are increasing with growing age. Youngsters of Age group 16 to 31 are mostly non diabetic irrespective of type of food consumed.**

**Correlations**

| | | Age | Sugar Level | Hemoglobin | Body Mass Index | Meal Frequency | Type of Meal | Heavy Meal Frequency | Light Meal Frequency |
|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | ,392** | ,073 | ,210** | -,117 | -,085 | -,125 | -,087 |
| | Sig. (2-tailed) | | ,000 | ,264 | ,001 | ,076 | ,198 | ,056 | ,187 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| Sugar Level | Pearson Correlation | ,392** | 1 | ,080 | ,109 | -,209** | -,059 | -,169** | -,055 |
| | Sig. (2-tailed) | ,000 | | ,221 | ,097 | ,001 | ,372 | ,010 | ,405 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Hemoglobin | Pearson Correlation | ,073 | ,080 | 1 | ,028 | -,080 | ,068 | ,051 | -,099 |
| | Sig. (2-tailed) | ,264 | ,221 | | ,669 | ,222 | ,303 | ,440 | ,133 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| Body Mass Index | Pearson Correlation | ,210** | ,109 | ,028 | 1 | -,100 | ,036 | ,044 | -,181** |
| | Sig. (2-tailed) | ,001 | ,097 | ,669 | | ,129 | ,585 | ,502 | ,006 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| Meal Frequency | Pearson Correlation | -,117 | -,209** | -,080 | -,100 | 1 | ,045 | ,439** | ,532** |
| | Sig. (2-tailed) | ,076 | ,001 | ,222 | ,129 | | ,496 | ,000 | ,000 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| Type of Meal | Pearson Correlation | -,085 | -,059 | ,068 | ,036 | ,045 | 1 | ,128 | -,055 |
| | Sig. (2-tailed) | ,198 | ,372 | ,303 | ,585 | ,496 | | ,051 | ,399 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| Heavy Meal Frequency | Pearson Correlation | -,125 | -,169** | ,051 | ,044 | ,439** | ,128 | 1 | -,330** |
| | Sig. (2-tailed) | ,056 | ,010 | ,440 | ,502 | ,000 | ,051 | | ,000 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| Light Meal Frequency | Pearson Correlation | -,087 | -,055 | -,099 | -,181** | ,532** | -,055 | -,330** | 1 |
| | Sig. (2-tailed) | ,187 | ,405 | ,133 | ,006 | ,000 | ,399 | ,000 | |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | | | | |

**Findings**

| **Correlations** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Age | Sugar Level | Hemoglobin | Body Mass Inde | Meal Frequency | Type of Meal | Heavy Meal Frequency | Light Meal Frequency |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | x | | | | |
| Meal Frequency | Pearson Correlation | -,117 | -,209** | -,080 | -,100 | 1 | ,045 | ,439** | ,532** |
| | Sig. (2-tailed) | ,076 | ,001 | ,222 | ,129 | | ,496 | ,000 | ,000 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |

**From the data analysis above it is found that except sugar level there is no significant correlation between meal frequency and haemoglobin or body mass index. In case of Meal frequency and sugar level there is significant impact of meal frequency and sugar level.**

**Correlations**

| | | Age | Sugar Level | Hemoglobin | Body Mass Index | Meal Frequency | Type of Meal | Heavy Meal Frequency | Light Meal Frequency |
|---|---|---|---|---|---|---|---|---|---|
| Type of Meal | Pearson Correlation | -,085 | -,059 | ,068 | ,036 | ,045 | 1 | ,128 | -,055 |
| | Sig. (2-tailed) | ,198 | ,372 | ,303 | ,585 | ,496 | | ,051 | ,399 |
| | N | 233 | 233 | 233 | 233 | 233 | 233 | 233 | 233 |

**From the data analysis, it is found that there is no significant correlation between Type of meal and Age , between type of meal and sugar level, type of meal and haemoglobin**

**Conclusion and Result**

The frequency and type of food intake significantly show varying impact across different age groups. Young adults benefit from age and show significantly good health irrespective of frequency and type of food intake. Older adults show overall poor health irrespective of frequency and type of food intake due to age factor. Future research should continue to explore these relationships to provide more nuanced dietary recommendations tailored to each age group.

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