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Eating Habits of Young People in Brazzaville Suffering from Abdominal Obesity

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Abstract

An unbalanced diet has always been a major cause of many nutritional diseases and pathologies in several African countries. This study aimed to examine a major public health problem: The prevalence of abdominal obesity among young people in Brazzaville. It highlights dietary practices and lifestyle factors as potential contributing factors to this phenomenon. **Method:** Dietary history was the method used. It allowed for the collection of information on the patients' eating habits. **Results:** Regarding the distribution of patients according to age, sex, and waist circumference, this study revealed that men and women aged 20 to 25 and 25 to 30, respectively, had a higher proportion of waist circumferences (120 to 150 cm) than other age groups. Regarding body mass index (BMI), the results showed that the majority of patients with abdominal obesity had a normal BMI ($18.5 \leq BMI \leq 24.9$), classifying them as non-obese according to this parameter. As for their dietary history, the results showed that these patients had an unbalanced and monotonous diet, inadequate for their nutritional needs, leading to excesses or deficiencies in certain nutrients. They also had a habit of snacking before and after meals, consuming excessive amounts of sugary, alcoholic, and carbonated beverages throughout the day, and eating foods high in saturated fats (meats, chicken thighs), often accompanied by mayonnaise. Low fruit and vegetable consumption was also observed. **Conclusion:** This is why it is clear that abdominal obesity can also be caused by a poor diet.

Keywords

Dietary History, Abdominal Obesity, Waist Circumference, Body Mass Index

1. Introduction

A healthy and balanced diet has always been a major protective factor against the development of many diseases. Therefore, the essential role of a healthy diet, as well as its link to life expectancy, has a strong influence on population health and is well established [1] [2]. Several scientific reviews have highlighted a link between the consumption of certain foods and an increased or decreased risk of developing certain diseases, particularly abdominal obesity [3] [4]. The latter is considered a complex chronic disease characterized by an excessive concentration of visceral fat around the stomach and abdomen, which can be detrimental to health and is often associated with various abnormalities, including visceral obesity, insulin resistance leading to hyperglycemia, dyslipidemia, and hypertension [5] [6]. Since abdominal obesity is a disease linked to poor diet, a growing number of people living in industrialized countries suffer from excess weight due to significant changes in their lifestyles. Therefore, in order to curb the progression of several nutritional diseases, including abdominal obesity, many international organizations (World Health Organization, International Diabetes Federation, and American Heart Association) have incorporated waist circumference measurement into their recommendations for identifying individuals at risk of obesity [7] [8].

Unfortunately, the Republic of the Congo, and Brazzaville in particular, is not immune to this unfortunate reality. Many young people have swollen, round, and hard bellies, sometimes forming an abdominal apron. While abdominal shape and even body mass index (BMI) are alarming indicators of this form of obesity, the lack of precise data on the causes of this phenomenon among most young people in Brazzaville motivated this study, which aims to analyze the eating habits and behaviors of young people suffering from abdominal obesity.

2. Materials and Methods

2.1. Materials

2.1.1. Target Population

The present survey was conducted among 100 young people (50 women and 50 men) aged 18 to 30 years from several districts of the city of Brazzaville who came for consultation at the medical office located at the Plateau of 15 Years in Brazzaville.

2.1.2. Teaching Materials

The teaching materials consisted of a questionnaire designed to gather information on young people's eating habits and behaviors during consultations.

This questionnaire includes open-ended and closed-ended questions. In addition to questions about eating habits, it also covers key areas such as sociodemographic characteristics (age, sex, occupation, place of residence), family history (hypertension, diabetes), lifestyle, and anthropometric parameters (weight, height, waist circumference, blood pressure, and body mass index).

2.2. Method

The survey was conducted from August 10 to November 10, 2025, with 100 patients (50 women and 50 men). It used the dietary history method, an effective way to gather information on patients' eating habits and physical activity. The survey aimed to collect data on:

- Food groups;
- Usual meal times;
- Number of meals per day;
- Frequency of alcoholic, sugary, carbonated, and iced beverages;
- Frequency of fruit and vegetable consumption.

3. Results and Discussion

3.1. Results

3.1.1. Identification of Obese Patients According to Their Age Groups and Sex

Table 1 below shows the distribution of respondents by sex and age group. This table indicates that the 20 - 25 and 25 - 30 age groups have a higher proportion of obese individuals than the other age groups in this survey.

Table 1. Distribution of obese individuals according to their sex and age groups.

Age groups (years)	Sex		Total
	Male	Female	
	n	n	n
18 - 20	5	10	15
20 - 25	15	20	35
25 - 30	30	20	50
Total	**50**	**50**	**100**

n: number.

3.1.2. Distribution of Patients According to Their Age Group, Sex, and Waist Circumference

Table 2. Distribution of obese patients according to their age, sex, and waist circumference.

Age groups (years)	Average waist measurement (cm)	
	Sex	
	Male (Waist size > 102)	Female (Waist size > 88)
18 - 20	105	90
20 - 25	120	135
25 - 30	130	150

Waist size: Waist circumference.

Table 2 below shows the distribution of patients according to their age, sex, and

waist circumference. This table reveals that men and women aged 20 to 25 and 25 to 30 years have a higher proportion of waist circumference than the other age groups in this study.

3.1.3. Distribution of Patients According to Their Body Mass Index and Sex

Table 3 below shows the distribution of patients according to their body mass index and sex. This table reveals that the majority of patients (men and women) have a normal BMI ($18.5 \leq BMI \leq 24.9$) compared to the other patients in this study.

Table 3. Distribution of patients according to their body mass index and sex.

Body Mass Index (kg/m²)	Sex	
	Male	Female
<18.5	5	2
18.5 ≤ I.M.C. ≤ 24.9	40	35
25 ≤ I.M.C. ≤ 30	4	8
I.M.C. ≥ 30	1	5
Total	50	50

3.1.4. Dietary History of the Patients Surveyed

Based on dietary history, we were able to identify certain habits or behaviors of patients suffering from abdominal obesity according to several selected dietary parameters. This information is presented in Table 4 below.

Table 4. Dietary history of patients suffering from abdominal obesity.

Factors	Patient attitude or behavior
Food groups (meats, fats, and sugary drinks)	Excessive consumption of foods high in refined sugar and saturated fats (pork, mutton) as well as mayonnaise
The usual times for breakfast, lunch, and dinner	Failure to respect meal times
The number of meals per day	Failure to adhere to the recommended number of meals due to snacking
The frequency of consumption of alcoholic, sugary, carbonated, and iced drinks	Frequent or high consumption of beverages (alcoholic, sugary, carbonated, and iced)
The frequency of fruit and vegetable consumption	Low consumption of fruits and vegetables

3.1.5. Foods Frequently Consumed by Patients

From dietary history, we were also able to gather information on certain foods consumed by patients with abdominal obesity. These foods are presented in Table 5 below according to their categories.

Table 5. List of some foods frequently consumed by patients with abdominal obesity.

Category	Foods consumed
Drinks	Alcoholic, sugary, carbonated, and iced drinks
Starches, cereals and cereal products	White bread, cassava, refined cereals
Sweets and pastry products	Cakes, biscuits, pastries, confectionery
Foods high in fat	Braised fish, chicken leg, red meat, and mayonnaise

3.2. Discussion

The main objective of this study was to analyze the dietary habits of patients with abdominal obesity. One hundred (100) patients, 50 women and 50 men, seen in a doctor's office, were included. It should be noted that the sampling method used in our study may limit the generalizability of the results to all young people in Brazzaville. However, this method also provides a general overview of the eating habits of young people in Brazzaville. The distribution of patients by age, sex, and waist circumference revealed that men and women aged 20 - 25 and 25 - 30 years, respectively, had a higher proportion of waist circumferences (120 - 150 cm) than other age groups. It should be noted that the ideal waist circumference varies, but the health risk thresholds are clear: for women, a waist circumference greater than 80 cm increases the risk of disease, and beyond 88 cm, the risk is very high; for men, the thresholds are more than 94 cm for an increased risk and more than 102 cm for a very high risk, indicating excess abdominal fat that can lead to diabetes or cardiovascular disease [9]. These results suggest that abdominal obesity can worsen at any age due to several factors, such as genetic predisposition, muscle loss (sarcopenia), which slows the metabolism of certain food macromolecules, and a diet high in saturated fats and sugary drinks. Our observations are consistent with those of [10] [11], who studied unhealthy dietary habits among young people in a student setting. Regarding body mass index (BMI), although it is the most frequently used tool for documenting the risks associated with overweight and for measuring changes in the prevalence of obesity in the population, this study revealed that the majority of patients interviewed (men and women) had a normal BMI ($18.5 \leq BMI \leq 24.9$), which classified them as non-obese based on this parameter. These results show that, despite normal BMI values, the majority of patients had abdominal obesity. These patients have a higher risk than that predicted solely by their weight status based on BMI. It is also worth noting that waist circumference measurement is associated with mortality risk, independently of body mass index (BMI). Indeed, a large study involving several prospective cohorts demonstrated that an increase in waist circumference is associated with a significant increase in the risk of all-cause mortality in each weight category [12]. Furthermore, recent studies have shown that, in people with chronic diseases, obesity, as defined by BMI, is only weakly associated with mortality risk, while abdominal obesity, as estimated by waist circumference, is a better predictor of this risk [13]. This could be explained by the fact that lean mass (muscle mass, bone mass, etc.)

is included in the measurement of body weight, and that individuals with higher lean mass may have better insulin sensitivity and a reduced risk of mortality compared to those with lower lean mass [14]. Our results are similar to those of [15], who showed a cohort of over 168,000 patients from 63 countries and observed an increased risk of cardiovascular disease and type 2 diabetes in individuals with a large waist circumference compared to their body mass index, which was normal.

Regarding dietary history, an effective method used in dietary and nutritional surveys, we were able to identify certain habits or behaviors in patients with abdominal obesity based on a few selected factors. The results (**Table 4**) show that these patients had an unbalanced diet, that is, an incomplete, non-varied diet that was unsuitable for their nutritional needs, leading to excesses or deficiencies in certain nutrients. They also had a habit of snacking before and after meals, excessive consumption of sugary, alcoholic, carbonated, and iced drinks throughout the day, and eating foods high in saturated fats (mutton and pork, chicken thighs), often accompanied by mayonnaise. Low fruit and vegetable consumption was also observed. Our results corroborate those of [16], who conducted dietary surveys with diabetic patients. Some foods frequently consumed by patients and their effects on the body are listed (**Table 5**). Foods high in saturated fats (chicken thighs, mutton, and pork) and braised fish contribute to the development of abdominal obesity by promoting the storage of visceral fat. Excessive consumption of these foods, especially when combined with mayonnaise, has been shown to lead to weight gain and fat accumulation around the abdominal organs. This type of fat, present in these foods, is high in calories but low in nutrients, and may also increase the risk of cardiovascular disease and insulin resistance. Our results are consistent with those [17]-[19] who have studied the consumption of foods high in animal fats. Alcoholic, sugary, and carbonated beverages contribute to weight gain because they are high in simple or rapidly absorbed sugars, carbon dioxide, and alcohol. The body prioritizes metabolizing these sugars rather than burning fat. Alcohol, for example, promotes fat storage, particularly in the abdominal area, and can increase feelings of hunger, thus leading to overeating. Many alcoholic beverages, such as cocktails and some beers, contain a lot of sugar, which increases their calorie content and promotes abdominal fat storage. Ice water, on the other hand, can slow down fat digestion by solidifying lipids and making the digestive process less efficient. It can also cause intestinal contractions, which further slow transit. In addition, dietary fats tend to solidify at low temperatures, making them more difficult for the body to emulsify and metabolize [20].

Patients often consumed white bread with peanut butter for breakfast. However, excessive consumption of white bread can contribute to abdominal obesity, primarily due to its high glycemic index and lack of fiber. These factors cause blood sugar spikes, which trigger the release of insulin. In excess, this insulin promotes fat storage, particularly in the abdomen. Furthermore, the lack of fiber in white bread reduces the feeling of fullness, leading to increased consumption. As for peanut butter, its high calorie content contributes to abdominal fat accumula-

tion when consumed in excess. Our results are consistent with those of [21]. The patients lacked the habits and reflexes necessary for regular physical activity. It turns out that a lack of physical exercise or a sedentary lifestyle can lead to the storage of saturated fat, particularly in the abdomen, inevitably resulting in abdominal obesity. An inactive lifestyle combined with an unbalanced diet increases the risk of weight gain. Our results are consistent with those obtained by [22].

4. Conclusion

Our analysis clearly shows that abdominal obesity is a disease linked to poor diet that affects our society. This disease, characterized by an excessive concentration of visceral fat around the belly or abdomen and often associated with various risk factors for several abnormalities, including hyperglycemia, dyslipidemia, and hypertension, can be detrimental to health. Therefore, a healthy and balanced diet, as well as regular physical activity, is essential to prevent abdominal obesity. However, abdominal obesity is not always linked to a high body mass index (BMI). As the results showed, despite normal BMI values, the majority of patients presented with abdominal obesity. This is why waist circumference is a crucial parameter in the diagnosis of abdominal obesity.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix

DIETARY HISTORY SHEET OF YOUNG PEOPLE FROM BRAZZAVILLE SUFFERING FROM ABDOMINAL OBESITY

_____Confidential_____

Name(s) and First Name(s):
Sex:
Address:
City:
Telephone:
Date of Birth:
Occupation:
Pathology:

NUTRITIONAL STATUS

Height (m):
Current weight (kg):
Usual weight (kg):
BMI (kg/m²):
Waist circumference (cm):

MEDICAL DATA

Blood pressure: _____
Family history: _____
Other pathologies: _____

PATIENT QUESTIONNAIRE ON EATING HABITS

How many meals do you eat per day?
Answer: _____
What are the exact times of your meals?
Answer: _____
Do you consume alcohol? Yes or No
If so, frequently or occasionally?
Do you consume sugary, carbonated drinks? Yes or No
If so, which ones? And in what way?
Answer:

_____
_____
_____
_____

What foods do you usually eat for breakfast? Answer:

_____
_____
_____
_____
_____

What foods do you usually eat for lunch? Answer:

What foods do you usually eat for dinner? Answer:

What foods do you rarely eat? Answer:

What foods cause you abnormal reactions? Answer:

Do you usually eat vegetables? Yes or no
If so, which ones and how?
Answer:

Do you usually eat fruit? Yes or No

If so, which ones and how? Answer:

Do you play sports? Yes or No

If so, which one and how?

Answer:

Other information: