

Obesity Among College Students

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Abstract: This paper is mainly focused on the analyses of obesity present among the college students in Bangalore. Obesity is a complex disease involving an excessive amount of body fat. Obesity is not just a cosmetic concern. It is a medical problem that increases the risk of other diseases and health problems, such as heart disease, diabetes, high blood pressure and certain cancers. With the coronavirus, restricting us in our homes, obesity in India, especially in young India, has become a major problem. Hence, this study is conducted to know what are the major causes of obesity and to acquire the awareness level of people about obesity, aged between 18-24. All the data shown below and the findings from them are all based on the information through surveys conducted online, and a sample survey from Jain (deemed to be) University students with a total of 51 applications. The survey helped the report to form its base and helped us to really understand what is the current state of the problem that we are researching in this paper. It also showed us how important primary data for research is and really gave us an actual view of the problem in the society.

Keywords: obesity causes, health status, lifestyle factors, heredity factors, diet trends.

1. Introduction

Obesity is one of the most serious public health challenges of the 21st century. The problem is global and is steadily affecting many low- and middle-income countries, particularly in urban settings. The prevalence has increased at an alarming rate. Globally, in 2013 the number of overweight individuals was estimated to be over 42 million. Close to 31 million of these are living in developing countries.

Overweight and obese are likely to stay obese into adulthood and more likely to develop non-communicable diseases like diabetes and cardiovascular diseases at a younger age. Overweight and obesity, as well as their related diseases, are largely preventable. Prevention of obesity therefore needs high priority.

As today's citizens of tomorrow's world, their survival, protection, and development are the prerequisite for the future development of humanity. Without ensuring optimal growth and development, efforts to accelerate economic development significantly will be unsuccessful. In many developing countries including India, it co-exists with under nutrition. This constitutes a double burden for these countries.

The problem of obesity is not only confined in adults but also among children and adolescents. Obesity is associated with a

higher chance of obesity, premature death, and disability in adulthood. But in addition to increased future risks, obese experience breathing difficulties, increased risk of fractures, hypertension, and early markers of cardio-vascular disease, insulin resistance and psychological effects.

With this background, present study has been planned with the objective to study and compare the prevalence of obesity in the youth of Jain University.

A. Research Objectives

- To investigate the prevalence, causes, and long-term health implications of obesity among Students of Jain university, with a focus on identifying effective strategies for prevention and intervention.
- To analyse the socio-cultural factors contributing to obesity in Indian youth and propose evidence-based interventions for its prevention and management.
- To assess the dietary habits and physical activity levels among Indian youth as key determinants of obesity and formulate targeted interventions.

B. Problem Discussion

Discussing the problem of obesity in the youth in Andhra Pradesh, India, in a research paper requires a comprehensive exploration of various aspects of the issue. Here is an outline for a problem discussion section:

1) Introduction to the Problem

Begin by introducing the problem of obesity in youth and its increasing prevalence in India.

Highlight the significance of addressing this issue, as obesity in youth can have serious long-term health and socio-economic consequences.

2) Prevalence and Trends

Provide statistics and trends related to obesity among youth in India, focusing on Andhra Pradesh as the specific region of interest.

Discuss any changes or trends observed over the past decade to illustrate the growing problem.

3) Factors Contributing to Youth Obesity

Explore the various factors that contribute to obesity among the youth in Andhra Pradesh.

These factors may include dietary habits, sedentary lifestyles, genetic predispositions, socio-economic factors, and cultural influences.

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4) *Health Implications*

Discuss the health consequences of obesity in youth, both immediate and long term.

Include information on associated health conditions such as diabetes, heart disease, and mental health issues.

5) *Socio-Economic Impact*

Analyse the socio-economic impact of youth obesity in Andhra Pradesh, considering healthcare costs, productivity loss, and the burden on the healthcare system.

6) *Cultural and Environmental Factors*

Examine how cultural norms and the built environment contribute to obesity in the region.

Discuss the availability and accessibility of healthy food options and opportunities for physical activity.

7) *Government Initiatives and Policies*

Evaluate the existing government initiatives and policies aimed at addressing youth obesity in Andhra Pradesh.

Discuss the effectiveness and gaps in these efforts.

8) *Challenges and Barriers*

Identify the challenges and barriers hindering efforts to combat youth obesity in the state.

This may include cultural resistance to change, lack of awareness, or inadequate healthcare infrastructure.

9) *Community and Stakeholder Involvement*

Discuss the role of communities, schools, healthcare providers, and other stakeholders in addressing youth obesity.

Highlight successful community-based interventions or partnerships.

10) *Potential Solutions and Recommendations*

Based on the analysis of the problem, propose potential solutions and recommendations.

Consider strategies for promoting healthier lifestyles, improving education and awareness, and strengthening healthcare systems.

Summarize the key points discussed in the problem discussion section. Emphasize the urgency of addressing youth obesity in Andhra Pradesh and its broader implications for public health and well-being.

2. Literature Review

The prevalence of obesity is a critical public health concern, not only in India but globally. In recent years, India has experienced a rapid epidemiological transition, shifting from a population primarily characterized by underweight individuals to one increasingly marked by overweight and obese individuals. Obesity is a multifaceted issue with far-reaching health implications, including its association with type 2 diabetes, cardiovascular diseases, and even neurological conditions like Alzheimer's disease.

Obesity is often defined using the body mass index (BMI), with the World Health Organization (WHO) recognizing it as a disease due to its complex etiology and adverse health consequences. However, the application of BMI criteria needs to consider the ethnic and regional variations in fat distribution. In the Indian context, lower BMI cutoffs are more representative, and they capture a significant portion of the population at risk.

The prevalence of obesity in India, according to a pan-Indian study in 2017, was alarmingly high at 40.3%. This prevalence varied across different regions of the country, with the southern region having the highest prevalence at 46.51% and the eastern region the lowest at 32.96%. Several factors were associated with obesity in India, including gender, urbanization, age, education level, and physical activity. Women had a higher prevalence of obesity compared to men (41.88% vs. 38.67%), and urban areas had a higher prevalence than rural areas (44.17% vs. 36.08%). Age also played a significant role, with individuals over 40 years of age having a higher prevalence of obesity than those under 40 (45.81% vs. 34.58%).

Education and physical activity levels were notable determinants of obesity. Those with more education, especially at the university level, exhibited higher rates of obesity (44.6%) compared to those with no education (38%). Furthermore, reduced physical activity levels were strongly associated with increased obesity rates, with the most sedentary individuals showing the highest prevalence (43.71% inactive vs. 32.56% vigorously active). Interestingly, physical activity had the highest odds ratio (OR) for obesity (3.83), followed by age (1.58), education (1.4), urban living (1.3), and gender (1.2).

The consequences of obesity are far-reaching and costly, both at the individual and societal levels. It increases the risk of type 2 diabetes, cardiovascular diseases, and even neurological disorders such as Alzheimer's disease. The economic impact of obesity is substantial, with an estimated global cost of \$2 trillion, comparable to smoking and armed conflict. Moreover, the South Asian region, including India, is witnessing one of the fastest-growing obesity rates globally, further emphasizing the need for public health interventions.

In conclusion, India is facing a severe obesity epidemic, with high prevalence rates across all regions. The odds of obesity increase with age and are higher among women and urban dwellers. Notably, physical activity and aging are the most potent determinants of obesity. Given the significant health and economic implications, urgent public health measures are imperative to combat and mitigate the impact of obesity in India.

3. Research Methodology

This research methodology section outlines the systematic approach used to collect and analyse primary data through surveys. The research design, data collection procedures, data analysis methods, and ethical considerations have been elucidated to provide a clear understanding of how this study was conducted. This methodology ensures the validity, reliability, and credibility of the research findings, contributing to the overall rigor of the research paper.

A. *Research Design*

The research design outlines the overall strategy and framework for conducting the research. In this study, a quantitative research design was adopted, which aims to collect numerical data that can be analysed statistically. The primary research method chosen is surveys, which involve structured questionnaires or interviews administered to a sample of

students from Jain (deemed to be) university.

B. Data Collection

1) Survey Instrument Design

The first step in the data collection process was the design of the survey instrument. This involved developing a set of questions and response options that are relevant to the research objectives. The survey instrument was carefully constructed to ensure clarity, objectivity, and the ability to capture the required information.

2) Sampling

Sampling is a critical aspect of survey research. A well-defined sampling frame was used to select a representative sample from the target population. The sample size was determined based on statistical principles to ensure adequate power and generalizability of results.

3) Data Collection Procedure

Data collection involved administering the survey instrument to the selected sample. Surveys were distributed through various methods, such as online surveys, face-to-face interviews, or mail-in questionnaires, depending on the nature of the study and the accessibility of the participants. Efforts were made to minimize bias and ensure data accuracy.

C. Data Analysis

1) Data Coding

After data collection, responses were coded to facilitate data entry and analysis. Open-ended questions were coded into meaningful categories to convert qualitative information into quantitative data.

2) Data Entry and Management

Survey responses were entered into a database or statistical software for analysis. Data management procedures were employed to organize and prepare the dataset for analysis.

3) Statistical Analysis

The collected data were analysed using appropriate statistical techniques. Descriptive statistics (e.g., means, frequencies, percentages) were used to summarize and present the data. Inferential statistics (e.g., regression analysis, t-tests, chi-square tests) were applied to test hypotheses and draw meaningful conclusions.

D. Data Collection Tool

1) Google forms

Google Forms is a versatile online survey and data collection tool developed by Google. It is part of the Google Workspace (formerly G Suite) suite of productivity applications and is available for free to anyone with a Google account. Google Forms is designed to simplify the process of creating, distributing, and collecting responses for surveys, questionnaires, quizzes, and other types of forms. Here is a detailed description of Google Forms as a tool:

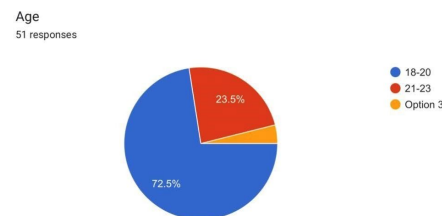
- **User-Friendly Interface:** Google Forms offers an intuitive and user-friendly interface that allows users to create forms without any coding or technical expertise. It features a drag-and-drop builder for adding various types of questions and elements to your forms.

- **Customizable Questions:** Users can create a wide range of question types, including multiple-choice, short answer, paragraph, checkboxes, and more. Each question can be customized with titles, descriptions, and images to make them more engaging and informative.
- **Media Integration:** Google Forms supports multimedia integration, allowing users to add images and videos to questions and answers. This feature is helpful for creating visually appealing and interactive forms.
- **Branching and Skip Logic:** You can use branching and skip logic to create dynamic forms that change based on respondents' answers. This feature is especially useful for creating complex surveys or quizzes with conditional follow-up questions.
- **Collaboration:** Google Forms supports real-time collaboration, allowing multiple users to work on a form simultaneously. You can invite others to edit or view the form, making it easy to collaborate with team members or colleagues.

Google Forms is widely used for various purposes, including conducting surveys, gathering feedback, creating quizzes and assessments, event registrations, and much more. Its simplicity, integration with other Google Workspace tools, and accessibility make it a valuable tool for individuals, businesses, educators, and organizations looking to collect and analyse data efficiently.

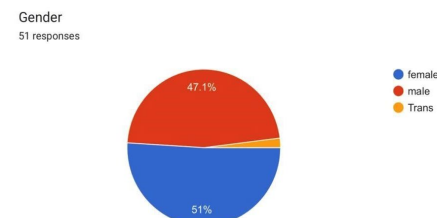
4. Data Findings

Question 1:



Results: This pie chart shows the distribution of age of the college students that responded to the questionnaire, out of total of 51 respondents the majority of students 36(72.5%) are 18-20 age, 13(23.5%) of the students are 22-23 age and only 3(6%) is of above age group.

Question 2:

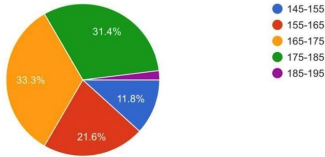


Results: This pie chart shows the distribution of gender of the

college students responded to the questionnaire, out of total of 52 respondents the majority of students 24(47.1%) are male, 26(51%) are female and 1(1%) is transgender.

Question 3:

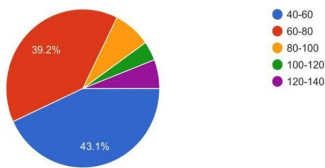
Height (cm)
51 responses



Results: This pie chart shows the distribution of height of college students responded to the questionnaire, out of total of 51 respondents the majority of students 17 (33.3%) are of height between 145-to-155-centimetre, 16 (31.4%) are of height between 155 to 165 centimeters, 11(21.6%) are of height between 165 centimeters. And 6(11.6) are Half height between 175 to 185 centimeters. Rest is of between 185 to 195 centimeters.

Question 4:

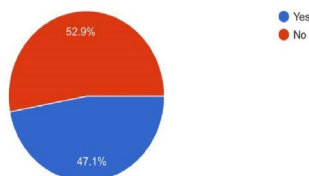
Weight(kg)
51 responses



Results: This pie chart shows the distribution of weight of college students responded to the questionnaire, out of total of 51 respondents the majority of students 22(43.1%) are of weight between 40 to 60 kilogram, 20 (39.2%) are of weight between 60 to 80 kilograms, 4(7.8%) are weight between 80 to 100 kilograms, 3(5.9%) are of 100 to 120 kilogram and rest are of 120 to 140 kilograms.

Question 5:

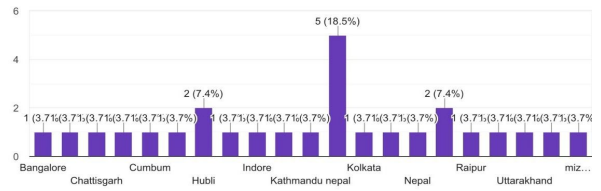
Are you originally from Bangalore?
51 responses



Results: This pie chart shows the distribution of the Jain university students who responded to the questionnaire, out of 51 respondents, students were asked that if they are originally from Bangalore or not, 27(52.9%) of students are not from Bangalore and 24 (47.1%) of the students are from Bangalore.

Question 6:

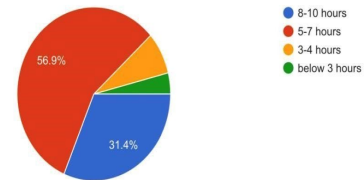
If not, where are you from?
27 responses



Results: This bar diagram shows the distribution of Jain university students who responded to the questionnaire, out of 51 responses students were asked that if they are not from Bangalore then which part of the states are they exactly situated, majority of students are from Kathmandu Nepal 5(18.5%) and rest are from other parts of the country such as Chhattisgarh, Hubli, Indore, Kolkata, Raipur, Uttarakhand, Mizoram.

Question 7:

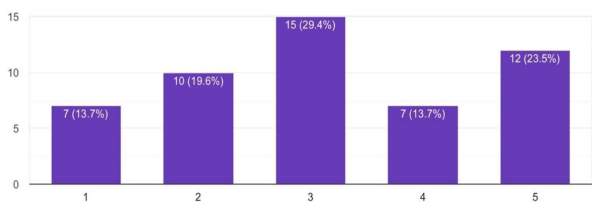
What is your usual sleep schedule?
51 responses



Results: This pie chart shows the distribution of Usual sleep schedule of college students responded to the questionnaire, out of total of 51 respondent's majority of students 29(56.9%) students sleep for 5 to 7 hours daily, 16(31.4%) of students sleep for 8 to 10 hours daily, 4(7.8%) students sleep for 3 to 4 hours daily and rest sleep below 3 hours daily.

Question 8:

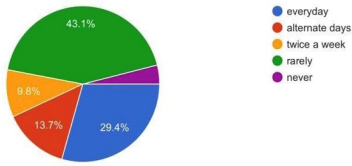
How actively do you exercise?
51 responses



Results: This bar diagram shows the distribution of how actively does the students exercise who responded to our questionnaire. Out of total of 51 respondents 15(29.4%) Exercise on an average. 12(23.5%) students exercise actively, 10(19.6%) students Does not exercise regularly, 7(13.7%) students do not exercise only and 7(13.7%) students exercise more often.

Question 9:

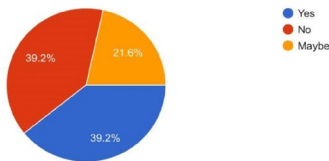
How often do you workout?
51 responses



Results: This Pie chart shows the distribution of how often do the students workout who responded to our questionnaire, out of total of 51 respondents the majority 22(43.1%) students' workout rarely, 15(29.4%) of students workout every day, 7(13.7%) of students exercise alternate days, 5 (9.8%) of students workout twice a week and rest never workout.

Question 10:

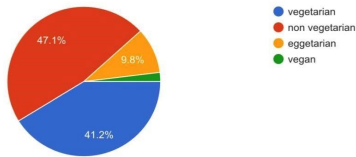
Are you aware of any current diet trends?
51 responses



Results: This pie chart shows the distribution of the students if they are aware of any current diet trends who responded to our questionnaire, out of total of 51 respondents, 20(39.2%) of students said yes and no equally. Rest 11(21.6%) of students said they are partially aware of the current diet trends.

Question 11:

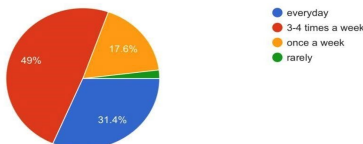
Diet choice
51 responses



Results: This pie chart shows the distribution about the preferences of the diet choice the students want who responded to our questionnaire, out of total of 51 respondents 24(47.1%) students prefer non vegetarian, 21(41.2%) students prefer Vegetarian, 5(9.8%) students prefer eggetarian, and rest prefer vegan.

Question 12:

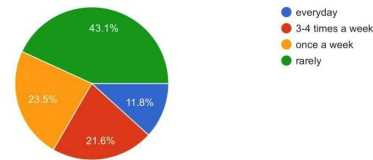
How often do you consume outside food?
51 responses



Results: This pie chart shows the distribution of how often do the students consume outside food. The students who responded to Our questionnaire, out of total of 51 Respondents, 25(49%) of students consume outside food 3 to 4 times a week, 16(31.4%) of students consume outside food every day, 9(17.6%) of students consume outside food once a week and rest consume outside food rarely.

Question 13:

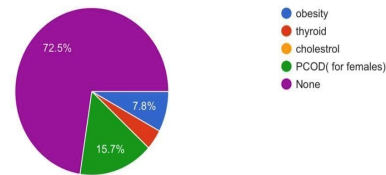
How often do you consume soda?
51 responses



Results: This pie chart shows the distribution of students that how often do they consume soda. The students who answered our questionnaire. Out of total of 51 respondents, 22(43.1%) of students consumes soda rarely, 12(23.5%) of students consume soda once a week, 11(21.6%) of students consumed soda 3 to 4 times a week, 6(11.8%) of students consume soda every day.

Question 14:

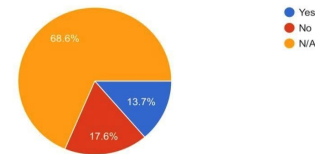
Do you suffer from any of these diseases?
51 responses



Results: This pie chart shows the distribution of students that suffer from any of the diseases. The students who responded to our questionnaire, out of 51 respondents 37(72.5%) of students does not have any diseases, 8(15.7%) of female students are suffering from PCOD disease, 4(7.8%) of students suffer from obesity. And rest suffer from thyroid and none of the students suffer from cholesterol.

Question 15:

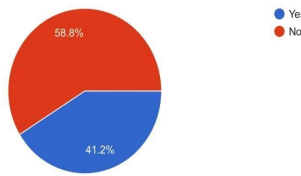
If you have pcod, have you consulted a doctor? (for females)
51 responses



Results: This pie chart shows the distribution of students who have consulted to a doctor or not (female students). The students who responded to our questionnaire, out of 51 respondents, 35(68.6%) students were not applicable, 9(17.6%) students said no and 7(13.7%) said yes.

Question 16:

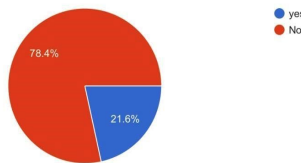
Do you get frequent health check ups?
51 responses



Results: This pie chart shows the distribution of students getting frequent health checkups or not. The students who responded to our questionnaire, out of total of 51 responded 30(58.8%) students said no and 21(41.2%) of students said yes.

Question 17:

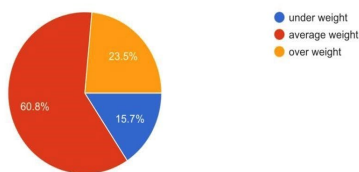
Are you under any medication?
51 responses



Result: This pie chart shows the distribution of students who are under medication or not. The students who responded to our questionnaire, out of total of 51 respondents, 40(78.4%) of students are not under any medication and 11(21.6%) of students are under medication.

Question 18:

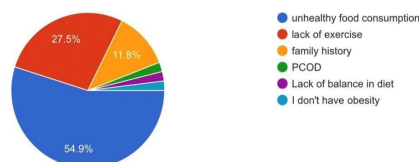
Which category do you belong to?
51 responses



Results: This pie chart shows the distribution of students that which category do they belong to. The students who responded to our questionnaire, out of total of 51 respondents 31(60.8%) of students are average weight, 12(23.5%) of students are overweight and 8(15.7%) of students are underweight.

Question 19:

What do you think is the reason for obesity currently?
51 responses

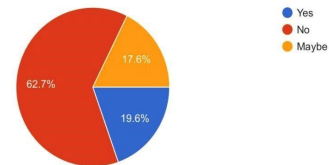


Results: This pie chart shows the distribution of students that

what do they think should be the reason for obesity currently. The students who responded to are questionnaire, out of total of 51 respondents, 28(54.9%) of students answered unhealthy food consumption, 14(27.5%) of students answered lack of exercise, 6 (11.8%) of students answered family history and rest equally said that the reason for obesity currently could be lack of balanced diet or they don't have any obesity or it could be PCOD.

Question 20:

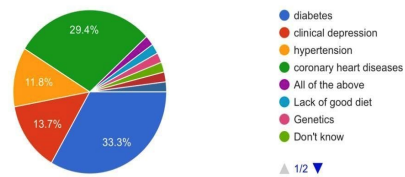
Do you have any family history in terms of obesity?
51 responses



Results: This pie chart shows the distribution of if the students have any family history in terms of obesity. The students who responded to our questionnaire, out of total of 51 respondents, 32(62.7%) of students do not have any family history in terms of obesity, 10(19.6%) of students, have family history in terms of obesity, 9(7.6%) of students may be have a family history in terms of obesity.

Question 21:

Which of the side effects of obesity are you aware of?
51 responses



Results: This pie chart shows the distribution of students if they are aware of any side effects of obesity. The students who responded to are questionnaire, out of total of 51 respondents 17(33.3%) of students said that it could be diabetes, 15(29.4%) of students said it could be coronary heart disease, 7(13.7%)of students said that it could be clinical depression, 6(11.8%)of students said that it could be hypertension and the rest 6(12%)of students said that it could be all of the above or lack of good diet or genetics or they do not know equally.

5. Conclusion

In conclusion, the data collected in this study sheds light on the prevalence, lifestyle, and awareness factors related to obesity among young college students, with a specific focus on Jain University in Bangalore, India. Several key findings emerge from this research:

- **Prevalence and Demographics:** The majority of respondents in the study were between 18-20 years old, with a fairly balanced gender distribution. Most students had a height between 145-165 cm and a

weight between 40-80 kg. A significant proportion of students were not originally from Bangalore but came from various parts of India and even Nepal.

- *Lifestyle Factors:* A considerable number of students reported sleeping for 5-7 hours per day and engaging in regular exercise. However, a significant portion of students did not exercise regularly, and some reported inadequate sleep. Additionally, a substantial percentage of students consumed outside food multiple times a week, and soda consumption was also relatively common.
- *Health Status:* Most students did not report suffering from any diseases, but a notable percentage of female students reported having PCOD (Polycystic Ovary Syndrome). Obesity was reported by a smaller portion of respondents.
- *Awareness and Family History:* Many students were aware of current diet trends, and the majority preferred non-vegetarian diets. A significant percentage of students believed that unhealthy food consumption was the primary reason for obesity. A majority of students did not have a family history of obesity.
- *Awareness of Side Effects:* Students exhibited awareness of the potential health risks associated with obesity, with many citing diabetes and coronary heart disease as possible side effects.

This data provides valuable insights into the lifestyle and awareness levels of young college students regarding obesity. It highlights the need for targeted interventions to promote healthier lifestyles, increase awareness of obesity-related risks, and encourage regular health check-ups. Moreover, the findings emphasize the importance of addressing dietary choices and exercise habits among young adults to combat the rising prevalence of obesity in India. Further research and public health initiatives are warranted to tackle this critical issue and prevent its long-term health consequences.

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