Dietary Habits and Obesity Management Among Higher Secondary School Students in Cuddalore District

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Abstract

This study highlights how obesity can impact educational out comes, with a particular focus on the Dietary Habits and obesity management. In India are influenced by a complex mix of cultural, socioeconomic, and lifestyle factors. The country has seen a shift in dietary patterns over the past few decades due to urbanization, globalization and economic growth. Contributing to an increase in obesity rates, especially in urban areas. The Experimental Study was conducted of Higher Secondary School Students in Cuddalore District. Objective of the study: To evaluate the impact of physical activity interventions on weight loss, body composition. Hypothesis of the study: Suitable hypotheses were adopted. Finding of the study: Diet also contributed significantly. The Students modified their eating habits in that the majority of them embraced better eating habits that supported excise and thus helped reduce obesity.

Key Words: Dietary, Obesity, Health, WHO-Organization, Spearman's Rank Correlation.

Introduction

Shift in Traditional Eating Patterns: The dietary habits of higher secondary school students in Cuddalore District have evolved, with more students consuming fast food, sugary snacks, and beverages. This change can be attributed to the influence of globalization and increased access to processed foods.

Home-Cooked Meals vs. Outside Food: While traditional South Indian diets include rice, lentils, vegetables, and fruits, the convenience and appeal of outside food can lead to unhealthy eating habits. Students may skip meals or opt for less nutritious options, contributing to an imbalance in calorie intake.

Snacking and High-Calorie Food: Snacking between meals, especially with high-calorie, fried, and sugary foods, is common among students. This behavior is often driven by

peer influence, school canteens that offer unhealthy food, and a lack of awareness about nutrition.

Irregular Eating Patterns: Busy school schedules, academic pressure, and extracurricular activities can lead to irregular eating habits, such as skipping breakfast or having late-night snacks, which can disrupt metabolism and promote weight gain.

Obesity Management

School-Based Initiatives: Schools in Cuddalore District can play an essential role in obesity management by implementing comprehensive health programs that include physical education, nutrition education, and healthy school meal plans. Schools with sports facilities and fitness programs encourage students to participate in physical activity, promoting a healthy weight.

Health and Nutrition Education: Educating students about the importance of balanced diets and the dangers of excessive consumption of high-calorie and low-nutrient foods can lead to better food choices. Workshops, seminars, and interactive sessions with nutritionists can be effective in increasing awareness.

Parental Engagement: The involvement of parents in obesity management is crucial. Parents who understand nutritional needs and the importance of a healthy diet can support their children by providing healthier meals at home and encouraging physical activity.

Community Support and Outreach Programs: Community health programs that educate the general public about obesity, its consequences, and preventive measures can help foster a culture of health. Community events that promote physical activity, such as yoga sessions or sports tournaments, can encourage students to participate and maintain an active lifestyle.

Government and Policy Support: Government initiatives aimed at promoting healthy eating in schools, such as subsidizing nutritious food and setting guidelines for school canteens, can help make healthier food options more accessible. Policies encouraging daily physical activity and limiting the sale of high-calorie snacks in schools can also be beneficial.

Challenges

Economic Disparities: Limited financial resources can affect a family's ability to provide healthy meals and support physical activities. Students from lower-income families may face more barriers to accessing nutritious foods and participating in organized sports.

Academic Pressure: The pressure to perform academically can lead to increased stress and reduced time for physical activity, contributing to obesity. Managing academic stress through balanced schedules and providing mental health support can help mitigate this effect.

Limited Awareness: A lack of awareness about nutrition and the health impacts of obesity can make it difficult to adopt healthier dietary habits and lifestyle changes.

Review of Literature

Iguacel*et al.*, (2021) recognized social vulnerabilities and assess their obesity risk. Prevention initiatives for vulnerable groups and their efficacy are also examined. Author-experience-based literature review Children with parental unemployment, low support from formal and informal sources, no social network, minority or migrant background, opposing childhood knowledges like violence, household dysfunction, childhood maltreatment, and other traumatic experiences, gender inequalities, and nontraditional families were at risk for childhood obesity. Social vulnerabilities affect lifestyles and stress, but not childhood obesity, depending on SES. Social vulnerabilities and childhood obesity may be linked via behavioral, physiologic, and mental health factors.

Vazquez and Cubbin (2020) examined the patterns, concepts, and processes linking socioeconomic status (SES) to childhood obesity and their implications for future treatments. Adiposity and SES are adversely correlated in high-income nations also favorably in middle- and low-income countries. Early solid meal introduction and parenting actions may explain the SES-adiposity link. Early childhood nutrition and parental education appear to be important SES-related adiposity factors. SES and obesity are linked by population prosperity. SES is complex and poorly defined, making it difficult to evaluate its association to childhood obesity. Many SES-related intervention targets exist. Intervention research should address SES-related issues in the study population.

Objectives

To evaluate the impact of physical activity interventions on weight loss, body composition, and overall health outcomes among higher secondary students with obesity in Cuddalore district.

Hypotheses

- **Hypothesis 2: Dietary Habits and Obesity Management**

Null Hypothesis (H0): Adopting healthy dietary habits, such as consuming a balanced diet and limiting sugary beverages, does not significantly impact the prevention and management of obesity among higher secondary students.

Alternative Hypothesis (H1): Adopting healthy dietary habits, such as consuming a balanced diet and limiting sugary beverages, significantly impacts the prevention and management of obesity among higher secondary students.

Findings

Statistics uses the terms correlation and dependence to describe any statistical relationship, whether causal or not, between two random variables or bivariate data. "Correlation" can refer to any type of relationship, but in the context of statistics, it often indicates the strength of a linear relationship between two variables. The links between parent-child height and the quantity that buyers are willing to purchase an item in, as indicated by the so-called demand curve, and the price of an item and its price are common examples of dependent phenomena.

A practical purpose for correlations may be found in their ability to provide a predicted link. Considering the correlation between temperature and electricity usage, an electrical business could produce less power during a warm day. In this instance, there is a causal relationship since people consume more energy to heat and cool their homes during inclement weather. Correlation does not, however, always imply causation; rather, the existence of a correlation is not enough to suggest the existence of a causative link. In mathematical terms, random variables are considered dependent if they fail to meet certain requirements related to probabilistic independence. Correlation is the informal equivalent of dependency.

In technical terms, on the other hand, correlation refers to any of a number of distinct mathematical relationships wherein the conditional expectation of one variable is contingent upon the other's non-constant value as the conditioning variable varies. In general, correlation in this particular sense is employed when $E\left({}^{Y}/_{X\,=\,x}\right)$ pertains to in some way (e.g., logarithmic, linear, monotonic, or maybe based on a certain functional form). Correlation may be defined as the intensity of the relationship between two or more variables. The degree of correlation may be measured using a number of correlation coefficients, which are often denoted by ρ or r. Most common among them is the Pearson correlation coefficient, which may be seen even in situations where one variable is only sensitive to a linear relationship between two variables and is a nonlinear function of the other. There are alternative correlation coefficients that are more resistant to nonlinear interactions than Pearson's correlation coefficient, such as Spearman's rank correlation. It is also possible to quantify the degree of reliance between two variables using mutual information.

Table 1.1: Correlation table

	PAE	DH	STSB	KOPT	LS	PGC	AC	Obesity
PAE	1							
DH	.495**	1						
STSB	.709**	.583**	1					
KOPT	.323*	.636**	.384**	1				
LS	.514**	.736**	.668**	.629**	1			
PGC	.513**	.631**	.757**	.534**	.757**	1		
AC	.468**	.706**	.644**	.574**	.741**	.686**	1	
Obesity	.544**	.732**	.789**	.601**	.839**	.831**	.773**	1

Table 1.1 displays the correlation coefficients among various factors related to obesity prevention: PAE, DH, STSB, KOPT, LS, PGC, AC, Obesity. The results indicated that all the factors are positively correlated and the highest correlation was found between Obesity and Lifestyle and Support at .839** which shows the significant association between supportive environments and obesity prevention behaviours. Likewise, the STSB is significantly related to Obesity at .789**, indicating that the more time spent on screen the higher the obesity risk. Dietary Habits (DH) also has a substantial relationship with Obesity with a value of .732** stressing the need to balance the diet in the prevention of obesity. The correlation between other variables like PGC and Obesity (.831**) as well as AC and Obesity (.773**) also show that the goal, perception and support system interplay is an important determinant of obesity. These results show that obesity prevention involves physical activity, dietary habits, screen time, knowledge, lifestyle support, personal goals, and awareness and all these are complex and interrelated.

Recommendations for Future Research

- **Longitudinal Studies**

Future research should consider longitudinal studies to assess the long-term impact of physical activity on obesity and overall health. This can provide insights into the sustainability of the benefits observed in short-term interventions.

- **Diverse Populations**

Conducting studies in diverse populations across different regions can help generalize the findings. Understanding the cultural and socio-economic factors influencing obesity and physical activity can inform the development of more inclusive and effective interventions.

- **Integration with Technology**

Exploring the use of technology, such as fitness apps and wearable devices, can offer innovative ways to promote physical activity among adolescents. Research can investigate the effectiveness of these tools in enhancing motivation and tracking progress.

- **Comprehensive Health Programs**

Future studies can explore the integration of physical activity programs with other health-promoting initiatives, such as mental health support and anti-bullying campaigns, to address the multifaceted nature of adolescent health.

- **Barriers to Participation**

Identifying and addressing barriers to participation in physical activity programs is essential. Research can focus on understanding these barriers and developing strategies to overcome them, ensuring that all students have the opportunity to benefit from such programs.

Conclusion

Dietary habits and obesity management among higher secondary school students in Cuddalore District are impacted by various factors, including changing food choices, socioeconomic status, school resources, and parental influence. Effective obesity management requires coordinated efforts involving schools, parents, community health programs, and government policies. By promoting awareness, encouraging physical activity, and providing access to healthy food options, the district can work towards reducing obesity rates and fostering healthier lifestyles for its students. Exploring the connection between education and obesity among higher secondary school students in Cuddalore District involves examining how educational attainment and school-related factors may influence the prevalence and management of obesity. Understanding this connection is essential for identifying interventions that could improve the health and well-being of adolescents.

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