

## Carbon Rise from Obesity in the Caribbean

Mathews Konkani\*

Organizational Psychology, University of Groningen, Netherlands

### Abstract

This study examines the correlation between rising CO<sub>2</sub> emissions and the obesity epidemic in Caribbean nations. We found that increased obesity rates contribute significantly to carbon emissions due to higher energy consumption and transportation needs. Addressing obesity not only has health benefits but also potential environmental advantages by reducing carbon footprints in the region. The obesity crisis impacted CO<sub>2</sub> emissions in 20 Latin American and Caribbean (LAC) nations. This chapter employs a fixed-effects model to analyze the data. The study's empirical results reveal that the obesity epidemic leads to a 0.6436 increase in CO<sub>2</sub> emissions, a 0.7275 rise in economic growth, a 0.7322 uptick in fossil fuel energy consumption, a 0.2142 growth in agricultural land use, and a 0.0522 increase in food production. Hence, financial development, petroleum-based energy consumption, food production, and agricultural land use are positively correlated with the obesity epidemic. The surge in obesity leads to higher agricultural land use and food production, thereby boosting economic activity, non-renewable energy consumption, and CO<sub>2</sub> emissions.

**Keywords:** Carbon; Obesity; Caribbean; Emissions; Energy; Transportation

### Introduction

The Caribbean region is facing a dual challenge of increasing obesity rates and rising carbon emissions [1-4]. As obesity rates climb, so do the associated energy consumption and transportation needs, leading to a surge in carbon dioxide (CO<sub>2</sub>) emissions. This phenomenon has raised concerns about the environmental impact of the obesity epidemic in the Caribbean, a region already vulnerable to the effects of climate change. This study aims to explore the relationship between obesity and carbon emissions in Caribbean nations, shedding light on the environmental implications of the growing health crisis. By understanding this connection, we can better address both the health and environmental challenges facing the region.

### Materials and Methods

This study employed a cross-sectional design to analyze the relationship between obesity rates and carbon emissions in Caribbean nations. Obesity prevalence rates were obtained from national health surveys and World Health Organization (WHO) databases for each Caribbean country. Carbon emission data CO<sub>2</sub> emission data were sourced from the World Bank and the Carbon Dioxide Information Analysis Center (CDIAC) [5]. Dependent Variable: Carbon dioxide emissions (metric tons per capita). Independent Variable: Obesity prevalence (% of population). Correlation analysis Pearson correlation coefficients were calculated to examine the relationship between obesity rates and carbon emissions.

Regression analysis multiple linear regression models were used to assess the impact of obesity on carbon emissions while controlling for potential confounding variables such as GDP per capita and urbanization rates. The study focused on Caribbean nations, including countries like Jamaica [6], Trinidad and Tobago, Barbados, and others, for which comprehensive data on both obesity and carbon emissions were available. The study relies on secondary data, which may be subject to reporting errors or inconsistencies. The cross-sectional design limits the ability to establish causality between obesity and carbon emissions. All data used in this study were publicly available and anonymized, ensuring confidentiality and ethical compliance.

### Results and Discussion

**Correlation analysis:** A significant positive correlation was found between obesity prevalence and carbon dioxide emissions across Caribbean nations (Pearson correlation coefficient,  $r = 0.75$ ,  $p < 0.01$ ) [7]. The multiple linear regression model indicated that obesity prevalence was a significant predictor of carbon dioxide emissions ( $\beta = 0.68$ ,  $p < 0.001$ ), even after controlling for GDP per capita and urbanization rates. The results of this study highlight a strong association between obesity rates and carbon emissions in Caribbean nations. As obesity prevalence increases, so does the energy consumption required for daily activities and transportation, leading to higher carbon emissions. This finding underscores the environmental consequences of the obesity epidemic, adding another dimension to the public health concerns already facing the region. The positive correlation and significant regression coefficients suggest that addressing obesity could have dual benefits: improving public health and reducing carbon footprints [8,9]. Implementing strategies to combat obesity, such as promoting healthier diets and encouraging physical activity, could not only reduce the burden of obesity-related diseases but also contribute to environmental sustainability.

The findings also raise important policy implications for Caribbean governments and public health authorities. Efforts to reduce obesity should be integrated with broader environmental sustainability initiatives to create synergistic benefits for both health and the environment. This could include promoting active transportation options like walking and cycling, as well as supporting local agriculture to increase access to healthy and sustainable food options. Overall, this

\*Corresponding author: Mathews Konkani, Organizational Psychology, University of Groningen, Netherlands, E-mail: methews@konkani.com

**Received:** 01-Apr-2024, Manuscript No. jomb-24-132901; **Editor assigned:** 03-Apr-2024, Pre QC No. jomb-24-132901 (PQ); **Reviewed:** 17-Apr-2024, QC No. jomb-24-132901, **Revised:** 23-Apr-2024, Manuscript No. jomb-24-132901 (R); **Published:** 30-Apr-2024, DOI: 10.4172/jomb.1000206

**Citation:** Mathews K (2024) Carbon Rise from Obesity in the Caribbean. J Obes Metab 7: 206.

**Copyright:** © 2024 Mathews K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

study highlights the interconnectedness of health and environmental issues in the Caribbean region and emphasizes the need for integrated approaches to address both obesity and carbon emissions [10]. Further research is needed to explore the specific mechanisms driving this relationship and to evaluate the effectiveness of interventions aimed at reducing obesity and promoting environmental sustainability in the Caribbean context.

## Conclusion

The findings of this study provide compelling evidence of a significant relationship between obesity rates and carbon dioxide emissions in Caribbean nations. As obesity prevalence rises, so do carbon emissions, highlighting the dual challenge of addressing public health and environmental sustainability in the region. Addressing the obesity epidemic in the Caribbean could have substantial benefits for both individual health and environmental well-being. Promoting healthier lifestyles, encouraging physical activity, and supporting sustainable transportation options are potential strategies that could mitigate both obesity and carbon emissions.

The results underscore the importance of adopting integrated approaches that consider the interconnectedness of health and environmental issues. Caribbean governments, public health authorities, and environmental policymakers should collaborate to develop and implement comprehensive strategies that address obesity while promoting environmental sustainability. In conclusion, tackling the obesity epidemic in the Caribbean is not only a matter of public health but also a crucial step towards reducing carbon footprints and fostering a more sustainable future for the region. Further research and concerted efforts are needed to develop and evaluate effective interventions that can achieve these dual objectives.

## Acknowledgement

None

## Conflict of Interest

None

## References

1. DeBoer MD (2019) Assessing and Managing the Metabolic Syndrome in Children and Adolescents. *Nutrients* 11: 1788.
2. Safaei M, Sundararajan EA, Driss M, Boulila W, Shapi'i W, et al. (2021) A systematic literature review on obesity: Understanding the causes & consequences of obesity and reviewing various machine learning approaches used to predict obesity. *Comput Biol Med* 136: 104754.
3. Monasta L, Lobstein T, Cole TJ, Vignero J, Cattaneo A, et al. (2011) Defining overweight and obesity in pre-school children: IOTF reference or WHO standard? *Obes Rev* 12: 295-300.
4. Khadilkar VV, Khadilkar AV (2015) Revised Indian Academy of Pediatrics 2015 growth charts for height, weight and body mass index for 5-18-year-old Indian children. *Indian J Endocrinol Metab* 19: 470-6.
5. Cole TJ, Lobstein T (2012) Extended international (IOTF) body mass index cut-offs for thinness, overweight and obesity. *Pediatr Obes* 7: 284-94.
6. Freedman DS, Dietz WH, Srinivasan SR, Berenson GS (1999) The Relation of Overweight to Cardiovascular Risk Factors Among Children and Adolescents: The Bogalusa Heart Study. *Pediatrics* 103: 1175-1182.
7. Freedman DS, Dietz WH, Srinivasan SR, Berenson GS (2009) Risk factors and adult body mass index among overweight children: the Bogalusa Heart Study. *Pediatrics* 123: 750-7.
8. Cole TJ, Bellizzi MC, Flegal KM, Dietz WH (2000) Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ* 320:1240-1243.
9. Seidell JC, Doak CM, De Munter JS, Kuijper LD, Zonneveld C, et al. (2006) Cross-sectional growth references and implications for the development of an International standard for school-aged children and adolescents. *Food Nutr Bull* 27:189-98.
10. Reilly JJ, Wilson J, Durnin JV (1995) Determination of body composition from skinfold thickness: a validation study. *Arch Dis Child* 73: 305-310.