

The Negative Implications of Childhood Obesity and Malnutrition on Cognitive Development

Authors : Stephanie Remedios, Linda Veronica Rios

Abstract : Background. Pediatric obesity is a serious health problem linked to multiple physical diseases and ailments, including diabetes, heart disease, and joint issues. While research has shown pediatric obesity can bring about an array of physical illnesses, it is less known how such a condition can affect children's cognitive development. With childhood overweight and obesity prevalence rates on the rise, it is essential to understand the scope of their cognitive consequences. The present review of the literature tested the hypothesis that poor physical health, such as childhood obesity or malnutrition, negatively impacts a child's cognitive development. Methodology. A systematic review was conducted to determine the relationship between poor physical health and lower cognitive functioning in children ages 4-16. Electronic databases were searched for studies dating back to ten years. The following databases were used: Science Direct, FIU Libraries, and Google Scholar. Inclusion criteria consisted of peer-reviewed academic articles written in English from 2012 to 2022 that analyzed the relationship between childhood malnutrition and obesity on cognitive development. A total of 17,000 articles were obtained, of which 16,987 were excluded for not addressing the cognitive implications exclusively. Of the acquired articles, 13 were retained. Results. Research suggested a significant connection between diet and cognitive development. Both diet and physical activity are strongly correlated with higher cognitive functioning. Cognitive domains explored in this work included learning, memory, attention, inhibition, and impulsivity. IQ scores were also considered objective representations of overall cognitive performance. Studies showed physical activity benefits cognitive development, primarily for executive functioning and language development. Additionally, children suffering from pediatric obesity or malnutrition were found to score 3-10 points lower in IQ scores when compared to healthy, same-aged children. Conclusion. This review provides evidence that the presence of physical activity and overall physical health, including appropriate diet and nutritional intake, has beneficial effects on cognitive outcomes. The primary conclusion from this research is that childhood obesity and malnutrition show detrimental effects on cognitive development in children, primarily with learning outcomes. Assuming childhood obesity and malnutrition rates continue their current trade, it is essential to understand the complete physical and psychological implications of obesity and malnutrition in pediatric populations. Given the limitations encountered through our research, further studies are needed to evaluate the areas of cognition affected during childhood.

Keywords : childhood malnutrition, childhood obesity, cognitive development, cognitive functioning

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