Universe International Journal of Interdisciplinary Research
(International Peer Reviewed Refereed Journal)
DOI No. – 08.2020-25662434

© UIJIR | ISSN (O) – 2582-6417
AUGUST 2024 | Vol. 5 Issue 3
www.uijir.com

CHILDHOOD CONSUMPTION OF FAST FOOD: A THREAT TO MENTAL AND PHYSICAL WELLBEING

Author's Name: Yogesh Panchal [1], Rakesh Kumar [2], Palkin Kapil [3], Dr Amandeep Kaur Bajwa[4], Om Prakash Kumawat[5], Sunita Thakur[6], Aukshina[7], Dr. G. Gomathy[8], Geeta Badiger[9]

Affiliation:

1. Associate Professor, MLB Govt. Paramedical Training College, Jhansi. yogesh.nsg@gmail.com
2. Associate Professor, Maharishi Dayanand Institute of Nursing, Chaudharywas, Hisar, Haryana. r.k.barupal94@gmail.com
3. Assistant Professor, Maharishi Dayanand Institute of Nursing, Chaudharywas, Hisar, Haryana. palkinkapil@gmail.com
4. Professor & HOD, Sri Guru Ram Das College of Nursing Vallah, Amritsar, Punjab. amanbajwa02@yahoo.com
5. Nursing Tutor, St Thomas College of Nursing Phagi. opk.11081992@gmail.com
6. Assistant Professor, Maharishi Dayanand Institute of Nursing, Chaudharywas, Hisar, Haryana. neetumandyal1234@gmail.com
7. Associate Professor, Baba Banda Bahadur college of Nursing Faridkot. sekhonaukshina@gmail.com
8. Principal, Welfare Institute of Nursing and Midwifery. goms68@gmail.com
9. Assistant Professor, New Ashwini Institute of Nursing sciences vijayapura Karnataka. gbadiger1045@gmail.com

Corresponding Author Name and Email ID: Yogesh Panchal, yogesh.nsg@gmail.com

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

© UIJIR | ISSN (O) – 2582-6417
AUGUST 2024 | Vol. 5 Issue 3
www.uijir.com

ABSTRACT

Fast food consumption has become a widespread phenomenon among children, with far-reaching consequences for their mental and physical health. This review article synthesizes the existing literature on the impact of fast food on children's health, highlighting the alarming effects on obesity, cognitive function, emotional wellbeing, and overall quality of life. Fast food consumption has become a pervasive aspect of modern childhood, with significant consequences for both physical and mental health. This review synthesizes the empirical evidence on the effects of fast food on children's health, revealing alarming associations with obesity, cognitive impairment, emotional problems, and increased risk of chronic diseases. The mechanisms underlying these effects, including nutrient imbalance, gut microbiome disruption, and environmental factors, are explored. The review highlights the urgent need for comprehensive interventions, including nutrition education, marketing restrictions, and policy initiatives, to mitigate the detrimental effects of fast food on children's health. By examining the complex relationships between fast food consumption and children's mental and physical wellbeing, this review aims to inform strategies for promoting healthier habits and reducing the burden of diet-related disorders in childhood. This review examines the impact of fast food on children's mental and physical health, revealing a disturbing link between frequent consumption and increased risk of obesity, diabetes, heart disease, and mental health issues such as anxiety and depression. The high levels of processed ingredients, added sugars, and unhealthy fats in fast food are shown to disrupt gut microbiome, lead to hormonal imbalances, and trigger inflammation, ultimately affecting brain function and behavior. Furthermore, marketing tactics targeting children and the widespread availability of fast food contribute to overconsumption and unhealthy eating habits. This review highlights the urgent need for effective interventions, including education, policy changes, and community engagement, to mitigate the detrimental effects of fast food and promote healthier habits among children, ensuring a foundation for optimal mental and physical wellbeing.

Keywords: Fast food, Children's health, Mental health, Physical health

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

© UIJIR | ISSN (O) – 2582-6417
AUGUST 2024 | Vol. 5 Issue 3
www.uijir.com

INTRODUCTION

Fast food has become a ubiquitous aspect of modern childhood, with children being increasingly exposed to high-calorie, high-fat, and high-sugar foods. The convenience and affordability of fast food make it a tempting option for busy families, but the consequences for children's health are alarming. Research has shown that fast food consumption is linked to a range of negative effects on both physical and mental health in children. Physical health problems associated with fast food consumption include: Obesity and weight-related issues, Nutritional deficiencies and poor diet quality, increased risk of chronic diseases, such as diabetes and cardiovascular disease, Poor dental health and oral hygiene

In addition to physical health problems, fast food consumption has also been linked to negative effects on mental health, including: Emotional problems, such as anxiety and depression, Cognitive impairment and reduced academic performance, Behavioural issues, such as hyperactivity and attention deficit, Low self-esteem and body image concerns.

This review aims to synthesize the existing literature on the effects of fast food on children's mental and physical health, exploring the mechanisms underlying these effects and highlighting the need for comprehensive interventions to mitigate the detrimental impact of fast food on children's wellbeing. Fast food consumption has become a ubiquitous aspect of modern childhood, with significant implications for mental and physical health. This review aims to synthesize the existing literature on the effects of fast food on children's health, highlighting the key findings, methodological limitations, and future research directions. As the prevalence of fast food consumption among children continues to rise, it is essential to explore future directions for addressing the profound impact on their mental and physical health. The effects of fast food on children's wellbeing are far-reaching, contributing to increased rates of obesity, diabetes, heart disease, and mental health issues such as anxiety and depression. To combat these alarming trends, it is crucial to develop innovative strategies that tackle the complex interplay between fast food, nutrition, and children's health. By investigating new research directions, implementing effective interventions, and fostering collaborative efforts, we can work towards creating a healthier environment for children to thrive. This introduction sets the stage for exploring future directions that prioritize children's health and wellbeing in the face of fast food's pervasive influence.

EFFECT OF FAST FOOD ON PHYSICAL HEALTH

Fast food consumption has been linked to a range of negative physical health effects in children, including: Obesity and Weight-Related Issues: Fast food is high in calories, sugar, and unhealthy fats, leading to weight gain and obesity. Nutritional Deficiencies: Regular fast food consumption can lead to inadequate essential nutrient intake, including vitamins, minerals, and fiber. Increased Risk of Chronic

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

Diseases: Fast food consumption is linked to a higher risk of chronic diseases, such as: Type 2 diabetes, cardiovascular disease, and certain types of cancer. Poor Dental Health: Frequent fast food consumption contributes to tooth decay, cavities, and other oral health problems due to high sugar content. Digestive Problems: Fast food can lead to digestive issues, including constipation, diarrhoea, and stomach pain. Sleep Disturbances: Consuming fast food close to bedtime can disrupt sleep patterns and reduce sleep quality. Reduced Immune Function: A diet dominated by fast food can weaken the immune system, making children more susceptible to illnesses. Slowed Growth and Development: Inadequate nutrition from fast food can impede growth and development in children. These physical health effects can have long-term consequences for children's overall health and wellbeing, emphasizing the need for balanced and nutritious diets.

EFFECT OF FAST FOOD ON MENTAL HEALTH

Fast food consumption has been linked to various negative mental health effects in children, including: Emotional Problems: Fast food consumption is associated with increased symptoms of anxiety, depression, and emotional distress. Cognitive Impairment: Regular fast food consumption can lead to: Reduced cognitive performance, Lower academic achievement, Decreased memory and attention span. Behavioural Issues: Fast food consumption is linked to: Hyperactivity, Attention deficit hyperactivity disorder (ADHD), Conduct disorders, Aggressive behaviour, Low Self-Esteem and Body Image Concerns: Frequent fast food consumption can lead to negative body image and low self-esteem., Mood Swings and Irritability: Fast food's high sugar and salt content can cause mood swings and irritability., Increased Stress Levels: Consuming fast food regularly can lead to increased stress levels and decreased stress management abilities., Decreased Self-Regulation: Fast food consumption can impair self-regulation skills, leading to impulsive behaviour and poor decision-making. Negative Impact on Brain Development: Excessive fast food consumption can affect brain development, particularly in regions responsible for emotional regulation and cognitive function. These mental health effects can have long-lasting consequences for children's emotional wellbeing, social relationships, and academic performance, highlighting the importance of a balanced diet for optimal mental health.

POTENTIAL MECHANISMS AND PATHWAYS RELATED TO THE EFFECT OF FAST FOOD ON CHILDREN'S MENTAL AND PHYSICAL HEALTH

The detrimental effects of fast food on children's mental and physical health can be attributed to several mechanisms and pathways:

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

© UIJIR | ISSN (O) – 2582-6417
AUGUST 2024 | Vol. 5 Issue 3
www.uijir.com

Nutrient Imbalance: Fast food consumption leads to a profound nutrient imbalance, characterized by an overabundance of detrimental substances and a scarcity of essential nutrients. This imbalance has far-reaching consequences for children's mental and physical health. Excessive intake of saturated and trans fats, added sugars, and sodium from fast food contributes to increased cardiovascular risk, insulin resistance, and digestive issues. Conversely, inadequate essential nutrients like fiber, vitamins, and minerals lead to energy crashes, mood swings, and weakened immune systems. Furthermore, the lack of omega-3 fatty acids, probiotics, and antioxidants in fast food hinders brain development, gut health, and overall wellbeing. As a result, children who regularly consume fast food are more likely to experience physical health problems like obesity and diabetes, as well as mental health concerns like anxiety and depression. This nutrient imbalance can also lead to decreased focus, fatigue, and poor academic performance, emphasizing the critical need for balanced nutrition in children's diets.

Excessive Sugar Consumption: Excessive sugar consumption, a hallmark of fast food, has devastating effects on children's mental and physical health. Regularly indulging in sugary fast food and drinks leads to a rapid spike in blood sugar levels, followed by a crash, causing energy crashes, mood swings, and irritability. This sugar rollercoaster can also contribute to increased risk of obesity, type 2 diabetes, and tooth decay. Moreover, excessive sugar consumption has been linked to altered brain chemistry, leading to increased symptoms of anxiety, depression, and attention deficit hyperactivity disorder (ADHD). Additionally, high sugar intake can disrupt the gut microbiome, leading to digestive issues and further exacerbating mental health concerns. The American Heart Association recommends that children ages 2-18 consume no more than 25 grams (6 teaspoons) of added sugars daily, yet a single fast food meal can exceed this limit, making it essential for parents and caregivers to monitor and limit sugar intake.

High Sodium Content: High sodium content in fast food poses a significant threat to children's mental and physical health. Consuming high-sodium foods regularly can lead to blood pressure increases, cardiovascular disease risk, and kidney strain. Excessive sodium intake can also cause fluid retention, leading to bloating, headaches, and fatigue. Furthermore, high sodium levels in the body can disrupt the balance of neurotransmitters, such as dopamine and serotonin, which regulate mood, appetite, and sleep. This can lead to increased symptoms of anxiety, depression, and attention deficit hyperactivity disorder (ADHD). Additionally, high sodium intake can negatively impact cognitive function, memory, and learning abilities. The American Academy of Paediatrics recommends that children ages 2-18 consume no more than 1,500-2,200 milligrams of sodium daily, yet a single fast food meal can exceed this limit, emphasizing the need for parents and caregivers to monitor and limit sodium intake.

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

© UIJIR | ISSN (O) – 2582-6417
AUGUST 2024 | Vol. 5 Issue 3
www.uijir.com

Low Essential Nutrient Intake: Low essential nutrient intake, a common consequence of fast food consumption, has far-reaching effects on children's mental and physical health. Regularly eating fast food can lead to inadequate intake of vital nutrients like fiber, vitamins, and minerals, causing a range of negative effects. Fiber deficiency can result in constipation, diverticulitis, and increased risk of chronic diseases. Inadequate vitamin intake can lead to impaired immune function, slow growth and development, and decreased cognitive performance. Mineral deficiencies, such as iron and calcium, can cause anemia, weakened bones, and decreased energy levels. Moreover, low essential nutrient intake can lead to decreased focus, attention, and memory, as well as increased irritability, mood swings, and behavioral problems. This nutrient deficiency can also impair the body's ability to regulate stress, leading to increased symptoms of anxiety and depression. By regularly consuming fast food, children risk missing out on the essential nutrients necessary for optimal growth, development, and overall wellbeing.

Imbalanced Gut Microbiome: An imbalanced gut microbiome, often resulting from fast food consumption, has profound effects on children's mental and physical health. Fast food's high levels of processed ingredients, added sugars, and unhealthy fats disrupt the delicate balance of gut bacteria, leading to changes in the gut-brain axis. This imbalance can cause increased inflammation, impaired immune function, and decreased production of essential neurotransmitters. As a result, children may experience mood swings, anxiety, depression, and attention deficit hyperactivity disorder (ADHD)-like symptoms. Furthermore, an imbalanced gut microbiome can lead to digestive issues, such as constipation, diarrhea, and abdominal pain, as well as increased risk of chronic diseases like obesity, diabetes, and cardiovascular disease.

Inadequate Hydration: Inadequate hydration, often a consequence of fast food consumption, has significant effects on children's mental and physical health. Fast food's high sugar and salt content can lead to increased urine production, causing dehydration if not balanced with sufficient water intake. Dehydration can impair cognitive function, memory, and focus, leading to decreased academic performance and increased symptoms of anxiety and depression. Furthermore, inadequate hydration can cause headaches, fatigue, and irritability, as well as decreased athletic performance and increased risk of heat-related illnesses.

Negative Impact on Micronutrients: Fast food consumption has a profoundly negative impact on children's micronutrient intake, leading to a range of mental and physical health problems. Micronutrients, including vitamins and minerals, play a crucial role in maintaining optimal health, and deficiencies can have far-reaching consequences. Fast food's high levels of processed ingredients and added sugars lead to

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

a decrease in essential micronutrients like vitamin C, D, and E, as well as minerals like calcium, iron, and potassium. This can result in impaired immune function, slow growth and development, and decreased cognitive performance

Hormonal Imbalance: Regularly eating fast food can disrupt the balance of insulin, leptin, and cortisol, leading to increased risk of obesity, type 2 diabetes, and metabolic syndrome. Elevated insulin levels can cause inflammation, while leptin resistance can lead to overeating and weight gain. Cortisol imbalances can result in anxiety, depression, and mood swings. Moreover, fast food's high levels of processed ingredients, added sugars, and unhealthy fats can also affect the balance of thyroid hormones, leading to issues with growth and development.

Environmental and Social Factors: Children who grow up in environments where fast food is readily available and marketed towards them are more likely to develop unhealthy eating habits. Social influences, such as peer pressure and family dynamics, can also contribute to fast food consumption. Moreover, socioeconomic factors, like limited access to healthy food options and food insecurity, can make fast food a convenient and affordable choice for many families.

Fast Food Prevention: Prevention is key to mitigating the negative effects of fast food on children's mental and physical health. Parents and caregivers can play a crucial role by promoting healthy eating habits and limiting fast food consumption. This can be achieved by preparing nutritious meals at home, encouraging whole foods like fruits, vegetables, and whole grains, and setting a good example through their own eating habits. Additionally, teaching children about the importance of healthy eating and involving them in meal planning and preparation can empower them to make informed choices. Schools and communities can also support prevention efforts by providing nutrition education, promoting healthy food options, and restricting fast food marketing to children. Furthermore, policymakers can implement initiatives like taxes on sugary drinks, zoning regulations to limit fast food outlets, and nutrition standards for school meals to create a healthier food environment. By working together, we can prevent the negative effects of fast food and promote a healthier future for children.

Future Directions for the Effects of Fast Food on Children's Mental and Physical Health: A promising future direction for mitigating the effects of fast food on children's mental and physical health lies in a multi-faceted approach that incorporates education, policy changes, and community engagement. Future research should focus on developing effective interventions that target vulnerable populations, such as low-income communities, and explore innovative strategies like food literacy programs, cooking

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

classes, and nutrition education. Additionally, policymakers can work towards implementing stricter regulations on fast food marketing to children, increasing funding for healthy food initiatives, and supporting sustainable agriculture. Community-based initiatives, like urban gardens and farmers' markets, can also play a vital role in increasing access to healthy food options. Furthermore, incorporating mental health support and stress management techniques into nutrition education programs can help address the psychological impacts of fast food consumption. By collaborating across disciplines and sectors, we can create a comprehensive framework that supports children's overall wellbeing and fosters a healthier relationship with food.

CONCLUSION

In conclusion, the effects of fast food on children's mental and physical health are far-reaching and alarming. Regular consumption of fast food has been linked to an increased risk of obesity, diabetes, heart disease, and certain types of cancer, as well as mental health issues like anxiety, depression, and ADHD. The high levels of processed ingredients, added sugars, and unhealthy fats in fast food can lead to hormonal imbalances, epigenetic changes, and disruptions to the gut microbiome, further exacerbating these negative effects. However, by promoting healthy eating habits, limiting fast food consumption, and creating a supportive environment, we can mitigate these risks and empower children to develop a lifelong commitment to healthy living. It is crucial that parents, caregivers, schools, communities, and policymakers work together to prioritize children's health and wellbeing, and ensure that they have access to nutritious food options that will allow them to thrive. By taking action now, we can help shape a healthier future for generations to come.

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR

REFERENCE

1. Lane MM, Gamage E, Travica N, Dissanayaka T, Ashtree DN, Gauci S, Lotfaliany M, O'Neil A, Jacka FN, Marx W. Ultra-Processed Food Consumption and Mental Health: A Systematic Review and Meta-Analysis of Observational Studies. Nutrients. 2022 Jun 21;14(13):2568. doi: 10.3390/nu14132568. PMID: 35807749; PMCID: PMC9268228.
2. Green JE, Davis JA, Berk M, Hair C, Loughman A, Castle D, Athan E, Nierenberg AA, Cryan JF, Jacka F, Marx W. Efficacy and safety of fecal microbiota transplantation for the treatment of diseases other than Clostridium difficile infection: a systematic review and meta-analysis. Gut Microbes. 2020 Nov 9;12(1):1-25. doi: 10.1080/19490976.2020.1854640. PMID: 33345703; PMCID: PMC7757860.
3. US Preventive Services Task Force; Grossman DC, Bibbins-Domingo K, Curry SJ, Barry MJ, Davidson KW, et al. Screening for Obesity in Children and Adolescents: US Preventive Services Task Force Recommendation Statement. JAMA. 2017 Jun 20;317(23):2417-2426. doi: 10.1001/jama.2017.6803. PMID: 28632874.
4. Connell CL, Lofton KL, Yadrick K, Rehner TA. Children's experiences of food insecurity can assist in understanding its effect on their well-being. J Nutr. 2005 Jul;135(7):1683-90. doi: 10.1093/jn/135.7.1683. PMID: 15987850.
5. Zahra J, Ford T, Jodrell D. Cross-sectional survey of daily junk food consumption, irregular eating, mental and physical health and parenting style of British secondary school children. Child Care Health Dev. 2014 Jul;40(4):481-91. doi: 10.1111/cch.12068. Epub 2013 Apr 18. PMID: 23594136.
6. Almandoz JP, Xie L, Schellinger JN, Mathew MS, Marroquin EM, Murvelashvili N, Khatiwada S, Kukreja S, McAdams C, Messiah SE. Changes in body weight, health behaviors, and mental health in adults with obesity during the COVID-19 pandemic. Obesity (Silver Spring). 2022 Sep;30(9):1875-1886. doi: 10.1002/oby.23501. Epub 2022 Jul 19. PMID: 35773790; PMCID: PMC9349662.
7. Walther J, Aldrian U, Stüger HP, Kiefer I, Ekmekcioglu C. Nutrition, lifestyle factors, and mental health in adolescents and young adults living in Austria. Int J Adolesc Med Health. 2014;26(3):377-86. doi: 10.1515/ijamh-2013-0310. PMID: 24803606.
8. Reales-Moreno M, Tonini P, Escorihuela RM, Solanas M, Fernández-Barrés S, Romaguera D, Contreras-Rodríguez O. Ultra-Processed Foods and Drinks Consumption Is Associated with Psychosocial Functioning in Adolescents. Nutrients. 2022 Nov 15;14(22):4831. doi: 10.3390/nu14224831. PMID: 36432518; PMCID: PMC9694351.
9. Harrison K, Moorman J, Peralta M, Fayhee K. Food brand recognition and BMI in preschoolers. Appetite. 2017 Jul 1;114:329-337. doi: 10.1016/j.appet.2017.03.049. Epub 2017 Apr 4. PMID: 28385580.
10. Leite FHM, de Carvalho Cremm E, de Abreu DSC, Oliveira MA, Budd N, Martins PA. Association of neighbourhood food availability with the consumption of processed and ultra-processed food products by

children in a city of Brazil: a multilevel analysis. Public Health Nutr. 2018 Jan;21(1):189-200. doi: 10.1017/S136898001600361X. Epub 2017 Jan 18. PMID: 28095942; PMCID: PMC10261095.

11. Cunningham TJ, Barradas DT, Rosenberg KD, May AL, Kroelinger CD, Ahluwalia IB. Is maternal food security a predictor of food and drink intake among toddlers in Oregon? Matern Child Health J. 2012 Dec;16 Suppl 2(0 2):339-46. doi: 10.1007/s10995-012-1094-8. PMID: 22907271; PMCID: PMC4538934.
12. Lee J, Seon J. Educational Attainment and Health Behaviors Among Young Adult Men: Racial/Ethnic Disparities. Am J Mens Health. 2019 Nov-Dec;13(6):1557988319894488. doi: 10.1177/1557988319894488. PMID: 31849273; PMCID: PMC6920595.
13. Elia C, Karamanos A, Dregan A, O'Keeffe M, Wolfe I, Sandall J, Morgan C, Cruickshank JK, Gobin R, Wilks R, Harding S. Association of macro-level determinants with adolescent overweight and suicidal ideation with planning: A cross-sectional study of 21 Latin American and Caribbean Countries. PLoS Med. 2020 Dec 29;17(12):e1003443. doi: 10.1371/journal.pmed.1003443. PMID: 33373361; PMCID: PMC7771665.
14. Silveira PP, Pokhvisneva I, Gaudreau H, Rifkin-Graboi A, Broekman BFP, Steiner M, Levitan R, Parent C, Diorio J, Meaney MJ. Birth weight and catch up growth are associated with childhood impulsivity in two independent cohorts. Sci Rep. 2018 Sep 12;8(1):13705. doi: 10.1038/s41598-018-31816-5. PMID: 30209275; PMCID: PMC6135839.
15. Cannuscio CC, Weiss EE, Asch DA. The contribution of urban foodways to health disparities. J Urban Health. 2010 May;87(3):381-93. doi: 10.1007/s11524-010-9441-9. PMID: 20354910; PMCID: PMC2871079.
16. Wang Y, Wang K, Du M, Khandpur N, Rossato SL, Lo CH, VanEvery H, Kim DY, Zhang FF, Chavarro JE, Sun Q, Huttenhower C, Song M, Nguyen LH, Chan AT. Maternal consumption of ultra-processed foods and subsequent risk of offspring overweight or obesity: results from three prospective cohort studies. BMJ. 2022 Oct 5;379:e071767. doi: 10.1136/bmj-2022-071767. PMID: 36198411; PMCID: PMC9533299.
17. Viera AJ, Antonelli R. Potential effect of physical activity calorie equivalent labeling on parent fast food decisions. Pediatrics. 2015 Feb;135(2):e376-82. doi: 10.1542/peds.2014-2902. PMID: 25624379; PMCID: PMC4306803.
18. Reuter PG, Afonso Barbosa Saraiva L, Weisslinger L, De Stefano C, Adnet F, Lapostolle F. Young children are the main victims of fast food induced obesity in Brazil. PLoS One. 2019 Oct 22;14(10):e0224140. doi: 10.1371/journal.pone.0224140. PMID: 31639147; PMCID: PMC6804984.
19. Almuhanna MA, Alsaif M, Alsaadi M, Almajwal A. Fast food intake and prevalence of obesity in school children in Riyadh City. Sudan J Paediatr. 2014;14(1):71-80. PMID: 27493393; PMCID: PMC4949920.

20. Rasouli A, Mohiti S, Javadi M, Panjeshahin A, Kazemi M, Shiri-Shahsavar MR. The effect of daily fast food consumption, family size, weight-caused stress, and sleep quality on eating disorder risk in teenagers. Sleep Breath. 2021 Sep;25(3):1527-1533. doi: 10.1007/s11325-020-02189-9. Epub 2021 Jan 7. PMID: 33411190.
21. Bauman D. Impact of obesity on female puberty and pubertal disorders. Best Pract Res Clin Obstet Gynaecol. 2023 Dec;91:102400. doi: 10.1016/j.bpobgyn.2023.102400. Epub 2023 Aug 10. PMID: 37708835.
22. Katsa ME, Ioannidis A, Zyga S, Tsironi M, Koutsovitis P, Chatzipanagiotou S, Panagiotakos D, Sachlas A, Kolovos P, Routsi K, Pistikou AM, Kougioumtzi Dimoliani DE, Rojas Gil AP. The Effect of Nutrition and Sleep Habits on Predisposition for Metabolic Syndrome in Greek Children. J Pediatr Nurs. 2018 May-Jun;40:e2-e8. doi: 10.1016/j.pedn.2018.01.012. Epub 2018 May 7. PMID: 29402659.
23. Mescoloto SB, Pongiluppi G, Domene SMÁ. Ultra-processed food consumption and children and adolescents' health. J Pediatr (Rio J). 2024 Mar-Apr;100 Suppl 1(Suppl 1):S18-S30. doi: 10.1016/j.jped.2023.09.006. Epub 2023 Oct 20. PMID: 37866398; PMCID: PMC10960188.
24. Mahmoud SA, El Moshy S, Rady D, Radwan IA, Abbass MMS, Al Jawaldeh A. The effect of unhealthy dietary habits on the incidence of dental caries and overweight/obesity among Egyptian school children (A cross-sectional study). Front Public Health. 2022 Aug 16;10:953545. doi: 10.3389/fpubh.2022.953545. PMID: 36052005; PMCID: PMC9424618.
25. Milyani AA, Al-Agha AE. The effect of body mass index and gender on lipid profile in children and adolescents in Saudi Arabia. Ann Afr Med. 2019 Jan-Mar;18(1):42-46. doi: 10.4103/aam.aam_17_18. PMID: 30729932; PMCID: PMC6380115.
26. DeWeese RS, Ohri-Vachaspati P, Adams MA, Kurka J, Han SY, Todd M, Yedidia MJ. Patterns of food and physical activity environments related to children's food and activity behaviors: A latent class analysis. Health Place. 2018 Jan;49:19-29. doi: 10.1016/j.healthplace.2017.11.002. Epub 2017 Nov 20. PMID: 29156415; PMCID: PMC5807153.
27. Kumawat.A, Kumar B “effectiveness of skill training programme regarding management of childhood pneumonia on the competencies of anganwadi workers at selected primary health centre of jaipur. Volume 10, Issue 3 March 2022. IJCRT2203194.pdf.
28. Paphangkorakit J, Kanpittaya K, Pawanja N, Pitiphat W. Effect of chewing rate on meal intake. Eur J Oral Sci. 2019 Feb;127(1):40-44. doi: 10.1111/eos.12583. Epub 2018 Oct 31. PMID: 30378710.
29. Bogl LH, Mehlig K, Ahrens W, Gwozdz W, de Henauw S, Molnár D, Moreno L, Pigeot I, Russo P, Solea A, Veidebaum T, Kaprio J, Lissner L, Hebestreit A; IDEFICS and I. Family Consortia. Like me, like you - relative importance of peers and siblings on children's fast food consumption and screen time but not

© UIJIR | ISSN (O) – 2582-6417
AUGUST 2024 | Vol. 5 Issue 3
www.uijir.com

sports club participation depends on age. Int J Behav Nutr Phys Act. 2020 Apr 15;17(1):50. doi: 10.1186/s12966-020-00953-4. PMID: 32295621; PMCID: PMC7160987.

DOI Link :: https://doi-ds.org/doilink/09.2024-79942924/UIJIR