

## Consequences and Prevention of Childhood Obesity

Saurabh RamBihariLal Shrivastava\*, Prateek Saurabh Shrivastava and Jegadeesh Ramasamy

Department of Community Medicine, Shri Sathya Sai Medical College & Research Institute, Kancheepuram, India

\*Corresponding author: Dr. Saurabh RamBihariLal Shrivastava, 3rd floor, Department of Community Medicine, Shri Sathya Sai Medical College & Research Institute, Ammapettai village, Thiruporur - Guduvancherry Main Road, Sembakkam Post, Kancheepuram - 603108, Tamil Nadu, India, Tel: +919884227224; E-mail: drshrishri2008@gmail.com

Received date: January 24, 2015, Accepted date: February 25, 2015, Published date: March 4, 2015

Copyright: © 2015 Shrivastava, et al. 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.

### Abstract

Globally, the prevalence of overweight and obesity has shown a remarkable rise in last couple of decades, both among the children and adult sections of society. Initially thought to be a disease of the high-income nations, this disease is now showing its presence even in the poor income nations. Evaluation of the national health policies has revealed major shortcomings in the existing policies especially on the community level, owing to which the current strategies have not been successful in achieving the desired outcome. In order to reduce the prevalence of childhood obesity and to respond to the multiple identified challenges there is an indispensable need to formulate a multi-disciplinary strategy in collaboration with the multiple stakeholders. In conclusion, development of a comprehensive evidence-based strategy well supported with the health education campaign will definitely reduce the magnitude of the childhood obesity in the future years to come.

**Keywords:** Childhood obesity; Health; Community; Dietary pattern

### Introduction

Globally, the prevalence of overweight and obesity has shown a remarkable rise in last couple of decades, both among the children and adult sections of society [1]. In fact, studies have even revealed a significant rise in mean level of blood pressure in childhood, and it has been further complicated by the emerging epidemic of childhood overweight and obesity [2]. In excess of 40 million children in the age group of 0-5 years were found to be overweight in the year 2012 alone [3]. In addition, almost 65% of the world's population lives in countries where overweight and obesity kills more people than underweight [3].

Initially thought to be a disease of the high-income nations, this disease is now showing its presence even in the poor income nations [4]. The prevalence of childhood overweight and obesity in preschool children is definitely more than 30% in developing nations, according to the global recent estimates [3]. These rising trends have eventually forced public health professionals to acknowledge the problem of childhood obesity as a major global health concern [5]. The current article explores the association between various environmental factors (and not genetic predispositions) and the development of the childhood obesity.

Childhood obesity has been associated with multiple other comorbidities such as hypertension, insulin resistance, type 2 diabetes mellitus, hyperlipidemia, and hepato-renal involvement [3,6]. Moreover, secondary to all these complications, a definite impact on the public health care delivery system in terms of economic burden (viz. direct and indirect medical costs or expenses for rehabilitation of the patient) has also been observed [7]. Multiple potential factors such as

- Monthly family income (indirectly determines the food habits of children especially with regard to consumption of outside foods/junk foods);
- Consumption of energy-dense foods/junk foods/sweetened beverages (these food items are generally associated with excessive calories which cannot be burnt easily and thus overconsumption of them results in excessive weight gain);
- Excessive consumption of salts;
- Reduced number of meals or skipping of breakfast (because of activation of body's intrinsic mechanism to adjust to decreased food intake and simultaneously conserve body's fat stores to facilitate survive at times of starvation);
- Habit of eating outside foods;
- Minimal involvement in moderate type of physical activity at school and/or at home on a regular basis (thus no scope to burn out the excessive calories); and
- Habit of watching television or using computers for prolonged period of time (as these children spent most of their time sitting without any involvement in physical activity), have been identified that eventually precipitates or aggravates the problem of childhood obesity [8,9].

Evaluation of the national health policies has revealed major shortcomings in the existing policies especially on the community level, owing to which the current strategies have not been successful in achieving the desired outcome [10]. These barriers includes

- The absence of comprehensive nature of policies – as most of the areas of childhood obesity have either been not addressed or inadequately addressed;
- Limited commitment from the side of policy makers owing to the long interval between the onset of childhood obesity and development of a complication (viz. chronic nature of disease), in contrast to the acute diseases like swine flu;
- Minimal involvement of stakeholders (viz. parents/guardians/teachers, etc.) in the initiative – currently most of the proposed

recommendations are being restricted within the policy framework itself, and in reality no major steps have been taken to actively involve the parents/teachers/elder siblings;

- Poor awareness among the masses about the potential risk factors/consequences of childhood obesity – this remains the key area which has to be addressed if the policy makers really want to halt or even reverse the rising trends of childhood obesity. The problem has been further magnified in those settings where parents are illiterate or households have no access to recreational activities or children are not going to schools;
- Lack of strategically planned awareness campaigns for the welfare of population who are at risk – more often than not, the awareness campaigns remain restricted to the urban population and minimal attention being given towards children who are from rural/tribal community (who also do not have any accessibility to health care services);
- Minimal guidance to the outreach workers – no framework or schedule has been proposed to ensure that outreach workers can be guided about the different aspects of childhood obesity, and hence there is no mechanism for monitoring or supervising the same; and
- Poor sensitization of the physicians regarding the need to counsel parents to avoid adoption of unhealthy dietary practices [10,11].

In order to reduce the prevalence of childhood obesity and to respond to the multiple identified challenges there is an indispensable need to formulate a multi-disciplinary strategy in collaboration with the multiple stakeholders [10]. Ideally, to prevent development of any cardiovascular event in later stages of life, it is essential to initiate the primordial prevention strategies from an early age itself by ensuring prevention of modifiable risk factors [12,13]. In fact, one of the society has recommended to implement timely measures to ensure prevention of childhood obesity like ensuring exclusive breastfeeding for six months/avoiding consumption of calorie-dense foods or junk foods or alcohol/promoting intake of fruits and vegetables/adhering to timely meals/and involvement in moderate type of physical activity) [14]. In addition, a wide range of measures can be implemented in heterogeneous settings based on the magnitude of the problem, such as

- Ensuring sustained commitment from the program managers – in view of its magnitude and associated aftermaths, the program managers should recognize it as a public health priority and thus give adequate attention to counter all potential risk factors;
- Formulating a holistic policy to address the identified gaps/barriers and other attributes associated with development of childhood obesity;
- Involving multiple stakeholders including school teachers/parents to ensure that the children not only understand the importance of a balanced & healthy diet, but even develop healthy habits (like involvement in sports) in the school environment, and eventually the same can be reinforced by the family members again;
- Ensuring sensitization of the pediatricians/general physicians/outreach workers to spread awareness about aftermaths of childhood obesity and adoption of healthy lifestyles (by organizing periodic sessions for the health professionals in the local and easy to understand language so that the imparted knowledge does not remain restricted to the session but can be practically utilized by the health professionals to convince the parents as well as the children);

- Developing strategies to scientifically evaluate the eating behavior of children – to achieve this research can be performed in heterogeneous settings under professionals guidance so that results of these studies can be utilized while formulating the future welfare policies intended to reduce the prevalence of childhood obesity;
- Starting an intensive clinic for reducing prevalence of childhood obesity – this initiative can be started initially (under the guidance of a pediatrician, child psychologist, school teacher, nutritionist, etc.), in an area with high prevalence of childhood obesity and based on the results obtained, initiative can be expanded further; and
- Ensuring availability of only nutritional rich foods within the premises of school – schools can set an example by providing nutritious foods and thus can serve as a benchmark for the families of the children to motivate their kids to consume similar kinds of meals even at home [10,11,15,16].

Furthermore, there is a definite scope to explore the role of childhood obesity in development of different metabolic complications by means of a prospective cohort study [17].

In conclusion, the prevalence of childhood obesity has significantly increased over the years and there is a crucial need to implement cost-effective measures to reduce the development of metabolic complications. In fact, development of a comprehensive evidence-based strategy well supported with the health education campaign will definitely reduce the magnitude of the childhood obesity in the future years to come.

## References

1. Hurtado-López EF, Macías-Rosales R (2014) [Focus of childhood obesity from pediatrics]. *Rev Med Inst Mex Seguro Soc* 52 Suppl 1: S116-119.
2. Juonala M, Magnussen CG, Berenson GS, Venn A, Burns TL, et al. (2011) Childhood adiposity, adult adiposity, and cardiovascular risk factors. *N Engl J Med* 365: 1876-1885.
3. Obesity and overweight (2014) World Health Organization, Fact sheet No 311, USA.
4. Agyemang C, Redekop WK, Owusu-Dabo E, Bruijnzeels MA (2005) Blood pressure patterns in rural, semi-urban and urban children in the Ashanti region of Ghana, West Africa. *BMC Public Health* 5: 114.
5. Karnik S, Kanekar A (2012) Childhood obesity: a global public health crisis. *Int J Prev Med* 3: 1-7.
6. US Preventive Services Task Force, Barton M (2010) Screening for obesity in children and adolescents: US Preventive Services Task Force recommendation statement. *Pediatrics* 125: 361-367.
7. Ortega-Cortés R (2014) [Economic costs and consequences of childhood obesity]. *Rev Med Inst Mex Seguro Soc* 52 Suppl 1: S8-11.
8. Salvadori M, Sontrop JM, Garg AX, Truong J, Suri RS, et al. (2008) Elevated blood pressure in relation to overweight and obesity among children in a rural Canadian community. *Pediatrics* 122: e821-827.
9. Larrosa-Haro A, González-Pérez GJ, Vázquez-Garibay EM, Romero-Velarde E, Chávez-Palencia C, et al. (2014) [Model for predicting childhood obesity from diet and physical activity]. *Rev Med Inst Mex Seguro Soc* 52 Suppl 1: S18-25.
10. Ghosh A (2014) Explaining overweight and obesity in children and adolescents of Asian Indian origin: the Calcutta childhood obesity study. *Indian J Public Health* 58: 125-128.
11. Robinson K, Lyons M (2013) What works (or does not) in using communities of practice to advance action on childhood obesity prevention? *Can J Diabetes* 37:S274.

- 
12. Dumas N, Bergeron F, Gandonou M, De Wals P (2013) Childhood obesity intervention evaluated in Canada: A review of the literature. *Can J Diabetes* 37:S272-273.
  13. Bucher BS, Tschumi S, Simonetti GD (2012) [Childhood's determinants for high blood pressure in adulthood]. *Ther Umsch* 69: 295-298.
  14. August GP, Caprio S, Fennoy I, Freemark M, Kaufman FR, et al. (2008) Prevention and treatment of pediatric obesity: an endocrine society clinical practice guideline based on expert opinion. *J Clin Endocrinol Metab* 93: 4576-4599.
  15. Braet C, O'Malley G, Weghuber D, Vania A, Erhardt E, et al. (2014) The assessment of eating behaviour in children who are obese: a psychological approach. A position paper from the European childhood obesity group. *Obes Facts* 7: 153-164.
  16. Endevelt R, Elkayam O, Cohen R, Peled R, Tal-Pony L, et al. (2014) An intensive family intervention clinic for reducing childhood obesity. *J Am Board Fam Med* 27: 321-328.
  17. Valladares-Salgado A, Suárez-Sánchez F, Burguete-García AI, Cruz M (2014) [Epigenetics of childhood obesity and diabetes]. *Rev Med Inst Mex Seguro Soc* 52 Suppl 1: S88-93.