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Developing multipronged intervention protocols for childhood obesity prevention based on multi-theory model (MTM) of health behavior change: a mini review

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Introduction

Childhood obesity is a well-established public health problem confronting the world and United States in present times. The prevalence of childhood obesity has tripled during the last three decades in the United States.[1] Prevalence of childhood obesity in 2011-12 in United States was estimated at 8.1% for infants and toddlers and 16.9% for 2 to 19year old youth.[2] Within United States, this problem is more severe in Mississippi. A state level study done in 2007 found that Mississippi had the highest prevalence of childhood obesity at 21.9% and overweight at 44.5%.[3] More recent studies also point at this trend.[4,5] Childhood obesity is associated with several short-term negative consequences such as adverse blood lipid profile, altered glucose metabolism, obstructive sleep apnea and long-term negative effects such as greater risk of hypertension, diabetes, cardiovascular disease, gall bladder disease, and osteoarthritis in adulthood.[6]

Sharma & Ickes[6] have analyzed psychosocial determinants of childhood obesity. Some of the non-modifiable determinants of obesity that they identified were genetics, age, height, and having older siblings who were obese. The modifiable factors included physical inactivity, television watching (screen time), and nutritional behaviors and environments. In nutritional behaviors consuming polyunsaturated fatty acids, and larger portion sizes were associated with obesity while consuming adequate servings of fruits and vegetables was protective against overweight and obesity. Maternal smoking during pregnancy, lack of breast feeding, high birth weight, weight gain in first week of life, and rapid growth in infancy were other modifiable factors for overweight and obesity. Final set of modifiable factors was related to parents such as parental overweight and obesity, parental education especially maternal education level, and socio-economic status. Hence, commonly suggested modifiable public health strategies to combat childhood obesity are

a. Promoting physical activity
b. Limiting screen time
c. Increasing fruit and vegetable intake
d. Controlling portion size
e. Limiting eating out
f. Replacing soft drink consumption with water. There is a need to develop behavioral public health interventions to address these six behaviors.

In order to combat childhood obesity Sharma & Branscum[7] have identified five types of interventions:

a. School-based interventions
b. After-school interventions
c. Family and home-based interventions
d. Community interventions
e. Policy interventions.

They contend that for effectual impact a synergistic multipronged approach is needed in any community that utilizes all five modalities of interventions. There is an urgent need to develop protocols for all five types of interventions, develop and test process and impact instruments and test these protocols for efficacy using newer theories. The intervention protocols can utilize the newly proposed multi-theory model (MTM) for health behavior change.[8,9] This theory breaks the behavior change into initiation and sustenance. The theory proposes that participatory dialogue in which advantages outweigh disadvantages, behavioral confidence and changes in physical environment are crucial for health behavior change and will be used to predict the five behaviors in this pilot study. For sustenance of behavior change the constructs of practice for change, emotional transformation and changes in social environment are important. The theory is very new and in its initial applications to physical activity behavior in adults,[10] portion size behavior in adults,[11] and sleep behavior[12] has shown very good predictability. There is a lot of promise in utilizing this theory to combat childhood obesity and it behooves both researchers and practitioners to use this theory in this direction.

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Conflict of interest

The author declares no conflict of interest.

References

1. R Balgir. Impact of gender bias on health and nutrition of the tribal women in relation dynamics of development in India. *The Internet J of Biol Anthro*. 2008;3(1):1–6.
2. Noreen Mucha. *Enabling and equipping women to improve nutrition*. USA: Bread for the World Institute, Briefing Paper; 2012.

3. Andrea Cornwall, Elizabeth Harrison, Ann Whitehead. Gender myths and feminist fables: the struggle for interpretive power in gender and development. *Devel and Change*. 2007;38(1):1–20.
4. Neumayer, Eric, Plümper, Thomas. The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002. *Annals of the Association of American Geographers*. 2008;97(3):551–566.
5. Muneer SE. Transfer of knowledge through expatriates nationals (TOKTEN) as a gender sensitive development assistance modality in patriarchal societies: An example from Kassala State, Eastern Sudan. *J Saudi Soc Agric Scie*. 2011;10(2):89–94.
6. FAO. *Women play a decisive role in household food security, dietary diversity and children's health*. 2015.
7. FAO. *Gender and nutrition*. 2012.
8. World Food Program. *Promoting gender equality and the empowerment of women in addressing food and nutrition challenge*s. 2009. p. 1–15.
9. Shashi IB. *Weight measurement of primary school rural community of Faizabad*. India: The Indian Practitioner; 1990. 109:461–465.
10. World Health Organization. *Obesity and overweight fact sheet*. 2011.
11. Fox KR. Childhood Obesity and the role of physical activity. *J Royal Soc Promot Health*. 2004;124:34–39.
12. Al Hazzaa HM, Musaiger AO. Physical activity patterns and eating habits of adolescents living in major Arab cities. The Arab Teens Lifestyle Study. *Saudi Med J*. 2010;31:210–211.
13. Al Hazzaa HM. Physical activity, fitness and fatness among Saudi children and adolescents: Implications for cardiovascular health. *Saudi Med J*. 2002;23(2):144–150.
14. AlNuaim AR, Bamgboye EA, AlHerbish A The pattern of growth and obesity in Saudi Arabian male school children. *Int J Obes Relat Metab Disord*. 1996;20(11):1000–1005.
15. Khayri HO, Muneer SE, Ahmed SB, et al. Assessment of nutritional status of sudanese primary school pupils in Riyadh city, Kingdom of Saudi Arabia. *J Imm Min Health*. 2016;18(1):28–33.
16. UNICEF. *Tracking Progress on Child and Maternal Nutrition: A Survival and Development Priority*. India: UNICEF; 2009.
17. Drake LC, Maier M, Jukes M, et al. *Nutrition of school–age children*. Institute of Partnership for Children Development; 2002.
18. Shailen Nandy, Michelle Irving, David Gordon, et al. Poverty, child under–nutrition and morbidity: New evidence from India. *Bull World Organ*. 2005;83:161–240
19. World Bank. *Repositioning Nutrition as Central to Development: A Strategy for Large–scale Action*. 2006.
20. World Health Organization. *Physical Status: the use and interpretation of anthropometry*. Technical Report Series, 1995.
21. Hasster T, Babey S, Diamont A, et al. *More California Teen consumes fast food soda serving of fruits and vegetables*. A publication to the UCLA Center for Health Policy Research, 2005.
22. Nicklas TA, Baranowski T, Cullen KW, et al. Eating Patterns, Dietary Quality and Obesity. *J Am Coll Nutr*. 2001;20(6):599–608.
23. Parsons TJ, Power C, Logan S, et al. Childhood predictors of adult obesity: a systematic review. *Int J Obes Relat Metab Disord*. 1999;23(8):1S–107S.

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