Childhood Obesity: An Alternative and Economical Solution

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Abstract:

Obesity today is no more restricted among the adults and has made it ways in the life of small children. Children who are often seen as the future of any nation, region, clan or community, but today this future is surrounded with an alarming problem of malnutrition, known as "Obesity". According to a global analysis published in The Lancet journal, which made headlines in Indian Newspaper, reports, "the number of obese children in India has increased dramatically, with approximately 12.5 million of those between the ages of five and 19 being obese in 2022 compared to 0.4 million in 1990. Although, primarily it is believed that childhood obesity in India is more prevalent among children from higher-income and urban backgrounds, there has been a disproportionate increase in obesity rates in rural and urban low-income populations in recent times[15]. Through this paper an attempt is been made to find an alternative and most economical solution to this growing problem.

Keywords: Obesity, Traditional Games, Alternative Solutions

Introduction:

The children are the future of any nation, region, clan or community, but today this future is surrounded with an alarming problem of malnutrition, known as "Obesity". According to a global analysis published in The Lancet journal, which made headlines in Indian Newspaper, reports, "the number of obese children in India has increased dramatically, with approximately 12.5 million of those between the ages of five and 19 being obese in 2022 compared to 0.4 million in 1990. 5.3 million Of the 12.5 were boys and 5.2 million were girls.[1,2,3] The shocking report was covered by all most all the main newspaper such as Economic Times, NDTV, Times of India to mention a few. As per one article. it is been estimated that more than 14.4 million children are obese in India, the second-highest rate globally, behind China[4]. Also The National Family Health Survey (NFHS-5, conducted in 2019-21), the most comprehensive household survey

of health and social indicators by the government of India, found that 3.4% of children under five are now overweight compared with 2.1% in 2015-16 (*https://www.bbc.com/news/world-asia-india-62307784)*

According to the World Health Organization (WHO), when body mass index (BMI) is more than 25, the situation is denoted as overweight, and a BMI of more than 30 is considered an obesity condition[5]. The conditions of overweight and obesity primarily occur due to energy imbalances between calories consumed, calories exhausted, and excessive calorie intake or insufficient physical activity. Childhood overweight/obesity is a precursor to metabolic syndrome, poor physical health, mental disorders, respiratory problems, and glucose intolerance, which can continue into adulthood[6]. Childhood overweight and obesity are determined mainly by insufficient nutrition, **physical inactivity**, high socioeconomic status, urban residency, traditional beliefs, and marketing of transitional food companies[7,8]. Various studies have suggested possible reasons for the increasing trends of overweight/obesity among children in India. Possible explanations include **insufficient physical activity, increased television screen time**, urban residency, and family social status [9,10,11,12,13,14].

The Studies:

Although, primarily it is believed that childhood obesity in India is more prevalent among children from higher-income and urban backgrounds, there has been a disproportionate increase in obesity rates in rural and urban low-income populations in recent times[15]

Several research studies has been carried on these aspect, according to the article," Overweight/Obesity Prevalence among Under-Five Children and Risk Factors in India: A Cross-Sectional Study Using the National Family Health Survey (2015–2016)" by Jay Saha, Pradip Chouhan, Farooq Ahmed, Tanmoy Ghosh, Sabbir Mondal , Muhammad Shahid , Saireen Fatima , Kun Tang and Edited by Sara Baldassano, published in National Library of Medicine *(https://pmc.ncbi.nlm.nih.gov/articles/PMC9460849/),* the study was based on 2015–2016 National Family Health Survey-4 (NFHS-4), the findings reveal that factors such as child sex, age, birth weight, birth rank, maternal education, number of children, age at marriage, mother's BMI, **media exposure**, social group, and dietary diversity score were most significantly correlated with childhood overweight and obesity in India. Furthermore, the finding also said that male children (ARR: 1.08) aged between 0 and 11 months (ARR: 3.77) with low birth rank (ARR: 1.24), obese (ARR: 1.81) children whose mothers married after the age of 18 (ARR: 1.15), children who belong to a scheduled tribe family (ARR: 1.46), and

children who consumed 7–9 food items (ARR: 1.22) were at highest risk of being overweight and obese. However, breastfeeding (ARR: 0.85) and Muslim families (ARR: 0.87) appeared to be protective factors with respect to childhood overweight and obesity in India. Pertinent public health programs, clinical follow-up, and awareness about sedentary lifestyles can help to reduce overweight/obesity risks in children.[16]

In 2016, a study reported that the prevalence of obesity among children between 5 and 9 years was approximately 9%.[17] the prevalence of childhood obesity is variable in different regions and populations across India. A study conducted in 2019 in Delhi reported a prevalence of 22.8% among school children aged 6–16 years[18] another study in 2019 from Maharashtra reported a prevalence of 13.6% among school children.[18.] The causes of childhood obesity may be genetic, behavioral, environmental, or socioeconomic. Higher maternal education and income were found to be associated with a lower risk of childhood obesity in a study conducted in Tamil Nadu.[19] Another study conducted in Delhi reported that children **who spending more than 2 h per day watching television** had higher chance of being obese.[20]. Another study conducted in South India reported that lack of physical activity was the most significant factor contributing to childhood obesity[21]

One more paper , Childhood obesity in India: A two-decade meta-analysis of prevalence and socioeconomic correlates, published in Clinical Epidemiology and Global Health, Volume 23, September–October,2023,101390, the study examined the correlates of obesity with respect to socioeconomic characteristics. It was found that children studying **in private schools were at a higher risk of developing obesity** compared to those studying in government schools. Children of working women were found to be at a higher risk of obesity compared to children of non-working women. Additionally, children with a family history of obesity were at an increased risk of developing obesity.[22]

The alternative and economical Solution:

In the various studies done on the obesity on children several factor were recognized which can be categorized into three sub section, a) Medical Condition of the child/Mother b) Socio economic status which includes Working parents and excessive media exposure, diversified food consumption, private schooling, urban residency and family social status c) Lack of Physical activity.

Whereas Sub section A and B which are the medical condition and socio economic, are hard to control because of its fluctuating nature and economic relevance, it is the Sub section C

which is the most economical based solution for the growing disease among the young children. The alternative solution is bringing back the traditional outdoor game culture in the daily life of the children, traditional games require very little equipment and they are less expensive in comparison to the modern games[23] and comparatively the benefits are many fold when compared to today's online games, which often leads to addition, violent behaviors, psychological disturbance to mention a few, supported many research papers on these aspects. India is considered as a place of origin for a number of traditional games which are well-known throughout the world in present time. A number of leading traditional games which had Indian origin are Teerandaji, kabbadi, kho-kho, Polo, shatranj, and Martial Art etc[23]. The Traditional Games are a part of intangible heritage and a symbol of the cultural diversity of any societies. Traditional games were not just games they were designed in such a way that can develop lot of skills like logical thinking, building strategy, concentration, basic mathematics, among and lot more. They teach us many things while playing like to learn to win and lose, develop sensory skill, count, add, improve motor skills, identify colour, hand-eye coordination and finally to have fun, also traditional games and sports reflect different cultural expressions and create a bridge between cultures for a better mutual comprehension.[24]

These games can be further divided into two group, group 1 Indoor Games, mainly focused on the mental health and Group 2 Outdoor Games, focused on the Physical health, team work.

However, in this paper only such games are covered that has not been archived , other than that popular traditional outdoor games such as Kit-Kit, Kho-Kho, Kabaddi, Gilli danda, pittu, kite, hide and seek and many more have already been researched many times and covered in many research articles.

Traditional Games:

1) **Name, Place, Animal, Thing**: This game which has now taken the online mode, was once play in a simple piece of paper and making four columns. Each column was named as Name of a person, Name of a place, Name of an animal and the last column is about name of any thing/ object. This games is super economic in nature, including this the game helps the player not only memorizing the name of great personalities, give knowledge about the geographic region all over the world, knowledge about different animals which also includes birds, reptiles, insects and sea creature, which involuntarily creates harmony and respect about other living creature but always towards the ecology and last but not the least knowledge about different things and

object. Additionally new columns can be added as per the requirement or new things to be learn.

2) **5 stones or locally known as pach goti**: In this game five equal shaped and sized pebbles are taken. This games is about seven round. In first round, all the five pebbles are thrown in the surface and then one pebble is tossed upwards and by the time the pebble comes down - one pebbles in the surfaced need to be picked with one hand and also the tossed pebble, likewise all the remaining three pebbles needed to be picked up without missing the tossed pebble. Similarly in second round, two set of pebble are picked, third round –three pebbles in one attempt and one single remained in second attempt. Fourth round all four pebble in the surfaced need to be picked in single stroke. Fifth round is different, all the five pebbles need to be tossed in the back side of the palm and tossed in the air and need to catch all the five pebbles in single stroke. Sixth round, only one pebble is balanced in the back side of the palm and balancing that all the remaining four pebble in the surface need to be picked, when finally all four pebbles are picked, the last balanced pebble in the back side of the palm need to be tossed and catched keeping all the four pebble in that hand only. The last round is with one hand a cave type is made and with another hand all the pebbles need to be goaled inside the cade in one go, each time tossing one pebble in the air. The person who does all the round in one single stroke wins the game.

   These 5 stone games is also super economical in nature and sometimes it does not need a partner to play also. The game helps a child in different skills such as balancing, aiming and improves concentration.

3) **I want (Amake Chai- Bengali version):** This game is played between two teams and one king. The king is selected randomly and whatever he wants need to be bought to the king at the earliest. The team who brings the demanded things first wins the game. However, the king does not demand one single object as in a single game the king can demand upto eight to ten items so that both the teams gets enough opportunities. This game is super fun to play as a lot of team work and coordination is required to win the game.

4) **Gaddi:** In this game a structure is made on the ground similar to hopscotch, but here three layer of barriers are made. One horizontal row followed by a big square box, and again horizontal row followed by a big square box and lastly one more horizontal row.

In each horizontal row, one person plays the role of a guard and the big square box is made to relax. So the player has to cross the guards to enter the big square box to thinks and rest and again cross the entire horizontal row and reach the end of the structure to win the game. The player gets out if the guards touch the player whenever it tries to cross the barrier. This game is super tricky to play similar to how kabaddi is been played and the player need to be very vigilant to win this game.

5) **The zig zag game/ cross game**: This game is quite similar to Ludo or cross game but the difference is here no board needs to be purchased. A complex pattern in drawn in the surface and stones pebbles of two different colors are taken by both sides' players.It is the complex pattern that makes this games unique and though it looks similar to Ludo but needs skill similar to play a chess game. It improves cognitive skills (including concentration, pattern recognition, decision making, algebraic and geometric thinking, problem-solving, spatial reasoning, and critical thinking) Improves self-confidence and self-worth. Increases attention span. Increases memory capacity.

Conclusion:

The different reports and researches indicating the health problem i.e. obesity among the children cannot be denied at any cost. World Health Organization has already acknowledged the growing problem and sees obesity as an epidemic especially in developing countries. In India, the trends are seen in a rapidly and gradually increasing rate and the consequences are often carried on to the adulthood. Although, the problem which was thought to be confined to higher income group and restricted to urban area are no more restricted to financial capacity or the development of any region.

The reason behind the increasing obesity among Indian children are many but in place to eliminate or handle the issues especially among the middle or lower income group and rural regions, the alternative and economical solution in the form of traditional games need to be incorporated in the daily life of the children.

Apart from making the alternative and economical solution i.e. the traditional games if made part of the schooling syllabus both in private and public institutions, within no economic stress the problem could be easily handled. This solution not only addresses the obesity problem in the most cost effective manner but the problem that is arising due to the increased engagement in online games can be also managed. Apart from addressing the health and

psychological issues, imparting the traditional games in one's daily life, a child also get accustomed with the difference traditions and culture associated with the games.

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