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Assessment of Nutritional Status, Junk Food Consumption among Intellectually Disabled Adolescents (14-19 Years)

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Abstract: ***Intellectually disabled people tend to have poor nutritional status due to malnutrition and nutritional deficiencies. The present study was aimed to assess the nutritional status, junk food consumption among intellectually disabled adolescents (14-19 years). The data of 100 intellectually disabled adolescents was collected from the special institutes for Intellectually Disabled situated in Hyderabad, using questionnaires that included general information, anthropometric measurements, questions about frequency of junk food consumed, factors affecting the choice and meals replaced by junk foods were included. The study revealed that a significant percentage of studied population was malnourished (59%). Obesity being highest (30%), followed by underweight (16%) and overweight (13%). Consumption of junk foods was found to be more frequently among malnourished adolescents specifically among obese (60%), followed by overweight (46%) and underweight (25%). The factors that affected choice of junk foods among the obese subjects were mood (43%), taste (37%), time (10%), and social media (10%), and 67% replaced one meal with junk food. Among overweight subjects factors were mood (69%), taste (23%), social media (3%) and 62% replaced one meal with junk food. Among underweight subjects, factors were taste (50%), mood (40%) and social media (10%) and 45% replaced one meal with junk food. Therefore, the present study concluded that among intellectual disabled adolescents malnutrition and unhealthy eating habits are more prevalent.***

Keywords: Mental health, intellectually disabled adolescents, malnutrition, junk food, choice of junk food

1. Introduction

Mental health is often referred as the cognitive, behavioural, and emotional wellbeing of an individual. It does not just indicate the absence of a mental disorder. Adolescence as defined by World Health Organization as 'a period of human growth and development that occurs nominally between the ages of 10 and 19'. This is a critical stage for physical and psychological well-being. The onset of serious mental illness like depression and psychosis occurs mostly during adolescence. Stress overload from physical, emotional, social, and sexual changes can result in anxiety, withdrawal, aggression, poor coping skills, and actual physical illness. The World Health Organization estimates that 10-20% of children and adolescents worldwide have mental disorders. Half of all mental illnesses start by the age of 14 and three-fourth by the mid-20s. [1]

Intellectual disability is a neurodeveleopmental disorder that begins in childhood. (American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 2013). It is characterised by 3 features

- deficits in cognition,
- deficits in adaptive function, and
- Onset during the developmental period.

According to American Association on Intellectual and Developmental Disabilities (AAIDD), Intellectual disability is characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before age 18.This health condition is cluster of syndromes and disorders characterized by low intelligence and associated limitations in adaptive behavior. [2]

Intellectually disabled children and adolescents are known to be at higher risk for developing malnutrition which may partly explain the growth retardation among them. Many Non-nutritional factors may influence growth, but nutritional factors such as inadequate calorie intake, excessive nutrient losses and abnormal energy metabolism also contribute to growth failure. The deleterious effect of early malnutrition on later intellectual development in children in developing countries has been clearly documented. [3]

The epidemic of childhood obesity observed in youth without disabilities (Daniels et al. 2009), may also be a concern for youth with intellectual/ developmental disabilities (IDD). Malnutrition revealed by anthropometric variables is highly prevalent among children and adolescent with Intellectual disability; and the prevalence of malnutrition increases with age, deterioration of mental functioning. Researchers have proved that there is a higher prevalence of obesity and obesity-related secondary conditions among youths with Intellectual/development disabilities. [4]

Junk food is usually considered as an empty calorie food. It is a high calorie or calorie rich food which lacks in essential

micronutrients such as vitamins, minerals, or amino acids, and fibre but has high energy (calories).

Eating junk food has a negative effect on mental health, causing depression among those who consume it regularly. Researchers found that people who consumed the most fast food and baked goods were 37% more likely to become depressed than people with the lowest consumption. Several studies have analyzed the association between fast food and commercial bakery consumption and physical diseases, such as obesity or coronary heart disease. Diet and mental state are interdependent. Research proved an increased risk of depression in junk food eaters. Consumers of fast food and sweets, compared with those who eat little or none, were 51 percent more likely to develop depression. The researchers have proved that as depression levels increases when the frequency of junk food consumption increases. [5]

There have been a number of published studies identifying an inverse association between diet quality and the common mental disorders. [6]

2. Aim

To assess the nutritional status and junk food consumption among intellectually disabled adolescents between 14-19 years of age.

3. Objectives

- To assess the nutritional status of intellectually disabled adolescents using anthropometry.
- To determine the frequency of consumption of junk food among intellectually disabled adolescents

4. Literature Survey

A study conducted by Nalan Hakime Nogay 2013 reported that among the mentally disabled children malnutrition and micronutrient deficiencies were more prevalent also another study by Sunil Kumar et.al., 2016 in Sub-Himalayan India reported statistically significant association between nutritional status and mental retardation. Similarly another study conducted by Mathur et.al., 2007 in India reported the prevalence of malnutrition and iron deficiency among mentally retarded children and adolescents.

Several studies have reported the effect of junk food consumption on mental health. A study conducted by Sheroze et.al., 2017 reported a positive correlation between consumption of junk foods and occurrence of depression in children. Another study conducted by Zahra et.al., 2013 reported that people who consume junk food daily were at a greater risk of poorer mental health. Similar results were obtained from another study conducted by Ghadeer et.al., 2017 in Saudi Arabia, which demonstrated a positive relation between fast food consumption and mental disorders among female adolescents.

5. Methodology

To assess the nutritional status and junk food consumption of intellectually disabled adolescent age 14 to 19 years, a survey was carried out by random sampling method.

Target population
For the study, 100 samples of adolescents with Intellectual Disability in the age group 14 to 19 years were selected. The samples were drawn from institutes for intellectually disabled people in Hyderabad, Telangana.

Tools and techniques:
The information required for the study was collected using questionnaires. A semi – structured questionnaire, consisting of close ended questions in a multiple choice format was developed. The information was collected from caregivers of the subjects. The objectives of the study were kept in mind while framing the questionnaire.

Anthropometry:
Height was measured using a stadiometer and measuring tape while participants were barefoot, with heels together, hands at sides, legs straight, shoulders relaxed, and eyes looking forward.

Weight was assessed with the Digital weighing scale for all participants, who wore light clothing.

Body Mass Index is commonly used measure to evaluate relative weight for height, using a mathematical ratio of weight (in kilograms) divided by height (in square meters).

The criteria of the World Health Organization for Asians were used to categorize them into underweight (BMI <18.5), normal weight (18.5 – 22.9), overweight (23 – 24.9) and obesity (BMI ≥ 25).

Questionnaire
The content of the questionnaire included general information, anthropometric measurement, frequency of junk food consumed and eating habits.

6. Results and Discussion

BMI of the subjects
The study was conducted on 100 intellectually disabled adolescents collected from special institutes, including both males and females of age 14-19 years.

From the figure given below, it can be seen that out of 100 subjects, 16% were underweight, 41% were normal, 13% were overweight, and 30% were obese. The figure clearly shows maximum subjects were malnourished. Among 59% malnourished subjects, 16% were undernourished and 43% were overnourished. Among the subjects who were over nourished, 13% were overweight and 30% were obese. The

results clearly show higher presence of over nutrition than undernutrition among the subjects.

Bronberg et.al., (2011), conducted a study on prevalence of malnutrition in institutionalized intellectually disabled patients, which indicated the presence of 2.9% of underweight patients, 30% of overweight and 27.7% of obese patients.

Amir et.al.,(2012), conducted a study on Weight status in Iranian children with autism spectrum disorders: Investigation of underweight, overweight and obesity, which revealed that 50.4% of these young children were in the limits of normal weight, but 8.7% were underweight, 13.3% were overweight, 11.5% were obese, and 15.9% were severely obese

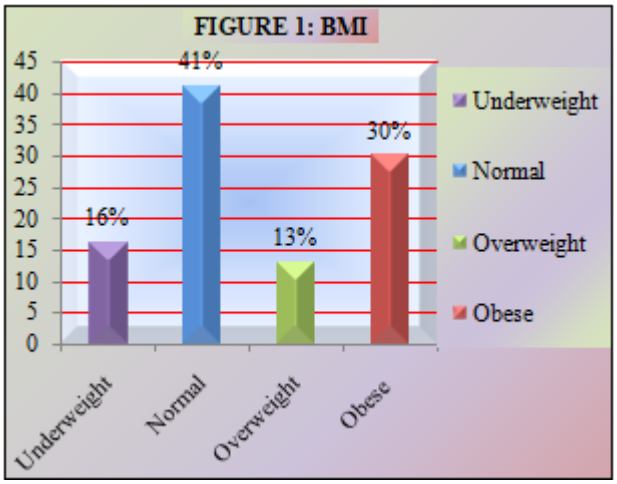


Figure 1: BMI of the subjects

Gender of the subjects:
The present study conducted on 100 adolescents showed that, 72% of the subjects were males and 28% were females. 81% of all underweight subjects were males while 19% were females. Among the subjects who had normal BMI, 73% were males and 27% were females. Among the subjects who were overweight, 54% were males while 46% were females. Among the subjects who were obese, 74% were males and 26% were females. The results showed presence of malnutrition was more among males than females.

Segal et.al., (2015), conducted a study on Intellectual disability is associated with increased risk for obesity in a nationally representative sample of U.S. children, which showed that a greater proportion of children with intellectual disability were male, 68.4% were males.

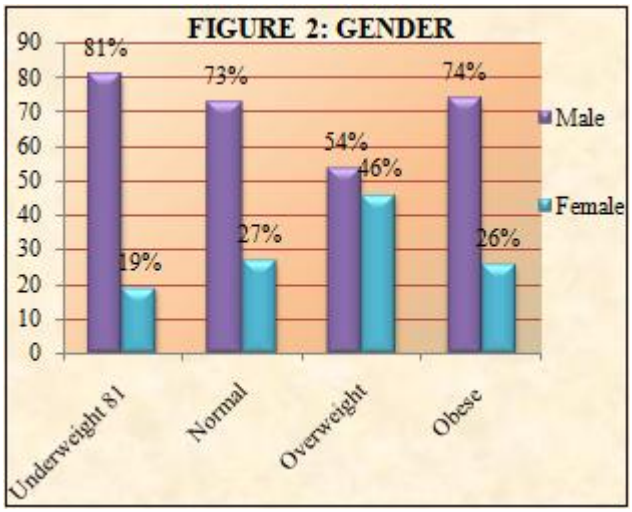


Figure 2: Gender of the subject

Favourite junk food among subjects
The study showed that, maximum subjects in each group liked all type of junk foods (fast foods, snacks, desserts). Among underweight 12% of the subject's favourite junk food was fast food, 25% liked snacks, 19% liked desserts, and 44% liked all types of junk foods. Among subjects with normal BMI, 15% liked fast foods, 17% liked snacks, 12% liked desserts, and 56% liked all types of junk foods. Among overweight subjects, 15% liked fast foods, 23% liked snacks, 23% liked desserts and 39% liked all types of junk foods. Among obese subjects, 10% liked fast foods, 30% liked snacks, 23% liked desserts and 37% liked all types of junk foods.

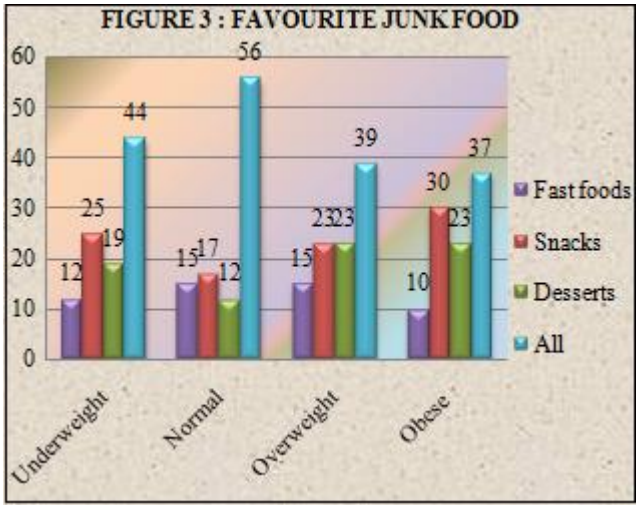


Figure 3: Favourite junk food

Frequency of consumption of junk food among the subject:
The study showed that, among the underweight subjects 25% of the subjects consumed junk foods daily, 38% consumed weekly, 31% consumed alternate day, 6% consumed occasionally. Among the subjects who had normal BMI, 24% consumed junk foods daily, 49% consumed weekly, 15% consumed alternate day and 12% consumed occasionally. Among the overweight subjects, 46% consumed junk foods

daily, 30% consumed weekly,16% consumed alternate day, 8% consumed occasionally. Among the obese subjects, 60% consumed junk foods daily, 20% consumed weekly, 14% consumed junk foods alternate day and 6% consumed occasionally.

Mohan et.al., (2012) conducted a cross sectional study among mid adolescent school children in Nagpur. The results revealed that 96% were consuming junk foods. 52% consumed more than one junk food consumption per week of which maximum study subjects 83.2% consumed chocolates followed by candies, pizza and noodles, 43% subjects consumed multiple junk foods per week followed by 17.8 % who consumed junk foods 3 times a week.

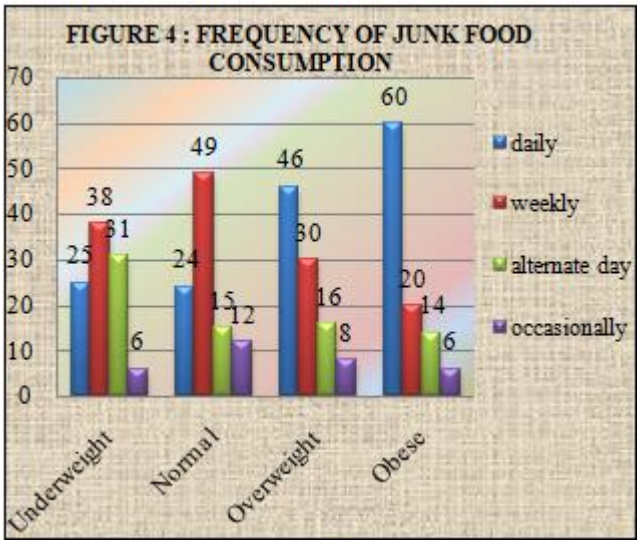


Figure 4: Frequency of Junk food Consumption

Factors affecting choice of junk food among subjects

The study conducted on 100 subjects showed that, among the subjects who were undernourished taste was the factor that affected the choice of junk food, while in overnourished subjects (overweight and obese) mood was the factor that affected the choice of junk food. Among underweight subjects, in 50% of the subjects taste affected choice of junk food, for 40% mood affected the choice of junk food and for 10% social media affected the choice of junk food. Among subjects with normal BMI, for 3% of the subjects time affected the choice, in 56% taste was the factor, in 41% mood was the factor. Among the overweight, in 23% of the subjects, taste was the factor, in 69% mood was the factor, and in 8% social media was the factor. Among obese subjects, in 10% time was the factor, in 37% taste was the factor, in 43% mood was the factor, and in 10% social media was the factor affecting the choice of junk food.

Driskell et.al., (2006) conducted a study on Differences exist in the eating habits of university men and women at fast-food restaurants and concluded that time as a main reason for preferring junk food.

Mandoura et.al., (2017), conducted a study on Factors Associated with Consuming Junk Food among Saudi Adults in Jeddah City and showed that limited available time as a main reason for preferring junk food. Taste is the second commonest reason for preferring junk food

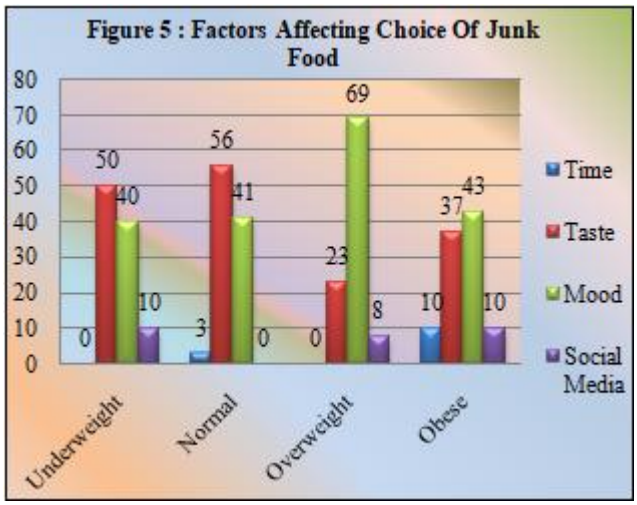
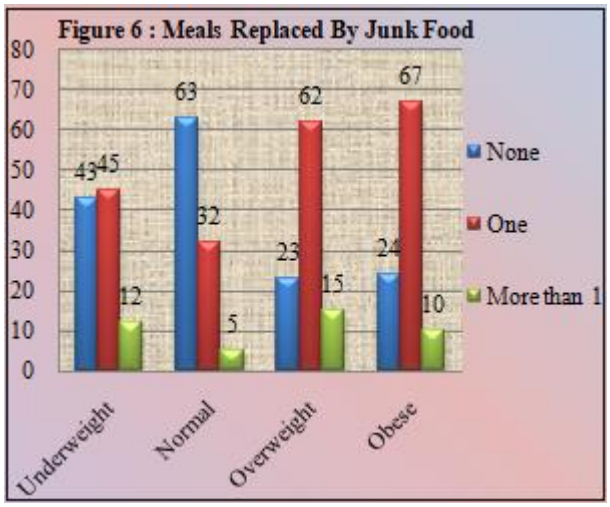


Figure 5: Factors affecting choice of junk food

Meals replaced by junk food among the subjects

The study conducted on 100 subjects showed that, among malnourished subjects, maximum respondents replaced one full meal with junk food and few of them replaced two meals with junk foods. Among underweight subjects, 45% replaced one meal with junk food, 12% replaced two meals and 43% never replaced meals with junk foods. Among subjects with normal BMI, 32% replaced junk food with one meal, 5% replaced with two meals, 63% never replaced meals. Among overweight subjects, 62% replaced one meal with junk foods, 15% replaced with two meals, 23% never replaced meals. Among obese subjects, 67% subjects replaced one meal with junk food, 10% replaced two meals and 24% never replaced meals with junk foods.



7. Summary and Conclusion

Mental health refers to the cognitive, behavioural, and emotional wellbeing of an individual. Mental disorders and mental health problems have been increasing considerably among adolescents. Malnutrition and nutritional deficiencies are more prevalent among intellectually disabled adolescents than normal population. Assessment of nutritional status helps to determine the nutritional needs and requirements of adolescents. Many researchers have concluded that among intellectually disabled adolescents obesity is more prevalent due to unhealthy eating habits, lifestyle patterns and other co-morbidities.

The results of anthropometry showed that, 41% of the subjects were of normal BMI and 59% of the subjects were malnourished. Among the malnourished subjects, Obesity was more prevalent (30%), followed by underweight (16%), and overweight (13%).The frequency of junk food consumption indicated that most of the malnourished subjects consumed junk food daily. Daily consumption of junk food was seen more among obese subjects (60%), followed by overweight subjects (46%) and underweight subjects (25%)

Junk food consumption has positive association with BMI. Obese adolescents are seen to replace their regular meal with junk food frequently (67%), followed by overweight subjects (62%) and then underweight subjects (45%).The factors that affected choice of junk foods among the obese subjects were mood (43%), taste (37%), time (10%), and social media (10%). Among overweight subjects factors were mood (69%), taste (23%), and social media (3%). Among underweight subjects were taste (50%), mood (40%) and social media (10%).

Therefore, present study concluded that among intellectually disabled adolescents, malnutrition, unhealthy eating habits like frequent junk food consumption, poor lifestyle pattern was seen, which could be the cause of nutritional deficiencies and other health risk factors among them.

8. Recommendations

Further studies should include all the biochemical parameters to detect any nutritional deficiencies. It should also create awareness among parents and adolescents about obesity and obesity related chronic conditions. Adolescents should be educated about the ill effects of junk food consumption on their physical as well as on their mental health. Health care professionals and care takers working should maintain a record of nutritional intake data of intellectually disabled adolescents.

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