

REVIEW PAPER ON NUTRITIONAL STATUS OF 10 TO 12 YEARS BOYS AND ITS IMPACT ON THEIR SPORTS PERFORMANCE

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ABSTRACT

A healthy body and mind can only be achieved via regular participation in sports. In order to achieve peak performance in sports, athletes must follow a structured training regimen and eat a healthy diet. Sports performance is negatively impacted by a lack of nutrition understanding and a poor nutritional status. Individualized sports nutrition principles should be used to address the nutritional needs and improve the nutrition understanding of children's athletes. Students' participation in organised sports has grown in recent years. Nutritional knowledge gaps are just one of the many obstacles that athletes face that prevent them from eating a healthy diet. The field of sports and nutrition and its impact on performance in India is under-researched. Children's nutritional status and physical fitness haven't been studied before, thus this study aims to examine the nutritional state of boys between the ages of 10 and 12.

Keywords:- nutrition, fitness, children, sports, diet, health, performance etc.

INTRODUCTION

For living a healthy life it is very essential for body to have enough nutrition in daily diet. A balanced and healthy food is utmost right from the early childhood to every stage of life to lead a proper developed and active life style. Proper nutrition feeding to a body is a science of dealing with all different variety of foods which is required to make a balanced diet and giving appropriate nourishment to grow. The basic need of nutrition is on an average fixed and depends on various demographic factors such as BMI, height, weight, age, gender, physical activity and growth rate. There is direct association in nutrition, physical performance and functional capacity of human beings. The dietary intake affects our physical strength a lot. Deficiency in this intake has an adverse effect on the capacity of an individual as well as on his/her health. Hence it is a famous saying that-

“Health is Wealth”

Therefore nutrition and proper physical exercise plays a vital role in everyone's life especially in the life of sports person or athlete. In order to have overall fine fitness status it is must to take a balanced diet according to your sports field as the exercise sessions varies a lot in different sports. Various past research works suggest that in order to have good health and fitness, a sports person must maintain his habit of taking balanced nutrition it will help them in proper training and competition.

Being active in sports is trending nowadays in society. Now parents also encouraging their children to participate in sports in their early ages. Being active in sports requires more energy and efforts from the side of participant as it involves more training, more practice sessions and tough competition. These rigorous training sessions puts strain on the bodies of growing children and increase the chances of injuries. These children have to

invest more energy hence required to take more appropriate and adequate diet to have proper growth and development.

The future of society is in hands of the children. Therefore to ensure the sound base and bright future of the society, the health and nutritional status of the children should be taken care of. The early age of school going children is the prime age to build the physical strength and to make significant changes. To prepare the adolescents for growing needs of their body an adequate amount of nutrition is required. If someone gets the balanced nutrition it is directly associated and reflected in his health, immunity and performance. The School going kids is the growing age of childhood. The age of primary class children is very dynamic from the point of view of physical growth and development of mind of the child. Various researches done in the past conclude that in the primary age children the major cause behind their high absenteeism, low rate of enrollment in school, dropouts in between and below average academic performance is the lack of nutritional diet and health problems related to it. If we look at the Indian scenario, the health status is quite dissatisfactory due to lack of nutrition and its awareness in the public. "The national family health survey (NFHS) data show that 53% of children in rural areas are underweight and this varies across states. The percentage of underweight children in the country was 53.4 in 1992; it decreased to 45.8 in 1998 and rose again to 47 in 2006." There is an increased demand for energy, protein, minerals and vitamins during adolescence. So keeping this in view current study has undertaken to check the impact of sports of physical activities on the nutritional status of young boys.

OBJECTIVE OF THE STUDY

This research has following objectives:-

- i. To study the nutritional status of 10 to 12 years boys.
- ii. To access the impact of sports activities on the nutritional status of 10 to 12 years boys.

REVIEW OF LITERATURE

A literature review is a thorough summary of prior research on a particular subject. The literature review examines scholarly articles, books, and other sources that are pertinent to a specific study topic. This previous study should be enumerated, described, summarised, objectively evaluated, and clarified in the review.

Muderedzwa, T. M., & Matsungu, T. M. (2020) conducted study to identify the nutrition knowledge of 9-14 years students along with their nutritional status and physical activity level. The study was conducted in Harare, Zimbabwe and 368 students were selected from eight primary schools. The questionnaire was used to collect the socio-demographic, nutritional knowledge and physical activity data of respondents. WHO standards were referred to measure the height and weight data of students. The collected data was analysed with the help of chi-square, fisher's exact test and regression at 5% level of significance. Results revealed that only 52.7% of the learners achieved the WHO recommended 60 minutes of physical activity. Almost 36% students were affected from stunting, wasting or overweight. Inadequate dietary habits were found to be major reason behind these sufferings.

Macêdo, C. C. et. al. (2020) indicated that in present era the obesity has become the major problem among the school going youth which is causing the early childhood health problems among the adolescents. If this problem is not rectified timely then it may cause serious nutritional disorders in the coming future. Keeping this in view the authors conducted this study the nutritional conditions of school going children of Santa Catarina, Brazil. The study was done on 595 children of 6-10 year age studying in the three different schools. It was concluded that although most children were found to be in normal nutritional condition, some were identified as being overweight or obese. It was evident that nutritional condition does not differ in relation to gender, but is influenced by age and height.

De Moraes Ferrari et. al. (2020) conducted study on 15-17 years youth of Latin America to record their dietary intake, physical activity and sitting time. BMI was used to measure the nutrition status, waist circumference (WC) was categorized as above or below thresholds and 24-hours dietary recalls was used to access the dietary intake. To measure the physical activity and sitting time International Physical Activity Questionnaire (IPAQ) was

used. In all respect significant difference was observed in the performance of male and female youngsters. The findings indicated that the dietary intake and physical activity of Latin American countries' youth is poor. It is suggested to implement the programs to make the adolescents aware of the healthier diet and regular physical activities.

Moral-García, J. E. et. al. (2020) collected data from 516 adolescents of age group of 12 to 16 years to access their physical activity, health, dietary pattern and consumption of tobacco and alcohol. The objective behind this data collection was to check the relationship between these variables. It was seen that youth who practice more physical activity have better health as well as more adherence to the Mediterranean diet. The youth who consume less tobacco and alcohol found to be healthier as compared to those adolescents who regularly consume alcohol and tobacco. These all shows that the promotion of healthy lifestyle is highly needed as well as the to improve the health of youth they should be motivated to practice more physical and sports activities.

Bhargava, M. et. al. (2020) analyzed the Demographic and Health Survey (DHS) database to re-estimate the stunting, overweight and thinness of Indian youth across the states with respect to gender and area of residence. According to The National Family Health Surveys (NFHS) the boys estimated thinness is 58.10% while it is 46.80% for girls. But in the conclusion authors indicated that these figures have been overestimated specially in the age group of 15-19 years. The researchers suggested that NFHS and DHS should consider a separate group of these youth for the better understanding and estimation of their nutritional assessment.

The objective of study conducted by **Bukht, H. et. al. (2020)** was to evaluate the energy and macronutrients of orphans along with their nutritional status. To achieve the objective 318 orphans of age 5 to 14 years were selected from the 6 orphanages of Lahore (Pakistan). Anthropometric measurement i.e. height, weight, BMI were used to access the nutritional status of children. Mean caloric and macronutrients intake was recorded thrice at alternative by using 24-hour dietary recall questionnaire. The data analysis showed that there is a high risk of malnutrition among the orphan children. BMI scores were compared from the standard z-scores and it was observed that 88% of the z-scores were ranging from -2 to 2. The overall results indicated that there is a need of high improvement in the dietary intake of orphan children.

Kaur, M. et. al. (2020) undertook a cross-sectional study to access the nutritional status and dietary intake of adolescent with respect to age and gender. The study was done on the 240 school going students of Uttarkashi, Uttarakhand. The height and weights of students were converted into standard z-scores to evaluate their nutritional status. Dietary intake was ascertained by employing 24-h dietary intake for 3 consecutive days. It was observed that by the age height and weight of students was increasing but boys were suffering more with the problem of underweight as compared to girls. On the other side girls intake of energy, iron, calcium and protein was significantly lower than the boys.

Kikuchi, R.et. al. (2019) conducted study to measure relationship between extracurricular sports activities (ECSA) and low back pain (LBP) in children and adolescents. The study was done on 9 to 15 years aged children studying in first to sixth grade of schools. The data was collected with the help of questionnaires and population attributable fraction (PAF) was calculated to serve the objectives of the study. It was found that extracurricular sports activities significantly cause the problem of low back pain, however as compared to boys the problem was seen more in girls.

Pérez-Ordás, R. et. al. (2019) said that extracurricular sports activities in schools plays significant role in promoting active lifestyles and create healthy habits among students. The first objective of this study was to access the quality of sports activities being offered by the schools of Spain. The second objective was to measure the students' satisfaction with these sports activities and their willingness to participate in these activities in future. The last objective was to access the relationship between these variables. In a sample 1080 students were included out of which 65.9% were boys. The average age of students was 13.76 ± 1.39 years. The standard questionnaires were used to collect the data. It was found that students' intention to participate in sports activities is highly affected with their satisfaction about these activities. So if schools want their students to participate in extra-curricular sports activities then they are advised to improve the quality of these activities.

Bostanci, Ö.et. al. (2019) indicated that children inclination towards sports activities help them in overall growth and development. Keeping this in view the authors conducted this study to check the impact of different sports activities on the physical health of boys aged 8 to 12 years. The sample consisted of 624 boys who were

engaged in any one of the wrestling, swimming, archery, basketball or football at least twice a week. Apart from these 146 boys were selected who do not participate in any kind of sports activities. Various pulmonary functions and respiratory muscle strength were measured to check the positive impact of sports activities. The results indicated that mean values of pulmonary functions and respiratory muscle strength were higher in boys who had actively played any one of the sport.

Nath, J. C. et. al. (2019) used anthropometric methods to assess the hygiene practices and nutritional status of primary school children. 300 students of age group 7 to 12 years were selected from the primary schools situated at Sylhet, Bangladesh. To identify the presence of wasting, stunting and underweight problem among the children, their height and weight was measured to calculate the BMI. Out of total sample 47% children were found to have normal height and weight. Rest of the students was considered abnormal with respect to height and weight. The study concluded the wide existence of malnutrition among the primary school children. Researchers recommended the implementation of nutrition education program in schools.

De Miranda, R. C. et. al. (2019) conducted a study to access the problem of overweight across the world. The research compared the weights of Calabria and Italian children with North American children. The study was conducted on the children of 9 to 12 years age at 3 time points i.e. 1992, 2004 and 2014. After analysis it was found that there was no significant difference between boys from Calabria and the United States in 2014. Over time, odds to become overweight were significant for most of the children from both populations but higher for those from Calabria. Therefore, inducting a reform in the political, environmental, and societal systems may protect children from becoming overweight by increasing quality of diet and physical activity.

Reimers, A. K. et. al. (2019) believed that physical activity is the necessity for child development and it is highly affected with the social environmental factors. So this study was conducted to identify the impact of social environmental factors on the physical activity participation of school going children. This study was done in Germany, where 3505 school going children of age 6 to 17 years participated in the survey. During data collection along with the students their parents were also interviewed. It was observed that at primary school level boys and girls were equally participating in sports activities, however at secondary level girls were getting less chance to participate in physical activities as compared to the boys. The high significant impact of social environmental factors was observed on the physical activity participation.

Jain, M. et. al. (2018) conducted a study on 7-9 years old school children to access their diet quality and nutritional status. 120 students from three schools were randomly selected for the study. Researchers developed a questionnaire to collect the demographic details of respondents. Weight and height were converted into z-scores with respect to the age of respondents as per the WHO reference. Diet and nutrition intake of students was gathered by using 24-hours diet recall method. To access the diet quality nutrient adequacy ratio, mean adequacy ratio and Eating Index was calculated. It was found that 0.83% respondents were suffering from severe underweight problem whereas 5.8% students were underweight. As far as nutrients are concerned, inadequacy of iron and energy was observed. Anthropometric measurements have not affected the diet quality of respondents, similarly diet quality and nutritional status were also not associated.

Astini, D. A. (2018) indicated that in present era majority of children are facing the problem of malnutrition which is also hindering the development and growth of children. The researcher conducted a study on 6 to 12 years children to access their nutritional status on the basis of Body Mass Index (BMI). The data of 81 children studying in elementary school of Tulikup was collected. It was found that most of the girls had underweight. In terms of age, most children aged 7 and 9 years were suffering from underweight.

Kunto, Y. S., & Bras, H. (2018) conducted study to identify the inequalities in the nutritional status of adolescents with respect to gender. 6781 families were selected and their 13396 adolescents of age 10 to 19 years were interviewed for the data collection. It was found that adolescent's nutritional status is highly affected with mother's education and mother's working status. The children of well-educated mothers were having good heights but the adolescents of bull-collar working women were having lower height as per their job. Significant difference was observed in the BMI Of boys and girls and boys were having lower BMI-for-age as compared to the girls. The boys of working mothers were found to have more fast food as compared to girls.

Debnath, S. et. al. (2018) used skinfold thickness to access the nutritional status of east India children with respect to their gender and age. 1262 children of age 5 to 12 years were selected from the Darjeeling, West

Bengal. L, M and S model was used to determine the skinfold thickness. The skinfold thickness of children was compared with respect to age and gender and in all the results it was observed that nutritional status of children in unsatisfactory.

Bogale, T. Y. et. al. (2018) undertook this study in Ethiopia where Stunting is the most serious problem among the children. Authors tried to identify the factors affecting the stunting among the 6-12 years children of Southern Ethiopia. The study was cross-sectional by nature and 633 participants from eight villages were selected by using multistage cluster sampling. To assess the stunting the height-for-age Z-scores were used. At 5% level of significance multiple logistic regressions was applied to identify the causing factors of stunting. It was observed that almost 57% children were suffering from stunting out of which 3.5% were severely stunted. The problem was more severe in boys as compared to girls. The authors suggested the implementation of nutrition policy and strategies in the rural areas of Ethiopia.

Sopa, I. S., Pomohaci, M., & Szabo, D. A. (2018) checked the impact of motor and sports activities on the students of 10 to 12 years. The study was done on two groups of 20 students each i.e. experimental group and control group. The control group was exposed to 2 hours physical education on daily basis as well as they were given training to start the basketball game. In control group 2 hours physical education was given but it was followed by classical curriculum. The observation, graphic and mathematical methods were used to study the students' behaviour. A significant difference was observed in both the groups with respect to the working style, communication level and adaptability of school environment.

CONCLUSION

There has been a remarkable increase in knowledge about nutrition and sports in the last 10-15 years. Certain dietary practises have seen significant progress in terms of their ergogenic effects and health advantages. Many athletes, particularly those in the 10-12 age range, have not been successfully and systematically promoting healthy eating habits, both for performance and for their own health, despite this understanding. Although nutritionists have developed various instructional resources for athletes, coaches, parents, and administrators, there hasn't been a defined model or framework upon which to base decisions when establishing and executing nutrition education programmes in schools. The psychosocial and cultural components of nutrition and sports have also received less attention. There is a shortage of knowledge on the food-related affects on athletes from both within and outside of the sporting field. In other words, the study's findings suggest that nutrition is critical for athletes at all stages of their careers since it supplies the body with the energy it needs to train. Strength, training, performance, and recuperation are all impacted by the food that athletes consume.

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