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"together we can and we will make a difference"

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ABSTRACT

The adolescent age, 17-25 years, is the transition phase where the child is in his/her college life. Many adolescents may experience increased academic stress, irregular eating habits, and a sedentary lifestyle due to long hours of studying and limited time for physical activities. Adolescent girls, particularly those from low- economic backgrounds, may struggle with access to nutritious food, leading to poor dietary habits. These factors contribute to BMI fluctuations, making the nutritional guidance essential to them.

Nutritional counseling can eradicate these problems by educating girls about the importance of eating balanced diets and helping in making healthy food choices even within limited budgets. It can provide these young girls with the knowledge and tools to make healthy food choices, understand the importance of physical activity, and manage their BMIs effectively.

By understanding the principles of nutrition, the importance of portion control, and the benefits of physical activity, adolescent girls can make pro-active choices that positively impact their BMI and overall health. Counseling sessions can also cover topics such as stress management, meal planning, and the importance of hydration, which are crucial for maintaining a healthy lifestyle.

Establishing healthy eating habits and a balanced lifestyle during this formative period can lead to long-term health benefits, reducing the risk of chronic diseases and improving quality of life. Moreover, well-nourished and healthy individuals are better equipped to handle academic and professional challenges, contributing positively to their future careers and personal lives.

Keywords: Adolescent girls, BMI (Body Mass Index), Eating habits, Under-nutrition, Nutritional counseling, Anthropometry etc.

INTRODUCTION

The word adolescence is derived from the Latin word *adolescere* which means “to grow” or “grow to maturity”. Adolescence is a phase of change where the individual is getting converted physically and psychologically into a mature adult from a child.

It is the critical period of life where eating habits are brought about and during that period the body undergoes several changes from childhood to adulthood. So the body needs adequate amount of healthy nutrition to promote fit growth physically as well as mentally. Therefore, it can be said that adolescents are more often at the front end of any social change and trends worldwide[1-2].

In the era of modernization, where the processed and fast foods are very easily approachable than any medical help, eating healthy diet is a big challenge for the adolescents to remain healthy.

They choose unhealthy habits of diet patterns, life styles, as they strongly believe to live in their own created comfort zone [3]. They do not want to escape

out of it. Some students for education are living in remote areas or away from their parents, so may due to the less affordability and availability of healthy diet in the premises and the more and easy availability of fast food corners in each street is also affecting their life styles and dietary pattern [4].

BODY MASS INDEX

The Body Mass Index (BMI) is a numerical value calculated from an individual's weight and height. It is generally used to categorize the population into different height and weight status. It does not account directly for the measure of muscle mass, bone density and body fat or distribution of fat. It helps in reflecting health status for all individuals.

Uses of BMI:

- BMI is a displaying tool to measure body weight comparative to height.
- It helps in identifying the actual health hazard adjacent with being under-weight or over-weight.

NEED OF MORE CONCERN FOR NUTRITION IN GIRLS THAN BOYS

In broad area, adolescents or college going girls are the most sufferers of underweight categories of BMI, because of their high body requirement of nutritional value foods and sometimes also low

societal power. These girls also can be called the beginner of the transmitting the ill cycles caused of malnutrition to their next generations. Hence, girls need more requirement of paying attention towards nutrition than boys due to their several physiological and social factors.

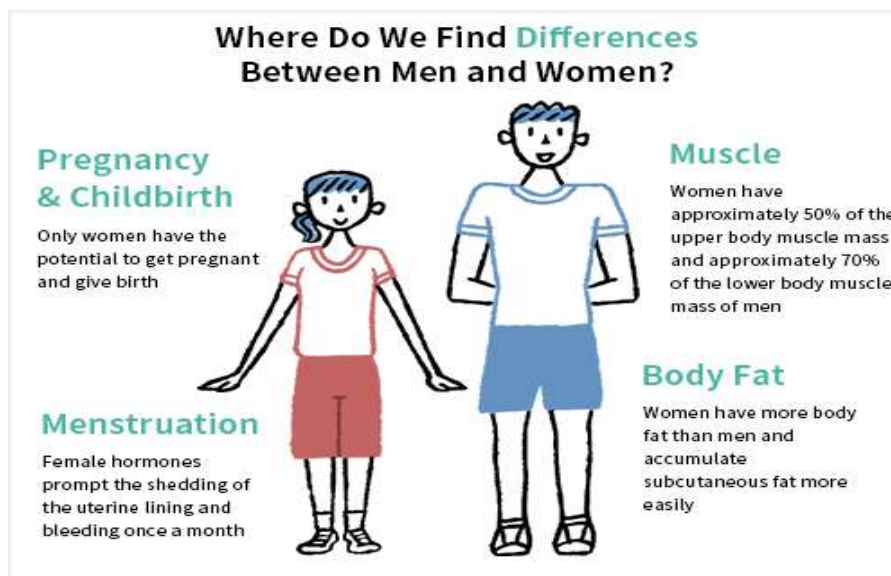


Fig. 1: Differences between girl and a boy. Source: ar.inspiredpencil.com

Today's generation is least bothered about the nutrients present in their food. Also, they had very poor knowledge about the low-priced recipes which are healthful for them. This can be one of the leading restrictions in the demolition of diseases from our country. This generation especially girls are unaware of following healthy diet patterns for the improvement of their nutritional status [5].

NUTRITIONAL COUNSELLING

Nutritional counseling is nothing but a man-to-man education and supportive sessions with trained dietitians called as registered dietitians. It is not telling anything about good or bad food. It is something telling of about making sustainable changes in our diet pattern to live our life healthier for long term.

Nutritional counseling significantly impacts improving BMI for women by promoting healthier eating habits and lifestyle changes under different categories. Overall, nutritional counseling serves as a valuable tool for women seeking to improve their BMI and overall health [6].

RESEARCH PROBLEM

The nutritional status of college going girls or teenage girls are badly affected by their modified eating habits. Girls, due to their especially designed physiology needs high requirement of nutritional valued food, and sometimes also due to low societal power they need more concern for the benefit of upcoming healthy generation, as they are carrier of ill cycles caused of malnutrition to their next generations.

AIMS AND OBJECTIVE

Keeping the above facts in mind, the present study was deep-laid to educate the today's young generation especially girls, the importance of eating healthy food. To explain them and their parents, the importance of nutrition, nutritional counseling and nutrition education is required.

Therefore, it is very essential to pick out healthy eating food habits, which can only be achieved by giving them nutrition education and nutritional counseling.

STUDY AREA

As no research work is done on the college going girls in Vidisha city. The present research work is opted for the betterment and upliftment of the girls residing here.

It is now one of the well-known city in Madhya Pradesh. The Vidisha city is the administrative headquarters of Vidisha district. It is situated 62.5 km northeast of the Bhopal, the capital of state Madhya Pradesh in India.

Vidisha city

Central address: Nandwana Rd, Chota Sarafa, Baripura, Vidisha district, Madhya Pradesh 464001, India.

Latitude: 23° 31' 30.396" N

Longitude: 77° 48' 29.2896" E

Area & Households

The total geographical area of Vidisha is 7371 square kilometers with total population of 9,70,388. The population density of Vidisha city is 198 peoples per square kilometer. Vidisha District has total 7 towns and 1,614 villages with approx 3.00 Lac (2,99,676) total number of households .



Fig. 2. Vidisha city in M.P., Source: www.mapsofworld.com

Vidisha Literacy Rate

Vidisha District has a literacy rate of 70.53% which is lower than national average of 72.98%, The Male literacy rate of Vidisha District is 79.14 lower than national average of 80.88%, The Female literacy rate of Vidisha District is 60.85 lower than national average of 64.63%. In Vidisha District's urban areas, the literacy rate is approximately 81.45%, while in the rural regions of Vidisha District, it is around 67.09%.

Overall, it can be said that women in Vidisha city is comparatively less literate than man and urban areas women, the root cause of all problems.

MATERIALS AND METHOD

The study was conducted among 250 college going girls aged 17 to 25 of different government, aided and private colleges of Vidisha district. These colleges are running diploma courses, graduation and post-graduation programmes consisting of either technical or non- technical courses for example B.Sc., B.Com., B.A., BCA, B.Tech. and so on. Medical and Para-medical courses are exempted from this study.

Questionnaire was handled one-on-one and was translated into leading local languages for the smooth understanding of speech communication for the better results.

Also, parents' and students' consents were obtained. Surroundings/place of residency, educational achievement and their economic status were also used as determining factor in the analysis.

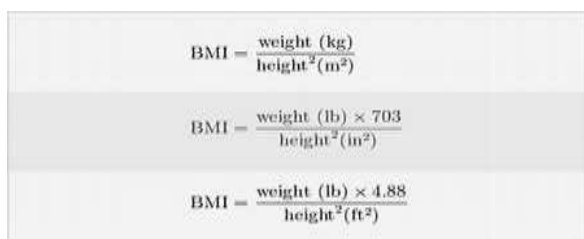
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In the next phase of the research, on the same day of the survey, the BMI and anthropometry measurements of each of the college going girls were calculated just after the completion of their questionnaires.

• **BMI Calculation-**


$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height}^2(\text{m}^2)}$$
$$\text{BMI} = \frac{\text{weight (lb)} \times 703}{\text{height}^2(\text{in}^2)}$$
$$\text{BMI} = \frac{\text{weight (lb)} \times 4.88}{\text{height}^2(\text{ft}^2)}$$

Source: healthy natural diet.com

BMI Categories:

- Underweight: BMI less than 18.5
- Normal weight: BMI 18.5 to 24.9
- Overweight: BMI 25 to 29.9
- Obesity: BMI 30 or greater

On the basis of BMI calculations and anthropometric measurements obtained by various the

respondents, the number of girls who were found under-weighted was 200. For an advance investigation, the observed under-weighted 180 respondents or the college going girls according to their ease and comfort were divided into next two groups consisting 90 girls each.

GROUP I (under counseling): Total 90 girls were present in this group which were frequently counseled every month for next 6 months.

Extension tools

The various extension tools used to transmit the knowledge, the skills and the information to the college going girls in this group were -

- **Audio-video aids:** reels, videos, photos, models
- **Written materials:** leaflets, posters, charts
- **Spoken methods:** lectures, meeting, conferences
- **Group contact methods:** organizing camps,
- **Mass media methods:** social media and mobile apps
- Poster making competition in colleges

GROUP II (Non-counseling): This group also consists of 90 girls. As these girls, may be due to their low economic status or busy schedule did not give their consent for counseling so were kept away from the counselling group and hence were kept in non-counseling group.

These girls were not in touch with me for the next 6 months. But were called again for their next after 6 months BMI and anthropometric measurements.

The comparative study was done the basis of BMI various anthropometric measurements recorded for the last 6 months.

RESULTS AND DISCUSSION

Poor nutrition includes both undernourishment and over-nourishment, with overweight and obesity presenting serious health hazards. Nutrition-related chronic diseases, comprising cardiac disease, hypertension, stroke, diabetes, and cancer, are linked to overweight and obesity [7].

Some of the main findings and insights that arose from our initial and subsequent studies included [8]-

1. Hinders over well-being:

Underfed children may not achieve their full capacity concerning physical and mental development.

2. Reduced heights in adults:

Impaired growth during childhood, as reported by a World Bank report, can result in a reduction of height in adults.

3. Infectious Diseases :

Underfed children are more sensitive for infectious diseases such as pneumonia, diarrhoea, measles, malaria etc.

4. Less economic productivity:

The enduring impacts of early-life under-nutrition, including growth retardation, can have fiscal repercussions, diminishing mature stature and, consequently, economic output.

5. Minimizing food variety and interests in meals:

Unawareness of nutritional knowledge notably hinders the proper usage of balanced nutrition in their core meals. As per the NAI 2023 (Nutrition Awareness Index) published by Right to Protein, “about 85% of Indians are lacking in awareness for protein rich sources in vegetables, while above 54% of Indians are lacking the concept of healthy fats. This unawareness can led to protein deficiency in vegetarian students by reduced options of protein intake through vegetables , by minimizing variety in their meals [9].

6. Unawareness leading to improper usage of social media:

In adolescent age, lies mainly college going students. In research it is observed that they have some common unhealthy eating patterns like skipping of meals ,habit of snacking and consumption of fast food [10]. The present scenario is mainly due to increase in urbanization and globalization, peer-pressure of friends and society, busy and hassle free life schedule , reduced affordability and easy to access of fast foods in and around the premises and some more other factors . Due to these many and different

reasons, they adopt the unhealthy style of eating patterns [11] .

It is observed, that sometimes they are more dependent on social media for the recipes that could be prepared in less cost and in less time. Also, sometimes to collect information regarding nutrition and health, they rely more on these platforms [12].

Researchers at Deakin University’s Institute for Physical Activity and Nutrition (IPAN) worked keenly at approx 700 Instagram posts, and brands having more than 100,000 subscribers /followers and reported that 45 per cent of them were full of inappropriate information. The report had also said that nine out of ten posts were consisted of poor quality facts and information [13].

Nowadays, Social media have become one of the powerful platform for marketing of the companies. Their main target is to convene adolescents with attractive and colorful advertisements, without worrying for the hazardous consequences of unhealthy products. The marketing of unhealthy food materials through this platform can increase adolescent’s usage of the promoted unhealthy food products [14].

Researches had also showed that the wide spread of misinformation related to nutrition and fad diets on social media is inversely influencing the adolescents by unhealthy eating habits, body image perception, and diet patterns across various age groups. [15-16].

‘What to eat and what not, habit plays an important role in development of our physical and mental health. So, correct information must be laid down by such platforms [17]. Also to avoid such type of spread of misinformation through social media, nutritional education and counseling becomes a necessary part of education to a child in educational institutes, as the most accurate and high-grade information can only be provided by either nutritionists or registered dietitians[18].

CONCLUSION

In our present study we had observed that the nutritional status of the adolescent girls were very badly affected by their unhealthy dietary habits. It becomes very essential for them to adopt and strictly follow a healthy dietary habits so that they can be

prevented by many nutritional disorders like anemia, pneumonia etc.[19]. And this can only be achieved by providing them time to time nutritional counseling as well as nutritional education. And this we had proved by our research work that the girls which were attending the Nutritional counseling thoroughly had shown better BMI results with good health and mental status comparing to the girls which were left untouched.

Imparting Nutritional education doesn't mean about making our children to eat more vegetables and fruits, but it's something about helping them to understand what is nutrition, why is nutrition required, how food can affect their physical and

mental development, and above all how even small changes can have long lasting effects [20].

At last it can be concluded that nutritional education not only equip our adolescents with important and necessary knowledge of eating healthy meals but also encourages them with essential life skills [21]. Educating children for practicing healthy habits and eating nutrition rich meals from a childhood age is very crucial. By providing this nutritional education from early age, children can live their healthier life by developing lifelong healthy habits.

“Planting HEALTHY SEEDS TODAY can give HEALTHY LIFE TOMORROW”

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