An Assessment of Nutritional Status of School Going Children & Adolescents in Bahawalpur City

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ABSTRACT

Introduction: Nutritional status is the condition of health influenced by intake and utilization of nutrients. Nutrition is a key determinant of health as under nutrition and over nutrition underline most pathological and disease conditions. The significance of improving nutrition knowledge in order to have a positive influence on food choices and health should not be underestimated. Objective: The objective of this study was “Assessment Of Knowledge And Practices Regarding Nutrition And Healthy Food Choices Among School Children.” Study design & duration: A cross sectional descriptive epidemiological study carried out from July 2015 to December 2015. Place: The study was conducted in:

- Comprehensive Girls Higher Secondary School, Situated Near University Chowk, Bahawalpur.
- Sadiq Dean High School For Boys, Bahawalpur.

Subjects/methods: A sample of 165 students (100 girls and 65 boys) was taken. Data was collected through a pretested questionnaire to determine nutritional knowledge. Anthropometric measurements including weight and height, measured using standard methodologies. Using the Chi-square test compared qualitative variables. Data were analyzed by SPSS 23 software. Results: The study revealed that 58.2% children were normal while 41.8% were suffering from some degree of malnutrition either under or over nutrition. Out of undernourished children, 27.8% are underweight, 9.1% are overweight, and 4.8% are obese. Conclusion: It was concluded that the students were deficient in knowledge and understanding of the facts about energy and nutritive values of foods. The study found a significant correlation between BMI and gender, BMI and general eating habits, BMI and knowledge on their healthier choices, BMI and breakfast taking habit on chi-square test. Information gained from this study can be utilized to formulate essential messages for many educational programs.

Keywords: Assessment, malnutrition, nutritional status, school going children, anthropology

1. INTRODUCTION

Historically science of nutrition developed from the study of diseases caused by an inadequate dietary intake (1). Nutritional status of an individual is the condition of his health that is influenced by nutrients intake and utilization by the body.
Disturbance in dietary intake of nutrients can have marked and determined the influence on individual’s health. In developing countries like Pakistan, various forms of malnutrition affect population and both macro, and micro nutrient deficiencies are of major concern. Healthy eating habits should be established during childhood.

Dietary habits are a key determinant of health as under nutrition and over nutrition underline most pathological and disease conditions.

Malnourishment can lead to, visual problems, Goiter, obesity, serious infections with fatal outcome and similarly persistent and recurrent infections are likely to precipitate malnutrition in children establishing a vicious cycle in this way.

Malnutrition’s main victims are children between the ages of 12-18 years thus School age period is nutritionally significant because it is a prime time to develop body store of nutrients in sufficient amount to combat needs of rapid growth during childhood and adolescent period.

If the protein and energy deficiency hits this critical period of active growth, there is a failure to gain weight and height<sup>(2)</sup>. Dietary habits in childhood impact growth, development and the prevalence of disease throughout the life cycle. Healthy eating habits should be established during childhood<sup>(3)</sup>.

A large number of school-based nutrition programs have been implemented globally, focusing mainly on obesity, the importance of activity and vegetables and fruit in the diet<sup>(4)</sup>.

The significance of improving nutrition knowledge through nutrition education in order to have a positive influence on healthy food choices should not be underestimated<sup>(5,6)</sup>. The aim of this study was to determine the nutrition knowledge and nutritional status of children attending higher and secondary school. This was done in order to gain information for planning a nutrition education program, as poor knowledge of nutrition is seen as one of the reasons for poor food choices and, consequently, as a contributing factor in the development of malnutrition<sup>(7,8)</sup>. A little research regarding nutritional knowledge, practice, and attitudes of young children was carried out in schools of Bahawalpur, to access nutritional status of school going children and adolescents.

### 2. METHODS

It was a descriptive cross sectional study conducted in 2 schools of Bahawalpur city named:

- Sadiq Dean High School For Boys, Bahawalpur.
- Comprehensive Girls Higher Secondary School, Situated Near University Chowk, Bahawalpur.

Conducted from July 2015-december2015. A sample of 165 students (100 female, 65 male) was taken aged between 12-17 years, by non-probability convenience sampling technique.

All who willing to participate were included, and no cooperative individuals were excluded from the study. Informed consent was taken from all participants, data collected was ensured to be confidential.

Data collection was done through a questionnaire, which was developed with great care including the close-ended questions. A team of data collection was trained, and then after getting permission from the head of the Institute of both schools, the team reached there and collected data from 9th and 10th class students according to the inclusion criteria till the completion of sample size. The interview schedule was translated into Urdu and reverse translated into English for better comprehension of the interviewee.

The data was entered and analyzed in computer software SPSS version 23. The frequencies and percentages were calculated. Tabulation with different variables like sex of adolescent, physical examination, general eating habits, knowledge and food preferences was done. Relationships were subjected to statistical analysis. The test of significance was chi-square test. The level of significance used was 5%.

### 3. RESULTS

Out of 165, one hundred individuals (60.6%) were female, and 65 individuals (39.4%) were males (Table 1) age between 12-17 years (mean 14.5 & S.D ± 1.707).

BMI was calculated to, and we found 58.2% children were normal while 41.8% were suffering from some degree of malnutrition either under or over nutrition.

Out of malnourished children, 27.8% were underweight, 9.1% were overweight, and 4.8% were obese.

General physical examination was conducted, and then according to the scoring criteria, it is calculated.
that 97.6% were excellent, 1.8% were good, and 0.6% were poor (Table 2).

**Table 1: Demographic profile of respondents**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>65</td>
<td>39.4</td>
<td>39.4</td>
</tr>
<tr>
<td>Female</td>
<td>100</td>
<td>60.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: General physical examination of respondents**

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>161</td>
<td>97.6</td>
<td>97.6</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
<td>1.8</td>
<td>99.4</td>
</tr>
<tr>
<td>Poor</td>
<td>1</td>
<td>.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3: Cross tabulation of BMI & gender**

<table>
<thead>
<tr>
<th>BMI</th>
<th>Examination</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Under-weight</td>
<td>Count</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>% Within BMI</td>
<td>97.8%</td>
</tr>
<tr>
<td>Normal</td>
<td>Count</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>% Within BMI</td>
<td>99.0%</td>
</tr>
<tr>
<td>Over-weight</td>
<td>Count</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>% Within BMI</td>
<td>86.7%</td>
</tr>
<tr>
<td>Obese</td>
<td>Count</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>% Within BMI</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>161</td>
</tr>
<tr>
<td></td>
<td>% Within BMI</td>
<td>97.6%</td>
</tr>
</tbody>
</table>

**Table 4: Breakfast habits of respondents**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>97</td>
<td>58.8</td>
<td>58.8</td>
</tr>
<tr>
<td>NO</td>
<td>68</td>
<td>41.2</td>
<td>41.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>165</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Our study showed that 90.9% had any type of food allergy, 27.9% of young adolescents had abdominal pain, 4.2% individuals gave a history of worm infestation, 77% of individuals had complained of heartburn.

58.8% took breakfast daily, while 41.2% didn’t take breakfast of which 16.4% never took because of not having time, 5.5% were not used to having breakfast, 17.6% had no appetite, 0.6% were on a diet and 1.2% had other reasons for not having breakfast (Table 4).

**REASONS FOR NOT TAKING BREAKFAST**

- Not Having Enough Time: 27 cases, which is 16.4% of the total 75.2%
- Not Used To Have Breakfast: 9 cases, which is 5.5% of the total 80.6%
- No Appetite: 29 cases, which is 17.6% of the total 98.2%
- On Diet: 1 case, which is 0.6% of the total 98.8%
- Other Reasons: 2 cases, which is 1.2% of the total 100.0%
4. DISCUSSION

“A child is the father of nation” a famous quote by William Shakespeare. As school age is the prime time for children to learn about healthy food habits, body needs and choice of healthy activities. Children of this age learn quickly and are concerned much about their choices what to eat and what not also influenced by popular trends and choices of their friends.

Thus important points to know:

- Nutrition knowledge is needed for better dietary choices.
- Offer nutritious as well as high-energy snacks.
- A nutrition education program should be developed and implemented for adolescents, as nutrition education can be an accessible and effective tool for improving food choices.

This study revealed that 41.2% of the students skipped breakfast which is the most important meal. The skipping of breakfast has been associated with lower nutritional status and the risk of malnutrition. It has also been reported that less adequate breakfast habits may contribute to the appearance and further development of obesity. Generally, 71% of the students performed poorly. Our results are consistent with those reported by Essien Eno. He reported that the result of food consumption and eating habits of the respondents showed that Meal skipping was high among the selected secondary school students as 68.8% reported that they skipped meals. Only 31.3% do not skip meals9. While our study revealed that 58.8% took breakfast and 41.2% individuals skipped breakfast due to any reasons. It is important to encourage breakfast because a good night’s sleep followed by food in the morning helps your child stay active and concentrate at school. Well-planned nutrition educational programs can significantly influence the quality of nutrition knowledge of children. Through these programs, we can significantly change nutritional behavior and dietary habits of school children.

By understanding different factors which influence nutrition behavior of children is the first step to forming efficient measures which may change nutrition behavior. Education and other psycho social factors also directly influence nutrition behavior including food taboos.

As far as healthy diet is concerned, research conducted in Brazil showed that 77.2% of students scored low on the healthy diet score, with an average of 16.00±6.82 points. Among adolescents, the mean score was 15.99±6.88 points10. Whereas our study that 58.2% children were normal while 41.8% were suffering from some degree of malnutrition either under or over nutrition. Out of these malnourished children, 27.8% are underweight, 9.1% are overweight and 4.8% are obese. These findings showed that the nutritional status of children and adolescents is of great interest for public health, once obesity in these age groups is often associated with the early development of other chronic diseases such as hypertension, dyslipidemia, and diabetes mellitus.

We found that sweets and snacks were being consumed by almost every student. Excess weight is both due to the large volume of food intake regarding the composition and quality of the diet and to dietary habits, such as the consumption of sweets (filled cookies, snacks, sweets) and soft drinks, which partly explain the continuous increase in weight in children and adolescents.

In addition, foods such as fruit and vegetables, with lower energy density and that are more nutritious, are less in adolescent's diet; and an approach to combat excess weight would be to encourage an increased consumption of healthy food items and regular exercise.

5. CONCLUSION

It was concluded that the students were deficient in knowledge and understanding of the facts about energy and nutritive values of foods. The study found
a significant correlation between BMI and gender, BMI and general eating habits, BMI and knowledge on their healthier choices, BMI and breakfast taking habit on chi-square test. Our results confirm the need for ongoing educational initiatives to make healthier food choices among school aged children. Information gained from this study can be utilized to formulate essential messages for many educational programs.

REFERENCES