



NUTRITIONAL AND HEALTH PROFILE OF 17-21 YEARS TO-BE MOTHERS

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ABSTRACT

A total of 100 adolescent girls of 17-21 years old were selected from Avinashilingam Institute for Home Science and Higher education for women randomly for the study. Anthropometric parameters such as height, weight, BMI, waist circumference, hip circumference and WHR were measured using standardized procedures. Biochemical estimation was done to find the haemoglobin level. Food weighment was used to find out the food and nutrient intake. Majority of the subjects belongs to lower socio economic status and very few belonged to high income group. Most of the subjects were underweight and some were coming under the obesity range and others were normal. Most of the adolescent girls selected for the study was found to be skipping meals and almost all were having problems during menstruation and among them few have Polycystic Ovary Syndrome sings. Haemoglobin level was found to be normal among most of the selected subjects; a few were coming under anaemic range. Morbidity status such as cold and cough was found to be more and some micronutrient and calcium intake was found to be deficit. Nutritional deficiency is still evident among the study population of adolescent girls which directly influence the health status. So, the adolescent girls should be more aware regarding their health and diet because they are the future mothers.

KEY WORDS: Adolescents, Anaemic, Anthropometric, BMI, WHR.

INTRODUCTION

“A wise man should consider that health is the greatest of human blessings, and learn how by his own thought to derive benefit from his illnesses” --Hippocrates. One third of India's population is adolescents. They are vulnerable to reproductive and sexual health, nutritional, mental and behavioral problems^[1]. WHO says, that more than 2.6 million young people aged 10 to 24 die each year. A much greater number of young people suffer from illness hampering their proper growth and development to the fullest^[2]. Internal changes like hormonal changes, basal metabolism and biochemical changes are more at this age^[3]. Adolescence represents a period of transition between childhood and adulthood when adequate nutrition is required for growth and maturation. However, adolescence is also a time for children to assert their independence in matters of food choice, sometimes leading to poor diets. Survey data reveal low intakes of key vitamins and minerals in subgroups of adolescents, particularly girls. Iron, calcium, folate, and longchain -3 fatty acids are all nutrients of concern in this age group. Intakes of saturated fat, salt, and added sugars tend to be higher than recommended levels^[4]. In addition to a nutritious well balanced diet, appropriate lifestyle practices and participation in physical activities such as games/ sports should be strengthen among children and adolescents^[5, 6] opines that India is undergoing a rapid nutrition and health transition. During the last two decades the country has observed a steep increase in nutrition and associated non-communicable diseases. Since good nutrition is a must for

good health, nutritional shortcomings and nutrition related problems must be identified, not only in patients but also in the general public as well. Nutritional deficiencies can be determined from an individual's food behavior and laboratory tests may confirm the tentative diagnosis. On the other hand, biochemical data can indicate tissue depletion of nutrients before clinical sings become apparent, and a study of food intake patterns may strengthen the argument^[7].

Young people are commonly regarded as healthy and for that reason few attempts have been made to systematically measure their health though adolescence and young adulthood coincide with major changes in health and thus establish determinants of health in later life^[8]. The Indian government launched a comprehensive programme to improve the health of adolescents, who comprise over 21 percent of the 121 crore populations. The Rashtriya Kishor Swasthya Karyakram (National Adolescent Health Programme), launched by union Health Minister Ghulam Nabi Azad here, will bring several dimensions into account, like mental health, nutrition, substance misuse, gender based violence, sexual and reproductive health and non-communicable diseases^[9]. To motivate this group and to sustain their interest in project activities apart from health and nutrition education, a special programme for adolescent girls to motivate them for self recording of weight periodically is to be introduced^[10].

A primary purpose of the function of nutrition is, thus, to establish and to sustain the structure and function of all organs and parts of the body: to keep in short, the

mechanism of the body in perfect order. And since health, at its best for it is a variable state of being- is that condition of body in which all its organs and parts are sound and perform their functions duly, easily and satisfactorily, it follows that a primary purpose of the function of nutrition is to prevent, so far as its limitations permit, that disturbance or impairment of structure or function of organs or parts of the body which is disease^[11]. Teenagers are the most affected due to poor diet and pressure to stay thin. They should realize that adolescence is the age where they grow fast, and so they should not neglect their diet and nutrition. Making good food choices is among the most pleasurable and effective ways of improving health. Good food choices also can help to prevent chronic diseases, such as heart diseases, certain cancers, diabetes, stroke, bowel diseases and osteoporosis that are leading causes of death and disability among adolescents. A proper diet can also reduce major risk factors for chronic diseases such as obesity, high blood pressure and high cholesterol^[12].

Nutritional deficiencies have far reaching consequences, especially in adolescent girls. If their nutritional needs are not met, they are likely to give birth to undernourished children, thus transmitting under nutrition to future generation^[13]. More than 68% of girls in Bangladesh, 51.4 % in Nepal, 47.4 percent in India, and 24 percent in Indonesia are married by 18 years of age^[14]. Unfortunately assessment of nutritional status of adolescent girls has been the latest explored area of research particularly in rural India^[13]. The field of nutrition of women in India that has been sadly neglected pertains to the adolescent girls. The adolescent girls, the young women, the mother-to-be represent an age group which experience a crucial phase of growth^[15].

Objective of the study

In view of the foregoing discussion the present micro level investigation was undertaken to study the “Nutritional and Health profile of 17-21 years old to-be mothers”. Hence towards this view an effort has been taken to assess the health and nutritional profile with the following objectives:

- To focus on the nutritional profile of undergraduate adolescents in relation to anthropometric, dietary pattern, clinical and bio- chemical
- To analyze the dietary intake of adolescents
- To identify the key nutritional problems that affect adolescents, the main risk factors and their interaction with health problems
- To assess the bio-chemical status i.e. Haemoglobin level
- To study the morbidity pattern among adolescent girls.

METHODOLOGY

The methodology adopted for the research work entitled “Nutritional Health profile of 17-21 years old to- be mothers” is presented under the following headings

Selection of Area

Selection of sample

Formulation of the tool and conduct of the study

Assessment of nutritional status

- Anthropometric measurements of the selected subjects
- Dietary Survey
- Health status
- Biochemical Assessment
- Clinical examination
- Analysis and Interpretation of the data

Coimbatore, which is known as the “Manchester of South India” has prove to be a fertile land for multivarious activities. Avinashilingam University situated in the Coimbatore City was selected for the conduct of the study. This was selected due to easy accessibility and co-operation extended by the University authority.

A questionnaire was prepared for collecting the information regarding the socio-economic background, lifestyle pattern, dietary habits, and health status and morbidity pattern of the selected population. The nutritional status of respondents was assessed by anthropometric measurements (height, weight, body mass index, waist ratio, hips ratio, waist-hip ratio), clinical examination (clinical signs and symptoms, diet survey, illness and treatment) and biochemical estimation. Anthropometry and clinical indicators can be used to assess nutritional status as a measure of health. The details on the dietary practice like type of diet taken, consumption of fast foods, and habit of skipping meals were collected by the questionnaire. The details on the health status of the subjects like age of menarche, regularity of menstrual cycle, problems faced during menstrual cycle, medication during menstrual cycle and family medical history were collected from the selected subjects. Haemoglobin was estimated by shalies method^[16] and compared with the standard values to find out the anaemic status of the selected subjects. Clinical examination was done for all the adolescence students of undergraduate to find out the nutritional status and degree of nutritional deficiencies by using the ICMR clinical schedule. The data collected on the various aspects were consolidated and statistical methods were applied at relevant places for analysis of the data.

RESULTS & DISCUSSION

Majority of the subjects belongs to lower socio economic status and very few belonged to high income group. Most of the subjects were underweight and some were coming under the obesity range and others were normal. Most of the adolescent girls selected for the study were found to be skipping meals and almost all were having problems during menstruation and among them few have Polycystic Ovary Syndrome sings. Haemoglobin level was found to be normal among most of the selected subjects; a few were coming under anaemic range. Morbidity status such as cold and cough was found to be more and some micronutrient and calcium intake was found to be deficit.

SUMMARY

The study entitled “Nutritional and Health Profile of 17-21 years to be-Mothers” was Adolescent girls are very important section of our society as they are our potential mothers and future homemakers. Adolescents aged

between 10-19 years account for more than one fifth of the world's population. In India this age group forms 21.4 % of total population^[17]. Unfortunately adolescent girls are a neglected sector of the population of our country.

Salient features of the study are listed below:

The results observed by household and dietary survey of the selected subjects (N=100) revealed that:

The age of the adolescent girls are 19 years (46 %), 23% were in the age of 20 years, 18 % were in the age of 18 years, 7 % were in the age of 21 years and only 6 % of the selected subjects were in the age of 17 years.

Majority of the adolescent girls belongs to nuclear family (86 %) whereas only 14 % belongs to joint family.

Most the adolescent girls selected for the study were hindu (92 %), only 4 % of the subjects belongs to muslim and Christian respectively.

Most of the families belongs to medium size 4-6 members (80 %), followed by small family 1-3 members (12 %), 4 % belongs to lage size (7-9) and very large size (10 and more) families.

The income of the family was 40 % middle income, 52 % low income (< 15,000 Rs/month) and 8 % was high income (> 45,000 Rs/month).

The entire adolescent girl selected for the study was unmarried.

The height of the selected subjects was found to be less than the standard height for all age groups i.e. for 17 years (152.83 \pm 4.17), 18 years (156.39 \pm 5.57), 19 years (156.82 \pm 7.35), 20 years (156.09 \pm 6.81), 21 years (154.86 \pm 10.78) respectively.

The weight of the selected subject was found to be less than the standard weight for all age group i.e. 17 years (40.75 \pm 4.60), 18 years (47.61 \pm 8.41), 19 years (51.42 \pm 9.61), 20 years (50.96 \pm 12.10), 21 years (49.14 \pm 16.60) respectively.

Among the 100 selected subjects 41% of the selected subjects were underweight, 35 % were normal, 11 % were at the risk of obesity, 6 % were in the category of grade I obesity and 7 % were in grade II obesity. None of them were in the category of grade II obesity.

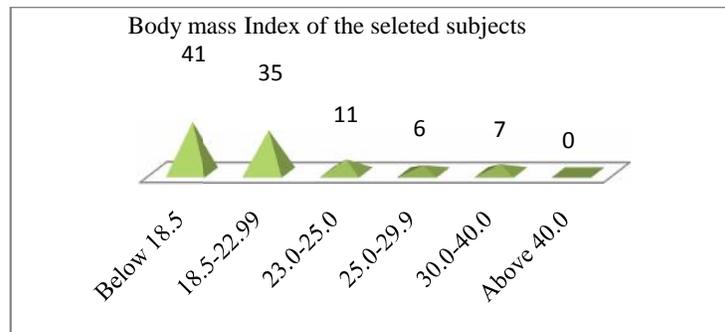


FIGURE 1: BMI

Out of the 100 selected subjects 40 % belongs to the waist circumference 75-80 cms, 24 % belongs to 70-75 cms, 17 % of the selected subjects belong to 80-85cms, 12 % belongs to 65-70 cms and only 7 % belongs to 85-90 cms.

Out of 100 selected subjects 30 % of the subjects belong to 80-85 cms hip circumference, 27 % belongs to 85-90 cms, 22 % belongs to 75-80 cms, 13 % belongs to 90-95 cms and only 8 % belongs to 95-100 cms hip circumference.

Among the 100 selected subjects, 54 % of the subjects belong to 0.80 or below which is a normal waist to hip ratio, 26 % belongs to 0.81-0.85 which is a moderate health risks and 20 % of the subjects belong to 0.85 or more which determines high health risks.

Mostly 57 % of the adolescent girls were vegetarian, 31 % were non-vegetarian and only 12 % were ova-vegetarian.

Meals consumed by the adolescent girls is that 53 % consumes three meals a day, followed by two meals (28 %), 14 % consume less than two meals in a day and 5 % consumes more than three meals in a day.

About 47 % of the adolescent girls selected for the study likes to eat snacks from eating outlets, 46 % likes fast foods, 12 % likes junk foods and only 3 % likes others.

The frequency of consumption of foods from eating outlets was 36 % occasionally, 35 % weekly, 26 % monthly and 3 % daily.

Most of the adolescent girls selected for the study like to take coffee/tea as beverages, 26 % likes to take milk, 20 % likes soft drinks and only 4% likes other beverages.

Most of the adolescent girls (64 %) selected for the study like to eat dosa with sambar or chutney, 44 % eat idly with sambar and chutney in their breakfast, 19 % eat rice items and 7 % eat other breakfast items.

Breakfast was skipped by 52 % of the selected subjects, and very few skip lunch and dinner, 39 % never skip meals.

Mostly plain rice with sambar and rasam was consumed as their lunch, 45% consume variety rice, 5 % consumes dosa, chappati and others respectively as their lunch.

Regarding consumption of various foods from food groups out of 100 selected subjects 96 % consume rice daily among all other cereals, consumption of, leafy vegetables, other vegetables, fruits, milk and milk products was found to be lower than pulses and roots and tubers.

Consumption of nuts and oils was adequate among the selected adolescent girls

Consumption of non-vegetarian foods was lower among the selected adolescent girls.

Consumption of sugar and sugar products was seems to be adequate among the selected adolescent girls.

Consumption of processed foods was found to be more consumed occasionally.

Curd was consumed by 70 % of the selected subjects, 15 % consume vegetable/fruit salads and a few consume other nutritious foods.

Profile of 17-21 years to-be mothers

Among 100 selected subjects 61 % likes to watch T.V during their free time, 24 % like to read books, 10 % likes gardening and 5 % likes other leisure time activities.

Out of 100 selected subjects 91 % do household activities in their home like cleaning (41 %), cooking (21 %), 13 % does other activities, 12 % does mopping and 9 per does not do any type of physical activities.

Among 100 selected subjects, 49 % sleeps for 6-7 hours, 34 % sleeps for 7-9 hours, 10 % sleeps for more than 9 hours and 7 % sleeps less than 6 hours.

About 37 % of the selected subjects do not do any type of physical activities, 51 % does walking, 12 % does others and only 2 % do jogging.

Duration of physical activities was daily 30 minutes (20 %), less than 30 minutes a day (6 %), weekly 30 minutes (13 %), no time limit 24 %.

Most of the girl attained their puberty at 11-13 years of age (57 %), (3 % of the selected subjects have their

menstrual cycle regular, 7 % gets irregular periods. Duration of menstrual cycle was found to be 3-5 days (65 %), 5-7 days (30 %), less than 3 days (5 %), more than 7 days (1 %). Fifty % of the selected subjects suffer from back pain during menstrual cycle, 45 % suffers from abdomen pain and 5 % suffer from other problems.

Among the 100 selected subjects 56 % thinks that they are healthy and fit and 44 % thinks that they are not.

Among 100 selected subjects, 31 % of their families have diabetes, 19 % have high blood pressure, 7 % have cancer, 7 % have other family history and 35 % of them do not have any family history.

Out of 100 selected subjects 68 % have the problem of hair loss, 6 % have dental carries, 2 % have bleeding gums, 3 % has other problems and only one % has pale eyes.

Clinical sings	No.	%
Pale eyes	1	1
Bleeding gums	2	2
Dental carries	6	6
Hair loss	68	68
Others	3	3

TABLE 1: Clinical sings

From the selected subjects 21 % have some PCOS symptoms such as irregular periods (9 %), excess hair growth (9 %), cyst (3 %) and 79 % do not have any symptoms of PCOD.

Biochemical parameters analysis revealed that 72 % of the selected subjects were non anaemic, 21 % of the selected subjects were mild anaemic, 7 % were moderate anaemic and no one was found to be severe anaemic.

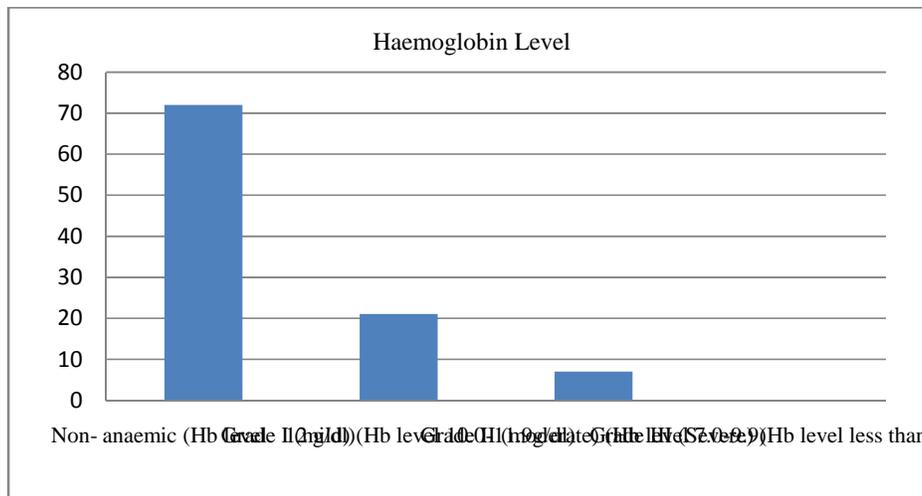


FIGURE 2: Haemoglobin level

Regarding the morbidity pattern, 19 % was found to be having skin infections, 7 % having urinary tract infection, 8 % having eye infection and 6 % were having ear infection. Thirty three % of the selected subjects had suffered from cold and cough few days back and it was

found to be occurring more than other illness, followed by fever and vomiting.

Among the selected subjects the consumption of cereals (+9.0), pulses (+22.3), fats and oils (+27.5), sugar and jaggery (+25) was found to be more than other food groups.

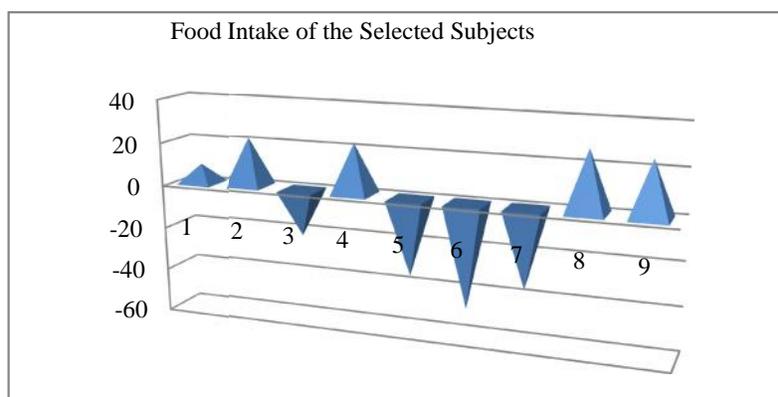


FIGURE 3: Food Intake

The mean nutrient intake of the selected subject was found to be in adequate in the sense of iron, calcium, beta carotene and ascorbic acid.

CONCLUSION

Nutritional deficiency is still evident among the study population of adolescent girls which directly influence the health status. So, the adolescent girls should be more aware regarding their health and diet because they are the future mothers.

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