



STUDY ON EATING HABITS, LIFESTYLE, NUTRITIONAL AND FOOD SAFETY KNOWLEDGE AND BELIEFS AMONG ADOLESCENT POPULATION OF PANTNAGAR [UTTARAKHAND]

Home Science

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ABSTRACT

Adolescents is the transition period from childhood to adulthood. As healthy eating habits and lifestyle play important role in enhancing health and slowing down ageing process but in adolescence eating habits and lifestyle becomes more critical as this stage lays the foundation of healthy adulthood. **Design:** A dietary questionnaire was constructed to check the nutritional status and eating pattern of adolescents. **Setting:** The study was carried out in the G.B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand. **Subjects:** Thirty adolescent subjects, aged 12-19 years, attending schools were participated in the study. **Measures:** Eating habits, physical activity, meaning of healthy and unhealthy dietary habits and food, self-efficacy, barriers affecting healthy food choices, nutritional and food safety are evaluated.

KEYWORDS

Adolescents, food choices, dietary questionnaire

INTRODUCTION

It is well known and documented that diet and nutrition play important roles in maintaining health and preventing diseases. Decrease in morbidity and mortality associated with lifestyle diseases may be achievable if satisfactory nutritional habits are adopted in early life and maintained in the long term. During adolescence, young people are assuming responsibility for their own eating habits, health attitudes and behaviours. In fact, attitudes play an important role in the adoption and maintenance of a variety of health and nutritional habits.

Although adolescent's growing independence is often associated with unconventional eating patterns and dietary behaviour during adolescence might be transitory in some individuals, health-related behaviours show tracking through adolescence and there is clear evidence of their early consolidation. In a random sample of 1682 teenagers in Scotland, *Sweeting et al.* found that overall changes in eating habits between 15 and 18 years were very slight, though females were more likely to have increased consumption of foods consistent with current recommendations. The authors concluded that dietary habits appear to be established in the mid-teens, by the age of 15 years, and are closely associated with lifestyle. We can say that if habits acquired in adolescence persist into adult life, behaviours established in young people may have important long-term consequences for health.

Knowledge about healthy food choices and food safety can be predisposing factors for improving eating habits and adopting a healthy diet, although it is insufficient to motivate healthy eating. Factors influencing eating behaviours need to be better understood to develop effective nutrition interventions tailored to individuals to improve their healthy eating. Therefore, determinants such as habits, attitudes, self-efficacy, barriers to change and the meaning of "healthy" and "unhealthy" diet and food must be considered.

An important determinant of the practice of healthy behaviours is a sense of self-efficacy, which is the belief that an individual can control his own practice of a particular behaviour. In fact, motivation to adopt healthy eating patterns and self-efficacy are important determinants of behavioural change. *Santelli et al.* found strong a relationship between self-efficacy and both change and maintenance of behaviour, as well as having pointed out that knowledge behaviour correlations were greater among those with high self-efficacy, when compared with those with low self-efficacy. Recognition of barriers to change is among the enabling factors affecting food choices. Also found that barriers to healthy eating in adolescents include a lack of time, limited availability of healthy foods in schools and a general lack of concern about following healthy eating recommendations. The authors suggest that interventions are needed which assist adolescents in translating good nutritional knowledge into healthy behaviours.

According to *Bhargava M.*, nutritional knowledge, as well as some dietary behaviours and lifestyle of adolescents, improved greatly after a nutrition education program, changing student's unhealthy living attitudes and dietary habits. In the present study we evaluated eating habits, physical activity, meaning of healthy and unhealthy dietary habits and food, self-efficacy, possible barriers affecting healthy food

choices, nutritional and food safety knowledge in a selected group of adolescents.

Methodology

All the students of both sex between the age group of 12-19 attending the schools (n = 30) in the Pantnagar, district U.S. Nagar, Uttarakhand were selected randomly. All students were surveyed over the course of one month. A dietary questionnaire was constructed and tested with regard to its reliability. It is divided into nine main sections which include eating habits to investigate the food habits of the adolescents, especially regarding breakfast contents, number of meals a day, daily consumption of fruit and vegetables as well as of beverages, physical activity, healthy and unhealthy dietary habits and food, nutritional knowledge, food safety knowledge

Data Analyses

The scores obtained in each section are expressed as mean $\pm$ standard deviation. The percentage distribution of students in each score was calculated by using the statistical Package for the Social Sciences. Eating habits, physical activity, meaning of healthy and unhealthy dietary habits and food, food safety and behaviour in hygiene practices were evaluated by comparing them with the Dietary Guidelines for Healthy Diet by ICMR.

RESULT

Characteristics of the sample are shown in Table 1. Group mean age is 15.4 ± 0.7 years and BMI mean value is $21.9 \pm 3.4 \text{ kg/m}^2$ for males and $20.0 \pm 2.9 \text{ kg/m}^2$ for females. According to WHO's cut-off points reference standard for BMI, 20.8% of males and 14.7% of females are overweight, and 3.7% of males and 2.1% of females are obese.

Table 1. General characteristics of respondents

Variables	Males mean $\pm$ SD	Females mean $\pm$ SD
Age (years)	15.5 ± 0.7	15.4 ± 0.7
Weight (kg)	59.4 ± 11.5	51.7 ± 9.2
Height (m2))	1.63 ± 0.07	1.52 ± 0.07
BMI(kg/m2)	21.9 ± 3.4	20.0 ± 2.9
Overweight	20.9%	14.7%
Obese	3.7%	2.1%
Underweight	0.4%	2.5%

Table 2: Percentage distribution of subjects according to tertile scores.

Questionnaire sections	1st tertile	2nd tertile	3rd tertile
Eating habits	7.5	55.5	37.0
Physical activity and lifestyle	29.7	51.7	18.6
Healthy and unhealthy dietary habits and food	12.0	54.9	33.1
Self-efficacy	7.1	27.5	65.4
Barriers to change	85.6	13.3	1.1
Nutritional knowledge	42.1	49.3	8.6
Food safety knowledge	70.1	27.5	2.4
Food safety and behaviour in hygiene practices	10.9	45.5	43.6

Eating Habits.

The total score (42) was divided into tertiles, where the lowest one referred to “inadequate eating habits”, the medium one referred to “partially satisfactory eating habits” and the highest one referred to “satisfactory eating habits”. The mean score obtained is 29 ± 5 , without any statistically significant differences between males and females. Seven point five percent of the students show “inadequate eating habits”, 55.5% have “partially satisfactory eating habits”, while only slightly more than one third of the sample (37.0%) show “satisfactory eating habits”.

The worst eating habits are skipping breakfast (about 20% of the sample); 33.1% of males and 44.6% of females do not drink milk or yogurt at breakfast; 92.1% of the subjects do not eat at least two portions of fruit and vegetables every day. With about 25% of the sample, consumption of cakes and sweets is too high.

Physical Activity and Lifestyle.

The total score (18) was divided into tertiles, where the lowest one referred to “sedentary physical level”, the medium one referred to “partially moderate physical level” and the highest one referred to “active physical level”.

The mean score obtained is 11 ± 3 , without any statistically significant differences between males and females. A statistically significant difference was found between normal and overweight and obese boys, with the highest score obtained by normal weight boys (12 ± 3 vs. 11 ± 3) ($p = 0.03$). Only 18.5% of the students have a very active lifestyle, while about one third (29.7%) show a sedentary physical level, not consistent with a healthy lifestyle. In response to the question “what do you prefer to do during free time?” 47.7% of the sample answered watching television, using the computer, listening to music, reading a book, while only 21.7% reported practicing a sport and 17.6% going for a walk. In general, males are more active than females: 22.3% versus 15.1%; in response to the question “Do you usually practice a physical activity”, 40.9% and 27.3% respectively of males and females answered “always”.

Healthy and Unhealthy Dietary Habits and Food.

The total score (15) was divided into tertiles, where the lowest one referred to “little comprehension of the meaning of healthy and unhealthy dietary habits and food”, the medium one referred to “sufficient comprehension of the meaning of healthy and unhealthy dietary habits and food” and the highest one referred to “good comprehension of the meaning of healthy and unhealthy dietary habits and food”.

The mean score obtained is 11 ± 2 , without any statistically significant differences between males and females. Slightly more than half of the sample (54.8%) have sufficient comprehension of the meaning of healthy and unhealthy diet and food, while only one third (33.1%) have a good comprehension, with a higher proportion among females (39.4% v. 26.2%). In response to the question: “According to you, which is a healthy diet”, 70.7% of the sample answered correctly (a healthy diet is a diet rich in different foods), nevertheless only 47.3% of the subjects reported eating a varied diet every day, as section 2 (eating habits) indicates.

Self-Efficacy

The total score (16) was divided into tertiles, where the lowest one referred to “incapacity for using advice aimed at improving one's well-being”, the medium one referred to “sufficient capacity for using advice aimed at improving one's well-being” and the highest one referred to “good capacity for using advice aimed at improving one's well-being”. The mean score obtained is 13 ± 3 , without any statistically significant differences between males and females. A good percentage of the subjects (65.4%) reported being able to use advice aimed at improving their well-being, while 7.1% think they are not able to do this.

Barriers to Change.

The total score (9) was divided into tertiles, where the lowest one referred to “no barriers in modifying one's own eating habits with the aim of improving them”, the medium one referred to “some barriers in modifying one's own eating habits with the aim of improving them” and the highest one referred to “a lot of barriers in modifying one's own eating habits with the aim of improving them”. The mean score obtained is 3 ± 2 , without any statistically significant differences

between males and females. Eighty-five point six per cent of the students have no barriers to change, with a higher proportion among females (87.8% vs. 83.2%); 13.3% have some barrier to change, with a higher proportion among males (16.0% vs. 10.8%).

Nutritional Knowledge

The total score (11) was divided into tertiles, where the lowest one referred to “insufficient nutritional knowledge”, the medium one referred to “good nutritional knowledge” and the highest one referred to “quite good nutritional knowledge”. The mean score obtained is 7 ± 2 with a statistically significant difference between males and females (6 ± 2 for males v. 7 ± 2 for females). About half of the subjects (49.2%) have good nutritional knowledge (most females), but 42.2% of the students (most males) have insufficient nutritional knowledge. Only 8.6% of the sample have quite good nutritional knowledge (higher among females). The most frequent mistakes related to dietary fibre, food protein content and energetic values. In response to the question “Which is the nutrient that contains the most energy?”, only 12.5% of the students answered fats, 37.2% said carbohydrates and 42.6% answered protein.

Food Safety Knowledge

The total score (10) was divided into tertiles where the lowest one referred to “insufficient food safety knowledge”, the medium one referred to “good food safety knowledge” and the highest one referred to “quite good food safety knowledge”. The mean score obtained is 3 ± 2 without any statistically significant differences between males and females. Seventy point one per cent of the adolescents have an insufficient food safety knowledge; 27.5% have a good food safety knowledge and only very few students (2.4%) have quite good safety knowledge.

Food Safety and Behaviour in Hygiene Practices

The total score (24) was divided into tertiles, where the lowest one referred to “inadequate behavior in hygiene practices”; the medium one referred to “partially adequate behavior in hygiene practices” and the highest one referred to “quite good behavior in hygiene practices”. The mean score obtained is 17 ± 4 with statistically significant differences ($p < 0.05$) between males and females (16 ± 4 for males vs. 18 ± 4 for females). A total of 43.7% of the students have quite good behavior in hygiene practices, mostly the girls (54.7%) when compared to the boys (31.5%), while the percentages between sexes are reversed in the two other tertiles (males 17.3% v. females 5.0% in the lowest tertile; males 51.2% vs. females 40.3% in the medium tertile). Table 3 summarizes the various scores obtained in each section by males and females, respectively.

Table 3. Scores Obtained in the Various Questionnaire Sections by respondents

Questionnaire sections	Scores	Males	Females
Eating habits	Low a	9	10
	Mean b	29 ± 5	29 ± 6
	High c	40	40
Physical activity and Lifestyle	Low a	0	1
	Mean b	12 ± 3	11 ± 3
	High c	18	17
Healthy and unhealthy dietary habits and food	Low a	1	0
	Mean b	11 ± 2	11 ± 2
	High c	15	15
Self-efficacy	Low a	0	4
	Mean b	13 ± 3	13 ± 3
	High c	16	16
Barriers to change	Low a	0	0
	Mean b	3 ± 2	3 ± 2
	High c	9	8
Nutritional knowledge	Low a	0	3
	Mean b	6 ± 2	7 ± 2
	High c	11	10
Food safety knowledge	Low a	0	0
	Mean b	4 ± 2	4 ± 2
	High c	9	10
Food safety and behavior in hygiene practices	Low a	0	0
	Mean b	16 ± 4	18 ± 4
	High c	24	24

- a Lowest score.
b Mean score Standard Deviation.
c Highest score.

CONCLUSION

In conclusion, different aspects of adolescent's eating behaviour may be influenced by different factors, which need to be considered in designing nutrition promotion programs. Interventions should help to make healthy eating easy for adolescents to apply and explain the consequences of unhealthy eating in terms that they value, stressing meaningful short and long-term benefits for human health, providing knowledge, increasing consciousness of healthy eating and, lastly, supporting the adolescents in the adoption of healthy lifestyle.

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