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A COMPARATIVE STUDY OF FOOD HABITS AND NUTRIENT INTAKES BETWEEN THE MALE AND FEMALE ADOLESCENTS IN KARAULI DISTRICT

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Abstract :
Adolescents aged 10-19 years account for more than one fifth of the world's population. In India, this age group forms 21.4 percent of the total population. Healthy eating is an important part of a healthy life style and is something that should be taught at a young age. Keeping the above facts, the present investigation is an attempt to compare the food habits and nutrient intakes between the male and female adolescents in Karauli district. In order to fulfill the objective of the study a multistage stratified random sampling technique was used to select four hundred male and female adolescents, aged 10 - 18 years from urban areas of Karauli district (Rajasthan). The food habit, meals per day, food liked and appetite were observed significant between male and female adolescents ($p<0.05$). Significant differences in nutrient intakes of calories, vitamin-A, vitamin-B1, iron and riboflavin were also observed between male and female adolescents ($p<0.05$).

Introduction :
Adolescents are the important segment of our population which has been neglected in all our developmental, educational and research program and this period is often considered the healthiest time of life but this is a myth that must be dispelled. Studies showed that 5-10% of adolescents suffered from an eating disorder, another 10-20% of the adolescents population is obese. In this regard quality of the diet should be considered as there are increased demands of nutrients due to rapid growth and development.

The growth of the nation depends on the healthy and prosperous population of the country. Adolescents are the most vulnerable segments of our population. Food habits play an important role in determining food preference and maintaining the good health of the adolescents. Choice of diet influencing long term health with in the range set by genetic inheritance. 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 percent of the total population. At this stage adolescents require large amounts of nutrient to support their accelerated growth and the demands of the nutrients is relatively high. This demand differ between boys and girls. Good nutrient during adolescence have strong positive influences on the growth rate and the health of individuals. Common observations and the articles read in the news papers and magazines by investigator and considering the importance of nutrient, the present paper is an attempt to assess and compare the food habits and nutrient intakes of male and female adolescents in the present study.

Objective :
To compare the food habits and nutrient intakes between the male and female adolescents.

Methodology :
Multistage stratified random sampling technique was used to select four hundred adolescents of both sexes, aged 10 - 18 years from urban areas of Karauli district (Rajasthan). A self-constructed and pre-tested schedule was developed to know the food habits and nutrient intakes among the selected adolescents. 24 hours recall method was used to calculate the nutrient intakes.

Results and Discussion :
The obtained data were coded, tabulated and statistically analysed for drawing valid conclusions and were discussed in the light of the work conducted previously.

Table - 1 : Food habit among the adolescents according to sex.

Food Habit	Sex of Adolescents					
	Male		*Female*		**Total**	
	No.	%	No.	%	No.	%
Vegetarian	129	74.14	191	84.51	320	80.00
Non-vegetarian	45	25.86	35	15.49	80	20.00
Total	174	43.50	226	56.50	400	100.00

χ^2=6.614, df =1, p<0.05.
Out of the 400 adolescents, majority (80.00%) were vegetarian and remaining (20.00%) were non-vegetarian. Non-vegetarian male and vegetarian female adolescents were found more as compared to non- vegetarian female and vegetarian male adolescents. Significant difference regarding the food habit was observed between male and female adolescents (χ^2=6.614, df=1, p<0.05). More or less similar observation was found by Garg and Singh (1993), Fauzia et.al (2007) and Ambesh et.al. (2009) in their study. Dahiya (2003) found in her study that out of the total selected adolescents, 59% of rural and 40% of urban respondents were vegetarians, whereas 41% of rural and 60% of urban respondents were non vegetarians.

Table - 2 : Number of meals consumed per day among the adolescents according to sex.

Meals Per Day	Sex of Adolescents					
	Male		*Female*		**Total**	
	No.	%	No.	%	No.	%
2	8	4.60	8	3.54	16	4.00
3	71	40.80	53	23.45	124	31.00
4	81	46.55	141	62.39	222	55.50
5	14	8.05	24	10.62	38	9.50
Total	174	43.50	226	56.50	400	100.00

χ^2=14.953, df =3, p<0.05.
Out of the total adolescents, majority (55.50%) consumed four meals per day, followed by 31.00% three meals per day and minimum (4.00%) consumed two meals per day. Four and five meals per day were consumed more by the female adolescents as compared to male adolescents while two and three meals per day were consumed more by the male adolescents as compared to female adolescents. Significant difference regarding the number of meals consumed per day was observed between male and female adolescents (χ^2=14.953, df=3, p<0.05). Similar findings were also reported by Fauzia et.al (2007) and Ambesh et.al. (2009) regarding the consumption of meals per day.

Table - 3 : Food liked by the adolescents according to sex.

Food Liked	Sex of Adolescents					
	Male		*Female*		**Total**	
	No.	%	No.	%	No.	%
Simple	97	55.75	56	24.78	153	38.25
Fast	16	9.20	18	7.96	34	8.50
Junk	61	35.06	152	67.26	213	53.25
Total	174	43.50	226	56.50	400	100.00

χ^2=43.963, df =2, p<0.05.

Majority of the adolescents (53.25%) consumed junk food, followed by 38.25% simple food and minimum (8.50%) consumed fast food. Simple and fast food were consumed more by the male adolescents as compared to female adolescents while junk food was consumed more by the female adolescents as compared to male adolescents. Significant difference regarding the food liked was observed between male and female adolescents (χ^2=43.963, df=2, p<0.05). The present finding is also supported by Piyushi et.al (2008). Most of the respondents liked spicy/junk food, followed by light food and minimum liked fried food as reported by Awasthi et.al. (2009).

Table - 4 : Appetite among the adolescents according to sex.

Appetite	Sex of Adolescents					
	Male		*Female*		**Total**	
	No.	%	No.	%	No.	%
Good	117	67.24	195	86.28	312	78.00
Poor	57	32.76	31	13.72	88	22.00
Total	174	43.50	226	56.50	400	100.00

χ^2=20.773, df=1, p<0.05.

Analysis of data from the above table - 4 reveals the comparison of appetite among the adolescents according to sex. Out of the selected adolescents, majority (78.00%) were having good appetite and remaining (22.00%) were having poor appetite. Good appetite was found more among female adolescents as compared to male adolescents while poor appetite was more among the male adolescents as compared to female adolescents. Significant difference regarding the appetite was observed between male and female adolescents (χ^2=20.773, df=1, p<0.05).

Table - 5 : Mean intake of various nutrient among the adolescents according to sex.

Nutrient Intake	Unit	Sex of Adolescents				Statistical Values	
		Male (n=174)		*Female* (n=226)			
		Mean	S.D.	Mean	S.D.	t	P
Calories	Kcal	2419.40	55.81	2394.12	65.04	4.096	<0.05
Protein	gm	36.82	2.82	37.38	2.99	1.903	>0.05
Calcium	mg	716.77	156.87	712.29	124.41	0.319	>0.05
Vitamin A	µg	2300.36	54.78	2285.74	66.95	2.340	<0.05
Vitamin B_1	mg	1.14	0.10	1.18	0.09	4.198	<0.05
Vitamin C	mg	32.32	1.37	32.07	1.52	1.702	>0.05
Iron	mg	31.62	1.16	32.35	1.12	6.363	<0.05
Fat	gm	28.15	1.99	28.55	2.13	1.916	>0.05
Riboflavin	mg	0.51	0.14	0.57	0.19	3.498	<0.05
Niacin	mg	16.19	1.64	16.13	1.45	0.387	>0.05

The mean intake of calories (2419.40 kcal), calcium (716.77 mg), vitamin-A (2300.36 g), vitamin-C (32.32 mg) and niacin (16.19 mg) were more among the male adolescents as compared

to female adolescents while the mean intake of protein (37.38 gm), vitamin-B1 (1.18 mg), iron (32.35 mg), fat (28.55 gm) and riboflavin (0.57 mg) were more among female adolescents as compared to male adolescents. Significant differences regarding mean intake of calories, vitamin-A, vitamin-B1, iron and riboflavin were observed between male and female adolescents ($p<0.05$) while no significant differences regarding mean intake of protein, calcium, vitamin-C, fat and niacin between male and female adolescents even at 5% level of significance. Bandyopadyay, et.al. (1980) observed that both the groups of urban students consumed significantly higher amount of protein and calories than the rural students and stated that the poorer economic status of the rural students is the possible cause of this significant difference in nutritional status between urban and rural college students. Anjla, et.al. (1983) observed that the calories were consumed below the body requirement in low income, large family size and labour class categories while the intake of protein was much higher than the recommended allowances in all the income occupation and family size groups. Hassapidou and Fatiadau (2001) found that boys had higher energy and macro nutrients intake as compared to girls. Of total energy intake. Energy intake was found adequate whereas fat intake was much higher than recommended. A percentage of adolescents also had lower than recommended iron, vitamin A, folate and zinc intake showing an unbalanced diet.

Conclusion :

The food habit, meals per day, food liked and appetite were observed significant between male and female adolescents. Significant differences in nutrient intakes of calories, vitamin-A, vitamin-B1, iron and riboflavin were also observed between male and female adolescents in the present study.

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