

Effect of family income and family composition on mean food intake of rural children (10-12 years) of Haryana

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A study was conducted to determine the effect of family income, family type and family size on food intake of 100 school children (10-12 years) selected from two villages of Fatehabad district, Haryana. The data regarding the food intake and other variables was collected using the questionnaire cum interview schedule and 24 hr recall method. To draw inferences, the data was statistically analyzed using SPSS software. The result found that the mean intake of cereals (177.95g), pulses (41.92 g), fats and oils (17.37g), green leafy vegetables (34.91 g), roots and tubers (56.46g), other vegetables (80.69) and fruits (38.36g) was higher among the children of nuclear families than that of joint family. The mean daily intake of cereals (183.17 g), green leafy vegetables (42.40 g), milk and milk products (264.56 g) and sugar and jaggery (18.22 g) was highest in children belonging to small sized families. The intake of food stuffs was found to be higher in children from high income families compared to low income families.

Key Words : School children, Food intake, Family income, Family type, Family size

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INTRODUCTION

Children are the most important human resource and biggest human investment in the overall development of a nation. Wellbeing of the children is of prime importance for any nation because healthier the children, higher the nation will grow. Therefore, the nutritional status of children is of great significance. Nutrition plays a vital role in overall development of the children *i.e.* physical, mental and emotional development. School age is the

active growing phase of childhood which represents a dynamic period of physical growth as well as of mental development of the child. Children in the age group of 5-14 years are often considered as school-age. Various workers reported that the health problems due to miserable nutritional status in school age children are among the most common causes of low school enrolment, high absenteeism, early dropout and unsatisfactory classroom performance (Srivastava *et al.*, 2012). It has been reported that poor health and nutrition may hinder the ability of children to learn and this affects their school performance. According to Global Nutrition Report (2017), 38 per cent of children under five years of age are stunted and about 21 per cent of children under 5 years of age are 'wasted' or 'severely wasted'. Many countries have implemented school feeding programmes,

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but undernutrition is still prevalent among school going children. Nutritional status of children is associated with families' economic status and family composition as these factors have immense effect on the food purchasing power and food distribution within the family members. Economic condition of family and numbers of family members influence choice of food, quantity and quality of food and access to health and nutrition services. In rapidly developing countries like India, there is increasing concern for improving the nutritional and health well-being of school going children especially belonging to low income groups and in remote rural areas. Keeping this in view the present study was conducted and aimed at studying the effect of family income and family composition on the mean food intake of school children (10-12 years) of Haryana state, India.

METHODOLOGY

Locale of the study:

The study was conducted in Fatehabad district of Haryana state of India, purposively. Two villages namely Khabra Kalan and Jandwala Baggar were selected randomly from Bhattu block of selected district.

Selection of respondents:

Hundred school going children (10-12 years) were selected randomly from the schools located in the selected villages of Fatehabad district. Fifty children were selected from each village.

Collection of data:

The general information about age, family type, family size and family income of respondent was gathered using well structured questionnaire-cum-interview schedule. Type of family in present study refers, whether the family is nuclear or joint. A nuclear family is composed of only one married couple and their off springs, while a joint family refers to one which is constituted by two or more brothers' family. Size of family indicates the total number of members in the respondent's family at the time of data collection. The assumption is that larger the family size, higher will be the pressure on the resources supply which in turn will create demands for resources in larger proportions and also for alternate sources. The size of family was classified as small (upto 4 members), medium (5-7 members) and large (8 members and above) family.

Family income:

The total income of the family in a month from all the available resources was taken into consideration and different categories were made. The total income of respondents families were divided into three categories as given under:

Categories	(Rs./month)
Low income group	Upto Rs. 5000
Middle income group	Rs. 5001-10000
High income group	Rs. 10001 and above

Food intake:

The data regarding food intake of children was collected using 24 hr recall method for three consecutive days. The mean daily food intake by respondents was calculated by taking mean of three consecutive days' intake. The food groups included cereal, pulses, milk and milk products, roots and tubers, green leafy vegetables, other vegetables, fruits, sugar and jaggery and fats and oils.

Statistical analysis:

The data was statistically analysed using SPSS 7.5 (Statistical Packages for Social Sciences) software. One way anova test was applied to compare the mean of different categories.

OBSERVATIONS AND ASSESSMENT

General information of rural school going children is presented in Table 1. Out of 100 respondents surveyed, 57 per cent were boys and 43 per cent were girls. Maximum percentage (61.00%) of the respondents belonged to nuclear families, whereas 39.00 per cent were from joint families. As many as (57.00%) of the subjects belonged to medium sized families while 23.00 and 20.00 per cent belonged to large and small sized families, respectively. On the basis of family income, 50.00 per cent of the respondents had average monthly income between Rs. 5,001-10,000 while 27.00 had monthly income less than Rs. 5,000 and 23.00 per cent had income more than Rs. 10,001.

Effect of family income on food intake:

The association of family income and food intake has been presented in Table 2. It was found that intake of cereals (178.99 g), pulses (42.10 g), milk and milk

Table 1: General information about rural children (10-12 years)

Characteristics	Percentage
Gender	
Boys	57.00
Girls	43.00
Family type	
Nuclear	61.00
Joint	39.00
Family size	
Small (Upto 4 members)	20.00
Medium (5-7 members)	57.00
Large (8 and above)	23.00
Income (Rs./month)	
Low (Upto Rs. 5,000/)	27.00
Medium (Rs. 5,001-10,000)	50.00
High (Rs. 10,001 and above)	23.00

products (303.19 g), green leafy vegetables (37.25 g), roots and tubers (58.59 g), other vegetables (83.11 g), fats and oils (19.94 g) and fruits (40.04 g) were highest in the children who belonged to high income group families compared to low and middle income group families. The children who belonged to middle income families had highest intake of sugar and jaggery (18.19 g) among all the income groups.

Family type:

Data in Table 3 depicted the effect of family type on mean food intake of rural school going children. There was a significant difference in the intake of fats and oils by the children of nuclear families (17.37 g) and joint families (13.12 g). Intake of food stuffs like cereals

(177.95 g), pulses (41.92g), green leafy vegetables (34.91 g), roots and tubers (56.46 g), other vegetables (80.69 g) and fruits (38.36 g) by children belonging to nuclear families was higher than that of children of joint families. However, the differences in intake were non-significant. On the other hand children of joint families consumed higher amounts of milk and milk products and sugar and jaggery than children of nuclear families but the difference in intake of these food stuffs was non-significant.

Effect of family size on food intake:

The association of family size and food intake has been depicted in Table 4. Results showed that mean daily intake of cereals (183.17 g), green leafy vegetables (42.40 g), milk and milk products (264.56 g) and sugar and jaggery (18.22 g) was highest in children belonging to small sized families. While intake of pulses (41.87 g), fats and oils (16.06 g) and fruits (38.53 g) was higher in children belonging to medium sized families while intake of roots and tubers (60.55 g) and other vegetables (83.65 g) was highest in children belonging to large sized families. The intake of green leafy vegetables and fats and oils was significantly ($p < 0.05$) higher in children of small sized and medium sized families, respectively, compared to large sized families.

Income is considered to be an important parameter in estimation of one's food consumption. The results of the present study showed that intake of food stuffs was higher in children who belonged to families with high income group (Table 2). George *et al.* (2003) and Craig *et al.* (2010) emphasized that purchasing power is obviously a major determinant of food intake. The effect

Table 2 : Effect of family income on mean daily food intake of rural children

(n=100)

Foodstuffs (g)	Mean daily food intake		
	Low income (upto Rs. 5000) (n=27)	Middle income (Rs. 5001-10,000) (n=50)	High income (Rs. 10,001 and above) (n=23)
Cereals	161.27 ^a ±39.39	176.83 ^a ±38.05	178.99 ^a ±51.24
Pulses	40.35 ^a ±8.40	41.68 ^a ±8.54	42.10 ^a ±7.46
Green leafy vegetables	33.83 ^a ±11.33	33.17 ^a ±13.33	37.25 ^a ±17.27
Roots and tubers	51.22 ^a ±18.35	58.08 ^a ±21.03	58.59 ^a ±12.82
Other vegetables	74.80 ^a ±37.75	80.51 ^a ±32.38	83.11 ^a ±33.40
Milk and milk products	230.09 ^b ±118.34	262.40 ^{ab} ±85.24	303.19 ^a ±110.59
Fats and oils	12.58 ^b ±4.65	15.47 ^b ±5.55	19.94 ^a ±11.77
Sugar and jaggery	14.15 ^b ±5.44	18.19 ^a ±6.13	17.81 ^a ±6.72
Fruits	37.43 ^a ±19.82	36.80 ^a ±15.15	40.04 ^a ±18.23

Values with same superscripts are not significantly different ($p < 0.05$)

Values are mean ± SD

of family type on mean food intake of rural school going children revealed that intake of food stuffs like cereals, pulses, fats and oils, green leafy vegetables, roots and tubers, other vegetables and fruits by children belonging to nuclear families was higher than that of children of joint families (Table 3). However, the differences in intake were non-significant. The results of present study corroborated with those of Hans (2014) who reported that the subjects from nuclear families were consuming higher amount of all food groups compared to children who belonged to joint families. Results showed that the mean daily intake of cereals, green leafy vegetables, milk and milk products and sugar and jaggery were highest in children belonging to small sized families (Table 4). The intake of green leafy vegetables and fats and oils was significantly ($p \leq 0.05$) higher in children of small sized and medium sized families, respectively. A significant relation between nutritional status and small size of families had also been reported by Shahnaz *et al.* (1998) and Rimpi

(2002) and Haijiang and Barry (1995).

Conclusion:

The effect of family income and family composition on food intake were observed in this study were consistent with previous findings. The results showed that mean intake of food stuffs like cereals, pulses, fats and oils, green leafy vegetables, roots and tubers, other vegetables and fruits was be higher among the children belonging to nuclear families than that of children of joint family. The mean daily intake of cereals (183.17 g), green leafy vegetables (42.40 g), milk and milk products (264.56 g) and sugar and jaggery (18.22 g) was highest in children belonging to small sized families. Intake of food stuffs was also higher in children from high income families. The findings of this study may be helpful to the policy makers, economists, nutritionists, scientists and doctors to plan an intervention programme that could be more specific and beneficial in improving the nutritional status

Table 3: Effect of family type on mean food intake of rural school going children (n=100)

Food stuffs (g)	Mean daily food intake		
	Joint (n=39)	Nuclear (n=61)	t -value
Cereals	165.58±40.80	177.95±42.31	1.40 ^{NS}
Pulses	40.63±7.78	41.92±8.50	0.78 ^{NS}
Green leafy vegetables	33.32±15.75	34.91±12.51	0.53 ^{NS}
Roots and tubers	56.18±16.38	56.46±20.34	0.08 ^{NS}
Other vegetables	77.82±38.05	80.69±31.28	0.39 ^{NS}
Milk and milk products	274.49±106.05	255.75±101.65	0.88 ^{NS}
Fats and oils	13.12±5.15	17.37±8.52	3.11 ^{**}
Sugar and jaggery	17.99±7.45	16.39±5.38	1.17 ^{NS}
Fruits	36.71±17.06	38.36±17.23	0.47 ^{NS}

Values are mean ±SD ** indicate significance of value at P=0.01 NS = Non-significant

Table 4: Effect of family size on mean daily food intake of rural school going children (n=100)

Food stuffs (g)	Mean daily food intake		
	Small (Upto 4 members) (n=20)	Medium (5-7 members) (n=57)	Large (8 and above members) (n=23)
Cereals	183.17 ^a ±45.84	170.58 ^a ±43.42	170.70 ^a ±34.55
Pulses	40.87 ^a ±7.83	41.87 ^a ±8.15	40.78 ^a ±8.94
Green leafy vegetables	42.40 ^a ±12.33	31.63 ^b ±13.73	33.83 ^b ±12.98
Roots and tubers	53.92 ^a ±10.30	55.50 ^a ±21.49	60.55 ^a ±17.29
Other vegetables	79.60 ^a ±28.69	77.91 ^a ±35.89	83.65 ^a ±33.92
Milk and milk products	264.56 ^a ±95.55	261.29 ^a ±121.25	260.87 ^a ±109.68
Fats and oils	15.37 ^{ab} ±5.52	16.06 ^a ±8.81	15.17 ^b ±6.02
Sugar and jaggery	18.22 ^a ±6.12	16.59 ^a ±6.59	16.83 ^a ±5.64
Fruits	38.25 ^a ±17.73	38.53 ^a ±17.29	35.21 ^a ±17.09

Values with same superscripts are not significantly different ($p < 0.05$) Values are mean ± SD

of the rural school aged children.

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