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Food Consumption Pattern of Farming Families in Punjab

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ABSTRACT

The present study was conducted in Punjab state to analyze the food consumption pattern of farming families. Empirical data was collected from a total of 180 respondents i.e. 60 males, 60 females and 60 children from farming families of Punjab with the help of a self-structured interview schedule. Findings revealed that cent per cent of the respondents had their breakfast and dinner daily. Further, it was found that there was a low consumption of fruits and nuts & oil seeds in the majority of the respondents and high consumption of fats & oils in nearly half of the respondents. The frequency of consumption of all the other food groups was found to be in medium category. The mean frequency consumption of milk & milk products, other vegetables (non-green leafy vegetables) and non-vegetarian food showed significant differences between the three categories of respondents. An imbalance was found in the consumption of different food groups by the respondents. So, based on the findings of the research, the paper recommends that there is a need for special efforts to change the consumption pattern of farming families in Punjab and spread awareness among the population to include a variety of food items from different food groups in the diet.

INTRODUCTION

India has a rich and diverse variety of food, and its various diets are strongly related to religion, social identity, and other cultural factors, as well as local farming practices. In the period of last fifty years, India has changed astoundingly as a nation, which has a major effect on the individuals' diet pattern. In the year 1961, the daily average intake of an Indian was considered to be 2,010 kcal, and the daily average diet of an individual consisted of 43 per cent grains (378g), 12 per cent fats and sugar (108g), 12 per cent eggs and dairy, 2 per cent meat (17g), and 8 per cent others (68g). In 2011, the daily average calorie intake of an Indian consisted of 2,458 kcal, and the daily diet included 32 per cent grain (416g), 10 per cent fats and sugar (129g), 18 per cent eggs and dairy (235g), 2 per cent meat (29g), and 4 per cent others (58g). The daily average consumption of protein has increased from 55g per day to 59g per day in the past 25 years from 1990-2015 and the protein from the animal source has increased from 9g per day to 12g per day. There is a decline in the dietary energy supplied by cereals and roots from an average of 66g per day to 59g per day. This shows that the consumption of calories by an average Indian has increased in fifty years. Intake of dairy, eggs, and plant products by Indians has increased more than twice during this period. The consumption of non-vegetarian food products has also increased but the average diet of an Indian remains primarily vegetarian. In addition to this, there is a decrease in grain consumption whereas the daily average intake of fats and sugar has increased (Plummer, 2017).

Indian people consume fewer cereals and have replaced them with more fat and snacks, beverages, and processed foods. It has been observed that protein consumption has declined in the rural areas whereas it remains the same in urban areas (Anonymous, 2014).

As the eating habits of the people are getting more and more westernized, and the consumption of processed and packed food is in practice people have started abandoning most of the traditional

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foods and cooking methods (Dhir & Singla, 2019). Due to the rapidly fast-growing world, modernization has touched every corner of the world even the rural areas. It has been observed that even the consumption pattern of the people living in rural areas has also changed to a great level (Amoura et al., 2020). Keeping the changing trend in mind, the present study has been planned to assess the food consumption pattern of farming families in Punjab.

METHODOLOGY

The research was carried out in, the three socio-cultural zones of Punjab i.e. Malwa, Majha, and Doaba with the purpose to have a representative sample of all farming families of Punjab. From each zone, twenty farming families were selected purposively to ensure that the sample consists of each family with, one adult man, one adult female, and one child in the age group of 9-12 years. Thus, the total sample consisted of 180 respondents. The selected respondents were interviewed personally with the help of a self-structured interview schedule. The data collected were tabulated and statistically analyzed to interpret the results. The statistical tests i.e. percentage, frequency, arithmetic mean, analysis of variance (ANOVA) test were used for analyzing the data.

RESULTS AND DISCUSSION

Data shown in Table 1 indicates that 46.67 per cent of the respondents were vegetarian and 47.22 per cent were non-vegetarian. However, the gender-wise distribution of dietary choice revealed that the majority of the female respondents (60%) had the vegetarian diet as compared to male (48.33%) and child (31.67%) respondents. Findings are in conformity with those of Bathla et al., (2018) who revealed that 63.3 per cent of the rural women were vegetarian. More than half of the children (55%) had the non-vegetarian diet which was higher than both male (50%) and female (36.67%) respondents. A small percentage of the respondents (1.67% of males, 3.33% of females and 13.33% of children) had ova-vegetarian choice i.e. they consumed eggs but not meat and meat products. In contradiction, Yadavar (2018) reported that only eight percent of males and four percent of females were non-vegetarian in Punjab.

The meal frequency pattern of the farming families is presented in Table 2. A perusal of data shows that cent per cent of the respondents had their breakfast and dinner daily. Singh et al., (2015) also revealed in their study that the majority of the adult and children consumed two main meals a day. The data further showed that majority of the respondents i.e. 98.33 per cent of the females, 96.67 per cent of the males and 90 per cent of the children used to have their evening tea daily. It was observed that a large percentage of child respondents (86.67%) were having their lunch daily as compared to male (68.33%) and female (78.33%) respondents. Ahmad et al., (2009) also reported that 82.8 per cent of the children took lunch regularly. Data further reveals that 61.67 per cent of male and female respondents and 55 per cent of child respondents had early morning meals. Findings are in conformity with those of Mahajan (2011) who revealed that 65 per cent of the rural population had early morning meals. About 50 per cent of the respondents in all the three categories had bedtime tea or milk. Only 23.33 per cent of the respondents were having mid-morning meals in the selected farming families out of which 31.67 per cent were male, 21.67 per cent female and 16.67 per cent children.

Overall, 41.11 per cent of the respondents had a medium frequency of consumption of cereal items followed by respondents with low frequency of consumption of cereals (39.44%) and high consumption of cereals (19.44%). The findings are in contrast to Sangeetha et al., (2018) who reported that cereals and cereal products were consumed frequently by a considerable large segment of children. It can be concluded from the data that out of various food items chappati and rice were frequently consumed by the respondents. Overall mean frequency consumption of cereals was 3.88 (female, 4.35; male, 3.71 and child, 3.58). However, no significant difference was found between male, female and child respondents in the frequency consumption of cereals.

The data reveals that 48.33 per cent had a medium frequency of consumption of pulses items and only 17.78 per cent of the total respondents had a high consumption of items of pulses items. The findings are in contrary to Singh et al., (2019) who studied that the pulses consumption was higher in farming respondents. The data also reveals that 21.67 per cent of the children had higher

Table 1. Distribution of the respondents based on their dietary choice

Dietary Choice	Male (n_1=60) f(%)	Female (n_2=60) f(%)	Child (n_3=60) f(%)	Total (n=180) f(%)
Vegetarian	29(48.33)	36(60.00)	19(31.67)	84(46.67)
Non- vegetarian	30(50.00)	22(36.67)	33(55.00)	85(47.22)
Ova-vegetarian	1(1.67)	2(3.33)	8(13.33)	11(6.11)

Table 2. Distribution of the respondents according to meal frequency pattern

Meal Pattern	Male (n_1=60) f(%)	Female (n_2=60) f(%)	Child (n_3=60) f(%)	Total (n=180) f(%)
Early morning	37(61.67)	37(61.67)	33(55.00)	96(53.33)
Breakfast	60(100)	60(100)	60(100)	180(100)
Mid-morning	19(31.67)	13(21.67)	10(16.67)	42(23.33)
Lunch	41(68.33)	47(78.33)	52(86.67)	140(77.78)
Evening Tea	58(96.67)	59(98.33)	54(90)	171(95)
Dinner	60(100)	60(100)	60(100)	180(100)
Bed Tea/Milk	30(50.00)	30(50.00)	31(51.67)	91(50.55)

consumption of items of pulses, which was also higher than that of male (18.33%) and female (13.33%) respondents. The majority of female respondents (63.33%) had medium frequency consumption of items of pulses which was higher in comparison to male (51.67%) and child respondents (30%) respondents. Consumption of pulses was more among the female respondents (3.21) compared to the child (2.93) and male respondents (2.75). Overall mean frequency consumption of pulses was 2.96 and no significant difference was found between different categories of respondents.

Nearly half of the respondents from each category male (43.33%), female (53.33%) and child (48.33%) had medium consumption of milk and milk products. The findings are in contrary to that of Singh et al., (2015) who found that half of the respondents had low consumption of milk and milk products. Further, results reported that overall 22.78 per cent of the respondents had a high consumption of milk & milk products. In comparison between male, female and child respondents it was found that 40 per cent of child respondents consumed less milk & milk products as compared to males (31.67%) and females (15%). A cursory glance at the table indicated that more percentage of females (31.67%) were found in the high category as compared to males (25%) and children (11.67%). Milk & milk products consumption was more in females (5.21) than the child (5.01) and male (3.96) respondents. A significant difference was observed in the mean frequency consumption of milk & milk products between the male, female and child respondents.

Large proportion i.e. 43.33 per cent of the respondents fall under medium level of consumption of green leafy vegetables and 25 per cent who had low consumption. The findings of the low consumption of green leafy vegetables are in conformity with the finding of Abudayya et al., (2009) & Kumari et al., (2019). Among all the respondents 36.67 per cent of males were in the high consumption category as compared to female (30%) and child (28.33%) respondents. Whereas, more percentage of female respondents (28.33%) were in the low consumption category of green leafy vegetables as compared to male (23.33%) and child (23.33%) respondents. On the perusal of data, it was revealed that the overall mean frequency of consumption of green leafy vegetables was 3.55. Comparison between male, female and child respondents was observed with a mean frequency of 3.72 for males, 3.62 for females and 3.31 for children. Findings are in line with those of Abudayya et al., (2009) who while assessing the food consumption pattern of adolescents also observed that the mean frequency consumption of green leafy vegetables was 3.5.

The frequency of consumption of roots and tubers was medium with 46.67 per cent. The results are in conformity with Singh et al., (2015). Further, it was observed that 20 per cent of the male respondents had higher consumption of roots and tubers in comparison with female (18.33%) and child respondents (10%). More than half of the children have medium consumption of roots and tubers (56.67%) in comparison to male (42.33%) and female (40%) respondents. More percentage of female respondents (41.67) were observed in low consumption of roots and tubers in comparison to male (36.67%) and child (33.33%) respondents. The overall mean frequency of consumption of roots & tubers was 3.90, with a non-significant difference between female (4.15), male (3.92) and child (3.62) respondents.

The majority of respondents had medium consumption of other vegetables. Further, the consumption of other vegetables by 48.33 per cent of the child respondents was lower than that of male (36.67%) and female (18.33%) respondents. The findings of the data are in conformity with Leal et al (2010). Large proportion of females (66.67%), males (48.33%) and child (41.67) respondents were found under medium consumption category. It may be due to the reason that some of the vegetables like cucumber, tomato and onion were consumed on daily basis. The same percentage (15%) of male, as well as female respondents had higher consumption of other vegetables as compared to child (10%) respondents. The result highlighted that the total mean frequency of consumption of other vegetables was noted as 3.90, with a significant difference favouring female respondents (4.21) over the child (3.86) and male (3.64) respondents.

It was further observed that the mean frequency of fruit consumption for male, female and child respondents were 3.14, 3.37 and 3.08 respectively, with a non-significant difference between the mean of all categories of the respondent. The same result was also reported by Mahajan (2011). 40.56 per cent had a low frequency of consumption of fruits and 32.78 per cent of the total respondents had medium consumption, whereas only 26.67 per cent of them had high consumption. Around 43.33 per cent of the male respondents were observed to have low consumption followed by 38.33 per cent female and 40 per cent child respondents. The findings on the consumption of fruits by the children are in conformity with Rethiaia et al., (2010) who reported that consumption of fruits were lower than the recommended allowances. There was not a major difference in the percentage of respondents who had a high consumption of fruits i.e. 26.67 per cent of males, 28.33 per cent of females and 25 per cent of children were found in this category.

The data regarding the consumption pattern of sweets was calculated on the basis of frequency consumption of (honey, jaggery and sugar). The majority of the respondents (48.33%) had medium consumption of sweets followed by low (31.67%) and high (20%) consumption. The findings are in contrary with Arlappa (2016) who revealed that the majority of the respondents consumed a high frequency of sweet items. Category wise difference shows that 23.33 per cent of the female respondents had higher consumption of sweets which was higher in comparison to male (15%) and child (21.67%) respondents, this may be due to females consume more sugar in tea, coffee etc while staying at home as most of the rural women are homemakers. Further, the data depicts that 41.67 per cent of male respondents had low consumption followed by female (25%) and child (28.33%) respondents. The sweet consumption was found to be 4.96 for males, 4.97 for females and 4.74 for children displaying a non-significant difference between the three groups. The result is in confirmation with the finding of Leal et al., (2010).

The 49.44 per cent of the respondents were having high consumption of fats & oil products followed by 35.56 per cent having medium and 15 per cent having low consumption. The findings are in conformity with Arlappa (2016) who found that majority of the respondents were consuming a high proportion of fats & oils than recommended. Further, the data indicates that more

Table 3. Consumption pattern of food items under different food groups

Food Groups	Frequency of Consumption	Male (n_1=60) f(%)	Female (n_2=60) f(%)	Child (n_3=60) f(%)	Total (n=180) f(%)
Cereals	Low (11-33)	23(38.33)	23(38.33)	25(41.67)	71(39.44)
	Medium (33-55)	26(43.33)	23(38.33)	25(41.67)	74(41.11)
	High (55-77)	11(18.33)	14(23.33)	10(16.67)	35(19.44)
Pulses	Low (11-33)	18(30.00)	14(23.33)	29(48.33)	61(33.89)
	Medium (33-55)	31(51.67)	38(63.33)	18(30.00)	87(48.33)
	High (55-77)	11(18.33)	8(13.33)	13(21.67)	32(17.78)
Milk & Milk Products	Low (6-18)	19(31.67)	9(15.00)	24(40.00)	52(28.89)
	Medium (18-30)	26(43.33)	32(53.33)	29(48.33)	87(48.33)
	High (30-42)	15(25.00)	19(31.67)	7(11.67)	41(22.78)
Green Leafy Vegetables	Low (5-15)	14(23.33)	17(28.33)	14(23.33)	45(25.00)
	Medium (15-25)	24(40.00)	25(41.67)	29(48.33)	78(43.33)
	High (25-35)	22(36.67)	18(30.00)	17(28.33)	57(31.67)
Roots & Tubers	Low (6-18)	22(36.67)	25(41.67)	20(33.33)	67(37.22)
	Medium (18-30)	26(43.33)	24(40.00)	34(56.67)	84(46.67)
	High (30-42)	12(20.00)	11(18.33)	6(10.00)	29(16.11)
Other Vegetables	Low (12-36)	22(36.67)	11(18.33)	29(48.33)	62(34.44)
	Medium (36-60)	29(48.33)	40(66.67)	25(41.67)	94(52.22)
	High (60-84)	9(15.00)	9(15.00)	6(10.00)	24(13.33)
Fruits	Low (18-54)	26(43.33)	23(38.33)	24(40.00)	73(40.56)
	Medium (54-90)	18(30.00)	20(33.33)	21(35.00)	59(32.78)
	High (90-126)	16(26.67)	17(28.33)	15(25.00)	48(26.67)
Sweets	Low (3-9)	25(41.67)	15(25.00)	17(28.33)	57(31.67)
	Medium (9-15)	26(43.33)	31(51.67)	30(50.00)	87(48.33)
	High (15-21)	9(15.00)	14(23.33)	13(21.67)	36(20.00)
Fats & Oils	Low (5-15)	13(21.67)	6(10.00)	8(13.33)	27(15.00)
	Medium (15-25)	23(38.33)	20(33.33)	21(35.00)	64(35.56)
	High (25-35)	24(40.00)	34(56.67)	31(51.67)	89(49.44)
Nuts & Oil Seeds	Low (7-21)	38(63.33)	33(55.00)	37(61.67)	108(60.00)
	Medium (21-35)	15(25.00)	20(33.33)	21(35.00)	56(31.11)
	High (35-49)	7(11.67)	7(11.67)	2(3.33)	16(8.89)
		(n_1=31)	(n_2=24)	(n_3=41)	(n=96)
Non-Vegetarian foods	Low (4-12)	10(16.67)	4(6.67)	11(18.33)	25(26.04)
	Medium (12-20)	8(13.33)	16(26.67)	23(38.33)	47(48.96)
	High (20-28)	13(21.67)	4(6.67)	7(11.67)	24(25.00)

Table 4. Mean frequency consumption of food items under different food groups (n=180)

FoodGroups	Male (n_1=60) Mean	Female (n_2=60) Mean	Child (n_3=60) Mean	Total (n=180) Mean	f-value
Cereals	3.71	4.35	3.58	3.88	0.20^{NS}
Pulses	2.75	3.21	2.93	2.96	0.95^{NS}
Milk & Milk Products	3.96	5.21	5.01	4.73	3.83*
Green Leafy Vegetables	3.72	3.62	3.31	3.55	0.31^{NS}
Roots & Tubers	3.92	4.15	3.62	3.90	0.12^{NS}
Other Vegetables	3.64	4.21	3.86	3.90	3.05*
Fruits	3.14	3.37	3.08	3.20	0.16^{NS}
Sweets	4.96	4.97	4.74	4.89	0.16^{NS}
Fats & Oils	4.59	4.78	4.91	4.76	2.42^{NS}
Nuts & Oil Seeds	2.30	3.47	2.77	2.85	0.97^{NS}
	(n_1=31)	(n_2=24)	(n_3=41)	(n=96)	
Non-Vegetarian Foods	4.25	2.19	2.32	2.92	5.89*

Mean score range 1-7

than half (56.67%) of the female respondents had higher consumption of fats & oil products in comparison to male (40%) and child (51.67%) respondents. It was also found that 21.67 per cent of male respondents had low consumption of fat & oil products in comparison to female (10%) and child (13.33%) respondents. The mean frequency of fats & oils was 4.59 for males, 4.78 for females and 4.91 for child respondents. The difference in mean frequency was reported to be non-significant between different categories.

The mean frequency of nuts & oilseeds consumption was reported to be 2.30 for males, 3.47 for females and 2.77 for children. Variation in the mean was found to be non-significant. 60 per cent were having a low intake of nuts and oilseeds and 31.11 per cent were having medium consumption. Further, it was also indicated

that the majority of males (63.33%) had low consumption compared to females (55%) and child (61.67%) respondents. Only 3.33 per cent of child respondents had high consumption which was low in comparison to males and females, both with 11.67 per cent consumption. 48.96 per cent had medium consumption of non-vegetarian food items followed by low (26.04%) and high (25%) consumption. In categories wise difference it was observed that 21.67 per cent of the male respondents had high consumption whereas only 6.67 per cent of the female and 11.67 per cent of child respondents were having high consumption. The data also reported that there were 18.33 per cent of child respondents who had low consumption of non-vegetarian foods followed by 16.67 per cent male and 6.67 per cent female respondents. It was further observed that the mean frequency of non - vegetarian foods was 4.25, 2.19 and 2.32 for male, female and child respondents respectively. A significant difference prevailed between the mean frequency of non - vegetarian foods of the three groups with the male respondents reporting the highest frequency of consumption. Whereas female reported the lowest frequency of consumption.

CONCLUSION

It may be concluded from this study that there was a lack of variation in the consumption of different food groups by the respondents. It was found that the food consumption pattern of the males was better than that of females as they consumed more balanced and diverse food as compared to their counterpart. So, it is suggested that Eating habits should be set according to the seasonal availability of the food items in an area as the environment grows different varieties of food according to the area and the requirements of the people living in a particular region. This practice will lead to a variation in diet and will naturally help in balancing the consumption of certain food items and products.

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