

Dietary Pattern and Food Preferences of Hypertensives

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Abstract

Hypertension is a chronic medical condition, attributed as the leading cause of mortality. The present study has been undertaken on clinically diagnosed hypertensive patients visiting multispecialty Hospital of Ludhiana. A total of 130 patients aged above 30 years have been included in the study.

To assess the food consumption pattern of the selected patients a structured questionnaire was prepared and the subjects were interviewed to collect information regarding the detailed dietary history with added information about his/her food likes/dislikes, eating habits, eating outside habits and general meal pattern. The present study results depicted that greater number of males is having hypertension than their counterparts and Majority (50.77 per cent) of the subjects were of age 50 & above.

Eating habits revealed a significant ($P < 0.05$) association between degree of hypertension and frequency of taking non vegetarian foods by male subjects however it was found to be non-significant for female subjects. The selected hypertensive were in majority habitual of dining outside regularly and had a liking for moderate salt in the food products and a non-significant association was found between salt consumption pattern and degree of Hypertension among the selected subjects. Food preferences in terms of overall frequency of consumption of selected foodstuffs revealed more frequent i.e. daily consumption of whole milk (59.15% of male; 59.32% of female), curd (33.80% of male; 42.37% of female), pure ghee (7.04% of male; 25.42% of female), refined oils (60.56% of male; 66.10% of female) was observed.

Keywords: Hypertension; Dietary pattern; Food preferences; Mortality

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Introduction

Hypertension is a chronic medical condition, in which blood pressure is elevated. It normally refers to systemic arterial hypertension which is becoming an important contributor to cardiovascular diseases. The world health organization attributes hypertension as the leading cause of mortality. The world hypertension league umbrella organization of 85 national hypertension societies recognized that more than 50 per cent of the hypertensive population worldwide is unaware of their condition. It is estimated that nearly one billion

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people are affected by hypertension worldwide and this figure is predicted to increase to 1.5 million by 2025 [1]. W.H.O. predicts that 100 million or 60 per cent of the world's heart patient will be Indians by the year 2210. It was reviewed in study that the role of dietary salt in the genesis, therapy and prevention of Hypertension and found few people with kidney disease to be salt sensitive, who responded with a rise in blood pressure and moreover salt restriction decreased BP as well as the need for antihypertensive medication.

The study also reported that salt sensitive Hypertension respond to increased potassium and calcium intake as they increases NaCl urinary excretion [2]. It was reported that a diet high in salt (NaCl) can raise blood pressure in susceptible people and animals, probably by similar mechanisms. In Dahl salt sensitive rats several renal abnormalities encouraged sodium retention and found that renal abnormalities were present in people susceptible to Hypertension [1]. At the present time hypertension is one of the most important health problems of societies. Approximately 7.6 million of early death happens due to hypertension and also the reason of about 54% of strokes and 47% of Ischemic heart disease is related to hypertension. Systematic analysis of different societies' health statistics shows that elevated blood pressure is the most important reason of death in the world and the second prevalent reason of death in children after underweight [3] According to studies of World Health Organization none communicable diseases are often preventable. However, 40% of deaths in developing countries and 75% in developed countries are due to the mentioned diseases [4].

Materials and Methods

The present study has been undertaken on clinically diagnosed hypertensive patients visiting multispecialty Hospital of Ludhiana. A total of 130 patients aged above 30 years have been included in the study. To assess the food consumption pattern of the selected patients a structured questionnaire was prepared and the subjects were interviewed to collect information regarding the detailed dietary history with added information about his/her food likes/dislikes, eating habits, eating outside habits and general meal pattern. Added information about consumption of salt, modification in salt intake etc. was also collected. The collected information has been comprehended in the form of tables and also calculated the percentages, standard errors and means for studying variables. The data was statistically analyzed to find out various differences and associations among variables using χ^2 , correlation and t-tests.

Results and Discussion

During the course of the study information was collected from the hypertensive subjects visiting multispecialty hospital in Ludhiana. A total of 130 hypertensive subjects were selected randomly for the purpose out of which 71 (54.61 per cent) were male and 59 (45.39 per cent) were found to be female subjects. It is revealed from the results of present study that hypertension is more prevalent among males (54.61 per cent) than their counterparts i.e. females (45.39 per cent). It also reported in study that higher incidence of hypertension among males as compared to females [5].

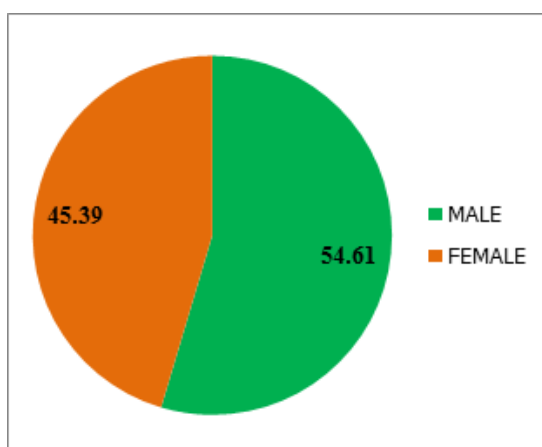


Figure 1: Gender wise distribution of Hypertensive subjects.

Age wise distribution of the subjects

After collecting data, the subjects were further distributed into three age groups i.e. 30–40 years (Group I), 40–50 years (Group II) and ≥ 50 years (Group III). As presented in Table 1, out of the total subjects surveyed, the maximum number i.e. 66 (50.77 per cent) belonged to age group III followed by 49 (37.69 per cent) group II and 15 (11.54 per cent) in group I. Age wise distribution of the male subjects revealed the numbers to be 8 (11.27 per cent), 19 (26.76 per cent) and 44 (61.98 per cent), respectively in age group I, II and III.

Age (years)	Male (N = 71)	Female (N = 59)	Total (N = 130)
30-40 (Group-I) Mean \pm SE	8 (11.27)* 37.63 \pm 1.50	7 (11.86) 33.40 \pm 3.13	15 (11.54)
40-50 (Group-II) Mean \pm SE	19 (26.76) 44.80 \pm 2.30	30 (50.85) 44.70 \pm 3.20	49 (37.69)
50 & above (Group-III) Mean \pm SE	44 (61.98) 55.27 \pm 5.24	22 (37.29) 57.90 \pm 6.70	66 (50.77)

Table 1: Age wise distribution of Hypertensive subjects.

*Figures in parentheses indicate percentages

Whereas the number of female subjects was found to be 7 (11.86 per cent), 30 (50.85 per cent) and 22 (37.29 per cent) in the age group I, II, and III respectively. The mean \pm standard error age of male subjects was found to be 37.63 \pm 1.50, 44.80 \pm 2.30 and 55.27 \pm 5.24 years, in the age group I, II and III respectively. On the other hand, the mean \pm standard error age of female subjects were found to be 33.40 \pm 3.13, 44.70 \pm 3.20 and 57.90 \pm 6.70 years in the age group I, II and III respectively.

Thus, it is indicated from present study results that majority of the subjects (50.77 per cent) were of age ≥ 50 years followed by 37.69 per cent in the age group 40-50 years (26.76 per cent of male; 50.85 per cent of female) and the remaining (11.54 per cent) were in the age group 30-40 years (Table 1). The present study results are in tuned with the findings of another study who reported an increasing trend of hypertension with advancing age [1]. It also found age to be a significant predictor of hypertension [6,5].

Dietary Pattern of the hypertensive subjects

Information regarding meal pattern of the hypertensive subjects is given in Figure 2. 60.00 per cent of the total subjects were taking standard thrice meals per day however, 32.31 per cent were taking twice and 7.69 per cent taking more than thrice meals a day. 60.77 per cent of the total subjects were regular for taking meals and 39.23 per cent were not regular about their meals. More preference was given for taking frequent and small meals (67.69 per cent) than taking few heavy meals (32.31 per cent) by the subjects. Majority (43.85 per cent) of the subjects were taking meals while watching T.V. followed by taking at dining table (29.23 per cent) and remaining (26.92 per cent) were taking their meals in the kitchen.

Thus, frequency of taking meals per day revealed that majority (60.00 per cent) of total subjects were taking standard thrice meals per day, however, 32.31 per cent were taking twice meals and 7.69 per cent were taking more than thrice meals a day. 60.77 per cent of the subjects were regular and 39.23 per cent were not regular about taking meals. Majority (43.85 per cent) of the subjects were taking meals while watching T.V.

Liking of type of foods in reference to method of cooking

Information was collected about foods preferred by the hypertensive subjects with special reference to method of cooking. It was found that 7.69 per cent liked raw foods, 23.85 per cent fried foods and 23.85 per cent of the subjects liked oven cooked or baked foods (mostly females).

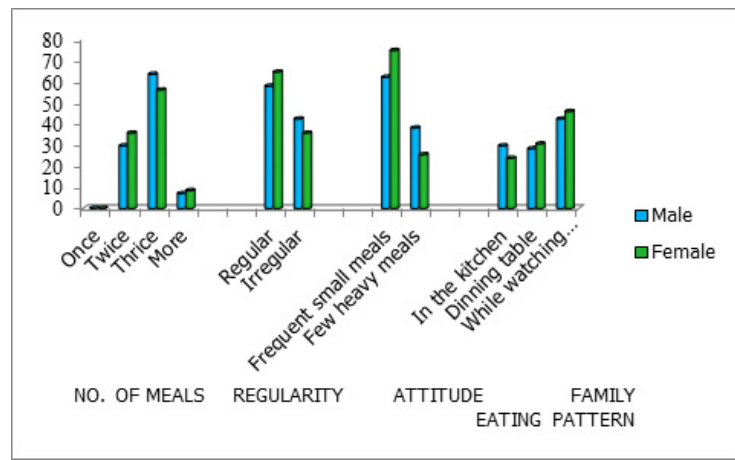


Figure 2: Information regarding meal pattern of the subjects.

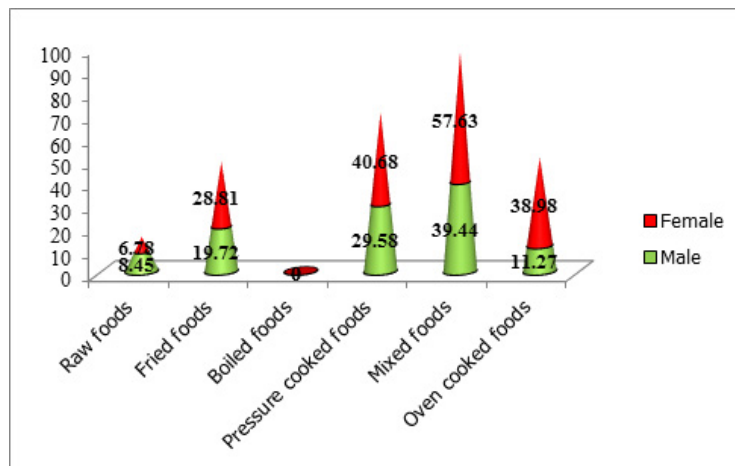


Figure 3: Information regarding liking of foods by the subjects with reference to method of cooking

Nobody showed liking for boiled foods, however, 47.69 per cent of the subjects preferred mostly mixed foods (i.e. a combination of methods) and 34.61 per cent liked pressure cooked foods.

Eating Habits

The data on eating habits of the hypertensive subjects (Table 2) showed that more than half of the total male subjects (52.12 per cent) were non vegetarian, 18.31 per cent were ovo-vegetarian (eating milk and egg) and 29.58 per cent were vegetarian. On the other hand, majority (49.15 per cent) of the female subjects was vegetarian, 27.12 per cent were ovo-vegetarian and 23.73 per cent were found to be non-vegetarian.

The data on frequency of consumption of non-vegetarian (including ovo-vegetarian) revealed that out of the male subjects, 8.00 per cent were found to consume daily, 36.00 per cent weekly, 32.00 per cent monthly and 24.00 per cent were consuming non vegetarian foods rarely. Moreover, significant (P < 0.05) association was found between frequency of consumption of non-vegetarian foods and degree of Hypertension of the male subjects. Out of the female subjects, same number of subjects i.e. 30.00 per cent was found to consume non vegetarian foods weekly and monthly each. 40.00 per cent of the female subjects were eating rarely; however, nobody reported daily consumption of non-vegetarian food.

Eating habits	Eating habits				Frequency of consumption of non-veg foods				
	Degree of HTN	Total	Vegetarian	Ovo veg	Non veg	Daily	Weekly	Monthly	Rarely
Male									
Pre HTN	27	8 (38.09)	5 (38.46)	14 (37.84)	-	6 (33.33)	9 (56.25)	4 (33.33)	
Stage I	36	10 (47.62)	7 (53.85)	19 (51.35)	4 (100.00)	10 (55.56)	7 (43.75)	5 (41.67)	
Stage II	8	3 (14.29)	1 (7.69)	4(10.81)	-	2 (11.11)	-	3 (25.00)	
Total	71	21 (29.58)	13(18.31)	37(52.12)	4 (8.00)	18(36.00)	16(32.00)	12 (24.00)	
χ ² values		χ ² = 0.39			χ ² =10.09*				
Female									
Pre HTN	32	16 (55.17)	9 (56.25)	7 (50.00)	-	5 (55.56)	5 (55.56)	6 (50.00)	
Stage I	21	10 (34.48)	6 (37.50)	5 (35.71)	-	4 (44.44)	3 (33.33)	4 (33.33)	
Stage II	6	3 (10.34)	1 (6.25)	2 (14.29)	-	-	1 (11.11)	2 (16.67)	
Total	59	29 (49.15)	16(27.12)	14(23.73)	-	9 (30.00)	9 (30.00)	12 (40.00)	
χ ² values		χ ² = 0.57	χ ² = 1.70						

* Significant at P < 0.05

Table 2: Distribution of subjects on the basis of their eating habits in relation to degree of Hypertension.

Eating out habits

Eating out habits may affect any disease condition. Therefore, information was collected (Figure 4) about eating out habits of the subjects and revealed that 50.77 per cent of the total subjects were dining out regularly, out of which, same number of subjects i.e. 25.76 per cent were found to dine fortnightly, monthly and occasionally each, whereas, 22.73 per cent were dinning out rarely. Data on the type of foods preferred revealed that 10.61 per cent prefer Punjabi foods, others preferred South Indian (15.15 per cent), Chinese (15.15 per cent), or non-vegetarian (19.70 per cent) foods when dine outside home. Majority (39.39 per cent) of the subjects were dinning outside for social ceremonies (marriage etc.).

Thus, present study results on liking of foods in reference to method of cooking revealed that most of the subjects liked mixed foods (47.69 per cent) and pressure cooked (34.61 per cent) foods, however, nobody showed liking for boiled foods. Eating habits of animal foods by the hypertensive subjects revealed that majority of the male subjects were non vegetarian (52.12 per cent), 18.31 per cent were ovo-vegetarian (eating only milk and egg) and 29.58 per cent were vegetarian. Whereas, among female subjects, majority (49.15 per cent) of the subjects were found to be vegetarian, 27.12 per cent ovo-vegetarian and 23.73 per cent were found to be non-vegetarian. Majority of the male subjects stated weekly (36.00 per cent) consumption, whereas, female reported rarely (40.00 per cent) consumption of non-vegetarian foods. Moreover, a significant (P < 0.05) association was found between frequency of consumption of non-vegetarian foods and degree of Hypertension in male subjects, however, non-significant in case of female subjects.

Eating out habits may affect any disease condition. Therefore, information was collected and the data revealed that 50.77 per cent of the total subjects were dining out regularly, out of which 25.76 per cent were dinning out fortnightly, monthly and occasionally, whereas, 22.73 per cent were dinning out rarely. Information on the type of foods preferred revealed that majority (39.39 per cent) of the subjects were dinning outside for social ceremonies (marriage etc.), however, 10.61 per cent prefer Punjabi foods, others preferred South Indian (15.15 per cent), Chinese (15.15 per cent), or non-vegetarian (19.70 per cent) foods when dine outside home.

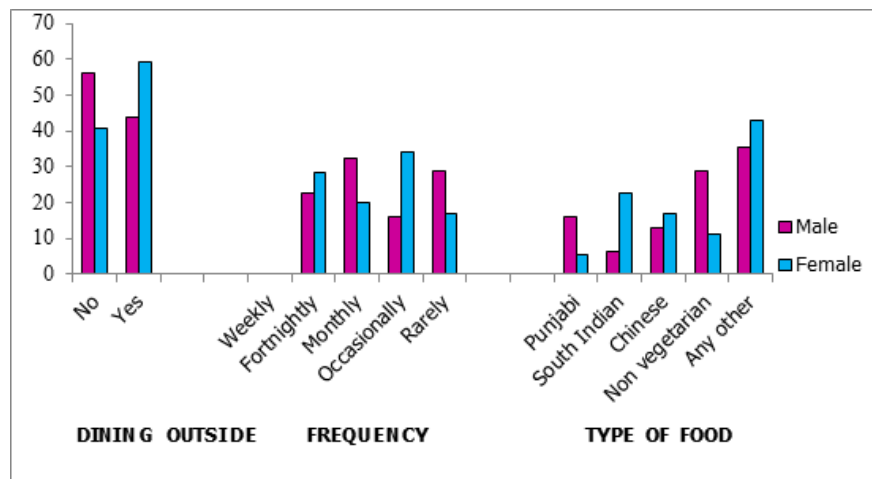


Figure 4: Information regarding liking of eating out habits of hypertensive subjects

Salt consumption by the subjects

Information was collected about salt consumption by the subjects. Hypertensive subjects were asked for their liking of salt in food. No standards were specified and results are fully statement based. 23.94 per cent of the male subjects had liking for more salt, 56.34 per cent liked moderate salt and 19.72 per cent liked low salt in foods. Out of the female subjects, same number of subjects i.e. 28.81 per cent had liking for more and low salt each in foods; however, 42.37 per cent liked moderate salt in foods. All the subjects were prescribed to reduce salt consumption, however, 64.79 per cent of the male and 59.32 per cent of the female subjects modified their salt consumption and all of them stated an improvement in the Hypertension condition by reduced salt consumption.

Data on the ways of reducing salt consumption revealed that out of the male subjects modified salt consumption, 52.17 per cent were using low/no salt in salad, 71.74 per cent avoided pickles, 71.74 per cent added no extra salt over cooked foods and 30.43 per cent had lowered amount of salt in cooking.

Degree of HTN	Liking of salt			If prescribed reduction in salt		If modified salt consumption		If salt reduction improved HTN		Ways adopted for reducing salt consumption			
	More	Moderate	Low	No	Yes	No	Yes	No	Yes	Low/no in salad	Avoiding pickles	Low in cooking	No extra
Male													
Pre HTN	7 (41.18)	15 (37.50)	5 (35.71)	-	27 (38.03)	9 (36.00)	18 (39.13)	-	18 (39.13)	9 (37.50)	14 (42.42)	5 (35.71)	12 (36.36)
Stage I	9 (52.94)	20 (50.00)	7 (50.00)	-	36 (50.70)	13 (52.00)	23 (50.00)	-	23 (50.00)	12 (50.00)	16 (48.48)	7 (50.00)	15 (45.45)
Stage II	1 (5.88)	5 (12.50)	2 (14.28)	-	8 (11.27)	3 (12.00)	5 (10.87)	-	5 (10.87)	3 (12.50)	3 (9.09)	2 (14.29)	6 (18.18)
Total	17 (23.94)	40 (56.34)	14 (19.72)	-	71 (100.00)	25 (35.21)	46 (64.79)	-	46 (64.79)	24 (52.17)	33 (71.74)	14 (30.43)	33 (71.74)
χ ² Value	χ ² =0.69			χ ² =0.12						χ ² =1.32			
Female													
Pre HTN	11 (64.70)	12 (48.00)	9 (52.94)	-	32 (54.24)	14 (58.33)	18 (51.43)	-	18 (51.43)	7 (41.18)	12 (52.17)	-	12 (42.86)

Stage I	6 (35.30)	9 (36.00)	6 (35.29)	-	21 (35.59)	7 (29.17)	14 (40.00)	-	14 (40.00)	8 (47.06)	9 (39.13)	4 (100.00)	13 (46.43)
Stage II	-	2 (11.76)	2 (11.76)	-	6 (10.17)	3 (12.50)	3 (8.57)	-	3 (8.57)	2 (11.76)	2 (8.69)	-	3 (10.71)
Total	17 (28.81)	25 (42.37)	17 (28.81)	-	59 (100.00)	24 (40.68)	35 (59.32)	-	35 (59.32)	17 (48.57)	23 (65.71)	4 (11.43)	28 (80.00)
χ^2 Value	$\chi^2 = 3.24$			$\chi^2 = 0.59$						$\chi^2 = 4.47$			
χ^2 values are non-significant at $P < 0.05$													

Table 3: Information regarding salt consumption by the subjects.

Out of the female subjects modified salt consumption, majority (80.00 per cent) were adding no extra salt over cooked foods, followed by avoiding pickle use (65.71 per cent), low/no salt in salad and 11.43 per cent of the female subjects decreased salt amount in cooking foods and decreased intake of dietary sodium has been demonstrated to have a hypotonic effect, both alone and as an adjunctive measure to pharmacologic therapy. The information collected about salt consumption by the subjects (Table 3) revealed that majority of the subjects (56.34 per cent of male; 42.37 per cent of female) had liking for moderate salt in the food products, however, no standards were specified and results are fully statement based.

All the subjects (male & female) were prescribed for salt reduction in foods. 64.79 per cent of the male and 59.32 per cent of the female subjects had modified their salt consumption and all of them stated an improvement in the Hypertension condition by reduced salt consumption. The ways adopted for reducing salt consumption included using low or no salt in salad, avoiding pickles, adding no extra salt over cooked foods and low salt in cooking foods.

Food preferences in terms of frequency of consumption of food stuffs

An attempt was made to collect information about consumption of various food stuffs by the subjects selected with special reference to increasing risk of cardiovascular diseases (milk & milk products, fats & oils, animal foods etc.). Table 4 shows the consumption of various foodstuffs from different food groups in terms of the frequency of consumption.

Milk and milk products: Frequency of consumption of milk and milk products showed that daily consumption was observed for whole milk (59.15 & 59.32 per cent) and curd (33.80 & 42.37 per cent) by the subjects. Besides these two, male subjects were also found to consume cheese on alternate days (11.27 per cent). The subjects were found to consume all the selected milk products weekly i.e. whole milk (25.35 & 23.73 per cent), cheese (9.86 & 30.51 per cent) and sweets (14.08 & 25.42 per cent) except for curd which was consumed weekly only by male subjects (12.68 per cent). Except for whole milk (daily to weekly frequency), rest of the products were used regularly by the subjects, however, proportion of the subjects was found to be the highest for rarely consumption of cheese (50.70 & 52.54 per cent) and sweets (42.25 & 52.54 per cent).

Fats and oils: The data on fats and oils consumption revealed that refined oils were most frequently used i.e. daily (60.56 & 66.10 per cent), alternately (11.27 per cent & 18.64 per cent) or weekly (28.17 & 11.86 per cent). Consumption of butter, pure ghee and vanaspati ghee revealed that male subjects were found to consume butter (7.04 per cent) and pure ghee (7.04 per cent) daily, however, female subjects were found to consume pure ghee daily (25.42 per cent).

Among these three, pure ghee was consumed by maximum of male subjects (16.90 per cent) and butter by female subjects (23.73 per cent) on alternate days. Weekly consumption got highest odds for butter by male subjects (42.25 per cent) and for pure ghee by female subjects (33.90 per cent). Regular consumption got highest odds for pure ghee (33.80 per cent) by male subjects and by female subjects for butter (18.64 per cent). Rare consumption got highest odds for vanaspati ghee both by male (40.84 per cent) and female (45.76 per cent) subjects.

Food Stuff	Male					Female				
	Daily	Alternately	Weekly	Regularly	Rarely	Daily	Alternately	Weekly	Regularly	Rarely
Whole Milk	42 (59.15)	11 (15.49)	18 (25.35)	-	-	35 (59.32)	10 (16.95)	14 (23.73)	-	-
Sweets	-		-	10 (42.25)	30 (42.25)	31 (43.66)	-	15 (25.42)	13 (22.03)	31 (52.54)
Curd	24 (33.80)	11 (15.49)	9 (12.68)	11 (15.49)	16 (22.53)	25 (42.37)	10 (16.95)	-	9 (15.25)	15 (25.42)
Cheese	-	8 (11.27)	7 (9.86)	20 (28.17)	36 (50.70)	-	-	18 (30.51)	10 (16.95)	31 (52.54)
Fats and Oils										
Butter	5 (7.04)	9 (12.68)	30 (42.25)	7 (9.86)	20 (28.17)	-	14 (23.73)	13 (22.03)	11 (18.64)	21 (35.59)
Pure Ghee	5 (7.04)	12 (16.90)	19 (26.76)	24 (33.80)	11 (15.49)	15 (25.42)	8 (13.56)	20 (33.90)	-	16 (27.12)
Vanaspati Ghee	-	8 (11.27)	14 (19.72)	20 (28.17)	29 (40.84)	-	5 (8.47)	18 (30.51)	9 (15.25)	27 (45.76)
Refined oils	43 (60.56)	8 (11.27)	20 (28.17)	-	-	39 (66.10)	11 (18.64)	7 (11.86)	-	-
Animal foods										
Egg	-	7 (9.86)	18 (25.35)	8 (11.27)	38 (53.52)	-	5 (8.47)	8(13.56)	4 (6.78)	42 (71.19)
Fish	-	-	-	38 (53.52)	33 (46.48)	-	-	-	8 (13.56)	51 (86.44)
Chicken	-	-	5 (7.04)	20 (28.17)	46 (64.79)	-	3 (5.08)	-	3 (5.08)	53 (89.83)
Mutton	-	-	7 (9.86)	-	23 (32.39)	41 (57.76)	-	-	6 (10.17)	53 (89.83)

Table 4: Frequency of consumption of special foodstuffs by the subjects.

Animal foods: Of the animal foods, egg was reported to be consumed on alternate days (9.86 and 8.47 per cent), however, maximum of the subjects were consuming eggs rarely i.e. 53.52 per cent of male and 71.19 per cent of female subjects. Fish was reported to be consumed regularly (53.52 & 13.56 per cent) or rarely (46.48 & 86.44 per cent) by the subjects. Besides eggs, male subjects were consuming chicken (7.04 per cent) and mutton (9.86 per cent) weekly, however, only chicken (5.08 per cent) is consumed weekly by female subjects. Subjects were consuming animal foods regularly; however, major proportion of the subjects reported rare consumption of all the animal foods.

Thus, it is revealed from the present study results that among milk and milk products, whole milk and curd were used more frequently and the frequency of consumption varied from daily to weekly for whole milk, daily to rarely for curd (none of female reported weekly consumption). The frequency of consumption of cheese varied from alternate day to rarely by male, however, weekly to rarely by the female subjects. Sweets were reported to be consumed weekly, regularly or rarely by different proportion of the subjects. Among fats and oils, refined oils were most frequently used i.e. daily to weekly consumption. Butter and pure ghee was used daily to rarely by the male subjects, however, female reported alternately to rarely consumption of butter and daily to rare use of pure ghee.

Vanaspati ghee was also used by the subjects and the frequency of consumption varied from alternate day to rarely. Among animal foods, egg was reported to be consumed more frequently by the subjects and the frequency varied from alternate day to rarely consumption. For chicken consumption, the frequency varied from weekly to rarely and fish was less frequently consumed i.e. regularly to rarely by the subjects. Frequency of consumption of mutton varied from weekly to rarely by male subjects, whereas, regularly to rarely by the female subjects.

Conclusions

- Out of the total hypertensive subjects (N = 130), 54.61 per cent (N = 71) were male and 45.39 per cent (N = 59) were female subjects. Majority (50.77 per cent) of the subjects were of age 50 & above, followed by 37.69 per cent in the age group 40-50 years (26.76 per cent of male; 50.85 per cent of female) and remaining (11.54 per cent) were in the age group 30-40 years of age (11.27 per cent of male; 11.86 per cent of female).
- Liking for method of cooking revealed that majority (47.69 per cent) of the subjects liked mixed foods followed by pressure cooked foods (34.61 per cent). Dinning out habits revealed that 50.77 per cent of the subjects dine outside regularly. Majority (39.39 per cent) of the subjects were found to dine outside for ceremonial functions. Moreover, frequency varied from fortnightly (25.76 per cent) to rarely (21.21 per cent) dinning outside.
- Eating habits revealed that majority of the male subjects were found to be non-vegetarian (52.12 per cent), whereas, 49.15 per cent of female subjects were vegetarian. Moreover, significant ($P < 0.05$) association was found between degree of HTN and frequency of taking non vegetarian foods by male subjects, however, non-significant for female subjects.
- Majority of the subjects (56.34 per cent of male; 42.37 per cent of female) had liking for moderate salt in the food products. Though all the subjects were prescribed to reduce salt consumption, 64.79 per cent of male and 59.32 per cent of female subjects modified salt consumption and all stated improvement in Hypertension condition. Moreover, non-significant association was found between salt consumption pattern and degree of Hypertension.
- Food preferences in terms of overall frequency of consumption of listed foodstuffs revealed that frequency varied from weekly to rarely consumption for most of the foodstuffs from various selected categories. More frequent i.e. daily consumption was observed whole milk (59.15% of male; 59.32% of female), curd (33.80% of male; 42.37% of female), pure ghee (7.04% of male; 25.42% of female), refined oils (60.56% of male; 66.10% of female). Alternate day consumption by both male and female subjects was observed for milk products excluding sweets and cheese (only female), of all fats/oils excluding butter and vanaspati ghee (only female), only eggs among animal foods.

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