Food Practices and Patterns among the Community dwelling elderly: A study in Pune city

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Abstract

The study gives a snapshot of food practices and patterns among the selected community dwelling elderly in Pune city. This cross-sectional study using survey method was conducted with a total of 427 elderly participants in selected slums in Pune city. The main objective of this study was to assess the food consumption practices and patterns among the elderly which was done using a pre-designed questionnaire using mostly closed ended questions. The findings give a broad idea of various practices followed by the elderly which would determine their food intake.

Key words: Food patterns, food practices, community dwelling elderly

Introduction and background of the study

India is experiencing a triple burden of diseases, a phenomenon which includes the current epidemiologic transition leading to NCDs, the environmental transition which leads to communicable diseases and the current burden of diseases. Thus, we experience communicable, non-communicable, emerging and re-emerging infectious diseases. There is also a twin epidemic of continuing/ emerging infectious diseases along with degenerative diseases. The condition of the country is a 'dilapidated' state with major public health problems like undernutrition, malaria, tuberculosis, high maternal, child mortality, safe drinking water and sanitation and one of the most important ageing issues. Various lifestyle diseases which are caused due to change in living habits and lifestyle modifications include diabetes, cardiovascular diseases, cancer, typhoid, and other water-borne diseases. One of the causes of these disease patterns can be categorized owing to inequalities in terms of social, economic, and political factors (Public Health in India: Issues and Challenges, 2016).

As we know, the number of older population in the developing world is increasing rapidly and it is estimated that by the year 2050, 80 percent of the population will be living in the developing countries (World Population Ageing, 2015). Considering the current context, the elderly is experiencing an array of problems which can be categorized as social, economic, health and psychological. Some serious issues include poverty, social insecurity, food insecurity and health problems including malnutrition which is seen at an alarming rate. The elderly is susceptible to infectious diseases due to progressive deterioration of immune function with age (immunosenescence) and also co-morbid risk factors which have delirious health consequences. Co-morbid risk factors have delirious health consequences among this population. Researchers call it the compression and expansion of morbidity which is experienced with an increase in age there are changes in the incidence, progression, and recovery of any morbidity with related disability and its effect on the mortality, this interplay of changes in mortality and morbidity results in improvement of health. Factors like increasing age, underlying physiological changes increase the risk of chronic diseases and thus increase the burden of disability and death. Also, there is an increased risk of elderly experiencing more than one chronic condition leading to 'multimorbidity' which is difficult to be captured by traditional disease classifications (Global Health and Aging, 2011).

Taking into account the effect of increasing age among elderly and implications on health it is often observed that the elderly are at risk of suffering from malnutrition. Nutrition is one of the core determinants of the health of the elderly. Malnutrition amongst the elderly can be due to varied reasons like poverty, poor education, health and sanitation conditions which is often an issue with the Indian slums or community dwelling. With increasing age, there are physical and physiological changes among the elderly affecting the dietary intake among them. Malnutrition is often caused due to reduced sensory impairment like loss of taste and smell hampering the appetite. This phenomenon among the elderly is often under-diagnosed (Wells & Dumbrell, 2006). With limited studies discussing food patterns and practices among the community dwelling elderly it becomes important to understand the underlying problems affecting food intake so as to understand the broader picture of malnutrition among them. The objective of this study is to assess food habits and other dietary associated patterns among the elderly living in community dwellings.

Methodology

Objective and research question

The broad objective of this study is to assess the food consumption practices and patterns among the elderly

What are the various food consumption practices followed by the elderly?

What are the food patterns and habits followed by the elderly?

What are the other factors that affect dietary intake among the elderly?

Research Design and sample

A cross-sectional descriptive study design using a survey method was carried out for data collection as this survey was carried out at one point in time. For this study, a pre-designed questionnaire with predominantly closed-ended questions was used.

Results

The data were collected and entered into SPSS in the pre-designed coded variables. It was entered into SPSS version 20.0. The data were analysed using statistical techniques like percentages and chi-square. Statistical significance was set at 95 per cent ($p<0.05$).

Demographic characteristics of the elderly

The table below describes the demographic profile of the study population.

Table 1. Demographic factors among the slum dwelling elderly

Variables	Male		Female		Total	
	%	No	%	No	%	No
Gender	42.1	185	57.9	246	100	431
Age group						
60-69 years	23.2	100	36.9	159	60.1	259
70-79 years	16	69	13.9	60	29.9	129
80+ years	3.7	16	6.3	27	10	43
Education status						

Primary	9	39	5.3	23	14.4	62
Secondary	13.5	58	6	26	19.5	84
High school and above	8.4	36	3	13	11.4	49
Illiterate	12.1	52	42.7	184	54.8	236

A total of 185 males and 246 females were interviewed for the study. The mean age of respondent was 68.5 years *(SD=7.4)* In this study age has been classified in three categories 60- 69 years, 70-79 years and 80 and above as there were a fewer participant and thus, they are clubbed in one category. The minimum and maximum age among the elderly studied ranged from 60 to 104 years. In the first category which was about 60 percent of the sample, it was there were more females (36.7 percent) than males (23.3 percent) whereas in the second category males (16 percent) outnumbered the females (14 percent). An interesting observation was that elderly from the age of 80+ year's age group had more female's 6.3 percent than males which were 3.7 percent. The finding supports the phenomenon of 'feminization of ageing' wherein there is a higher number of females as compared to that of males.

Education status

In this study, more than half of the elderly were illiterate accounting to 54.8 percent among which females were higher in number (42.7 percent) than males (12.1 percent). About 19.5 and 14.4 percent of them had acquired secondary and primary education respectively with a higher proportion of males as compared to that of females. A total of 11.4 percent of the elderly had completed education of high school and above which included graduation and diploma. The role of gender on education status has always been significant with women to expect to be handling domestic and caregiving chores thus they require lesser education qualification. In the slum/ community setting poverty and access to education for women has been another factor contributing to a higher number of illiterate women to that of men.

Food habits and practices among the elderly

In the present study, various practices and patterns of the elderly were assessed to understand their dietary intake and factors. Studies suggest dietary practices on the basis of following different religions. There is a plethora of various cultures and behavior with one commonality that is the provision of nourishment to the body (Sabate, 2004). In this study, there was heterogeneity in terms of various religions and each religion practiced different customs and traditions.

Table 2. Food practices among the elderly

Variable	**Codes**	**Males n = 185**		**Females n = 246**		**Total**		**Significance (p value)**
		%	**No**	**%**	**n**	**%**	**n**	
Customs/ traditions	Yes	4.6	20	8.6	37	13.2	57	
Sequence of food serving	Self Spouse Others Everyone eats together	14.4 2.1 8.1 18.3	62 9 35 79	11.6 3.7 13.0 28.8	50 16 56 124	26.0 5.8 21.1 47.1	112 25 91 203	
Food bought by	Self Spouse Children Others	11.8 13.0 12.3 5.8	51 56 53 25	15.5 4.4 24.4 12.8	67 19 105 55	27.4 17.4 36.7 18.6	118 75 158 80	p=0.00

Food expenditure	Self Spouse Children Others	13.0 9.0 16.7 4.2	56 39 72 18	12.5 5.3 29.7 9.5	54 23 128 41	25.5 14.4 46.4 13.7	110 62 200 59	p=0.00
Freq of shopping for food	Daily Weekly Fortnightly Monthly NA	8.6 6.7 1.9 25.3 0.5	37 29 8 109 2	13.9 7.2 1.9 33.9 0.2	60 31 8 146 1	22.5 13.9 3.7 59.2 0.7	97 60 16 255 3	
Decision of food	Self Spouse Children Others	5.3 19.5 6.5 11.6	23 84 28 50	20.2 1.9 13.5 21.6	87 8 58 93	24.9 20.9 19.3 33.2	110 92 85 143	p= 0.00
Preparation of food in HH	Self Spouse Children Others	3.0 20.6 5.8 13.5	13 89 25 58	20.9 1.2 10.0 25.1	90 5 43 108	23.9 21.8 15.8 38.5	103 94 68 166	p= 0.00
Food availability through scheme	Yes	12.1	52	15.5	67	27.6	119	

Customs/ traditions

There were various customs and traditions adhered by the elderly in the community. As this study was carried out during the period of February to July it was the time period when *Ramzan* was followed in the community, fasting once a week was observed by some of the elderly. The above table gives an estimate of elderly who followed customs and traditions. About 13.2 percent elderly informed that they follow some tradition with a higher proportion of women (8.6 percent) following the traditions than that of male (4.6 percent). With different religions and caste, there was diversity observed in the community. Some of the responses on the customs followed by the elderly are as follows. Some of the customs followed by Hindus included *Chaturmas*[1], *Shravan*[2], *Margashirsh*[3]. Few of the elderly individuals fasted on certain days of the week like Monday/ Thursday/ Saturday and some of them restricted their non-vegetarian food consumption in the household. Some of the religious practices followed by the elderly included *Adhikmahina*[4] fasts, *Navratri*[5], *Khandhoba*[6] *'Satti*' they make 'rott' of Bajri and Brinjal *Bharit*[7] and perform puja and then consume it, *"Pradush*[8]*"* after 2 or 3rd day of Ekadashi[9] done for Mahadev and Chaturthi.

[1]Chaturmas is a holy period of four months where individuals fast every day and abstain their favorite food
[2]Shrawan is a holy month in which non-vegetarian food consumption is completely avoided
[3]Margashirsh is a holy month in which non-vegetarian food consumption is completely avoided
[4]Adhikmahina is a holy month in which non-vegetarian food consumption is completely avoided
[5]Navrathri is celebrated for 9 days were fasting for 9 days is followed and non-vegetarian food consumption is avoided.
[6]Khandoba or (Shiva) is a Hindu God
[7]Bharit is made by roasting brinjal directly on fire and then mashing with other vegetables and spices.
[8]Pradush is a holy month followed my various communities where restriction of various food is observed and followed
[9] Ekadashi is a fast followed by Hindus

Some traditions of Christians community included *Dukka*[10](Christians) and Lent. The Muslim community had *Roza*[11] a fast which performed during the holy month.

Sequence of food serving in the household

The data in the above table elicits response of the male and female elderly on the sequence of food served in their household. About 47 percent of the elderly reported to not have any specific sequence of food serving while having their meals and the elderly consumed the food together with other members of the household. Out of the 47 percent, this trend was seen more among women (28.8 percent) than that of males (18.3 percent). About 26 percent reported to have served them first, this trend was seen more among males (14.4 percent) than females (11.6 percent) which also reflects patriarchal dimension. About 11.8 and 7.4 percent elderly reported that food was first served to their children (adult) and grandchildren respectively. About 25.8 percent and 21.2 percent said that food was first consumed to either self or other members of the family.

Food bought by

As already mentioned in the earlier section the elderly relied on their family members for most of the expenditure. About 36.7 percent elderly reported that their adult children got the food. The reason for this behavior was due to caregiver role of the children which was reported by many elderly. About 27.4 percent of them got the food by themselves, in this category more women (15.5 percent) participated to that of men (11.8 percent). In the case of the elderly spouse buying the food, males outnumbered the females. The other category enlisted about 18.6 percent, which included mostly the daughter in law, grandchildren or other relatives of the household. It can be evident that there is statistical significance among the gender and food bought variable.

Expenditure for the food

In this study about one fifth of the elderly were engaged in work and thus a large proportion of elderly were dependent on their children for food expenditure. About 46.4 percent of the elderly reported that their children carry out their food expenditure. This trend was seen more amongst women (29.7 percent) than men (16.7 percent). About 25.5 percent elderly informed that they carry out their expenditure on food by themselves with almost similar proportion among males and females.

[10]Dukka is fast observed my Christian communities
[11]Roza is fasts followed by Muslim communities

Frequency of shopping for food

The following bar diagram describes the trend observed in the community.

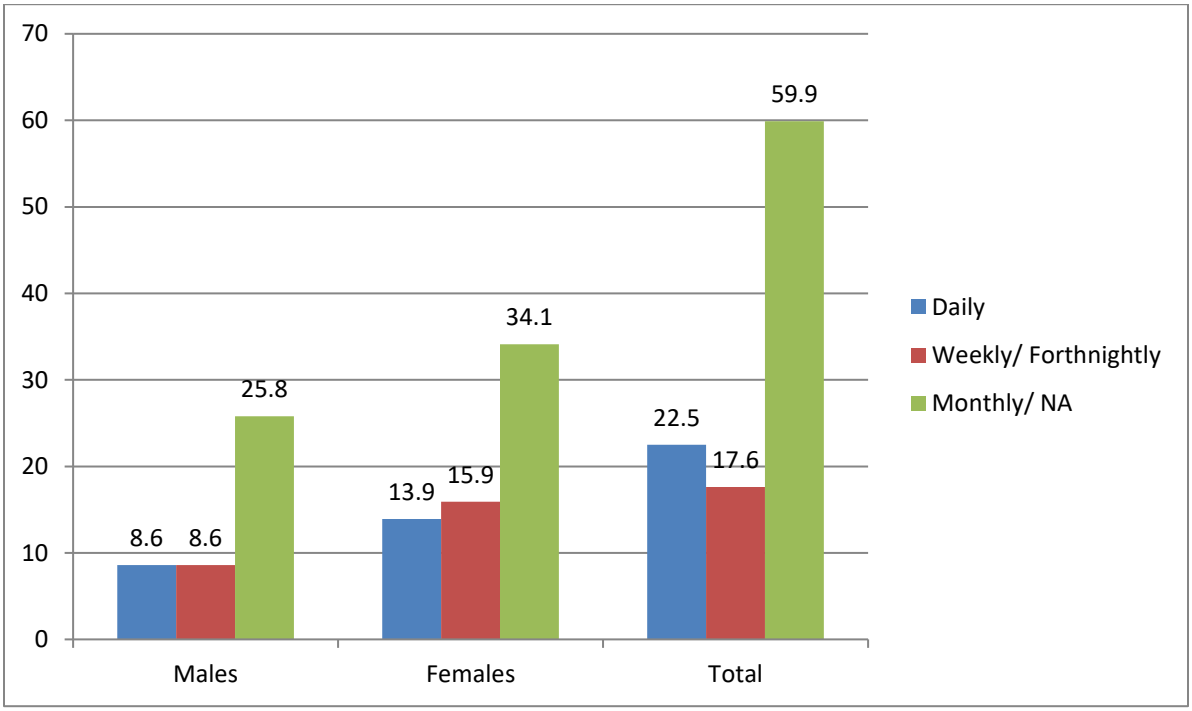

Figure 1. Number of meals consumed by the elderly

Some of the elderly bought the food grains on an annual or monthly basis. The other food items were bought on a daily, weekly, fortnightly or monthly basis. Among the entire sample, about 59.2 percent bought on a monthly basis. About 22.5 percent bought on a daily basis and 13.9 bought on a weekly basis.

Decision on the preparation of food

The table below describes the decision of food preparation. About 20.2 percent elderly women, 19.5 percent spouses of elderly males, 21.6 percent of female relatives in the household decided what has to be cooked in the house.

Preparation of the food

Food was generally prepared by the women of the household. The table below illustrates the preparation of food in the household. A similar trend like the decision of food, the preparation of food was made by 20.9 elderly females, 20.6 spouses of elderly male and 25.1 percent female relatives and 10 percent female children (adult) prepared the food in the household. Gender and preparation of food had a statistically significant relationship

Avail food from some scheme

In the community, some of the elderly reported to avail from the PHS schemes. Though there was the availability of PDS very few of the sample availed it due to various issues. Many of the elderly individuals reported the food grains of PDS were substandard and beyond consumption.

Participant 1: "Wheat is not of good quality and rice is thick"
Participant 2: "The ration has a lot of dirt (phopata/ kunda) in the food grains"
Participant 2: "The seller keeps good quality to himself and sells us the substandard quality to the food grains"

The elderly reported that food grains available in the PDS were not of good quality. In such cases the elderly HH got the food grains from local markets. From the above table it can be observed that only one-fourth of the sample which is about 27.6 percent of the elderly reported getting food through the PDS system. About 15.5 percent of females and 12.1 percent of males got the food grains through the PDS system.

Consumption of non-vegetarian items

Out of the entire sample, about 83.3 percent consumed non-vegetarian food with higher number among females (48.3 percent) than males (35 percent).

Number of full meals

During old age due to digestion and health issues; the elderly population are usually advised small frequent meals. The general dietary guidelines for adults suggest small frequent 6-8 meals. The following bar diagram shows the number of meals consumed by the elderly.

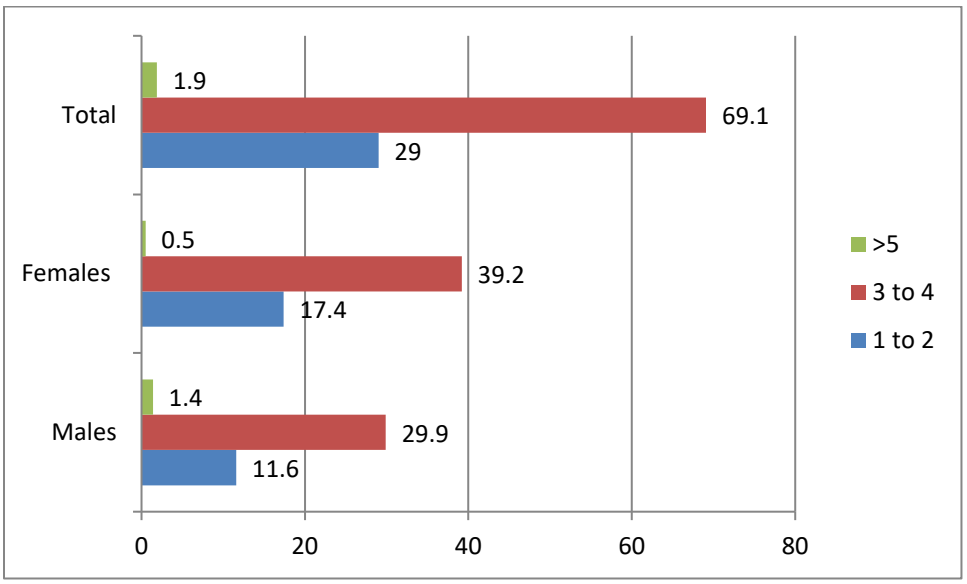

Figure 2. Number of meals consumed by the elderly

In this study, the majority (69.1 percent) of the elderly consumed 3-4 meals/ day with a larger number of females (39.2 percent) than males (29.9 percent). In most cases the elderly consumed tea (black/ with milk) in the morning, which was followed by daily chore (filling water), followed by breakfast, lunch and black/ milk tea (during the evening) and dinner. About 29 percent in totality consumed 1-2 meals a day. Only about 2 percent had more than 5 meals in the day which should be ideal for every elderly.

Substance abuse

The following table gives a picture of substance abuse among the slum dwelling elderly.

Table 3. Substance abuse among the elderly

Type of substance abuse	Smoking	Males		Females		Total		Chi-square
		%	No	%	No	%	No	
Smoking	Yes	8.6	37	0.5	2	9.0	39	x2 (1, N= 431) = 47.356, p= 0.00
	No	34.3	148	56.6	244	90.9	392	
Chew tobacco/ misri	Yes	18.6	80	28.8	124	47.3	204	-
Alcohol	Yes	6	24	0.5	2	6.5	28	

Smoking was practiced by many elderly as it helped to reduce hunger. In this study, a total of 9 percent elderly smoked on a daily basis. Out of this 9 percent which accounted to 39 participants 2 were females. The elderly in slums had limited source for carrying out their expenditures. The elderly had to depend on the other family members for their food. Many times, the elderly consumed tobacco as it reduced their hunger and thus food intake. Misri is a teeth cleaning powder made from tobacco was largely consumed by the elderly women in the community. Mishri was not expensive thus every elderly used it and were habitual. Though there were was awareness in some of the female elderly and then had stopped the consumption of Mishri. A total of 47.3 percent of the sample either consumed tobacco or misri. Out of the 47.3 percent, about 28.8 percent were females and 18.6 percent were males. Most of the women used misri for cleaning their teeth. One of the main purposes to use misri was to relieve constipation. The consumption was on a daily basis and many times in the day. Alcohol consumption was relatively lower in the community. About 6 percent of elderly males and 0.5 percent of females consumed alcohol. Most of them consumed inexpensive and domestic alcohol.

Intake of medications (Ayurvedic)

In the Indian context consumption of medications is very high and alternative therapies like Ayurveda are very much seen in the setting. The table below describes the intake of ayurvedic medicines among the elderly.

Table 4. Intake of Ayurvedic medication among the elderly

Intake of medications (Ayurvedic)	Males		Females		Total	
	%	No	%	No	%	No
Yes	7.2	31	5.8	25	13.	56
No	35. 7	15 4	51. 3	22 1	0 87	37 5
x2 (1, N= 431) = 4.061, p= 0.04						

In this study, few of the elderly (13 percent) consumed Ayurvedic medications for their health issues. Out of which, 7.2 percent were males and 5.8 percent were females. There was a statistically significant relationship among intake of ayurvedic medications and gender.

Supplements

There was awareness among the elderly regarding health. Some of the elderly consumed supplements. About 18.8 percent of elderly consumed supplements for maintaining their health. More females (12.3 percent) consumed than males (6.5 percent). The supplements included calcium/ iron/ multivitamin.

Factors affecting dietary intake

Problems with teeth/ denture/ no teeth

Table 5. Problem with teeth with respect to gender and age group among the elderly

Age group/	60-69 years		70-79 years		80+ years		Total	
Gender	%	No	%	No	%	No	%	No
Male	12.6	54	10.3	44	2.5	11	25.4	109
Female	20.9	90	10.9	47	4.2	19	36.0	156
Total	33.5	144	21.2	91	6.7	30	61.4	265
x2 (2, N= 431) = 9.505, p= 0.009								

In this study problem with teeth was assessed by complaints and issues of elderly either suffering from tooth lessness/ toothache. About 61.4 percent of elderly complained about having a problem with teeth. Out of them 36 percent were females and 25.4 percent were males. There was comparatively a higher proportion of females complaining teeth problem as one of the habits observed in most females was usage *misri*[12] several times in the day, which caused decaying of the teeth. When the data were disaggregated according to the age group it was noticed that the number of elderly suffering from problems of teeth reduced with an increase in age. One possibility can be with higher occurrence among the young old's, with an increase in age the number of elderly also reduces thereby reducing the number in the oldest old category. A statistically significant relationship was observed among problem with teeth and the increase in the age group and gender.

Intolerance and allergy of any particular food

Intolerance of food can lead to insufficient food intake leading to deficiency of various nutrients and lower calorie consumption. Intolerance of any food was assessed in terms of complaints of the elderly suffering from skin rash/ stomach upset/ vomiting. The table below illustrates intolerance and allergies among the elderly with regard to different age group.

Table 6. Intolerance among elderly with respect to age group

Intolerance of any food	60-69 years		70-79 years		80+ years		Total	
	%	No	%	No	%	No	%	No
	11.2	48	6.7	29	3.0	13	20.9	90

In this study, about 20.9 percent reported intolerance of various foodstuffs, out of which 11.3 percent were females and 9.3 percent were males. About 11.2 percent, 6.7 percent, and 3 percent from the 60-69 years, 70-79 years and 80+ year's age group respectively complained intolerance

[12]Misri is a fine black powder made from roasting the tobacco, which is generally consumed by the elderly women for brushing (massaging) their teeth

of food. The list of foods which caused intolerance included dal and dal products (pulse and legumes food group) and *Vatal*[13] food items which included vegetables like potato, brinjal, drumsticks and cluster beans. Some elderly also complained acidity after intake of bread (fermented food), spicy food, lemon, tamarind, milk and milk products and soyabean, sour foodstuff, banana, and eggs. The number of elderly complaining from intolerance was seen reducing with an increase in elderly sub age group.

Allergy

About 11.2 percent of the elderly reported having allergies with intake of a few foodstuffs. Eggs and milk allergy/ lactose intolerance was found among the elderly in the study

Health problems hampering food intake

The health of the elderly depends on both intrinsic factors like physiological/ physical attribute which determine the health status and extrinsic factors like lifestyle, nutrition along with other confounding factors which affect the nutritional and dietary intake among the elderly. Some of the factors considered in this study include constipation, loss of appetite and disability.

Constipation

The table explains constipation among elderly with an increase in their age group and differentiation among gender.

Table 7. Constipation with respect to gender and age group among the elderly

Age group/	60-69 years		70-79 years		80+ years		Total	
Gender	%	No	%	No	%	No	%	No
Male	7.7	33	6.7	29	1.5	6	15.8	68
Female	11.6	50	6.1	26	2.5	11	20.2	87
Total	19.3	83	12.8	55	4.0	17	36.0	155

Many elderly (36 percent) complained of constipation out of which 20.2 percent were females and 15.8 percent were males. Yet there are about 15.2 percent elderly women complaining constipation as an issue. There is a decrease in the number according to the increase in the age group, however, there is no statistical significance.

Loss of Appetite

The following table describes the loss of appetite observed in the study with regard to gender and age group.

Table 8. Loss of appetite with respect to gender and age group among the elderly

Age group/	60-69 years		70-79 years		80+ years		Total	
Gender	%	No	%	No	%	No	%	No
Male	3.8	16	5.2	22	0.8	3	9.8	41
Female	8.5	37	6.1	26	1.1	5	15.7	68
Total	12.3	53	11.3	48	1.9	8	25.5	109

x2 (2, N= 431) = 13.910, p= 0.001

[13]Vatal is a Marathi word used to explain foodstuff causing gases

Out of the entire sample about 15.7 percent females and 9.8 percent males which accounted to almost one-fourth of the sample size, complained that they have reduced the amount of food consumption due to lesser appetite and other health issues. When the data were disaggregated with the age group there was a statistically significant relationship (p= 0.01) between loss of appetite and age group among the elderly population. It was observed in the male category that there were higher number of male (5.2 percent) complaining loss of appetite in the 70-79 years age group as compared to that of 60-69 years age group (3.8 percent). In case of the male elderly, with increase in age there is health deterioration and also monotonous food intake which leads to loss of appetite. Whereas in the case of females it was observed that the number of females complaining loss of appetite reduced with an increase in age group.

Disability

Ageing is associated with bodily changes which at times lead to disability and physical limitations. In this section, disability is captured in terms of mobility (physical disability) and sensory impairments like limited vision and hearing. The following table illustrates disability status among the elderly in terms of gender and age group.

Table 9. Disability with respect to gender and age group among the elderly

Age group/ Gender	60-69 years		70-79 years		80+ years		Total	
	%	No	%	No	%	No	%	No
Male	1.1	8	3.4	14	1.0	4	6.4	26
Female	3.5	14	2.2	10	2.2	10	7.9	34
Total	5.6	24	5.6	24	3.1	14	14.3	60

x2 (2, N= 431) = 21.191, p= 0.00

About 14.3 percent of the elderly had a disability of various form like blur vision, hearing and walking. About 8 percent of females and 6 percent of males suffered from the same. When the data was analysed from the age group context there was no clarity on how the increase in age group and disability were related. On assumption that with an increase in age the prevalence of disability increases which clearly seen from the above table. The elderly in the oldest old group is comparatively lower thus the prevalence seen among this age is lower. Nevertheless, there was statistical significance among both the variables.

Discussion and conclusion

To understand the food consumption practices and patterns various aspects of their daily life were identified and assessed which help to give a diverse picture. Few of the aspects include customs and traditions, food practices at the household level of each elderly, their food preference habits and number of meals. To summarise it was observed that there were a wide range of customs and traditions based on various religious practices, adhered by the elderly in the community. Food consumption depends on various other factors like food practices at each household which have underpinned social aspects. The sequence of food serving especially to the elderly members varied and depended on factors including gender role and family dynamics. In the case of households with children (adult) going for work, they were fed first and the assumption that the elderly lived back home thus they can consume later. In some cases, they were alone hence they ate by themselves thus there was no sequence followed by them. While in other cases grandchildren were given first. In some household's elderly men and other family members were fed before in such cases the quantity of food remaining for self (here female elderly) was less thus hampering the dietary intake and at times eating less than the requirement mainly

leaving them hungry and weak. To summarise some of the factors studied in this study under the influence of historical facts or rituals show patriarchal role in which males are served before followed by other family members and finally the women. This leads to lower intake of food by the women which have an effect on their nutrition status. Another aspect is assumption of food making decision made by the women in the household. Thus, the role of gender and decision of making the food was 'woman-centric'. The second aspect studied includes food expenditure, role of family member in decision making and getting the food items. As this study was carried out in a community, the caregivers (children and family members) of the elderly worked in different organized and unorganized sector with limited salaries. It was observed that at the end of the month the participants faced difficulty in food access and at times there was limited economic potential of the household. The third aspect discusses frequency of food shopping and lastly beneficiaries of government schemes to understand coverage especially in community settings. In every household there are unique practices in terms of food expenditure, preparation food sequence of serving food and other practices were adapted and related to individual family dynamics of that household. Some of these practices like food purchasing which was more adult children centric and decision and preparation of food was women centric. Further in the study food habits were assessed and it was observed that a very high proportion of elderly sample (83.3 percent) consumed nonvegetarian food one of the reasons for such high consumption was as vegetables and fruits were expensive thus unaffordable. Non-vegetarian items included primarily dry fish, mutton or chicken (leftover/ discarded) pieces which were obtained at lesser prices from the meat shop and to larger extent eggs. Some elderly reported consuming non-vegetarian food as the quantity of meat required is less and can be made in bulk (curry/ gravy kind preparation) leading to consumption by the larger number of members of the household and it can be consumed for two whole meals. Some elderly were given left-over meat by the shopkeepers which included the parts of the meat which are generally discarded (intestine, skin, fat, feet etc.). Dry fish was bought and stored taking into account a month's consumption by many elderly as it was cheaper and available throughout the year.

Substance abuse was reported by some elderly specifically in case of males in the community they consumed tobacco, smoked bidis, ghutka and consumed alcohol. Among the women, a common practice of brushing the teeth with mishri was observed. The reasons for substance abuse was mainly myths pertaining its effect on their overall day to day life.

The study discusses other factors which may affect the food intake like the dental health. A study confirms healthy dentition which is defined as having more than twenty teeth plays an important role in having a healthy diet leads to a satisfactory nutrition status and an acceptable nutrition status among the elderly (Marcenes, Steele, Sheiham, & Walls, 2003). *Edentulism* a condition of losing teeth which was observed among the elderly also many elderly reported having a toothache which further hampers their food intake. The diet of the participants was very low in terms of vegetables and fruits food groups. These food groups are known to add roughage which thereby helps in the process of digestion. When the elderly was asked about constipation there was a large proportion who complained about this issue. With an increase in age, it is observed that it often leads to age-related disorders. The elderly is also subjected to psychological issues like spousal loss and bereavement which lead to loneliness and boredom. Thus, such social isolation limits their dietary intake causing to have lesser meals in the day. The elderly is also subjected to illnesses causing change and restrictions in their diet which add on a lower intake of food. Many elderly have a sensitive gut (atrophic gastritis) which often leads to loose motions and diarrhoea further hampering their intake. Poor dental health, taste, and smell one of the most important sensory responses are hampered with an increase in ages which lead to limited food choices among the elderly.

To summarise some of the factors which can affect the dietary intake and further discussed, these include problems with teeth/ denture/ no teeth which was observed in more than half the elderly in the study, intolerances which was observed among one fifth of the participants. Lastly health problems like allergies, appetite issues, constipation and disability were discussed in the paper. It can be summarized that the food intake among the elderly is definitely not the mere intake of food but an interplay of large number of factors which contribute to their food consumption.

Acknowledgements

I would like to thank each participant of my study for their time.

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