

## *International Journal of Scientific Research and Reviews*

### **Use of Spices and Condiments by Urban Hyderabad's**

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#### **ABSTRACT**

Spices play an important role as flavoring agents in the diet and are used throughout the world.. Spices are known to have several health benefits in fact its addition makes traditional Indian home-cooked food one of the healthiest meals eaten around the world In recent times consumption pattern of spices is gaining importance as various phytochemicals present in spices have been recognized to have health promoting effects.. This study was planned to assess the consumption pattern of spices. Two hundred and forty households in the urban areas of Hyderabad in India. Spice intake frequency questionnaire was prepared, pretested on 10 households. Fifteen commonly used spices were selected based on the pretest questionnaire. Turmeric and chilies are used daily by 100 and 76.7 percent respectively. Omum is least consumed (6.2 percent), it is used as a medicine for indigestion. Other spices consumed daily by more than 50 percent households are garlic, onions cumin seeds, tamarind and ginger. Many of these spices are used in rice preparations or curries or with dhal. Consumption of chilies and turmeric per annum are slightly more than the all India figures - 990g and 400g respectively while all India per family consumption is 926g and 343 g .respectively. With respect to garlic, ginger, tamarind and black pepper the figure are more than, double the quantity of All India figures. The growing consciousness among people about health benefits of spices coupled with availability, awareness, and accessibility increased the spice consumption among these middle income group of families.

**KEY WORDS:** Spices, health benefits, food frequency questionnaire, phytochemicals

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## INTRODUCTION

Spices are defined as vegetable products such as leaves, flowers, seeds, and roots that are rich in essential oils and aromatic principles<sup>1</sup> Spices are the dried part of the plant that contain volatile oils or aromatic flavors such as buds (cloves) bark (cinnamon), root (ginger) berries (black pepper) and seeds (cumin and coriander)<sup>2</sup> Spices play an important role as flavoring agents in the diet and are used throughout the world. Every spice has its own flavor and essence and its addition or omission can really make or break a dish.<sup>3</sup> Spices are known to have several health benefits in fact its addition makes traditional Indian home-cooked food one of the healthiest meals eaten around the world<sup>4</sup>. Spices are commonly used as condiments or employed for other purpose – fragrance, preservatives or medicinal quality. India is known as home of spices, it produces 75 spices and emerged as one of the largest producer, consumer and exporter of spices in the world.<sup>1</sup> Importance of spices saw a great change between 1994-2012. Consumption of dry chili and tamarind reduced on the other hand garlic, ginger, turmeric increased. The rising importance of mixed spices and being in demand, with peoples' inclination towards ready to cook, ready to eat and processed food products is seen. Studies on the consumption pattern of spices in the recent times are scanty. With fast changing lifestyles and urbanization there had been considerable changes in the dietary pattern. The present study focuses on the use of spices in daily life.

## METHODOLOGY

In recent times measurement of dietary intake of spices is gaining much significance as various phytochemicals present in spices have been recognized to have health promoting effects and play preventive role in chronic diseases.<sup>5,6</sup>

**Study Population:** 240 urban families in selected locations in different zones in Hyderabad city formed the study group. The households belong to middle income and different religious groups – Hindus and Muslims Demographic profile consisting of religion, type of family, type of diet, age of the respondent, family size, education and employment status is collected.

**Spice Intake Survey:** Spice intake questionnaire was prepared to collect information on the consumption pattern and intake in each household. , type of spice used, frequency of usage –daily, alternate day (3 times /week) twice week, once a week and often ( 1 or 2 items per month).Quantity purchased for three continuous month was taken calculated per annum. Reasons for choice of spices

and condiments and their related taboos were collected Semi structured questionnaire prepared and pretested on 10 households. . Methods used are food records , dairies and food frequency questionnaire.

## RESULTS AND DISCUSSION

The responses obtained from the families are presented as demographic profile, consumption pattern of spices and the medical benefits as perceived. .

**Demographic Profile:** Of the 240 households, Hindus constitute 73 percent and Muslims 27 percent. Among Hindus nuclear families are 87.5 percent, joint families 2.3 and extended families 10.2 percent. Among Muslims 82.5 percent are Nuclear families, joint families are 8.3 percent extended are 9.2 percent. (Table 1)

**Table 1. Type of Family**

Type of family	Hindus	Muslims	Total
Nuclear	87.5 (154)	68.7 (44)	82.5 (198)
Joint	2.3 (4)	25.0 (16)	8.3 (20)
Extended	10.2 (18)	6.3 (4)	9.2 (22)
Total	100 (176)	100 (64)	100 (240)

Respondent's age ranged between 20-70 years. (Table 2). Majority (82.6 percent) are between 31-50 years. In the 20-30 are 2.5 percent and above 51 years are 15.0 percent.

**Table: 2. Age wise Distribution of Respondents**

Age in Years	No	Percent
20- 30	6	2.5
31- 40	136	56.7
41-50	62	25.9
51-60	26	10.8
61-70	10	4.2
	240	100

Family size ranged between 2 to 10 members. (Table 3). Among Hindu and Muslim families majority are with 5 to 7 members, percentages are 58.5 and 56.3 respectively. Hindu Families with 2-4 members are more ( 39.8%) while in the group with 8-10 members Muslim families are more

(29.6%). Overall percent did not indicate much differences between the two religious groups therefore both are combined and considered as one group for further aspects .

**Table: 3. Family Size of Respondents**

No	Hindus		Muslim		Total	
	%	No	%	No	%	No
2-4	39.8	70	14.1	9	32.9	79
5-7	58.5	103	56.3	36	57.9	139
8-10	1.7	3	29.6	19	9.2	22
	100	176	100	64	100	240

All family members are educated (Table 4). Undergraduates are 6.2 percent among males and 29.8 percent among females. Graduates are 51.4 percent (males) and 28.3 percent (females). Post graduates are more in females (28.3 %) than in males (19.3%). Male Engineers are more (19.5%) than female engineers (7.1 %) . Doctors among males and females are 3.6 and 2.9 percent respectively.

**Table 4: Educational Status of Family Members**

Education	Males		Females		Total	
	%	No	%	No	%	No
Under						
Graduates	6.2	24	29.8	104	17.3	128
Graduates	51.4	200	28.3	99	40.5	299
Post graduates	19.3	75	32.5	114	25.6	189
Engineering	19.5	76	7.1	25	13.7	101
Medicine	3.6	14	2.3	8	2.9	22
	100	389	100	350	100	739

**Scientific and Local names of the selected spices:** Based on the commonly used spices list obtained in the pretesting of the questionnaire, 15 commonly used spices were identified<sup>7</sup>. Their Scientific and local names are presented in Table 5.

Table 5: Scientific and Local names of the selected spices

S.No	Name	Scientific Name	Local Name
1	Red Chilies	Capsicum annum L & frulescens L	Lal mirchi
2	Turmeric	Curcumin Lango L	Haldi ( Pasupu)
3	Cumin Seeds	Cumisum cyminum	Zeera
4	Coriander Seeds	Corinnalum sativum L	Dania
5	Mustard	BrasicaJuncea	Rai( avalu)
6	Fenugreek Seeds	Triganella foenum groecum	Menthi
7	Black Pepper	Peper Nigrum L	Kali Mirchi (Miriyalu)
8	Cloves	Syzygium aramattiain	Lavang
9	Cardamom	Eletlania cardamamum Maton	Ilachi
10	Cinnamon	Cinnamamum Zeylanicum Breyn-	Dachini
11	Caraway seeds	Carum Carvi L	Shajeera
12	Fennel seeds	Foeniculum vulgare Mill	Sounf
13	Asafetida	Ferula asafoetida	Hing
14	Garlic	Allicum Sativum L	Lassan/ Vellulli
15	Ginger	Zingiber Officinale Rosc	Adharak/Allum
16	Tamarind	Tamarindus indica L	Imli/Chintapandu
17	Onion	Allium Cepa	Pyaz/ ullipayi

**Consumption pattern of spices:** In Norway it was reported that out of 27 different herbs and spices investigated only 8 were consumed by 1/3<sup>rd</sup> population<sup>11</sup>. In the present study 7 spices are used daily by more than 50 percent of the households, they are chilies, garlic, onions, cumin seeds, turmeric, tamarind, and ginger. Others consumed during the week. Aizwan is used only as a medicine, the percent ranged between 6.2 daily to 52.5 used when required (Table 6). Chilies and turmeric are being the most frequently used spices in the present study. Earlier studies in India<sup>8,9,10,5</sup> showed that frequency of consumption of red chilies and turmeric is higher than most other spices, which is consistent with observations of the present study. Chilies and turmeric were used in all the routine dishes particularly curry, chutney and dhal preparations whereas cloves, cinnamon, cardamom, caraway seeds and black pepper were dominant spices used in rice dishes by majority of households. In most of the dishes consumed in North Eastern Thailand, use of chilies and turmeric was common.

Spices have antioxidant activity due to phenolic compounds mostly flavonoids present in them. These antioxidants may also act as natural preservatives by preventing or slowing of spoilage of foods<sup>13</sup>. Most of the families used chili, garlic and mustard as a preservative in pickles in the present study.

**Table 6: Frequency of Consumption of Spices**

Spices &condiments	No. of HH		Daily		3/week		2/week		1/week		often	
	%	HH	%	No.	%	No.	%	No.	%	No.	%	No.
Chilies	100	240	76.7	184	12.5	30	3.8	9	4.2	10	2.9	7
Garlic	100	240	70.8	170	13.7	33	3.8	9	5.4	13	6.3	15
Onions	97.5	234	67.9	163	12.5	30	8.8	21	5.0	12	3.3	2.5
Asafetida	72.9	175	12.9	31	4.3	10	10	24	10.8	26	35	84
Cardamom	97.1	233	22.5	54	3.7	9	8.3	20	17.6	42	45	108
Cloves	92.9	223	20.8	50	9.2	22	10	25	15.0	36	37.5	90
Coriander seeds	92.9	223	40.0	96	7.5	18	7.9	19	13.3	32	24.2	58
Cumin seeds	93.8	225	66.6	160	7.9	19	4.6	11	5.0	12	9.6	23
Fenugreek seeds	86.7	208	35.8	86	7.1	17	9.6	23	10.0	24	24.2	58
Omum	73.8	177	6.2	15	2.9	7	4.2	10	7.9	19	52.5	126
Pepper	97.7	232	33.3	80	11.3	27	7.1	17	12.9	31	32.1	77
Turmeric	100	240	69.5	167	9.6	23	9.6	23	11.3	27	0	0
Cinnamon	100	240							33.3	80	66.7	160
Ginger	100	240	68.8	165	13.7	33	8.3	20	5.0	12	4.3	10
Tamarind	100	240	77.1	185	13.7	33	3.8	9	5.4	13	0	0

Consumption of spices varied with the type of dish prepared. (Table 7) which was also observed in the study in Thailand<sup>12</sup>.

Annual consumption was calculated by taking three months actual consumption (August, September, October) and calculated for consumption per year (Table 7). Chili and turmeric consumption is slightly more than the All India average annual consumption values, while garlic, ginger and black pepper are double and tamarind is three times more than all India average annual consumption values.

**Table 7: Spices Used in Various Preparations**

Rice Preparations	Curries	chutneys	Dhal
Red chilies, Turmeric, Cumin & coriander seeds, mustard, fenugreek seeds, black pepper, cloves, cardamom, cinnamon caraway seeds, fennel Asafetida Onions tamarind, ginger	Chilies, Turmeric, Cumin seeds, mustard , fenugreek seeds, black pepper, cloves, cardamom cinnamon caraway seeds, ginger Asafetida	Red chilies, Turmeric, Cumin seeds, Coriander seeds, mustard fenugreek seeds, Asafetida, tamarind and ginger	Red chilies, Turmeric, Cumin seeds, mustard fenugreek seeds, Asafetida, tamarind

**Table 8. Consumption Spices by families**

Spices	Observed values kg /year	All India g/annum <sup>1</sup>
Chilies	0.99	South 926
Turmeric	0.40	343
Garlic	1.00	762
Ginger	2.00	406
Tamarind	3.99	1014
Black pepper	0.20	99gms
Mustard	2.80	NA
Cumin seeds	0.80	NA
Fenugreek	0.39	NA
Onions	72.0	NA

**Medicinal Properties of Spices:** Herbs and spices beneficial for body's immune system are – turmeric, ginger cayenne, pepper, garlic, cinnamon, rosemary, thyme, cardamom <sup>13,14</sup>. Information on the medicinal value of some of the spices as perceived by the families is given below:-

**Garlic:** decreases inflammation and sore throat, has cholesterol lowering effect, it is considered to improve milk production in a lactating mother (galactogogue). Garlic is used instead of onions for three days immediately after delivery.

**Turmeric:** has curcumin. It reduces exercise linked muscle damage. It is used to reduce inflammation, for any open wound turmeric is applied. It is mixed with milk to relieve cough and cold.

**Black pepper:** Promotes weight loss, helps relieve cold and cough , improves digestion, treats many skin problems, haldi-doodh-kali mirchi is a therapeutic drink.

**Cumin seeds:** aids in digestion, it is considered to reduce blood sugar levels in diabetics ,when it is boiled with water - the zeera- pani is taken to reduce blood sugar levels.

**Cloves:** Cloves are considered as anti-bacterial, anti-fungal, and antiseptic and is said to have omega 3 fatty acids<sup>3</sup>. Cloves are consider to relieve tooth aches. Clove oil is smeared on the part of any sprain to relive pain.

**Coriander seeds:** is used for digestion problems including upset stomach, loss of appetite, diarrhea, and intestinal gas. It is also used to treat measles, hemorrhoids, toothaches, worms, and joint pain, as well as infections caused by bacteria and fungus.

**Ajwain:** used to relieve stomach pain and indigestion. After recovery from fever ajwain, salt ghee and turmeric are added to hot rice and a few morsels are given to the patient to help digestion and prevent recurrence of fever.

## **CONCLUSION:**

Increasing consumption of species in the present circumstances is attributed to health benefits and due to the availability of mixed spice powders making cooking easy .

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