

# AN EPIDEMIOLOGICAL STUDY OF THE MORBIDITY PATTERN AMONG THE ELDERLY POPULATION IN AHMEDABAD, GUJARAT

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## ABSTRACT

**Background:** Ageing is a part of the development sequences of entire life span, from prenatal growth to senescence. India is going to be having highest number of Elderly in world by year 2025. Morbidity among Elderly is a serious problem for health service utilization in India due to increase in elderly population.

**Aims & Objectives:** To study the socio demographic profile and morbidity pattern among geriatric population of study area.

**Methodology:** It was cross sectional community based study done in Kalipinagar area of UHTC. All elders above age of 60 years are covered in survey on house visit. Data analysis was done using EPI-Info 6.4.

**Result:** Total 218 elderly were surveyed (Male =74 & Female=144). Mean age of female was 50.31 & of male was 57.44. Among elderly surveyed, 92% were living in joint family. Nearly 34% of female were illiterate. 47.7% of elderly were earning with maximum wages between 1000- 2000 Rs/month. Among them majority were suffering from loco motor, visual & hypertension problem. Gender wise association was found significant when comparison was done between normotensive & pre hypertensive but not with hypertensive. Statistical significance was there between weights of male & female but no significance was there in BMI. Among tobacco users gender wise difference was statistically significant. Pallor ness was common in both the gender.

**Key words:** BMI, elderly morbidity pattern, smoking

## INTRODUCTION

Aging has been define as progressive, generalized impairment of function leading to lose of adaptive response to stress and growing risk of age related disease, resulting in progressive increase in age specific mortality.<sup>1</sup>

Hippo crates (460 - 370 BC) recognized that certain diseases and ailment were peculiar to old age. Senescence was thought to be cause by progressive diminution of the store of innate

heat or vitality in life by normal course of event.<sup>2</sup>

In India the elderly population is 10 crore forming 10% of total population and it is estimated to reach up to 15 crore by the year 2020. The demographic population is rising due to better health control of communicable diseases resulting in increase longetivity.<sup>3</sup>

Three out of four countries projected to have the largest number of people in the year 2025 are

located in Western pacific and South East Asia: China, India and Indonesia <sup>4</sup>

From the morbidity point of view, at least 50% of the elderly in India have chronic diseases. This poses a greater responsibility on the health services especially in developing countries like India where there is a greater strain on available health infrastructure. <sup>5</sup>

The population of this study was to delineate the socio economic & health profile of geriatric population in an urban area.

## MATERIALS & METHODS

The present study was conducted in urban field practice area (UHTC) of Department of Community Medicine BJ Medical College Ahmedabad. This center caters the health services among five region having 500 families in each. Random selection of one region was done & Kalapinagar comes out as our survey area. The team visited the selected area; all the houses were enquired for the presence of an elderly of age of 60 years or more. We have

included only those persons above 60 years of age who have given informed consent. The information was collected in a pre design & pre tested proforma. Physical examination and anthropometrics measurement was done. Blood pressure was measured by standard method and criteria using standard sphygmomanometer. The data was entered in the computer & analyzed on the EPI-Info 6.4.

## OBSERVATIONS AND DISCUSSION

In our study out of 218 elderly people 74 (33.9%) were male & 144 (66.1%) were female. Mean age of male and female was 67.73±7.12 and 68.11±7.73 respectively and the difference was statistically not significant ( $Z=0.36, P>0.05$ ) As per Bhatia,etal out of total 361 aged person , 152 (43.76%) were males & 209 (57.89%) were females <sup>6</sup>. Kishore & Garg found 55% of females & 45% of males in the village Anji of Wardha district <sup>7</sup>.

**Tables 1:** Socio demographic profile of study population

		Female (%)	Male (%)	Total (%)
Age group (Years)	60-70	104 (72.2)	54 (73.0)	158 (72.5)
	70-80	29 (20.1)	14 (18.9)	43 (19.7)
	80-90	10 (6.9)	5 (6.8)	15 (6.9)
	90-100	1 (0.7)	1 (1.4)	2 (0.9)
Education	Illiterate	49 (34.0)	2 (2.7)	51 (23.4)
	Primary	75 (52.1)	25 (33.8)	100 (45.9)
	Secondary	15 (10.4)	36 (48.6)	51 (23.4)
	Higher sec	4 (2.8)	8 (10.8)	12 (5.5)
	College	1 (0.7)	3 (4.1)	4 (1.8)
Occupation	Sedentary	35 (24.3)	50 (67.6)	85 (39.0)
	Moderate	8 (5.6)	11 (14.9)	19 (8.7)
	Non	101 (70.1)	13 (17.6)	114 (52.3)
Family type	Joint	134 (93.1)	68 (91.9)	202 (92.7)
	Nuclear	10 (6.9)	6 (8.1)	16 (7.3)
Total		144 (66.1)	74 (33.9)	218 (100.0)

In Kalapinagar 34% of females were illiterate & only 2.7% of male were illiterate. Among female who were literate the maximum (52.1%) were primary educated while among male who were literate the maximum (48.6%) were secondary educated. Only 1.8% elderly were colleges pass out. Kishore & Garg found 59% of males & 9.9% of females had a primary & secondary education.<sup>7</sup> Gurav & Kartikeyan said 58.76% of males 22.85% of female had taken education up

to secondary level & only % of males had taken higher secondary education.

In our area 52.3% elderly were not indulge in any occupation & 39% were working but in sedentary way<sup>8</sup>.

Elderly of our survey area 92.7% were living in joined family. Srivastava & Mishra's revealed that the majority of elderly were found living with their spouse & other member.<sup>9</sup> (Table 1)

Among 47.7% of working elderly 64.4% earned 1000-2000Rs /month & 6.8% were earning 4000-7000Rs/month. As per National Sample Survey 52<sup>nd</sup> Round 1995-96 reveals that as many as 70% aged had to depend on others for their daily maintenance. The situation is worse for elderly females. A significant proportion of working population is engaged in regular wage employment & in this category there is a fixed age of mandatory superannuating. People are provided with retirement benefits. As there is no age limit for superannuation people continue to work even after 60 years<sup>10</sup>. (Table 2)

**Table 2:** Monthly income of study population

Monthly Income (Rs)	Frequency (%)
1000-2000	67 (64.4)
2000-3000	20 (19.2)
3000-4000	10 (9.6)
4000-5000	6 (5.8)
6000-7000	1 (1.0)
Total	104 (100.0)

Morbidity profile of our surveyed elderly had maximum problem of locomotors (48.6%), followed by vision (42.7%) & hypertension (34.4%). In our study only 3.7% of elderly had psychosocial problems.

**Table 3:** Morbidity pattern among study population

Morbidity	Male (%)	Female (%)	Total (%)
Hypertension	19(25.7)	56(38.9)	75 (34.4)
Locomotors	34(45.9)	72(50.0)	106 (48.6)
Respiratory	20(27.0)	24(16.7)	44 (20.2)
Psychosocial	1(1.4)	7(4.9)	8 (3.7)
Diabetes	7(9.5)	16(11.1)	23 (10.6)
Communicable	2(2.8)	2(1.4)	4 (1.9)
Hearing	12(16.2)	27(18.8)	39 (17.9)
Skin	3(4.1)	5(3.5)	8 (3.7)
Vision	27(36.5)	66(45.8)	93 (42.7)
Other	8(8.9)	9(6.3)	17 (7.8)

There was no statistically significant difference of morbidity pattern found among male and female ( $\chi^2=11.05, P>0.05$ ) Rahul P etal found that 44.2% of male & 54.5% of female were having hypertension. While 44% of elderly were having musculo skeletal problame. Female are having more problem than male. Psychosocial problems were also found among 42% <sup>11</sup>. Gurav &

Kartikeyan found 7.92% of the asthmatics elders where as in this study 20.2% were having respiratory complaints including asthma <sup>8</sup> (Table 3).

There was no statistically significant difference found of sleeping pattern among male and female ( $\chi^2=3.23, P>0.05$ )

16.5% of the elderly were found who are not having hypertension during our visit. But 40.3%(39.2% of male & 41% of feamles) had hypertension measured during our visit. As per HM Swami etal 53.59% of male & 61.24% of female had hypertension.<sup>12</sup> As compared to Normotensive male (22.2%) and females (77.8%), Statistically significant difference ( $Z=2.1, P<0.05$ ) was found among pre hypretensive male(39.4%) and female(60.6%) while the no significant difference ( $Z=1.26, P>0.05$ ) among hypertensive male(33%) and female(67%)(Table 4).

**Table 4:** Distribution of study population according to JNC VII Hypertension Criteria<sup>15</sup>

Categories	Male (%)	Female (%)	Total (%)
Normal	8 (10.8)	28 (19.4)	36 (16.5)
Pre hypertension	37 (50.0)	57 (39.6)	94 (43.1)
Stage-I	24 (32.4)	43 (29.9)	67 (30.7)
Stage-II	5 (6.8)	16 (11.1)	21 (9.6)
Total	74 (33.9)	144 (66.1)	218 (100.)

**Table 5:** Distribution of study population as per Body mass Index (BMI)<sup>16</sup>

BMI	Male (%)	Female (%)	Total (%)
<18.5	7 (9.5)	14 (9.7)	21 (9.6)
18.5-24.9	51 (68.9)	89 (61.8)	140 (64.2)
25-29.9	13 (17.6)	34 (23.6)	47 (21.6)
30-39.9	2 (2.7)	6 (4.2)	8 (3.7)
≥40	1 (1.4)	1 (0.7)	2 (0.9)
Total	74 (33.9)	144 (66.1)	218 (100)

Among our elderly 21.7% of male & 28.5% of female were overweight as per BMI classification. Difference between mean weight of Male (57.44±8.75) and female (50.31±9.53) was statistically highly significant ( $OZ=5.57, P<0.001$ ). Mean BMI of Male and female was 22.8±3.32 and 23.03±3.97 respectively. Which was statistically not significant ( $Z= .34, P>0.05$ ) As per MK Sharma etal 21.27% elderly were over weighted.<sup>13</sup> (Table 5)

Total 26.60% elderly were addicted to different form of tobacco. Among the tobacco user 25% of them were smoking & 25% were snuffing it. 50% were using tobacco in some other form. Tobacco addiction was found in 72.41% male & 27.58% female in form of smoking, chewing, snuffing & pan masala. There was Statistically significant difference found of smoking pattern among male and female ( $\chi^2=69.02, P<0.001$ ). Bala et al in their study of tobacco use in Gujarat state found in age group of 65 years or older 10.68% were tobacco chewer, 20.36% wire snuffing & 2% were using more than one form of tobacco & 64.73% were smokers. This study again observed that snuffing was more common in elderly above 65 years age group especially in women, illiterate & in household occupation.<sup>14</sup>

Only one female had edema & clubbing. We found almost similar percent of pallor ness in male (22.97%) & female (22.22%).

## REFERENCES

1. WHO, Dey AB.Ed, Health care of elderly. A Manual for Trainers of physicians in Primary & secondary health care facilities, who regional office for South East Asia 2001; 11-13.
2. WHO, Dey AB.Ed, Health care of elderly. A Manual for Trainers of physicians in Primary & secondary health care facilities, who regional office for South East Asia 2001; 1-11.
3. Bhawalkar. JS, Dangore Js, Ratanaparikh DH, Tapkir VB. Comparative evaluation of health education in geriatric population in urban & rural areas. Medical Journal of Padmashree Dr. D Y Patil Medical College, Pimpri 2006, 1 (1): 31-35.
4. WHO Epidemiology & Prevention of cardiovascular diseases in elderly people Technical report series 1995; 853, 5, 2-3,21.
5. Kumar V. Aging in India. Indian J Med Res.1997; 106:257-64.
6. Bhatia SPS, Swami H M , Thakur J S , Bhatia V, A study of health problem & loneliness among elderly in Chandigarh., 2007, 32 (4);255-58.
7. Kishore .S & Garg B S, Sociomedical problems of aged population in a rural area of Wardha District, IJPH 1997;41(2) 43-8.
8. Gurav R V, Kartikeyan S, Problem of geriatric population in urban area, Kalwa Thane, Bombay Hospital Journals 2002 Jan, 44 (1); 47-51.
9. Srivatava H C, Mishra N R, Living arrangement & morbidity pattern among elderly in rural India. International Institute for population science Mumbai 2005: 1-7.
10. Basu S, Das P K. Socioeconomic & Health Implication of population ageing in India, India Journal of Gerontology 2008; 85-106.
11. Rahul P, Chaudary S K, Singh V S. A study of Morbidity pattern among geriatric population in an urban area of Udiapur Rajasthan I J C M 2004 : 29 (1): 35-40.
12. HM Swami, Vikas Bhatia, Rekha Dutta, SPS Bhatia. A community based study of the morbidity profile among the elderly in Chandigarh, Bahrain Medical Bulletin, Vol. 24, No 1, and March 2002.
13. M K Sharma, H M Swami, V Bhatia , A Verma, S P S Bhatia, G Kaur. An Epidemiological study of correlates of osteo arthritis in geriatric population of UT Chandigarh . Indian Journal of Community Medicine Vol 32, No. 1 (2007-01-2007-08).
14. Bala DV, Bodiwala I, Patel DD, Shah PM, Epidemiological determinants of Tabasco use in Gujarat state IJCM 2006; 31(3): 173-76.
15. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure U.S. Department of Health and Human Services, National Institutes of Health. National Heart, Lung, and Blood Institute National High Blood Pressure Education Program , NIH Publication No. 04-5230, August 2004.
16. Joshi P. P Integrated Disease Surveillance Project Training Manual for field workers & field supervisors BMI, Waist to Hip ratio. WHO surveillance Handouts The GOI- WHO collaborative Programme 04-05.