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A study on morbidity pattern among geriatric population in urban field practice area of medical college, Udaipur, Rajasthan, India

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Abstract
Background: Geriatrics is the science that deals with the study of diseases and their treatment peculiar to the old age. Elderly population has special health problems that are basically different from those of adult or young.
Materials and Method: It was a hospital based cross-sectional study, conducted in Urban field practice area of Udaipur, Rajasthan. The geriatric patients aged 60 years or more were included in this study.
Results: A total of 900 geriatric patients registered. Majority of the elderly (59.4%) were in age group of 60-70 years. Morbidity profile among our study, elderly had maximum problem of Musculoskeletal (48%), followed by hypertension (36.3%), diabetes (33.9%) and gatro-intestinal problems (30.6%). Lowest morbidity was dental problems (9.3%) in our study. Mostly all types of morbidity were found more in female with comparison to male except genito-urinary problems.
Conclusion: The proportion of elderly is becoming higher and usually associated with increasing medical and social problems. So awareness among the elderly population should be created to prevent and early detection of the chronic diseases along with social support.

Keywords: Geriatrics, elderly, morbidity, urban

Introduction
Over the long run, if fertility continues to decline, the share of the population of working age also declines and that of older persons increases, leading to rising dependency ratios and when this happen, the phenomenon is called the 'demographic burden'. This is an inevitable consequence of demographic transition and every country has to face this problem with development and successful demographic transition [1].

Geriatrics is the science that deals with the study of diseases and their treatment peculiar to the old age. Ageing is a normal, inevitable, biological phenomenon and it is not known when the old age begins. United Nations considers 60 years as the age of transition to the elderly age group [2]. The global population aged 60 years or more numbered 962 million in 2017, more than twice as large as in 1980. It is expected to double again by 2050, when it is projected to reach nearly 2.1 billion [3].

Three out of four countries projected to have largest number of people in the year 2025 are located in Western pacific and South East Asia: China, India and Indonesia.[4] The share of elderly population is projected to increase from 8% in 2015 to 19% in 2050. By the end of century, the elderly will constitute nearly 34% of the total population of the country [5].

Ageing leads to a generalized deterioration of many organs and systems that leads to a lower effectiveness of physiological functions accompanied by an increase in risk factors for various diseases. Elderly population has special health problems that are basically different from those of adult or young. Most diseases in geriatric population are chronic in nature like cardiovascular disease, hypertension, arthritis, diabetes, stroke, cataract, deafness, cancer, kidney disease, dementia, chronic infections etc. Mostly geriatric persons may suffer from multiple chronic conditions, visual defects, hearing impairment and deterioration of speech which can cause social isolation [6].

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Objectives
To study the socio-demographic profile and morbidity pattern among geriatric population of study area.

Methods
The study was a hospital based cross-sectional study, conducted in Urban Health Training Centre (UHTC), Dhanmandi area attached to the Department of Community Medicine, RNT Medical College, Udaipur, Rajasthan from July 2019 to September 2019. The geriatric patients aged 60 years or more of both sexes were included in this study. Those geriatric patients who were seriously ill and not willing to participate in study were excluded. Informed verbal consent was taken from each patient before interview. A pre-designed pre-tested semi-structured questionnaire was used which contained questions relating to the information about patient, socio-demographic profile and morbidity pattern. Physical examination and anthropometrics measurement was done. Blood pressure and BMI were measured by standard methods. All data was entered in Microsoft Excel 2010 spread sheet and analysed by appropriate statistical methods using SPSS software version 21.

Results and Discussions
A total of 900 geriatric patients above the age of 60 years registered for study; 515 (57.2%) were male and 385 (42.8%) were female with male to female ratio 1.3:1. Similar observations were found in the study done by Baweja S *et al*. [7].
Majority of the elderly for both sex (total=59.4%; male=57.3% and female=62.3%) were in age group of 60-70 years followed by 71-80 years of age (34.7%) and a small fraction (5.9%) of patients were observed the age group of more than 80 years of age. Lena A *et al* reported that nearly 73% of study subjects belonged to 60-69 years of age group [8].
About 3/4th of the study population belonged to Hindu community followed by 23.1% to Muslim community.
Majority (33.6%) of respondents were illiterate, in which mostly were female (51.7%) as compared to male (20%). Among 66.4% literate, 23.6% educated up to primary level, 21.1% up to secondary level followed by 17.6% were up to higher secondary level. Only 4.2% had graduate or post-graduate level. M Kanna *et al* also found in their study that 78% of study population were literate [9].
43.9% of the respondents were unemployed followed by 25.9% unskilled worker, 16.7% semi-skilled worker, 3.7% semi-professional and only 9.9% were skilled worker. In all category of occupation, proportion of male subjects was higher than female subjects except in category of unskilled worker.
33.2% respondents had lost their life partner in our study. There were 64.4% patients had married life. 24.1% of the elderly male were widower while 45.5% of the female were widow among the study population. Bhatia *et al* found in their Chandigarh that 59% were married, 39.3% were widows/widowers, 0.6% was separated/divorced and only 1.1% was unmarried [10]. Venkatarao *et al* also found in their study that 75% males and 32% females were married, 23% males and 67% females were widowed, 1% unmarried, divorced and separated for both gender [11].
Majority of the respondents (77.6%) belonged to joint family system. Srivastava *et al* revealed that the majority of

elderly were found living in joint family [12].
Socio-economic status revealed that there were mainly three classes from where elderly (93.4%) belongs to; upper middle, upper lower, lower and lower middle. Most of the elderly patients (48.9%) belonged to class IV. Only 1.2% of the elderly belongs to upper socio-economic group. In study of Chandrashekhar R observed that maximum 36.8% were belonged to class IV and followed by 28.6% and 28.1% in class III and class V respectively [13].
32.7% were addicted to tobacco, alcohol, smoking etc. Tobacco addiction was found in 53.9% male and 20.3% female in form of smoking, chewing and pan masala. Bala *et al* in their study of tobacco use in Gujrat state found that 10.68% were tobacco chewer, 20.36% were snuffing and 64.73% were smokers in more than 65 years age group [14]. (Table 1)

Table 1: Distribution of Geriatric patients according to Socio-demographic profile

Characteristic	Male (n=515) %	Female (n=385) %	Total (n=900) %
Age group (years)			
60-70	295 (57.3)	240 (62.3)	535 (59.4)
71-80	192 (37.3)	120 (31.2)	312 (34.7)
81-90	25 (4.9)	20 (5.2)	45 (5)
>90	3 (0.6)	5 (1.3)	8 (0.9)
Religion			
Hindu	399 (77.5)	269 (69.9)	668 (74.2)
Muslim	101 (19.6)	107 (27.8)	208 (23.1)
Others	15 (2.9)	9 (2.3)	24 (2.7)
Education			
Illiterate	103 (20)	199 (51.7)	302 (33.6)
Primary	142 (27.6)	70 (18.2)	212 (23.6)
Secondary	127 (24.7)	63 (16.4)	190 (21.1)
Higher Secondary	113 (21.9)	45 (11.7)	158 (17.6)
Graduate or above	30 (5.8)	8 (2.1)	38 (4.2)
Occupation			
Unemployed	230 (44.7)	165 (42.8)	395 (43.9)
Unskilled worker	110 (21.4)	123 (31.9)	233 (25.9)
Semi-skilled worker	98 (19)	52 (13.5)	150 (16.7)
Skilled worker	56 (10.9)	33 (8.6)	89 (9.9)
Semi-professional	21 (4.1)	12 (3.1)	33 (3.7)
Marital Status			
Married	378 (73.4)	202 (52.5)	580 (64.4)
Widow/Widower	124 (24.1)	175 (45.5)	299 (33.2)
Divorce	9 (1.7)	6 (1.6)	15 (1.7)
Unmarried	4 (0.8)	2 (0.5)	6 (0.7)
Type of Family			
Nuclear	113 (21.9)	89 (23.1)	202 (22.4)
Joint	402 (78.1)	296 (76.9)	698 (77.6)
Socio-economic status			
I	6 (1.2)	5 (1.3)	11 (1.2)
II	32 (6.2)	16 (4.2)	48 (5.3)
III	99 (19.2)	75 (19.5)	174 (19.3)
IV	235 (45.6)	205 (53.2)	440 (48.9)
V	143 (27.8)	84 (21.8)	227 (25.2)
Addiction			
Present	186 (36.1)	108 (28.1)	294 (32.7)
Absent	329 (63.9)	277 (71.9)	606 (67.3)

Morbidity profile among our study, elderly had maximum problem of Musculoskeletal (48%), followed by hypertension (36.3%), diabetes (33.9%) and gatro-intestinal problems (30.6%). Lowest morbidity was dental problems (9.3%) in our study. Mostly all types of morbidity were

found more in female with comparison to male except genito-urinary problems.

Nearly half population of study subjects (48%) had musculoskeletal problems. All the musculoskeletal problems, arthritis, backache, kyphosis and neck pain were more common in female (61%) than male (38.4%). In the study of Prakash *et al* also found that 44% of elderly were having Musculoskeletal problems. Female were more affected than males. Arthritis of various joints was most common problem [15].

36.3% of elderly subjects had hypertension; in which female were slightly more affected than male. Study of Hanger *et al* reported in their study of elderly observed prevalence of hypertension as 43.6% [16]. Chadha *et al* observed a prevalence rate of hypertension were 52.2% and 58.4% among male and female respectively [17].

31.7% suffered from psychosocial problems; in which 41% were female and 24.7% were male. Depression was common (21.7%). Dube *et al* found 22.3% psychiatric morbidity in aged persons [18]. Muller *et al* observed that 22 % depression was found in their study subjects [19].

In gastrointestinal disease, common disease was dyspepsia (21.1%) followed by constipation (11.6%), diarrhea (9.1%) and hemorrhoids (8%). The prevalence of gastrointestinal diseases varied from 5% to more than 50% in various studies. Such variations might be due to different food habits, lifestyles and environmental conditions [20, 21].

Diabetes was seen in 33.9% of the study population which was observed more in females (36.4%). Sithara *et al* also found 33.25% prevalence of diabetes in their study [22].

Among study population, 30.6% were suffering from urinary problems. Male (25.6%) were more affected than female (21%). Difficulty in micturition was common in males (39.4%) whether incontinence was common in females (27.2%). Swami *et al* found that 6.1% of rural population suffered from frequency and urgency [23].

Most common ocular morbidity were cataract (39.9%) and refractive error (21.6%). Purty *et al* found that 32.1% of elderly persons were suffering from cataract and 24.6% from refractory errors [24]. About 21.8% of elderly subjects were suffering from different respiratory diseases. Most of them (41.8%) were suffering from respiratory tract infection followed by chronic obstructive pulmonary disease (26.5%). A higher proportion of females (24.9%) were found to be affected by respiratory diseases compared to males (19.4%). Study done by Shashi *et al*. was found that 33.5% participants had respiratory morbidity [25]. About 14.2% study subjects had different type of ear problems. Lal *et al* also 20% aged persons were suffered from hearing problems [26]. Skin diseases affected 10.7% of elderly. Male both were slightly more affected (10.9%) than female (100.4%). Mostly (62.4%) were suffering from dermatitis. Shraddha K also found 6.8% of different skin diseases in elderly population [27].

There were 9.3% aged persons found different dental problems. Sijan Poudyal *et al*. reported 42.2% toothache, 29.9% tooth decay, 10.3% mobile tooth, 8.2% bleeding gums, 3% mouth ulcer in their study [28].

Only 7% were suffering from neurological disorders, among these both sex had equally distributed. With increasing age diseases of nervous system disorders were observed more among elderly males than elderly females [29]. (Table 2)

Table 2: Distribution of Geriatric patients according to Morbidity pattern

Morbidity	Male (n=515) (%)	Female (n=385) (%)	Total (n=900) (%)
Hypertension	181 (35.1)	146 (37.9)	327 (36.3)
Musculoskeletal	197 (38.3)	235 (61)	432 (48)
Respiratory	100 (19.4)	96 (24.9)	196 (21.8)
Nervous system	36 (6.9)	27 (7)	63 (7)
Psycho-social	127 (24.7)	158 (41)	285 (31.7)
Diabetes	165 (32.1)	140 (36.4)	305 (33.9)
Ear	62 (12)	66 (17.1)	128 (14.2)
Skin	56 (10.9)	40 (10.4)	96 (10.7)
Vision	105 (20.4)	108 (28.1)	213 (23.7)
Dental problems	48 (9..3)	36 (9.4)	84 (9.3)
Urinary problems	132 (25.6)	81 (21)	215 (23.9)
Gastro-intestinal problems	144 (27.9)	133 (34.5)	275 (30.6)
Other problems	48 (9.3)	37 (9.6)	85 (9.4)

There were 24.8% male and 29.3 female elderly had overweight. Overall 26.8% elderly patients were overweight. MK Sharma *et al* also found 21.27% elderly were over weighted.[30] (Table 3)

Table 3: Distribution of study population as per BMI

BMI	Male (%)	Female (%)	Total (%)
<18.5	64 (12.4)	42 (10.9)	106 (11.8)
18.5-24.9	323 (62.8)	230 (59.7)	553 (59.2)
25-29.9	80 (15.5)	85 (22.1)	165 (18.3)
30-39.9	37 (7.2)	23 (5.9)	60 (6.7)
>40	11 (2.1)	5 (1.3)	16 (1.8)
Total	515 (57.2)	385 (42.8)	900 (100)

About half study population (45%) had pre hypertensive value (male=51.1% and female=36.9%) followed by stage-I value (29.8%) and stage-II value (9.4%) while 15.8% of the elderly were found who had no hypertension during our study. (Table 4) Joshi *et al*. found 49% were having hypertension [31]. Mukesh kumar *et al*. also found that 27.9% of study people were having hypertension [32]. (Table 4)

Table 4: Distribution of study population according to JNC VIII Hypertension Criteria

Category	Male (%)	Female (%)	Total (%)
Normal	57 (11.1)	85 (22.1)	142 (15.8)
Pre-hypertension	263 (51.1)	142 (36.9)	405 (45)
Stage-I	135 (26.2)	133 (34.5)	268 (29.8)
Stage-II	60 (11.6)	25 (6.5)	85 (9.4)
Total	515 (57.2)	385 (42.8)	900 (100)

Conclusion

With the change in the demographic trends, the proportion of elderly is becoming higher. Elderly age group usually associated with increasing medical and social problems. Our study glimpsed that most of the elderly people don't aware about regular health check-ups and affected by medical and social problems. So awareness among the elderly population should be created to prevent and early detection of the chronic diseases along with social support. It is also necessary to have geriatric units with specialized professionals in both government as well as private hospitals. Doctors and other staffs should be trained to manage geriatric cases. The segment of social mobilisation should also campaigned for considering the elderly as valuable to the societies and to be respected as elders.

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