AN EPIDEMIOLOGICAL STUDY IN ELDERLY AND ITS MORBIDITY IN URBAN SLUM POPULATION IN MIRAJ DISTRICT, MAHARASHTRA

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Abstract-

Background- Greying population is one of the most significant characteristics of the 20th century and quite often the first quarter of the 21st century is going to be called as the 'age of ageing'. By the year 2025, the elderly population will constitute 15% of the world's population [1]. The staggering number gives an insight into the importance of aged population in the coming years. Socio-economic status and various health problems directly affect an individual's way and quality of life during old age. The physical functioning and the psychological well-being in elderly depend on the morbidity pattern. So this study was planned to evaluate the morbidity profile and its determinants

Objectives-

- To study the demographic pattern
- To study the morbidity pattern among the elderly.
- To study the mental status among the elderly.
- To assess the functional capacity of the elderly.

Materials and Methods- This descriptive study was carried out in the urban slum area of the Department of Community Medicine. A total of 836 elderly patients (60 years old and above) were interviewed using a pre-tested schedule by house to house survey. Findings were described in terms of proportions and percentages.

Results- Out of the total population of 13,015, 872 were above 60 years and above (6.7%).The elderly population had more Hindus (63.16%), illiterates (62.92%), Unemployed or retired (45.4%), living in joint family (82.5%).High prevalence of multiple morbidities were seen (83.25%).

Conclusions- The results of the study showed that there is a need for geriatric counselling centres that can take care of their physical and psychological needs. The stringent rules for eligibility to social security schemes should be made more flexible to cover a larger population.

Keywords- elderly, multiple morbidity, social health problems, mental health, functional capacity

Introduction

Human body is the most wonderful machine, which the nature has ever ordained. But like all other machines, it also wears out with use and time. We are ageing everyday of our life. Ageing is a natural process and should be welcomed, because the alternative would be pre-mature deaths.

Greying population is one of the most significant characteristics of the 20th century and quite often the first quarter of the 21st century is going to be called as the 'age of ageing'. By the year 2000AD the population of 60 years and above was 600 million globally. By the year 2025, the elderly population will constitute 15% of the world's population [1]. The greying world population is a phenomenon to which even the developed countries have not adopted. The staggering number gives an insight into the importance of aged population in the coming years.

In the past, elderly enjoyed a privileged place in the society. They were the bulwarks of their family. The demographic transition, urbanization and industrialization, gradual disappearance of traditional family support system ,changing priorities of the younger generation, increasing trend of women's participation in work force and replacement of 'we' concepts by 'I' concepts are challenging the future greying population.

The advances in fertility control, control of many life threatening diseases, immunization against diseases, advances in diagnosing and many life threatening diseases, improved literacy status with awareness and better access to health services have resulted in a gradual increase in the elderly population.

Older people also constitute a very diverse group. Many factors like gender, ethnic and cultural backgrounds, urban and rural settings, climate, geographical location, family size and life skills and experience make less and

less alike as they advance in age. There are differences between men and women as they age, not only due to the socially determined roles and responsibilities, life style patterns etc.

The UN agreed cut off is 60+ years when referring to the elderly population [1]. In India, the elderly account for 7% of the total population, of which two-thirds live in villages and nearly half of them in poor conditions

Therefore an attempt to study the elderly, especially in relation to their health and related factors seems appropriate. WHO has also stressed the importance of geriatrics by incorporating ageing theme in 1982 and 1999.

Objectives

- To study the socio-demographic pattern
- To study the morbidity pattern among the elderly.
- To study the mental status among the elderly.
- To assess the functional capacity of the elderly

Materials and methods

This cross-sectional study was carried out in the urban slum adopted by the Urban health Centre of Government Medical College, Miraj. All the people above 60 years were included in the study. The study period was from June 2005 to Dec 2005. A pretested questionnaire was used to collect the relevant details. A house to house to survey was conducted after obtaining informed consent. Care was also taken to ensure privacy and confidentiality of the interview. In order to avoid the interference and influence of other family members and neighbours, each respondent was called and interviewed privately where he/she could feel comfortable. Health status and various morbidities were assessed by history, clinical examination and also from pre-existing health records.

Data was collected on age, sex, educational status, occupation, family history, literacy status, marital status, personal habits was collected. Mental health status was assessed by 'The survey Psychiatric assessment schedule' developed by Bond et al [2]. For functional independence Katz PADL was used [3].

A Joint seminar on ageing organized by ministry of social worker, Government of India and Tata institute of social sciences, Bombay 1981 have considered 60 years as elderly[4]. Further elderly are divided into

- The young old – 60 to 74 years
- The old old - 75 to 84 years
- The oldest old- 85 years and older.

Hypertension was defined as systolic blood pressure more than 140 mm of Hg and diastolic blood pressure more than 90 mm of Hg. Low vision is defined as vision less than 3/60 which was unable to count fingers at a distance of 3 meters. Defective hearing is defined as inability to hear a whisper at a distance of 1 meter. Data collected was analysed and the findings were described using simple statistical calculations.

Results

Out of the 872 elderly in the adopted slum only 836 could be examined. The non-response rate was 4.12%. It was non –availability in spite of three visits and also refusal to get examined.

Out of the total population of 13,015 the elderly constituted about 872 i.e. 6.7%. Out of the 836 the majority of them were the young old group (84.21%) and the least were in the oldest old age group (0.96%) Females were more in proportions than males. It was observed in the study population majority were Hindus (63.16%).Majority of the elderly population were illiterate (62.92%).It was seen that illiteracy was seen more in females (80.53%). A joint family system (82.5%) was seen to be the most common than nuclear family. Only 23.96% of the elderly men were widower while 76.99% of the women were widows. The unmarried group of 0.96% was comprised of only men. Some elderly were still engaged in semi-skilled or skilled workers (20.9%).In this study it was observed that majority of the elderly were financially dependent on their family members (80.02%) [Table 1].

It was observed that 159 elderly males (41.41%) still retained the headship of the house while 104 females (23.01%) were the wife of the head of the house.

In this study it was seen that majority of the elderly rated their health as good (78.11%).

Among the elderly 56 (6.7%) had no morbidity. Out of the elderly who were morbid, 83.25% had multiple morbidities i.e. more than two morbidities. Gastrointestinal system (GIT) was most commonly affected (58.33% males and 53.76% females).The next common was eye morbidity (39.35%) and cardiovascular system (CVS) (24.88%).Respiratory system (RS) was more commonly affected in males (16.67%) than females (10.84%).[Table 2]

The GIT morbidities that were commonest were edentulous (19.14%), glossitis (13.88%), dental caries (11.96%), gingivitis (5.74%), gastritis (5.26%), constipation (4.78%) and diarrhoea (3.83%).

In eye morbidity, cataract (33.97%); low vision (15.31%); aphakia (7.54%) and 3.35% had corneal opacity.

In CVS majority of them had hypertension (24.40%). Ischemic heart disease was present in 16 elderly (1.91%).

The musculoskeletal system (MSS) 106 (12.68%) had osteoarthritis, 75(8.97%) had backache and 0.36% suffered from fractures at the point of survey.

113 elderly (13.52%) were having respiratory problems like chronic bronchitis (6.1%), bronchial asthma (4.61%).

It was observed that 108 elderly had skin problems. 44(5.26%) had corns and 20(2.39%) had dermatitis.

The prevalence of symptoms of genitourinary system (GUS) were 8.01%. The most common conditions were urinary tract infection (3.11%), and incontinence (0.84%).In females 2.63% had pelvic inflammatory disease and 0.96% males had hernia.

Out of the elderly 3.83% complained of impaired hearing and 2.99% of tinnitus.

43 elderly had morbidities of central nervous system (CNS) like migraine/headache (2.03%), hemiplegia (0.24%) sciatica (1.99%).

The mental status was assessed by survey for psychiatric assessment designed by Bond et al [2]. Out of the 836 elderly, 28 (2.75%) elderly were detected to have psychiatric disorders. Out of the 28, 8 (0.96%) suffered from organic disorders and 19 (2.39%) had some affective disorder and psychoneurosis. There were no elderly was suffering from schizophrenia or paranoid disorders.

In the present study it is seen as the age increased the morbidity increased. It was 88% in age group 60-65 years and 100% in age group above 80 years. The morbidity was seen more in females (96.46%) than in males (89.58%). The morbidity in illiterate (96.38%) was more than literate (88.03%).The proportion of morbidity was seen more in unmarried (100%) as compared to married (93.2%). And among married elderly it was seen more in widowed (98.6%) than spouse living elderly (87.4%). [Table 3]

The functional independence was assessed by Katz PADL (Physical Activity Of Daily Living). It was seen that majority of the elderly were independent (93.89%). Out of the 51 elderly who were dependent the proportions in males and females were almost equal. It was observed that 28(3.35%) elderly were dependent for bathing and dressing and going for toilet: 27(3.23%) for transfer: 8(0.96%) on continence and 7 (0.84%) on feeding. The proportion of dependency increased as the age increased. It was also seen that the 80.4% elderly with no morbidities and with more than two morbidities it was 96.1%. [Table 4]

Discussion

The prevalence of elderly population in the adopted urban slum was 6.7%. In our study males were 45.93% and females were 54.06%. Mehrotra et al (1979) also found the proportions to be 6.9% and the proportions of both sexes almost the same [5]. A majority (63%) of the respondents were Hindus. This reflects the true picture of the population based on religion at the local and national level.

Almost two-thirds of the respondents who were interviewed were from joint families (82.5%). Various studies by Padda et al[6].,Singh,et al[7] have brought out similar findings. The higher prevalence of joint families could be because of the Indian culture of son taking care of aged parents still prevails.

It is indeed true that it is the marital status that determines ones position within the family as well as the status in society. The proportion of elderly married, widowed, or unmarried were found to be similar to the study conducted by Singh, et al.[7] and Bhutia et al[8]. The study reports that 76.99% of elderly women were widows and most of them were dependent.

According to the NSS 63% of the elderly were illiterate in India. Our study showed that almost half were illiterate (62.92%) and around 10% had education up to the primary level. Padda et al. reported 38.6% illiteracy [6] and Singh et al. reported 80.2% [7].

It is observed in this study that illiteracy is higher among females (80.53%) than males (42.19%). The disparity in literacy status may be attributed to the area being slum. Educating females in those days was not considered as important as establishing a marriage at an early age.

It is important to know from the elderly person how they evaluate their health since health comprises subjective and objective evaluations. In this study, many of the elderly (78.11%) felt that they were in good health and 21.89% rated their health bad. In a multicentric study in 11 European countries an average 15% men rated their health bad and 5% women rated their health bad [9].

The difference in the proportion of self-reported illness in various studies could be due to differential access and utilization of health services by different segments of the population. Moreover, self-reporting of illness is influenced by factors such as gender, culture, language, and educational level in different regions.

Morbidity Profile

In the present study it was found that 55.5% of elderly people presented with more than three morbidities. Only 6.7% of elderly subjects presented with no morbidity. The average morbidity per person was 2.63 per person.

Higher proportions of multiple morbidities were also found in Ray et al [9] and Sunder et al [11]. The average sickness per person was 3.1 per person. Multiple morbidities is a characteristics of the elderly population.

Comparing the morbidity profile of the elderly in this study with other studies shows the variation is due to varying definitions and non-reporting of illness which might increase with age and it also varies greatly with the disease considered.

In the study GIT symptoms were found in high proportions similar to Bhutia T.K. Edentia was the most common morbidity due to process of ageing. The other GI morbidities probably are due to deficiency of multiple nutrients which are due to reduce diet, malabsorption, impaired metabolism, toothlessness, reduced taste buds and other factor like food taboos and myths related to age, poor socio-economic.

Singh found ocular morbidity in 37.38% of elderly which is similar to the present study [7]. Ray also found similar prevalence of cataract to the present study [10]. The different proportions of other ocular morbidities like corneal opacity, conjunctivitis may be due to occupation, personal hygiene .environmental factors, air pollution exposure to sunlight.

The prevalence of CVS morbidities were similar to other studies like Kutti et al[12], Ray et al[10].

Most of the morbidities in various systems were similar to the various study conducted.

Similar to the present study, Purohit[13] and Garg et al[14] found that as age increases morbidity also increases. This is because of the degenerative changes, many diseases tend to manifest in this phase of life due to long latent period etc. The other factors contributing to it are economic restraint, being neglected person in the

family, physical incapacitation leading to delay in seeking health services.

The morbidity was seen more in females which were similar to study by Garg et al [14]. Life expectancy is more in females than males. Most of the elderly women are widows. Majority of them have been housewives and were economically dependent. Women have also a secondary status in the society.

Health is both a determinant and consequence of marital status. Married persons are generally more secure and protected and they usually lead a more qualitatively better life. So morbidity was seen less in married compared to unmarried. Among married, morbidity was seen more in widowed (98.6%) than among the elderly whose spouse were living (87.4%).

It was seen majority of the elderly were independent (93.89%). Alan et al analysed PADL among the elderly and found dependence for bathing in 2%,dressing & transfer 1[15]%.A WHO study also found that who need help in coping with simple tasks such as feeding ,transfer, going to toilet was below 10%[9].PADL are hierarchically arranged and the last dependence will be for continence or feeding. Bhutia et al found the females were more dependent than males. In males the dependency was reported for taking bath, transfer and toilet. For females it was seen more in dressing, toilet, taking bath, combing hair. Independence in these activities have a profound effect on social and mental health of a person. Though physical morbidity is common in elderly, the dependence in basic activities is preserved till last as observed in the above studies. This also indicates that the present study population though suffering from many ailments had less disabling morbidities requiring physical support.

Summary
- Out of the total population of 13,015 ,872 were above 60 years and above (6.7%).The elderly population had more proportions of females, hindus, illiterates, Unemployed or retired, living in joint family, and married elderly.
- Majority of them rated their health as good.
- High prevalence of multiple morbidities were seen.
- It was observed that the morbidities of GIT were more prevalent in elderly followed by ocular morbidities.
- Morbidity increases as age increases, more common in females, more in illiterates, and was seen more in unmarried and widowed.
- Majority of the elderly were independent. The level of dependence increased as age increased and more in females.

Conclusions
- The present study revealed that economic dependency had a profound effect on their physical and social health. Adequacy of income results in better nutrition and better utilization of health care resources.
- Many elderly rate their health as good though multiple morbidities. Diseases of the elderly are characterized by multiplicity and chronicity.
- Socially elderly are well were integrated. Joint family system serves as insurance for them.
- The present study revealed that multiple morbidity though common in elderly, the independence in six basic activities at daily living are retained till the last.

Recommendations
Ageing is a vulnerable period. One of the most common needs of people in old age is for care; not just being 'taken care of', but being cared 'about'.

1. Health care services for the elderly need to be fully integrated with primary health care. Screening should be done periodically. There should be separate outpatient department for elderly. They should be given a periodic free full medical check-up. Ambulance services, mobile geriatric clinics, geriatric wards, medicines, aids like spectacles and hearing aids at reduced and affordable prices should be provided. Special care should be taken to cover the rural elderly in organizing health services.
2. Social security should be provided to all the people above the age of 60 years and above.
3. Special facilities should be made elderly friendly like public transport, public places.
4. Government and voluntary organizations should uplift the image of old age homes and to improve the standards.

Limitations of the study
1. Limitations of the study are that there are increased chances of misreporting of information by the respondents. Moreover, geriatric epidemiologists are concerned that misreporting might increase with age and varies greatly with the disease considered.
2. One possible source for biased reporting of medical conditions may arise from differential access and utilization of health care services by different segments of the population.
3. This study also did not incorporate measures of environmental characteristics which can directly or indirectly affect both functional status and psychological well-being.
4. As the study was carried out in a community set up ,examination of external genitilia, breast examination were not carried out.

In order to improve the health status of the elderly population it is important to carry out more studies in different areas to identify various factors that are related to psychological distress and disability, which should

lead to efforts to develop effective programmes in disease prevention.

List of abbreviations
1. GIT- Gastrointestinal system
2. CVS- Cardio vascular system
3. RS- Respiratory system
4. MSS- Musculoskeletal system
5. GUS- Genitourinary system
6. CNS- Central Nervous system
7. PADL-Physical Activity Of Daily Living

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Table 1 – Socio-demographic characteristics of the elderly population.

Variables	Males n= 384	Females n=452	Total n=836
Age (yrs)			
60-69	244	296	540 (64.5)
70-79	116	120	236 (28.2)
>80	24	36	60 (7.2)
Marital status			
Married	281	99	380 (45.4)
Single	8	0	8 (0.96)
Separated	3	5	8 (0.96)
Widow/widower	92	348	440 (52.6)
Education			
Literate	222	88	310 (37.1)
Illiterate	162	364	526 (62.9)
Occupation			
Employed	92	76	168 (20.1)
Unemployed/retired	292	88	380 (45.4)
Housewives	-	288	288 (34.5)
Economic dependency			
Dependent	217	452	669 (80)
Independent	167	0	167 (20)
Living status			
Alone	4	0	4 (0.5)
Spouse/children	335	433	768 (91.8)
Relatives	45	19	64 (7.7)

Table 2- Age and sex wise distribution of morbidities by various systems

Systems	60 -69 years		70-79 years		80 years +		Total		Total
	M	F	M	F	M	F	M	F	
GIT	125	144	80	71	19	28	224(58.3)	243(53.8)	467(55.86)
Eye	51	58	84	82	21	33	156(40.6)	173(38.3)	329(39.35)
CVS	44	27	40	67	07	23	91(23.7)	117(25.9)	208(24.88)
RS	17	24	36	11	11	14	64(16.7)	49(10.8)	113(13.52)
MSS	38	46	25	32	07	07	70(18.2)	85(18.8)	115(13.75)
Skin	13	20	21	27	07	19	41(10.7)	66(14.6)	108(12.92)
Ear	03	01	10	04	13	15	26(6.8)	20(4.4)	46(5.50)
GUS	10	07	17	20	05	08	32(8.3)	35(7.7)	67(8.01)
CNS	01	02	05	15	07	11	13(3.4)	28(6.2)	41()
Mental	00	01	01	05	06	10	7(1.8)	16(3.5)	23(2.75)

Table 3 - Morbidities and the related variables

Study Variable	Morbidity		p Value
	Yes	Total	
Age group (yrs)			
60-69	490	540	
70-79	230	236	p <0.001
80 +	60	60	
Sex			p < 0.001
Male	344	384	
Female	436	452	
Education			
Illiterate	507	526	
Literate	273	310	p <0.001
Socio economic status			
Middle	64	103	p<0.001
Lower	716	733	
Marital status			
Unmarried	8	8	
Spouse living	332	380	p <0.001
Widowed	434	440	
Separated	6	8	

Table 4 - PADL and variables

PADL	Dependent		p Value
	Yes	Total	
Age group (yrs)			
60-74	12	704	p< 0.05
70+	31	124	
Morbidites			
0	11	56	
1	13	84	p<0.001
2+	27	696	