Research Article

A study of the morbidity profile of geriatric patients in rural areas of Ghaziabad, Uttar Pradesh

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Abstract

Background: Considering the increase in the population of elderly persons as a result of increase in the life expectancy owing to the advancements in the field of medical science, there is a need to provide better health-care facilities to the geriatric population.

Objective: To analyze the morbidity profile of senior citizens reporting to the outreach clinics in the Rural Outreach Program of Santosh Hospital in nine villages in the outskirts of Ghaziabad district, Uttar Pradesh, India.

Materials and Methods: Each geriatric patient reporting to the outreach clinic, after having been seen by the concerned resident doctor, was subjected to a thorough screening to detect any other age-related problem affecting the person. The data were compiled and analyzed to study the morbidity profile of the geriatric population.

Result: The maximum cases were of eye diseases, which included presbyopia (36.10%) and cataract (22.48%) cases mainly. This was followed by musculoskeletal disorders, respiratory diseases, gastrointestinal tract diseases, and hypertension cases in that order. A lot of cases of hypertension, cataract, loss of hearing, and certain other diseases were detected for the first time during the screening in the outreach clinic.

Conclusion: In order to improve the health of the elderly population, it is important to carry out more such studies and screening programs to identify the problems, as this can help the public health planners in planning health services and developing effective programs in disease prevention.

KEY WORDS: Morbidity Profile, Geriatric Population, Rural Outreach Program, Senior Citizens

Introduction

With the advancement in the field of medical science and better medical facilities, the expectation of life at birth has been continuously increasing for the last four decades all over the world. Consequently, the number of elderly people is continuously on the increase. In India, although the percentage of aged persons to the total population is lower in comparison with the developed countries, the absolute size of population is considerable.[1]

As per 2001 census, the population of senior citizens (age > 60 years) was 7.5% of total population.

The projected population of senior citizens for future years is 9.3% by 2016, 10.7% by 2021, and 12.4% of the total population by 2026.[2]

The elderly people are more vulnerable to various chronic noncommunicable and degenerative diseases, besides being prone to injuries and infections. There is, thus, an increasing need to plan for proper health promotion and health-care facilities for this group of people. For planning these activities, the most important information needed is the morbidity profile

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of the geriatric population in the concerned area. This study was planned to analyze the morbidity profile of elderly persons reporting for treatment in the Rural Outreach Program of Santosh Hospital, which was conducted in nine villages of Ghaziabad district, Uttar Pradesh, India, starting from August 2014.[3]

Materials and Methods

Santosh Hospital is running a Rural Outreach Program in nine villages in the outskirts of Ghaziabad, since August 4, 2014. Each village is visited once in a week by a team of doctors, which includes resident doctors in medicine, pediatrics, ophthalmology, ENT, and dentistry. All patients reporting to the clinics are provided free consultation and treatment. This study was planned to know the morbidity profile of the geriatric population reporting to the clinics.

Inclusion and Exclusion Criteria

The analysis of the morbidity profile of the geriatric patients was done on the basis of new patients only. If same patients came for consultation more than once, then, they were considered once only.

Each elderly person (age > 60 years) reporting to the clinic, after having been seen by the concerned resident doctor, was subjected to a personal interview, thorough screening, and clinical examination by the author. Complete detailed history was taken to ascertain all the health problems affecting the person. Blood pressure (BP) was checked for every patient, and the eyes were examined for cataract and refractive error in all the cases. Diagnosis was made on the basis of history, clinical, and laboratory findings. Standard definition of diseases was used for diagnosing the various health problems. Old medical records of patients were also scrutinized. Those individuals who required further investigation to confirm the diagnosis were taken to Santosh Hospital for further checkup.

The study period was from August 4, 2014, to November 21, 2014. The total population of the nine villages was 45,020, which included 23,002 male and 22,018 female subjects. A total of 903 geriatric patients reported to the clinics during the study period, which included 441 (48.84%) men and 462 (51.16%) women.

Table 1: Age and sex distribution of patients

Age group (years)	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
60–64	142 (15.73)	206 (22.81)	348 (38.54)
65–69	100 (11.07)	92 (10.19)	192 (21.26)
70–74	110 (12.18)	92 (10.19)	202 (2.37)
>75	89 (9.86)	72 (7.97)	161 (17.83)
Total	441 (48.84)	462 (51.16)	903 (100)

$\chi^2 = 15.03$; degrees of freedom = 3; $p < 0.001$.

Statistical Analysis

Statistical analysis was done by using Pearson's χ^2-test and percentage ratios wherever applicable. The level of significance was set at 5% ($p < 0.05$).

Result

Age and sex distribution of the geriatric patients reporting to the outreach clinic are given in Table 1. It shows that, of the 903 geriatric patients, 441 (48.84%) were men and 462 (51.16%) women. The maximum number of patients (38.54%) were from 60 to 64 years age group, followed by 22.37% from 70 to 74 years age group and 21.28% from 65 to 69 years age group, and there were only 17.83% of geriatric patients who were older than 75 years.

The distribution of reported cases of different diseases according to sex is given in Table 2. The maximum cases (64.45%) presented with involvement of eyes. This was followed by musculoskeletal disorders (30.23%), cardiovascular system (CVS) diseases (26.58%), respiratory system diseases (24.58%), gastrointestinal tract (GIT) diseases (19.93%), and ear diseases (11.30%) in that order. The prevalence of eye diseases, musculoskeletal diseases, and GIT disorders was higher among the women, whereas CVS and respiratory group of diseases exhibited a higher prevalence among the men. Many of the subjects reported with multiple problems or were detected during screening to have additional diseases for which they had not reported.

The distribution of patients as per eye diseases is given in Table 3. The maximum number of patients (36.10%) showed refractive error, mainly presbyopia, and cataract was observed in 22.48% of cases.

Table 2: Distribution of reported cases of different diseases according to sex

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) (%)	Total (*n* = 903) *N* (%)
Eye	246 (55.78)	336 (72.73)	582 (64.45)
CVS	144 (32.65)	96 (20.78)	240 (26.50)
Psychiatry	10 (2.27)	18 (3.90)	28 (3.10)
Respiratory	162 (36.73)	60 (12.99)	222 (24.58)
Musculoskeletal	101 (22.90)	172 (37.23)	273 (30.23)
CNS	6 (1.36)	18 (3.90)	24 (2.66)
Ear	48 (10.88)	54 (11.69)	102 (11.30)
GIT	66 (14.97)	114 (24.68)	180 (19.93)
Endocrine	18 (4.08)	24 (5.19)	42 (4.65)
Genitourinary	24 (5.44)	16 (3.46)	40 (4.43)
Skin	48 (10.88)	24 (5.19)	72 (7.97)
Hernia	12 (2.72)	—	12 (1.33)
Anemia	30 (6.80)	36 (7.79)	66 (7.31)
Dental	42 (9.52)	12 (2.60)	54 (5.98)
Injuries	12 (2.72)	5 (1.08)	17 (1.88)
Total	441 (48.84)	462 (51.16)	903 (100)

Table 3: Distribution of patients as per eye diseases

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
Refractive error	130 (29.48)	196 (42.42)	326 (36.10)
Cataract	91 (20.63)	112 (24.24)	203 (22.48)
Others[a]	25 (5.67)	28s (6.06)	53 (5.87)
Total	246 (55.78)	336 (72.73)	582 (64.45)

[a]Others include cases of glaucoma, conjunctivitis, corneal ulcer, pterygium, dry eye, etc.

$\chi^2 = 1.83$; degrees of freedom = 2; $p > 0.05$.

Table 4: Distribution of patients according to musculoskeletal diseases

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
Backache	14 (3.17)	29 (6.28)	43 (4.76)
Osteoarthritis	54 (12.44)	108 (23.38)	162 (17.94)
Myalgia	21 (4.76)	20 (4.33)	41 (4.54)
Others[a]	12 (2.72)	15 (3.25)	27 (2.99)
Total	101 (22.90)	172 (37.23)	273 (30.23)

[a]Others include cases of kyphosis, rheumatoid arthritis, joint pains, etc.

Table 5: Distribution of patients as per CVS diseases

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
Hypertension	96 (21.77)	72 (15.58)	168 (18.60)
CAD/arrhythmias	48 (10.88)	24 (5.19)	72 (7.97)
Total	144 (32.65)	96 (20.78)	240 (26.58)

Table 6: Distribution of patients as per respiratory diseases

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects, (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
Upper respiratory tract infections	95 (21.54)	37 (8.01)	132 (14.62)
COPD	45 (10.20)	10 (2.16)	55 (6.09)
Bronchial asthma	17 (3.85)	12 (2.60)	29 (3.21)
Tuberculosis	5 (1.33)	1 (0.22)	6 (0.66)
Total	162 (36.73)	60 (12.99)	222 (24.58)

Table 7: Distribution of patients as per GIT diseases

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
Acid peptic disease	24 (5.44)	47 (10.17)	71 (7.86)
Acute gastritis	16 (3.63)	14 (3.03)	30 (3.32)
Constipation	8 (1.81)	20 (4.33)	28 (3.10)
Diarrhoea/Amebiasis	10 (2.27)	25 (5.41)	35 (3.88)
Worm infestation	8 (1.81)	8 (1.73)	16 (1.77)
Total	66 (14.97)	114 (24.68)	180 (19.93)

The distribution of patients as per musculoskeletal diseases is shown in Table 4. Osteoarthritis was found in 17.94% of patients, whereas backache and myalgia were observed in 4.76% and 4.54% patients, respectively.

The distribution of patients as per CVS diseases is shown in Table 5. Hypertension was observed in 18.60% of the patients, and 7.94% patients showed coronary artery disease/arrhythmia. The prevalence of CVS disorders was found to be more among men than women.

The distribution of patients as per respiratory diseases is given in Table 6. Upper respiratory tract infection was observed in 14.62% of reported cases, and there were 6.09% cases of chronic obstructive pulmonary disease (COPD), 3.21% cases of bronchial asthma, and only 0.66% cases of tuberculosis. As against 36.37% of male patients, only 12.99% of female patients presented respiratory problems.

The distribution of cases as per GIT disorders is shown in Table 7. The maximum patients (7.86%) showed acid

Table 8: Distribution of patients as per ear diseases

Diseases	Male subjects (*n* = 441) *N* (%)	Female subjects (*n* = 462) *N* (%)	Total (*n* = 903) *N* (%)
CSOM	16 (3.63)	22 (4.76)	38 (4.21)
Hearing loss	13 (2.95)	8 (1.73)	21 (2.33)
Wax	9 (2.04)	11 (2.38)	20 (2.21)
Others[a]	10 (2.27)	13 (2.81)	23 (2.55)
Total	48 (10.88)	54 (11.69)	102 (11.30)

[a]Others includes cases of otomycosis, otalgia, traumatic perforation of tympanic membrane etc.

Table 9: Distribution of patients detected with a health problem during screening

Diseases	No. of patients					
	Male subjects (*n* = 441)		Female subjects (*n* = 462)		Total (*n* = 903)	
	No.	Detected during screening, *N* (%)	No.	Detected during Screening, *N* (%)	No.	Detected during Screening, *N* (%)
Hypertension	96	21 (27.87)	72	12 (16.67)	168	33 (19.64)
Cataract	91	14 (15.38)	112	19 (16.96)	203	33 (16.26)
Refractive error	130	25 (19.23)	196	30 (15.31)	326	55 (16.87)
Loss of Hearing	13	2 (15.38)	8	—	21	2 (9.52)
Dental caries	42	11 (26.19)	12	3 (25)	54	14 (25.93)
Total	372	73 (19.62)	300	64 (21.33)	772	137 (17.75)

peptic disease, followed by diarrhea (3.88%), acute Gastritis (3.32%), constipation (3.14%), and worm infestation (1.77%) in that order.

The distribution of cases as per ear diseases is shown in Table 8. Chronic suppurative otitis media (CSOM) was observed in 4.21% of the patients, and 2.33% of the reported patients were found to reveal loss of hearing. Wax in the ears was detected in 2.21% of cases, and 2.55% of cases presented other problems such as otomycosis, otalgia, and traumatic perforation of tympanic membrane.

In addition to the health problems with which these geriatric cases reported to the outreach clinic, all these patients were screened, and a complete medical examination was carried out by the researcher who was the in charge of the Outreach Program. The distribution of patients who were detected with a health problem during screening is given in Table 9.

It shows that 33 (19.64%) cases of hypertension were detected for the first time owing to the screening program. Similarly, 33 (16.26%) cases of cataract, 55 (16.87%) cases of refractive error, 14 (25.93%) cases of dental caries, and two (9.52%) cases of loss of hearing were detected owing to screening of these patients who had not reported with any symptoms of these diseases.

Discussion

Certain chronic and degenerative diseases are more frequent among the elderly people than in the younger people, such as the degenerative diseases of the heart and blood vessels, diseases of the locomotor system such as osteoarthritis and spondylosis, diseases of the respiratory system such as chronic bronchitis and emphysema, diabetes mellitus, cancers, accidents, and psychological problems. The study found the maximum cases (64.45%) of eye diseases, followed by musculoskeletal disorders (30.23%), CVS disorders (26.58%), respiratory system diseases (24.58%), GIT diseases (19.93%), ear diseases (19.93%), skin diseases (7.97%), and anemia (7.33%) in that order. Similar results were found by Prakash et al.[4] in their study in the field practice area of a medical college in Udaipur. They also found the maximum (70%) cases of eye diseases, followed by CVS diseases (48%), respiratory diseases (36%), and musculoskeletal diseases (14.6%).

The study shows that 36.10% elderly people presented with refractive error. Similar findings were reported by Singh et al.,[5] who found 40.8% cases of the refractive error in their study in the rural areas of central India. Our study found cataract among 22.48% of elderly patients. Srivastava et al.[6] (24.40%) and Mishra and Srivastava[7] (25.8%) reported similar incidences of cataract in their studies.

Musculoskeletal disorders were found in 30.23% of the patients. Studies by Kishore et al.[8] (36.8%) and Mishra and Srivastava[6] (37.2%) found similar results. The main problems were osteoarthritis, backache, and myalgia in that order. These disorders were more among the female (37.23%) than the male (22.90%) subjects. The higher percentage among women reflects the harder life faced by women in rural areas who never retire from strenuous household work. Another reason is that postmenopausal women experience osteoporosis and degenerative changes owing to hormonal withdrawal.

Of the 26.58% patients presenting CVS diseases, 18.60% revealed hypertension. Mohapatra et al.[9] (18%), Abdulraheem and Abdulrahman[10] (18.9%), Jadhav et al.[11] (21.6%), Srivastava et al.[6] (22.2%), and Garg et al.[12] (16.5%) reported similar incidence of hypertension in their studies.

Respiratory diseases were found among 24.58% patients. There were maximum number of cases of upper respiratory tract infections, followed by COPD, bronchial asthma, and tuberculosis in that order. More male (36.73%) than female (12.99%) subjects revealed respiratory disorders. Similar observation was made by Narayan and Chandrashekhar[13] in their study among elderly population in a tertiary-care hospital in south India.

GIT disorders were observed in 19.83% patients. The main problem was acid peptic disease (7.86%), which was reported among 5.44% men and 10.17% women. Similar findings were reported by Jadhav et al.,[11] who found it among 6.73% male and 8.53% female subjects.

Ear diseases were reported in 11.30% patients. The main problems were CSOM, loss of hearing, and wax in the ears. Srinivas and Manjubhashini[14] observed ear diseases among 12% of their subjects, which is similar to our study.

The screening of all elderly patients reporting to the outreach clinic was carried out, and during this, 137 (17.75%) patients were detected with health problems for which they had not reported. The main cases detected during screening were patients with hypertension, cataract, refractive error, loss of hearing, and dental caries.

The strength of this study is that a thorough screening of all the elderly patients led to an early detection of many disabilities giving a detailed insight into the health of the geriatric population living in the rural areas.

The limitation of the study is that it involved only the geriatric patients who reported to the clinics and missed out those people who could not come to the clinics for some reasons for which a house-to-house survey could have been better.

Conclusion

The study highlights the main health problems faced by the elderly people in the rural area. Maximum cases were of eye diseases (64.45%), which included presbyopia (36.10 %) and cataract (22.48%). This was followed by musculoskeletal disorders, respiratory diseases, GIT diseases, and hypertension cases in that order. A lot of cases of hypertension, cataract, and certain other diseases were detected for the first time during the screening of the elderly patients. In order to improve the health of the elderly population, it is important to carry out more such studies and screening programs in different areas to identify the problems, as this can help the public health planners in planning health services and developing effective programs in disease prevention.

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