

ORIGINAL ARTICLE

Health Screening of the Elderly: A Cross-Sectional Comparative Study in Urban and Rural Surendranagar

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ABSTRACT

Introduction: Worldwide, increase in longevity has shifted the age distribution toward elderly population. For the substantial impact of this burden, preventive health-care strategies specific to the elderly need to be clearly formulated and tested. The screening of health problems can give a better cross-sectional assessment of the health problems and also is a clear reflection of the felt and unmet needs of the elderly. **Aims and Objectives:** The aims of the study were as follows: (1) To study the clinicoepidemiological profile of the elderly living in urban and rural areas of the district, (2) to study the difference in both urban and rural areas with respect to their clinical presentations and clinical examination findings, and (3) to identify most prevalent health problems among the elderly with differences in urban and rural areas. **Materials and Methods:** A cross-sectional study was carried out in urban and rural area of Surendranagar district among 611 elderly, using a pre-designed and pre-tested questionnaire. The study was carried out by directly questioning and physical examination of the subjects with oral and written consent. For selection of the area, in both the urban and rural areas, the sampling units were enumerated and samples were collected using simple random sampling. Data were entered and analyzed using MS Excel 2007. **Results:** Most prevalent chief complaints were related to locomotor, vision, and hearing problems. Others included complaints related to cardiovascular system (CVS), respiratory system (RS), and gastrointestinal tract (GIT). Females had more prominent history of medical illness than males. **Conclusion:** It can be concluded from the study that most common complaints among the elderly were related to vision; hearing and locomotor system and the less prevalent ones were related to CVS, RS, and GIT systems. Community-based camps and screening exercises must be carried out at regular intervals to find out the patterns and trends of morbidities experienced by the elderly.

Key words: Clinical examination, elderly, ophthalmic, psychiatric, urban, rural

INTRODUCTION

Worldwide, increase in longevity has shifted the age distribution toward elderly population.^[1] In India, the size of elderly population (above age of 60 years) is growing fast. This is also suggested by absolute numbers in India which has shown an increase from 76 million in 2001 to 100 million in 2011.^[2]

Aging leads to a generalized deterioration of many organs and systems in the body. It leads to a lower effectiveness of

physiological functions accompanied by an increased risk for various diseases. From the morbidity point of view, almost 50% of the Indian elderly have chronic diseases and 5% suffer from the immobility which poses a greater responsibility on the health services due to a greater strain on available health infrastructure.^[3]

India, in the associated epidemiological transition, is facing a double burden of communicable and non-communicable diseases. For the substantial impact of this burden, preventive

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health-care strategies specific to the elderly need to be clearly formulated and tested.^[4]

The present study was, therefore, aimed at identifying the major health problems among the elderly during health screening held in the village. The screening of health problems can give a better cross-sectional assessment of the health problems and also is a clear reflection of the felt and unfelt needs of the elderly. Even though the concept of geriatric care is said to be functioning in a multitier approach from the primary health-care system until the tertiary, the true amalgamation of the geriatric care in primary health-care settings is the need of the hour. Studies like the current one will help in planning these services better and help health managers take policy level decisions which can help the elderly fight their illnesses and lead a quality life.

Aims and Objectives

The aims of the study were as follows:

1. To study the clinicoepidemiological profile of the elderly living in urban and rural areas of the district.
2. To study the difference in both urban and rural areas with respect to their clinical presentations and clinical examination findings.
3. To identify most prevalent health problems among the elderly with differences in urban and rural areas.

MATERIALS AND METHODS

A total of 611 elderly subjects were studied from both urban and rural areas. A cross-sectional study was carried out by directly examining the subjects and questioning for their medical and past history. For selection of the areas, the sampling units were enumerated and samples were collected from them. For rural data collection, out of all the 12 talukas in Surendranagar district, one taluka was selected using simple random sampling, which came out to be Sayla Taluka. For selection of villages, the similar process was followed and Sayla village was selected. For urban data collection, the city which has 14 wards was enumerated and by simple random technique, Ward No. 7 was selected for the study. The estimated geriatric population combined in both urban and rural areas amounted to 12,220 (7% of geriatric population as per census 2001)^[5] out of which 5% was selected as sample. This came out to be 611 elderly subjects which were selected equally from both urban and rural areas. The study was conducted for a period of 6 months. For collection of the data, a self-structured, validated, and pre-tested pro forma was used. Data were entered and analyzed using MS Excel 2007.

RESULTS

The sociodemography profile of the study subjects revealed that majority of the subjects in the urban area were in the age

Table 1: Enumeration of the chief complaints of the subjects according to the system – urban versus rural – number = urban: 305, rural: 306

Chief complaints system wise	Sex				Total	
	Males		Females		n	%
	n	%	n	%		
Cardiovascular system						
Urban	6	4.87	13	7.14	19	6.22
Rural	3	2.08	12	7.4	15	4.9
Nervous system						
Urban	9	7.31	34	18.68	43	14.09
Rural	12	8.33	12	7.4	24	7.84
Gastrointestinal tract						
Urban	12	9.75	21	11.53	34	11.14
Rural	12	8.33	24	14.81	36	11.76
Respiratory system						
Urban	14	11.38	19	10.43	33	10.89
Rural	42	29.16	15	9.25	57	18.62
Locomotors/orthopedic system						
Urban	47	38.21	78	42.85	125	68.68
Rural	27	18.75	54	33.33	81	26.47
Psychiatric						
Urban	3	2.43	6	3.2	9	2.95
Rural	3	2.08	3	1.85	6	1.96
Dental						
Urban	10	8.13	15	8.24	25	8.19
Rural	9	6.25	6	3.70	15	4.90
Hearing						
Urban	39	31.7	40	21.97	79	25.9
Rural	55	38.19	60	37.03	115	37.55
Vision						
Urban	107	86.99	135	74.17	242	79.34
Rural	103	71.52	138	85.18	241	78.75

*Other complaints include skin, endocrine, and general complaints

group up to 75 years, whereas in the rural area, most of the subject aged more than 65 years. In the urban area, majority of subject were female and about 28% in urban and 58% rural were illiterate. Majority of the literate in both the areas were educated up to primary. About 14% in urban and 4% in rural were graduates. The predominant family system in the rural was three-generation family (44%) followed by joint family (36%), whereas in urban areas, all the three types of families had nearly similar pattern with slight dominance of three-generation system.

A total of 63 subjects in urban areas, who were 16 (13.0%) males and 47 (25.82%) females, had no complaints whatsoever. A similar number of subjects (66), that is, 21.5% in rural areas also had no complaints. This constituted 29% among males and about 15% among females. For the remaining, complaints were analyzed system wise as

shown in Table 1. In the cardiovascular system (CVS), there were more subjects from the urban who had complaints compared to rural, 6.22% and 4.9%, respectively. In central nervous system (CNS), more urban (14.09%) had complaints compared to rural people (7.84%). Complaints regarding gastrointestinal tract (GIT), similar trends were noticed in both urban (11.14%) and rural areas (11.76%). Respiratory complaints were more in the rural (18.62%) compared to urban (10.89%). Locomotor system complaints were the second most common complaints. There were more complaints (68.68%) in the urban compared to rural (26.47%). Psychiatric complaints were seen in about 3% of urban and 2% of rural population. Dental complaints were more in urban (8.19%) compared to rural areas (4.9%). Hearing problems were seen in 25.9% of urban and 37.55% of rural population, with males and females equally distributed. Complaints regarding vision were the most rampant. About 79.34% of the urban and 78.75% of the rural had complaints with equal number of males and females. It was also seen that general complaints were more in rural (29.41%) than rural (19%). The general complaints such as skin disease 3.7% and endocrine 4.59% were more common in rural area.

Nearly 33% and 42.7% of the males in urban area and 66.6% and 57.28% of females in rural areas were reported of having some history related to medical illnesses. The comparative picture reveals that females had more history of medical illnesses as compared to their male counterparts.

Table 2 depicts the findings of clinical examination of the elderly. Examination of CVS showed nearly 67% of the urban and 72% of the rural showed normal findings. Only 32.7% in urban and 26.7% in rural elder had some abnormal finding. This included abnormal rhythm (37%) and cardiac murmur (32%) as the most common ones. Examination of respiratory system (RS) revealed that 29.8% in urban and 26.4% in rural had abnormal findings. These included crepitation and decreased air entry in any lobe of lungs (36.26% and 35.16%, respectively, in the urban and 46.34% and 36.5%, respectively, in the rural). Almost 96% of subjects in rural and urban areas had a normal finding on examination of gastrointestinal system. Among the abnormal findings were, tenderness over some or other part of abdomen (54.54%) in the urban areas. In the rural also, similar trend was observed. Hemorrhoids were seen in nearly 45% of rural and urban elderly. In reference to CNS, only 5.6% in urban and 6.6 % in rural elder had abnormal findings. These included fine tremors and loss of motor function (41.17%) followed by those having facial tremors (35.29%) in the urban. In the rural area, fine tremors were seen in 28.57% followed by those having facial tremors 19.04%. On examination of the mental health, it was seen that 31% of urban and 34% of rural population had some psychiatric complaints or the other. Depression and dementia formed the maximum percentage of morbidities. Clinical examination of locomotor system showed abnormal findings among 15.4% urban and 17%

Table 2: The findings of clinical examination among the urban subjects (n=305) versus rural (n=306)

Clinical examination system wise	Sex				Total	
	Males		Females		n	%
	n	%	n	%		
Cardiovascular system						
Urban						
Normal	82	66.66	123	67.58	205	67.21
Abnormal	41	33.34	59	32.42	100	32.79
Rural						
Normal	95	65.97	123	75.92	218	71.24
Abnormal	49	34.0	39	24.08	88	26.76
Respiratory system						
Urban						
Normal	65	52.8	149	81.86	214	70.16
Abnormal	58	47.2	33	18.14	91	29.84
Rural						
Normal	90	62.5	135	83.33	225	73.52
Abnormal	54	65.8	27	16.67	82	26.48
Gastrointestinal system						
Urban						
Normal	116	94.3	178	97.8	294	96.39
Abnormal	7	5.69	4	2.2	11	3.6
Rural						
Normal	138	95.8	156	96.2	294	96.07
Abnormal	6	4.16	6	3.7	12	3.92
Central nervous system						
Urban						
Normal	117	95.12	171	93.95	288	94.42
Abnormal	6	4.87	11	6.04	17	5.57
Rural						
Normal	135	93.75	150	92.59	285	93.41
Abnormal	9	6.75	12	7.41	21	6.56
Psychiatric						
Urban						
Normal	78	63.41	132	72.52	210	68.85
Abnormal	45	36.58	50	27.47	95	31.14
Rural						
Normal	113	78.47	109	67.28	202	66.22
Abnormal	31	21.53	53	32.72	104	34.09
Locomotors/orthopedics						
Urban						
Normal	117	95.12	167	91.75	284	84.59
Abnormal	6	4.87	15	8.25	21	15.4
Rural						
Normal	138	95.83	147	90.74	254	83
Abnormal	15	4.16	37	9.25	52	17

rural subjects. The most commonly reported findings were stiff joints and reduced movements.

Table 3: Findings of ocular examination – urban (n=305) versus rural (306)

Ocular examination	Sex				Total	
	Males		Females		n	%
	n	%	n	%		
Normal						
Urban	3	0.98	25	13.73	28	9.18
Rural	19	13.19	12	7.4	31	10.13
Mature cataract						
Urban	30	9.83	33	18.13	63	20.65
Rural	18	12.5	12	7.4	30	9.8
Immature cataract						
Urban	65	52.84	77	42.3	142	46.55
Rural	31	21.52	57	35.18	88	28.75
Refractory errors						
Urban	63	51.21	66	53.65	129	42.29
Rural	94	65.27	129	79.62	223	72.87
Arcus senilis						
Urban	69	56.09	81	44.5	150	49.18
Rural	16	11.11	24	14.81	40	13.07
Corneal opacity						
Urban	6	4.87	9	4.94	15	4.91
Rural	36	25	6	3.7	42	13.72
Redness of eye						
Urban	0	0	3	1.64	3	0.98
Rural	3	2.43	0	0	3	0.98
Pterygium						
Urban	3	2.43	3	1.64	6	1.96
Rural	13	9.02	9	5.55	22	7.18
Squint						
Urban	0	0	3	1.64		0.98
Rural	0	0	3	1.85		0.98

Table 3 shows that immature cataract (46.55% in urban and 28.75% in rural) was the most common morbidity followed by refractory error 42.3% in the urban and 72.87% in rural. Arcus senilis was observed in 49% of urban 13% of the rural population. Mature cataract was observed in 21% of urban and 10% of the rural population. About 14% of rural and 5% of urban showed corneal opacity. Nearly 33% and 43% of the males in the urban area and 67% and 57% females in rural area were reported of having some past history related to medical illnesses. The comparative picture reveals that females had more past history of medical illnesses as compared to their male counterparts.

DISCUSSION

In the present study, females formed a higher percentage than males in the 60+ age group in urban area; however, in the rural area, proportions were same for both genders. A study

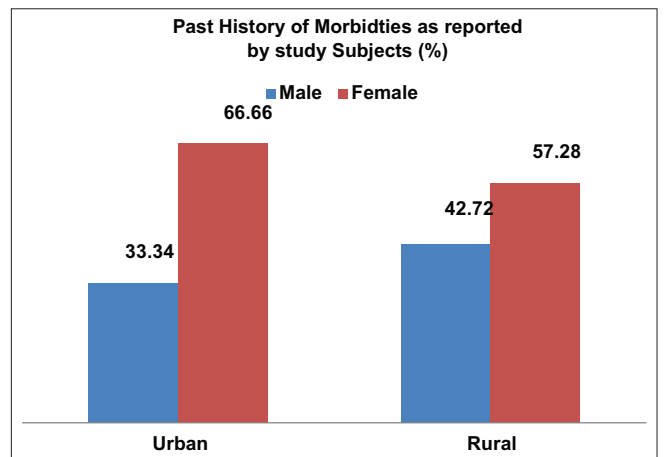


Figure 1: A history of morbidities among the subjects – urban (n=305) versus rural (306)

by Vijayanchali and Gandhi^[6] showed reversal of the result in which male proportion of elder population in study group was higher as compare to females. This difference must have been due to differences in the sociodemography of the underlying population.

In the present study, the elderly residing urban areas had more CVS abnormalities and complaints as compared to those residing in rural areas. This difference is predominantly due to differences in lifestyle. Most non-communicable and lifestyle disorder hold a similar trend when compared. A study by Rahul *et al.* on the elderly showed 44.2% of males and 54.5% of the females having hypertension in the urban area.^[7] Another study by Jadav *et al.* also explained that as studies done in an urban area have a higher prevalence of cardiovascular disease than a rural setting.^[8] This difference seems to be common in most populations due to differences in lifestyles and activity levels among general population and seems also to be reflecting among the elderly in these areas.

Other important findings included CNS abnormality which was found more in urban area (14.09%) compared to rural (7.84%). In all abnormality, it was seen that majority of elder subjects had fine tremors and loss of motor function followed by those having facial tremors in the urban. A study by Prakash *et al.*^[9] showed that 8.6% elderly were suffering from diseases of nervous system, in which 2% were suffering from neuritis and neuralgia followed by 1.3% each with tremors and anxiety. Furthermore, a study by Shraddha *et al.*^[10] showed that diseases of nervous system were found to be only 3%. It can, therefore, be seen that diseases of CNS even though not so common among the elderly are definitely found and cannot be ignored and need appropriate attention.

About 10% of the subjects showed problems and complaints of gastrointestinal system which was similar to Shraddha *et al.* showed 10.8% of the prevalence of digestive system problems in which constipation was the major problem followed by gastritis, anorexia, indigestion, and abdominal

pain.^[10] The present study showed similar prevalence of psychiatric complaints, that is, 31% of urban and 34% of rural population. A little higher prevalence was observed by Jadav *et al.*^[8] also explained that psychosocial problems were also found among 42% in the urban areas.

For the ophthalmic examination, it was seen that immature cataract was the most common morbidity followed by refractory error in the urban and in rural area. Similar result was observed by Purohit and Sharma *et al.*^[11] reported cataract in approx. 40% elderly, whereas, Mishra and Srivastava^[12] reported in 25.8% elderly and Prakash *et al.*^[9] reported in 40% elderly in one or both eyes. This shows that ophthalmic abnormalities are the most common ones reported among the elderly across various geographical areas across the country.

CONCLUSION

It can be concluded from the study that most common complaints among the elderly were related to vision; hearing and locomotors system and the less prevalent ones were related to CVS, RS, and GIT systems. Complaints related to respiratory and hearing were found more among those inhabiting rural areas whereas complaints related to nervous system, locomotor, and dental were found more among urbanites. Problems related to GIT, psychiatric, and vision were found equally among both groups, that is, urban as well as rural elderly. Clinical examination showed a wide range of 70–90% normal findings among study subjects. Abnormal cardiac rhythm, cardiac murmurs, crepitation, fine tremors, depression, dementia, and locomotors issues were the predominant findings on examination and clearly reflect the unfelt as well as felt need of the health care of the elderly. This surely is a reflection of the morbidities experienced by the elderly of community in general.

Recommendations

Community-based camps and screening exercises must be carried out at regular intervals to find out the patterns and trends of morbidities experienced by the elderly. Those in need can be given the adequate treatment and need management of chronic diseases at the earliest to prevent a long sequel

of health problems which follow. Camps covering larger populations with assessment and treatment are the need of the hour. Strengthening of the elderly care along with provision of primary care as envisioned in Ayushman Bharat needs to be focused on to serve the elderly.

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