



A Study of Socio-Demographic Factors Associated with Geriatric Health in the Field-Practice Area of an Urban Health Centre.

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Abstract

Background: India's elderly population is growing at an unprecedented pace and carries a heavy burden of chronic, largely preventable morbidity, yet the socio-demographic determinants of geriatric health in urban field-practice settings remain under-studied.

Objectives: To describe the socio-demographic profile of the geriatric population in an urban health-centre field-practice area and to examine the association between socio-demographic factors and common morbidities. **Methods:** A community-based, cross-sectional study enrolled all 394 eligible persons aged ≥ 60 years residing in the field-practice area of an urban health training centre attached to a Tertiary Care Teaching center. Data were collected by house-to-house interview and clinical examination using a pretested structured questionnaire, the 15-item Geriatric Depression Scale, and the modified B.G. Prasad socio-economic classification. Associations were tested using the chi-square test ($p < 0.05$ significant). **Results:** Of 394 subjects, 61.17% were aged 60–69 years and 52.03% were women. Nearly two-thirds (64.72%) were illiterate and 84.02% belonged to socio-economic classes IV–V. Multiple morbidity affected 73.60% of subjects. The commonest morbidities were anaemia (72.34%), depression (38.83%), arthritis (33.05%), hearing impairment (29.44%), hypertension (27.15%), cataract (23.09%), loss of teeth (15.22%) and diabetes mellitus (12.94%). Age was significantly associated with every major morbidity ($p < 0.05$); anaemia, depression, hypertension and diabetes showed additional significant associations with socio-economic class, occupation or education. **Conclusion:** The urban elderly carried a high burden of multiple morbidity that was strongly patterned by age and socio-economic disadvantage. Age-friendly primary care, routine geriatric screening and targeted health promotion are needed.

Keywords: geriatric health; morbidity; socio-demographic factors; anaemia; depression; urban health.



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INTRODUCTION

Population ageing is one of the most significant demographic transitions of the present century. According to the World Health Organization, the proportion of the world's population aged over 60 years is projected to nearly double, from about 11% in 2000 to 22% by 2050, while the absolute number rises from around 605 million to two billion.[1] India is ageing at an unprecedented pace: the elderly constituted 8.1% of the total population at the 2011 Census, and whereas the older population took more than a century to double in most developed nations, in India it has doubled in roughly two decades.[2,3]

Ageing is a progressive, generalised impairment of function that reduces adaptive responses to stress and increases the risk of age-related disease and mortality.[4] Although old age is not itself a disease, the elderly are especially vulnerable to chronic, degenerative and long-term illnesses of insidious onset — cardiovascular, respiratory, musculoskeletal, ophthalmic and mental disorders — which frequently coexist as multiple morbidity. At least half of India's elderly are estimated to suffer from one or more chronic diseases, and this burden is heaviest among the frail and functionally dependent.[4]

The health of older people is shaped not only by biology but also by their social circumstances. Urbanisation, migration of the young in search of work, nuclearisation of families and the growth of dual-career households are progressively eroding traditional family support, making care of the elderly an increasingly personal and social challenge.[5] The majority of older Indians belong to the unorganised sector and lack pension or social security; on retirement, a sudden fall in income, together with widowhood, changes in housing and illness, compounds their vulnerability.[5] Advanced age, low education, poverty and manual occupation have been consistently linked with chronic morbidity and with depression among the elderly.[6]

Despite the wide distribution of primary health centres and their sub-centres, older people are often unable to access services owing to lack of transport, geographical distance, physical disability or want of funds, and there are seldom dedicated wards or clinics for their needs.[7] India's health programmes have historically prioritised maternal and child health, fertility and communicable-disease control, and geriatric health has received comparatively little programmatic attention. Community-specific data on the morbidity profile of the elderly and its socio-demographic correlates are therefore essential for planning appropriate, locally relevant services.

Urban slum and field-practice populations, which combine poverty, illiteracy and limited access to care, are of particular interest yet remain under-studied. Against this background, the present study was undertaken in the urban field-practice area of an urban health training centre attached to a Tertiary Care Teaching center, with the objectives of describing the socio-demographic profile of the geriatric population, documenting the extent and pattern of geriatric morbidity, and examining the association between socio-demographic factors and common morbidities, so as to suggest measures for improving the delivery of health care to the elderly.

MATERIALS AND METHODS

This was a community-based, cross-sectional, descriptive study conducted in the field-practice area of the Urban Health Training Centre (UHTC) attached to the Department of Community Medicine of a Tertiary Care Teaching center. The area is an adopted urban community situated approximately 1.5 km from the college and served by the UHTC through preventive, promotive and curative services.

Study population and duration. The unit of study was the geriatric population, defined as persons aged 60 years and above permanently residing in the field-practice area.[7] The study was conducted between January 2015 and June 2016. No sampling was performed; all eligible residents were enrolled. Willing elderly persons were included, while those below 60 years, those unwilling to participate, those seriously ill, and those whose houses remained locked or who could not be contacted after three successive home visits were excluded. A total of 394 elderly persons were enrolled.

Data collection. Data were collected through house-to-house visits after written informed consent. Age was verified from voter identity cards, Aadhaar cards or driving licences where available, and otherwise estimated with reference to well-known historical events (e.g., Independence in 1947) or the age of the first living child. A pretested, semi-structured questionnaire recorded socio-demographic details (age, sex, religion, marital status, education, occupation, type of family, socio-economic status), personal habits, chief complaints, and history of present and past illness. A pilot study on 50 subjects over two months was used to refine the instrument; pilot data were excluded from the final analysis.

Clinical examination. Every subject underwent general and systemic examination. Height was measured to the nearest 0.5 cm and weight to the nearest 0.5 kg on a portable scale standardised weekly, and body mass index was calculated. Blood pressure was measured with a mercury sphygmomanometer, with two additional readings after 15 minutes' rest when the first reading was high. Visual acuity was assessed with a Snellen chart and torchlight, and hearing by the whispered-word test and tuning forks. Specialist opinion and further investigations were obtained by referral where required.

Definitions and criteria. Hypertension was defined as systolic blood pressure ≥ 140 mmHg and/or diastolic ≥ 90 mmHg or current use of antihypertensive drugs.[8] Diabetes mellitus was recorded in those on treatment or diagnosed per WHO criteria, and anaemia was judged clinically and confirmed by investigation. Socio-economic status was classified using the modified B.G. Prasad classification updated to the All-India Consumer Price Index of June 2016.[9] Depression was screened with the 15-item Geriatric Depression Scale (short form), graded as normal (0–4), mild (5–8), moderate (9–11) and severe (12–15).[10]

Statistical analysis and ethics. Data were entered in Microsoft Excel and summarised as proportions, means and standard deviations. The chi-square test assessed associations, with $p < 0.05$ taken as statistically significant, using Open Epi-Info software. Ethical approval was obtained from the Institutional Ethics Committee before the study commenced.

RESULTS

A total of 394 elderly persons were studied. Their socio-demographic characteristics are summarised in Table 1. Most subjects (241; 61.17%) belonged to the “young-old” 60–69-year group, and women slightly outnumbered men (205; 52.03% versus 189; 47.97%). Hindus formed the largest religious group (50.51%), followed by Buddhists (34.26%). Illiteracy was strikingly high (64.72%) and was concentrated among women. Manual and dependent occupations predominated, and 331 subjects (84.02%) belonged to socio-economic classes IV and V. The joint family remained the commonest living arrangement (57.36%), and 264 subjects (67.00%) were married and living with a spouse.

Table 1. Socio-demographic profile of the study subjects (N = 394)

Variable	Category	Male	Female	Total, n (%)
Age (years)	60–69	112	129	241 (61.17)
	70–79	73	66	139 (35.28)
	≥80	04	10	14 (3.55)
Religion	Hindu	87	112	199 (50.51)
	Muslim	23	24	47 (11.93)
	Buddhist	74	61	135 (34.26)
	Others	05	08	13 (3.30)
Education	Illiterate	93	162	255 (64.72)
	Primary	56	25	81 (20.56)
	Secondary	22	12	34 (8.63)
	Higher secondary +	18	06	24 (6.09)
Occupation	Non-agricultural labourer	89	52	141 (35.79)
	Agricultural owner/labourer	46	32	78 (19.79)
	Own business	12	00	12 (3.05)
	Unemployed / housewife	27	116	143 (36.30)
	Other (pensioner, etc.)	15	05	20 (5.07)
Socio-economic class*	Class I	04	02	06 (1.52)
	Class II	08	05	13 (3.29)
	Class III	17	27	44 (11.17)
	Class IV	73	56	129 (32.75)
	Class V	87	115	202 (51.27)
Type of family	Nuclear	48	52	100 (25.38)
	Joint	108	118	226 (57.36)
	Third-generation	33	35	68 (17.26)
Marital status	Married (with spouse)	126	138	264 (67.00)
	Widowed	53	63	116 (29.44)
	Separated / divorced	10	04	14 (3.56)

*Modified B.G. Prasad classification (AICPI, June 2016).

Lifestyle characteristics are shown in Table 2. Tobacco chewing was the commonest habit (43.65%), followed by smoking (15.73%) and alcohol use (13.19%); habits were far more frequent among men, and 44.16% of subjects reported no addiction. Slightly more than half the subjects were vegetarian (54.06%).

Table 2. Distribution of study subjects by lifestyle characteristics (N = 394)

Characteristic	Male	Female	Total, n (%)
Tobacco chewing†	112	60	172 (43.65)
Smoking (bidi/cigarette)†	46	16	62 (15.73)
Alcohol use†	44	08	52 (13.19)
No addiction	51	123	174 (44.16)
Vegetarian diet	86	127	213 (54.06)
Mixed diet	103	78	181 (45.94)

†Categories overlap because some subjects reported multiple habits; totals therefore exceed 100%.

The morbidity burden was substantial. Overall, 290 subjects (73.60%) had more than one morbidity, and the load was higher in women. The prevalence of the major morbidities is presented in Table 3.

Anaemia was the single commonest condition, affecting nearly three-quarters of subjects (72.34%), followed by depression (38.83%), arthritis (33.05%), hearing impairment (29.44%), hypertension (27.15%) and cataract (23.09%). Loss of teeth (15.22%), diabetes mellitus (12.94%) and upper respiratory tract infection (10.40%) were also frequent.

Table 3. Prevalence of major morbidities among study subjects (N = 394)

Morbidity	Male (n=189)	Female (n=205)	Total, n (%)
Anaemia	132	153	285 (72.34)
Depression	67	86	153 (38.83)
Arthritis	58	74	132 (33.05)
Hearing impairment	67	49	116 (29.44)
Hypertension	50	57	107 (27.15)
Cataract	51	40	91 (23.09)
Loss of teeth	27	33	60 (15.22)
Diabetes mellitus	21	30	51 (12.94)
Upper respiratory tract infection	23	18	41 (10.40)
≥ One additional (multiple) morbidity	128	162	290 (73.60)

The associations between the major morbidities and socio-demographic factors are summarised in Table 4. Age was significantly associated with every morbidity examined ($p < 0.05$), reflecting the cumulative, degenerative nature of geriatric illness. Beyond age, anaemia was significantly associated with religion, socio-economic class, occupation and education; depression with socio-economic class and education; hypertension with occupation and education; cataract with occupation; hearing impairment with education; and diabetes mellitus with socio-economic class. In contrast, sex and religion showed no significant association with most morbidities, and disease clustered in the poorest and least-educated groups.

Table 4. Association of major morbidities with socio-demographic factors (chi-square test)

Morbidity	Age	Sex	Religion	SE class	Occupation	Education
Anaemia	S	NS	S	S	S	S
Depression	S	NS	NS	S	NS	S
Arthritis	S	NS	NS	NS	NS	NS
Hypertension	S	NS	NS	NS	S	S
Cataract	S	NS	NS	NS	S	NS
Loss of teeth	S	NS	NS	NS	NS	NS
Hearing impairment	S	NS	NS	NS	NS	S
Diabetes mellitus	S	NS	NS	S	NS	NS

S = statistically significant ($p < 0.05$); NS = not significant ($p > 0.05$). SE class = socio-economic class.

DISCUSSION

In this community-based study of 394 urban elderly, women slightly outnumbered men (52.03% versus 47.97%) and most subjects (61.17%) fell in the “young-old” 60–69-year group, a distribution closely matching the urban-slum findings of Thakur et al. and Singh et al., who likewise reported a female preponderance concentrated in the youngest elderly band.[11,12] Illiteracy was high (64.72%) and greater among women, echoing Thakur et al. and reflecting the historic neglect of female education in India.[11] More than four-fifths of subjects belonged to socio-economic classes IV and V, consistent with the poverty typical of urban field-practice populations,[14] and the joint family predominated (57.36%), as reported by Srinivasan et al. and Lena et al., indicating that traditional living arrangements, though eroding, still shelter most older people.[13,19]

The morbidity burden was heavy: 73.60% of subjects had more than one morbidity, with a higher load in women. Anaemia was the commonest condition (72.34%), comparable to the 62–68% reported by Barman et al. and Swami et al.,[15,17] and plausibly driven by poor nutrition, low socio-economic status and coexisting chronic disease. Depression, screened with the Geriatric Depression Scale, affected 38.83% and was more frequent in women, within the 32–52% range described by Jain et al. and Thakur et al.[18,11] Arthritis (33.05%) was similar to the 36–45% documented by Swami et al., Purty et al. and Thakur et al.,[17,16,11] and hypertension (27.15%) matched the 22–35% reported by Singh et al. and Purty et al.[12,16] Cataract (23.09%), hearing impairment (29.44%), diabetes mellitus (12.94%) and loss of teeth (15.22%) all fell within the ranges of comparable Indian studies.[16,15] Differences from studies reporting much higher or lower figures likely reflect variation in case definitions, diagnostic methods and the socio-economic composition of the populations studied. The pattern of associations was instructive. Age was significantly associated with every major morbidity ($p < 0.05$), underlining the cumulative, degenerative character of geriatric illness rather than any effect of chronological age alone. Anaemia was additionally associated with religion, socio-economic class, occupation and education; depression with socio-economic class and education; hypertension with occupation and education; and diabetes and depression with socio-economic class — findings broadly consistent with Qadri et al., Bharati et al. and Barman et al.[14,6,15] The clustering of

disease in the poorest and least-educated groups points to social disadvantage as a key, and modifiable, determinant of ill health in old age. The main limitations are the cross-sectional design, which precludes causal inference, and the reliance on clinical and screening rather than confirmatory laboratory diagnosis for some conditions; the single-area, complete-enumeration design also limits generalisability. Nevertheless, full enrolment of eligible residents and combined interview-with-examination are strengths, and the findings accord with the wider Indian literature.[20,21].

CONCLUSION

The urban elderly in this field-practice area carried a heavy and largely preventable burden of multiple morbidity, with anaemia, depression, arthritis, hearing impairment, hypertension and cataract being the most common conditions. Morbidity was consistently patterned by age and by socio-economic disadvantage — low socio-economic class, illiteracy and manual or absent occupation — while sex and religion were largely unrelated to disease. These findings underscore the need for accessible, age-friendly primary care with routine screening for anaemia, depression, hypertension, diabetes and sensory impairment; for health education and nutritional support targeted at the poorest households; and for strengthening social-security and family-support mechanisms for older people. Integrating geriatric services into existing urban health-centre activities would allow early detection and management of these conditions and improve the quality of life of this growing and vulnerable population.

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