

A Profile of Common Morbidities among Elderly Rural Indian Population

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Abstract Understanding health problems among elderly and health-seeking behavior is prerequisite for providing comprehensive geriatric care to them. The study was undertaken to document the prevalence of common morbidities among elderly rural population. A community based cross sectional study was conducted on the census population aged 60 years & above residing permanently in the rural field practice area of Katihar Medical College using predesigned and pretested questionnaire with clinical assessment of morbidity status assessed using criteria of primary care by WONCA International Classification Committee. Gastro intestinal was most common disorder which constituted 51.04 percent of total study population. Osteoarthritis was present in 49.65 percent of total study population. Cardiovascular problems were seen in 41.29 percent population. Total respiratory morbidity (ARI, Asthma, and COPD) was seen in 41 percent of total study population. Total neurological morbidity (Epilepsy, Hemiplegia & Parkinsonism) was found in only 2.5 percent of total study population. Non-specific Generalized weakness was found in 22.73 percent of population. Diabetes mellitus was recorded only in 9.51 percent of population. Majority of the study population were Independent according to the total scores obtained from instrument of Activities of Daily living (ADL), which is 91.18 percent of the total participant. Almost 9 percent elderly needs some assistance. The present study showed that Government health facility was the most frequent (54.06%) first place of contact for health care among elderly. Only 22.97 percent of population went to private physician. 7.88 percent visited AYUSH, 5.10 percent Quacks & 9.98 percent used self-medication. The present study identified a high prevalence of morbidities in elderly age. It also pointed out various socio-demographic, nutritional, and environmental modifiable risk factors which can be tackled by effective behavior change communication of the community supported models as practiced in the developed countries.

Keywords: *geriatric, morbidity, Bihar, rural, ADL*

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1. Introduction

Population aging is a global phenomenon. Aging has been defined as progressive, generalized impairment of function leading to loss of adaptive response to stress and growing risk of age related disease, resulting in progressive increase in age specific mortality [1]. The elderly are a precious asset for any country. With rich experience & wisdom, they contribute their might for sustenance & progress of the nation. They have special health & socio-economic background which differ from those of general population. Worldwide increase in longevity has shifted the age distribution toward older populations. In India the size of the elderly population, that is, persons above the age of 60 years is growing fast. The absolute number in India increased from 76 millions in 2001 to 100 millions in 2011. In India, as per the census 2011, the number of elderly population comprised 8.2 percent of the total population [2].

This increase is largely due to the decline in overall death rates, decline in fertility and sustained improvement in survival due to improvement in living conditions, spread of health care and awareness, and advances in medicine. Many older adults have multiple medical conditions. The growth of the elderly population presents a new challenge to health system and social support networks in many less developed countries where populations are becoming old before they become wealthy. In order to improve the quality of life of elderly, it is essential to reduce the burden of disease. Primary health care is the mainstay of health care delivery in India. The effort should therefore be focused on the disease that could be effectively treated at primary health Centre level.

With this background, the study was undertaken to document the prevalence of common morbidities among elderly rural population.

2. Methodology

A community based cross sectional study was conducted from January to December 2011 on the census

population aged 60 years & above residing permanently in Hajipur village, the rural field practice area of Katihar Medical College.

2.1. Study Instrument

The data collection tool used for the study was an interview schedule that was developed at the Institute with the assistance from the faculty members and other experts in relation to geriatrics with the socio demographic situation prevailing in India. This predesigned and pretested questionnaire contained questions relating to the information on family characteristics such as residence, type of family, family history of illness, and family history of chronic disease; income and personal characteristics such as age, sex, education, financial dependency, socio economic status etc. By initial translation, back translation, re-translation followed by pilot study, the questionnaire was custom-made for the study. The pilot study was carried out at the institute among general subjects following which some of the questions were modified.

Morbidity was assessed by history taking, clinical examination, reviewing past medical records and medicines taken by the study subject. International classification of primary care by WONCA International Classification Committee was used to list the common morbidities among elderly [3]. Height and weight were measured as per standard guidelines laid down by World Health Organization [4]. Recent JNC 7 and WHO classifications were used for classifying the hypertension [5]. B.G.Prasad socio-economic classification was used to classify the socio-economic status of study subject [6]. Activities of Daily living were taken & total ADL score was calculated (higher score=less disability) according to the WHO criteria. Subject's performance in the previous 24-48 hours was given primary importance.

2.2. Data Collection Procedure

Study was approved by Institutional ethics committee and informed verbal consent was obtained from all participants. The health workers informed and motivated the families to participate in the study along with the scope of future intervention, if necessary. All the participants were explained about the purpose of the study and were ensured strict confidentiality, and then informed consent was taken from each of them before the total procedure. They were assured that the information collected would be kept confidential and would be used only for academic purpose and not for their interventions. The participants were given the options not to participate in the study if they wanted. Data regarding family and personal characteristics were recorded by personal interview. The principal investigator collected the data using the interview technique by conducting house-to-house visits in the households of the selected population.

To reduce the risk of biohazards, all the precautions were undertaken and the procedures were well tolerated by the participants with no reported medical complaint. The time required for did not exceed fifteen minutes that included the counseling times. In total 30 minutes per participant was required for acquisition of concluding data. The data were strictly kept confidential and were not disclosed for the assessment, management or intervention. The concept of morbidities was discussed in several

sessions in connection with elderly age group as feedback to the study.

2.3. Statistical Analysis

The collected data were thoroughly cleaned and entered into MS Excel spreadsheets and analysis was carried out. The statistical analyses were done using Graph Pad In Stat "version 3" software. Proportion of adult person with hypertension was presented as percentage and Chi square tests were used in this study to analyze epidemiological variables; an alpha error of five percent was used as the definition of statistical significance.

3. Results

Majority of the study population were Muslims. Hindu & other religions were a minority.

Most of the total study population was living with their spouse, though sizeable populations of them were widowed. Majority of the study population were illiterate & very few of them were educated to the level of high school & above. Majority of the total study population were financially dependent on others. Majority of the population were belonged to age group of 60-64 years. Females were more than males for the total study population (Table 1).

Table 1. Socio-Demographic Outline of The Participants

	Frequency (%)
Age (n=431)	
60-64	187 (43.39%)
65-69	102(23.67%)
70-74	77 (17.87%)
75-79	40 (9.28%)
80 years & above	25 (5.80%)
Gender (n=431)	
Male	196 (45.47%)
Female	235 (54.52%)
Religion (n=431)	
Muslim	398 (92.34%)
Hindu	23 (5.34%)
Other	10 (2.32%)
Education(n=431)	
Illiterate	258 (59.86%)
Just Literate	108 (25.06%)
Primary	43 (9.97%)
Secondary	12 (2.78%)
Higher Secondary	10 (2.32%)
Financial dependency(n=431)	
Dependent	267 (61.94%)
Partially Dependent	118 (27.38%)
Independent	46 (10.67%)
Socioeconomic status (n=255)	
Upper class	7 (2.75%)
Upper Middle Class	34(13.33%)
Lower Middle Class	53(20.78%)
Upper Lower Class	82(32.16%)
Lower Class	79(30.98%)

The morbidity status was assessed by History, Clinical Examination & Review of past & present Medical reports & records. The present study shows that majority of the study population suffered from gastro intestinal disorder

which constituted 51.04 percent of total study population. Osteoarthritis was present in 49.65 percent of total study population. Cardiovascular problems were seen in 41.29 percent population. Total respiratory morbidity (ARI, ASTHAMA, and COPD) was seen in 41 percent of total study population. Total neurological morbidity (EPILEPSY, HEMIPLEGIA & PARKINSONISM) was found in only 2.5 percent of total study population. Non-specific Generalized weakness was found in 22.73 percent of population. Diabetes mellitus was recorded only in 9.51 percent of population. (Table 2)

Table 2 Morbidity Profile of The Study Population (N=431)

Illness	Male	Female	No. of study population
Generalized Weakness	29	69	98 (22.73%)
Ocular Morbidity	52	83	135(31.32%)
Osteoarthritis	112	102	214(49.65%)
GI Disorder	88	132	220(51.04%)
Cardiovascular Problem	96	82	178(41.29%)
ARI	5	8	13(3.01%)
Asthma	19	20	39(9.05%)
COPD	68	57	125(29.02%)
Lung Cancer	3	0	3(.69%)
Oral Cancer	2	0	2(.46%)
Neck Swelling	2	1	3(.69%)
Diabetes Mellitus	18	23	41(9.51%)
Fracture Femur	3	0	4(.92%)
Hematuria	3	0	3(.69%)
Inguinal Hernia	1	1	2(.46%)
Generalized Eczema	2	1	3(.69%)
Epilepsy	3	5	7(1.62%)
Hemiplegia	3	0	3(.69%)
Parkinsonism	2	1	3(.69%)

Table 3a. Ability in The Different Facets For The Activities of Daily Living of The Geriatric Population (n=431)

		No. of Participant
Feeding	Needs help	28 (6.49%)
	Independent	403 (93.51%)
Bathing	Dependent	28 (6.49%)
	Independent	403 (93.51%)
Grooming	Needs help	28 (6.49%)
	Independent	403 (93.51%)
Dressing	Dependent	20 (4.64%)
	Needs help	8 (1.85%)
	Independent	403 (93.51%)
Bowels Control	Occasional accident	12 (2.78%)
	Continent	419 (97.22%)
Bladder Control	Incontinent	19 (4.40%)
	Occasional / accident	20 (4.64%)
	Continent	392 (90.95%)
Toilet	Dependent	8 (1.86%)
	Need some help	17 (3.94%)
	Independent	406 (94.20%)
Transfer (Bed To Chair and Back)	Major help	8 (1.86%)
	Minor help	17 (3.94%)
	Independent	406 (94.20%)
Mobility	Immobile	9 (2.09%)
	Wheel chair dependent	19 (4.40%)
	Independent	380 (88.17%)
Stairs Climbing	Unable	8 (1.85%)
	Needs help	20 (4.64%)
	Independent	403 (93.51%)

Table 3b. Stratification of The Study Population According To Disability (ADL) (n=431)

	Number of Participants (Percent)
Dependent	11 (2.55)
Partially Dependent	27 (6.26)
Independent	393 (91.18)
Total	431 (100)

It was seen that government health facility was most frequently visited at first contact for health care though some of them preferred private health care. Majority of the study population were motivated by themselves to seek health care. Reason for avoidance of public health care was health facilities being situated far away, long waiting time, unavailability of medicines, rude behaviors, unsuitable timings & being alone with no one to accompany (Table 3, Table 4).

Table 4. Health Seeking Behavior of The Participants First Place of Contact For Health Care (n=431)

First Place of Contact For Health Care	
Govt. Health Facility	233(54.06%)
Private Practitioner	99(22.97%)
Quack	22(5.10%)
Ayush	34 (7.88%)
Self-medication	43 (9.98%)
Between Illness & Care Seeking Time Interval (n=431)	
Same day	104 (24.12%)
1-3 days	309 (71.69%)
>4 days	18 (4.18%)
Source of Motivation(n=431)	
Self	344 (79.82%)
Family Member	85 (19.72%)
Peer Group	2 (0.46%)
Reasons To Avoid Govt. Health Facility (n=198)	
Far away	85 (47.97%)
Long Waiting Time	42 (21.21%)
Medicine Unavailable	38 (19.19%)
Unsatisfactory Behaviour	23 (11.62%)
Unsuitable Timings	7 (3.54%)
No One to Accompany	3 (1.5%)

4. Discussions

Present study showed that 45.47 percent of the study subjects were males and 54.53 percent were females. This can be attributed to longer life expectancy for females. Jaipur urban area study reported similar observation (male 48.2 %, female 51.8 %). [7] Majority of the study population were Muslims, while Udupi study had 89 percent Hindu. [8] Majority of participants were illiterate & very few had seen high school or above comparable to rural study of Bangladesh that showed 61 percent of the elderly illiterate [9].

Majority of the study population suffered from gastro intestinal disorder (51.04%), osteoarthritis (49.65%), cardiovascular problems (41.29%), respiratory morbidity (41%) and non-specific generalized weakness (22.73%); Diabetes mellitus only in 9.51 percent of population. Similar findings were seen in the study conducted in rural West Bengal where 67.2 percent elderly there is involvement of gastrointestinal system, followed by involvement of eye, cardiovascular and musculoskeletal system in 49.5, 46.1 and 29.9 percents elderly respectively.

Respiratory system was also involved in 29.2 percent study population. In 15.7 percent elderly there was Skin and subcutaneous tissue disease. Genito-urinary system, nervous system and ENT problem was seen in 9.8, 5.4 and 4.9 percents study population. In 24 percent elderly there was other diseases [10].

Researchers had revealed higher prevalence than present study of urge incontinence rate with 36.6 to 41.6 percent of the elderly having at least an occasional problem (with 7.5 to 9.6 percent having problems often) , compared to 23.4 to 28.8 percent having at least an occasional problem with stress incontinence (with 3.3% to 5% having problems often) [11]. Similarly in the study carried out Uttaranchal found that hypertension was the most common problem (41.4%), followed by musculoskeletal problems (36.8%), respiratory problems (36.1%) and psychosocial problems (28.8%) [12]. Others found that 40 (54.1%) elderly presented with some sign / symptom for which fasting blood sugar level was done and the patient was diabetic. 18 (24.6%) were diagnosed on routine investigation and rest 16 (21.6%) accidentally [13]. Hypertension was noted by other research group in 25.9% percent and diabetes in 8.3 percent elderly; Less common findings were Gastrointestinal complaints / diarrhoea in 12 percent, dermatological 9.4 percent, and respiratory 7.3 percent; 61 percent of the elderly chewed tobacco, 33.3 percent of males were smokers and 28.7 percent regularly consumed alcohol [14].

4.1. Dependency According to Activities of Daily Living

Activities of daily living (ADL) play an important role, whether the person can live independently or needs some provision to prevent him from being a burden. It is the functional ability of the individual that is related to his mental, physical and social health. The physical activities include bathing, toilet, dressing, walking, eating, transfer in and out of bed etc. Majority of the study population were Independent according to the total scores obtained from instrument of Activities of Daily living (ADL), which is 91.18 percent of the total participant. Almost 9 percent elderly needs some assistance. In a study conducted among elderly in Rural South India 8.6 percent of the elderly needed assistance in physical activities [15]. Study conducted in West Bengal using the same instrument to assess disability according to Activities of Daily Living as in present study found among geriatric population 17.47 percent disability. The difference in the disability with the present study population can be explained by the fact that seriously ill elderly were excluded from the study [16].

4.2. Health Care Seeking Behavior

The extent of use of health services by the aged is an indirect determinant of their access to health care. The magnitude of the health problem requires a regular utilization of health services. The present study showed that Government health facility was the most frequent (54.06%) first place of contact for health care among elderly. Only 22.97 percents of population went to private physician. 7.88 percent visited AYUSH, 5.10 percent Quacks & 9.98 percent used self-medication. In the present study majority of study population contacted

health care in days 1-3; this was 71.69 percent of total study population. 24.12 percent of geriatric population consulted on the same day of ailment & 4.18 percent in day 4 or more.

Study conducted in Tamil Nadu observed that Private health care facilities were the preferred place of contact for 48 percent of rural study subject, the reason being proximity to residence & perception of availability of better care [17].

The segment of population unwilling to who did not avail health care, even with overt symptoms, attributed their inaction due to insufficient severity of symptoms (51%), unaffordability (46%) and lack of time due to work pressure (25%). Studies reported that 46.3 percent of the elderly were unaware of any geriatric welfare services & 96 percent had never utilized any geriatric welfare services [18].

It was also reported that 59 percent of the subjects had to travel more than 3 kilometers for Government health facilities. Study conducted in Bangladesh emphasized that the most powerful predictor for client satisfaction with Government services was provider behavior especially respect & politeness. Reduction of long waiting time was more important to the clients than prolongation of short consultation time [19].

A community based cross sectional study in Punjab found that the prevalence of disorders of Cardiovascular System (88.4%) was maximum. The leading causes of morbidity were Hypertension (53.7%), Arthritis (49.7%), cataract (41.6%) and anemia (30.8%) [20].

Other researchers found that common morbidity among elderly people were related to oral cavity & salivary glands (69.6%); musculoskeletal system (53.4%); eye & adenexa (39.9%); endocrine, nutritional & metabolic diseases (28.2%); Ear & mastoid process (21.1%) and skin diseases (19.7%) [21].

In another study disorders of oral cavity were more prevalent among aged males (40.6%), while diseases of skin were more prevalent among aged females (10.0%). Most common disorder reported among elderly were diseases of the eye (51.7%) followed by endocrine, nutritional and metabolic diseases (38.4%) [22].

In a cross sectional study at Gujarat that most common geriatric problems reported by the study population were visual problems (65%), hypertension (40%), dental problems (34%), diabetes (26%), joint complain (26%) and hearing problems (22%). Treatment seeking behaviour was more prevalent for hypertension (90%) and diabetes (92%) as compared to others [23].

Andhra Pradesh study found that among the elderly population aged 60 years and above, 64% have morbidity. Diseases of Musculoskeletal System (39%) followed by diseases of Circulatory system (21%) and diseases of Eye and adnexa (20%) were most commonly seen among study population. Joint pains (41%), defective vision (34%), polyuria (12%) and defective hearing (7%) were most common presenting complaints [24].

5. Conclusion

The present study identified a high prevalence of morbidities in elderly age. It also pointed out various socio-demographic, nutritional, and environmental modifiable risk factors which can be tackled by effective behavior

change communication of the community supported models as practiced in the developed countries.

6. Strengths of the Study

In eastern Bihar, no study had been reported so far to assess morbidity & quality of life of geriatric population. Further, it was a community based cross sectional study which showed the true picture of geriatric population in rural area.

7. Limitations of the Study

1. Larger sample size could have provided more vital information, however due to constraint of time the same could not be achieved.
2. Presence of family members during interview and examination could not be avoided and it might have influenced the response of the respondents.
3. No laboratory investigation was done.
4. To make the study more focused and feasible by a single investigator, the mental morbidity of the elderly subjects could not be assessed in its entirety.

8. Future Directions of the Study

There is a need to carry out extensive multicentric studies involving both rural and urban areas to identify all the risk factors precipitating morbidities in elderly age, so that preventive program becomes more successful in India. Not only the array of socio-demographic, socio-economic, and environmental factors along with the health-seeking behavior, but also other physiological and behavioral risk factors need to be explored for effective control of morbidities in elderly age. We hope to replicate the study further with larger population in whole of the state.

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Declaration of Conflicting Interests

The authors declare that there is no potential conflicts of interest with respect to the research, authorship and /or publication of this article.

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