



A STUDY ON MORBIDITY PATTERN AND HEALTH SEEKING BEHAVIOUR AMONG ELDERLY POPULATION RESIDING IN AN URBAN AREA OF DISTRICT KATIHAR, BIHAR: A CROSS SECTIONAL STUDY

Community Medicine

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ABSTRACT

Background The world is on brink of demographic milestone. The elderly are one of the most vulnerable as well as high risk groups in respect to health. Understanding elderly health problems and health-seeking behaviour is prerequisite for providing comprehensive geriatric care to them. **Objectives:** The aim was to study the socio-demographic profile, pattern of morbidity and health seeking behaviour of elderly people of Katihar, Bihar. **Methods** A community based cross-sectional study was conducted in urban field practice area of Katihar Medical College. A total 384 elderly people aged 60 years and above were selected by systematic random sampling technique. A pre-designed, pre-tested semi structured questionnaire was used to collect information and complete clinical examinations were performed among the study subjects. Data was analyzed using epi info version 7 statistical software. **Results** Among 384 elderly people studied, 52.86% were female and 47.14% were male. Cardiovascular diseases including hypertension were the most common morbidity (85.68 %), followed by musculoskeletal disorders (51.74 %). Majority of elderly people used to go to private hospitals (66.67 %), followed by government hospitals (22.14 %). **Conclusions** The study has highlighted that the elderly suffers from multiple morbidities. The high morbidity load among elderly in present study stresses for effort to provide better health care to them and thus ensure that they remain active members of our society.

KEYWORDS

Elderly/ Socio-economic status/Morbidity/Health seeking behavior

BACKGROUND

Population aging is the 21st century's dominant demographic phenomenon. Declining fertility, increasing longevity, and the progression of large-sized cohorts to the older ages are causing elder shares to rise throughout the world. According to world health statistics 2014, globally around 11 % of population is above 60 years of age with 8 % of population is above 60 years of age in South East Asian countries including India.¹ The percentage of elderly population in India has increased from 6.0 to 8.3 per cent since 1991 to 2013 with proportion of females to be higher than males.² Over the next four decades, India's demographic structure is expected to transform dramatically from a young to an ageing population resulting in 316 million elderly persons by 2050.³

An Indian Council of Medical Research (ICMR) report on the chronic morbidity profile in the elderly states that hearing impairment is the most common morbidity followed by visual impairment.⁴ However, different studies show varied results in the morbidity pattern. A study conducted in the rural area of Pondicherry reported decreased visual acuity due to cataract and refractive errors in 57 % of the elderly followed by pain in the joints and joint stiffness in 43.4 %, dental and chewing complaints in 42 %, and hearing impairment in 15.4 %. Other morbidities were hypertension (14 %), diarrhea (12 %), chronic cough (12 %), skin diseases (12 %), heart disease (9 %), diabetes (8.1 %), asthma (6 %), and urinary complaints (5.6 %).⁵ A similar study that had been conducted among 200 elderly people in rural and urban areas of Chandigarh in Haryana observed that as many as 87.5 % had minimal to severe disabilities. The most prevalent morbidity was anemia, followed by dental problems, hypertension, chronic obstructive airway disease (COAD), cataract, and osteoarthritis.⁶ A study on ocular morbidities among the elderly population in the district of Wardha found that refractive errors accounted for the highest number (40.8 %) of ocular morbidities, closely followed by cataract (40.4 %) while other morbidities included aphakia (11.1 %), pterygium (5.2 %), and glaucoma (3.1 %).⁷ In a community based study conducted in Delhi among 10,000 elderly people, it was found that problems related to vision and hearing topped the list, closely followed by backache and arthritis.⁸ Health-seeking behavior in terms of illness behavior refers to those activities undertaken by individuals in response to symptom experience. Elderly patients are generally perceived to be more reluctant to seek health care for ailments.^{9,10}

With this perspective, the present research was undertaken to study the morbidity pattern, sociodemographic profile and health seeking behaviour of the elderly residing in the urban area of Katihar District.

This study will help us to understand and evaluate their health problems, so that a comprehensive health-care plan covering all aspects of preventive, promotive, curative, and rehabilitative services can be planned for the care of the elderly residing in this area.

AIMS AND OBJECTIVES

1. To assess the prevalence and pattern of morbidity in elderly population in Katihar District.
2. To study the utilization of health services among them.

METHODS

Study Setting

The study was conducted in urban field practice area of Katihar medical college.

Study Design

Community-based cross-sectional study.

Study Population

The study subjects were in the age group of 60 years and above and residing in this area were included in the study.

Duration of Study

The study will be carried out from Jan 2017 to December 2017.

Sample Size

Appropriate simple random sample of size (n) within 95 % confidence limit obtained by using the following formula:

$$n = \frac{1.96^2 \times P \times (100 - P)}{d^2}$$

P = Prevalence

d = Precision (absolute or relative precision)

The minimum sample size to be covered is derived on the basis of morbidity prevalence rate of 50 % in elderly^{11,12} with 95 % confidence interval and 10% relative precision.

$$n = \frac{3.84 \times 50 \times (100 - 50)}{(10 \text{ of } 50)^2}$$

Thus by the above formula the minimum sample size will be 384.

METHODS

The area of Sharifganj has approximately 10,000 populations. The registered number of persons aged 60 years & above was 800

(considering 8.0 % population aged 60 years and above).¹ Houses that have at least one or more elderly person were numbered serially. Then the houses where survey had been undertaken were selected by systematic random sampling technique. A detailed information about the morbidity, functional ability, psycho-social profile of the elderly and availability & utilization of Geriatric Welfare Services were collected with the help of predesigned and pretested Performa by oral questionnaire method followed by clinical examination of the elderly people.

Sampling Strategy And Data Collection

The information had been collected on a pretested Performa. Each individual aged 60 years and above were informed in his or her own house. For all those who could not be contacted in the first instance, two further visits were made before declaring the subject unavailable. The purpose of the study had been explained and confidentiality of the information will assured. A detailed history was also taken regarding housing and sanitary condition along with the history of present and past illness.

Statistical Analysis

The data collected was first coded and then transferred on to a master chart from which simple as well as correlation tables were prepared, analyzed and statistically evaluated using epi info version 7 software. Chi-square test was applied for proportions. A $p < 0.05$ was considered as statistically significant.

RESULTS

Age Group (years)	Male		Female		Total	
	No.	%	No.	%	No.	%
60-64	49	27.07	89	43.84	138	35.94
65-69	56	30.94	45	22.17	101	26.30
70-74	34	18.78	42	20.69	76	19.79
75-79	24	13.26	16	7.88	40	10.42
80+	18	9.94	11	5.42	29	7.55
Total	181	47.14	203	52.86	384	100.0

Table 1. Age and Sex Distribution

The study population consisted of 384 elderly persons aged 60 years and above with 47.14 % males and 52.86 % females with a sex ratio of 1121 females per 1000 males. Maximum population of aged was in the age group of 60-64 years (35.94 %), followed by 65-69 years age group (26.30 %) and 7.55 % of the aged were 80 years and above as shown in Table 1.

Variables	Categories	Total		Morbid		P Value
		No.	%	No.	%	
Religion	Hindu	161	41.93	140	86.95	2 = 21.16 df=2 P<0.0001
	Muslim	210	54.69	189	90.00	
	Others	13	3.38	6	46.15	
Caste	General	161	41.93	149	97.38	2 = 12.44 df=2, P<0.01
	OBC	153	39.84	133	86.92	
	SC	70	18.23	53	75.71	
Occupation	Retired/Unspecified	136	35.42	118	86.80	2 = 40.23 df= 4 P<0.0001
	Housewife	181	47.14	170	93.90	
	Service	34	8.85	29	85.30	
	Labourer	24	6.25	14	58.33	
	Agriculture*	7	1.82	2	28.57	
	Business*	2	0.52	2	100.00	
Type of Family	Joint	300	78.13	271	90.30	2 = 15.08 df=2 P<0.001
	Nuclear	78	20.31	58	74.35	
	Single Mother	6	1.56	6	100.00	
Literacy	Illiterate	42	10.94	41	97.60	2 = 29.04 df=4 P<0.0001
	Just literate	115	29.55	102	88.69	
	Primary	82	21.35	73	89.00	
	Middle	62	16.15	60	96.80	
	Higher Secondary*	62	16.15	47	75.80	
	Graduate & Above*	21	5.47	12	57.14	

Socio-Economic Status	I	19	4.95	15	78.90	2 = 8.84 df=4 P>0.05
	II	32	8.33	25	78.10	
	III	105	27.34	87	82.85	
	IV	147	38.28	133	63.26	
	V	81	21.09	75	92.60	

Table 2:- Demographic Profile & Prevalence of morbidity

*Pooled together for 2 purposes in respective variables.

Maximum of the elderly studied were Muslim (54.69 %), followed by Hindu (41.93 %). Prevalence of morbidity was found (90.0 %) in Muslim and (85.95 %) in Hindus. and this difference in prevalence of morbidity in relation to religion was found to be statistically significant ($p < 0.0001$).

Prevalence of morbidity was highest among General category (97.38 %), followed by OBC (86.92 %), and SC/ST (75.71 %) and this difference in prevalence of morbidity in relation to caste was found to be statistically significant ($p < 0.01$).

Maximum prevalence of morbidity was found in Businessman (100 %), followed by housewives (93.9 %), retired/ unemployed (86.8 %), servicemen (85.3 %), laborer and Agriculture (58.33 & 28.57 % respectively). This difference was found to be statistically significant ($p < 0.0001$).

The prevalence of morbidity was highest among elderly living alone (100.0 %), and lowest in joint families (90.3 %). This difference was found to be statistically significant ($p < 0.001$).

The illiterates & just literates were having the highest prevalence of morbidity (97.6 % and 88.69 % respectively) and least prevalent in graduates & professionals (57.14 %). This difference in relation to literacy was found to be statistically significant ($p < 0.0001$).

The prevalence of morbidity was highest among elderly belonging to socio- economic class IV (82.85 %) and lowest in class I (78.9 %). This difference in prevalence of morbidity in relation to socio-economic status was not found to be statistically significant ($p > 0.05$).

ICD-10	Disease	Male		Female		Total	
		No.	%	No.	%	No.	%
Musculoskeletal System 51.74							
M 13.9	Arthritis	54	29.83	130	64.04	184	49.92
S 72	Fracture Femur	2	1.1	5	2.46	7	1.82
Cardiovascular System 85.68							
I 10-15	Hypertension	97	53.59	102	50.25	199	51.82
I 20-25	Ischaemic heart disease	12	6.63	4	1.97	16	4.17
D 50-64	Anemia	23	12.71	91	44.83	114	29.69
Respiratory System 11.20							
J 45	Asthma	13	7.18	12	5.91	25	6.51
J 42	Chronic bronchitis	4	2.21	1	0.49	5	1.30
A 16	Pulmonary TB	1	0.55	1	0.49	2	0.52
J 00-06	Acute URTI	6	3.31	5	2.46	11	2.86
Gastrointestinal System 14.32							
K 29-5	Chronic Gastritis	7	3.87	19	9.36	26	6.77
K 25-9, A09	Gastroenteritis	1	0.55	6	2.96	7	1.82
K 81-0	Cholecystitis	0	0.0	3	1.48	3	0.78
K 59-0	Constipation	4	2.21	8	3.94	12	3.13
K 40-46	Hernias	4	2.21	0	0.00	4	1.04
I-84	Haemorrhoids	2	1.10	1	0.49	3	0.78
Genitourinary System 5.99							
N 39.0	Urinary Tract Infection	5	2.76	7	3.45	12	3.13
N 40	BPH	5	2.76	0	0.0	5	1.30
D-25	Fibroid Uterus	-	-	6	2.96	6	1.56
Disease of Eye and Adnexa 41.41							
H 25-26	Cataract	69	38.12	85	41.87	154	40.10
H-54	Blindness	1	0.55	1	0.49	2	0.52
H-10	Conjunctivitis	1	0.55	2	0.99	3	0.78
Endocrine, Nutritional & Metabolic Disorders 38.28							
E 66, E 44	Obesity & PEM	27	14.92	50	21.73	77	20.05
E 10-14	Diabetes mellitus	25	13.81	37	18.23	62	16.15
E00-07	Thyroid dysfunctions	1	0.55	7	3.45	8	2.08

Mental & Behavioral disorders F00-99	11	6.08	6	2.96	17	4.43
Diseases of Skin and Subcutaneous Tissue L 00-99	5	2.76	4	1.97	9	2.34
Diseases of Nervous System 12.76						
G 80-83 Paralysis	5	2.76	4	1.97	9	2.34
H 90-95 Hearing Impairment	17	9.39	23	11.33	40	10.42
Table 3. ICD-10 Classification of the Morbidity (Multiple Response)						

Table 3 shows the ICD-10 classification of the morbidity present in population. The prevalence of diseases of cardiovascular system was maximum (85.68 %), followed by musculoskeletal system (51.74 %), eye and adnexa (41.41 %), endocrine nutritional and metabolic disorders (38.28 %), gastrointestinal system (14.32 %), nervous system (12.76 %), and respiratory system (11.20 %).

First Response	No.	%
Home remedies	7	1.82
Self-medication	18	4.69
Family physician	12	3.13
Private hospital	256	66.67
Govt. health center	85	22.14
Medical Store	6	1.56
Total	384	100.0

Table 4. Utilization of Health Services in General Illness by study population

Table-4 shows that majority of elderly used to go to Private hospital (66.67 %) as their first response to illness, followed by government health centers (22.14 %), and self-medication (4.69 %).

First Response	No.	%
Private Practitioner	274	71.35
Nursing Home	58	15.10
Govt. Hospital	52	13.55
Total	384	100.0

Table 5. First Response in Severe Illness by Study Population

Majority of the elderly attended Private Practitioners (71.35 %), followed by Nursing Homes (15.10 %) and Government Hospitals (13.55 %) as shown in Table-5.

DISCUSSION

A total of 384 elderly above 60 years of age were studied. Age group 60-69 years constitute the major fraction of the population (62.24 %), followed by 70-79 years (30.21 %), and 80+ years (7.55 %), in comparison to 72.4 %, 22.6 %, and 5 % respectively in Aligarh City,¹³ 77.0 %, 17.1 %, and 4.9 % respectively in Amritsar City,¹⁴ and 55.8 %, 27.3 % and 16.9 % respectively in Chandigarh City.¹⁵

The sex distribution shows that females outnumbered the males being 52.86 % in comparison to 47.14 % males, which is almost similar to ICMR findings of 50.8 % and 49.2 % respectively¹⁶, and 52.8 % female to 47.2 % male in rural area of Meerut.¹⁷

The morbidity was significantly higher in General Category (41.93 %) than OBC (39.84 %) & SC/ST (18.23 %) and it was found to be statistically significant ($p < 0.01$), in contrast Pawan et al (2002)¹⁷ in rural Meerut found that the morbidity was significantly higher in OBC (82.4 %). The morbidity was higher in single member family than in joint & nuclear family, which was found statistically significant, in comparison Pawan et al (2002)¹⁷ found higher morbidity in nuclear family. The morbidity was found maximum in illiterate groups, and in socio-economic class V, almost similar findings were found by Pawan et al (2002)¹⁷ with higher morbidity in class V and illiterate groups. The diseases of cardiovascular system constituted the major fraction (85.68 %) of overall morbidities found in the study population. Hypertension was the leading cause of morbidity (51.82 %). In other studies, almost similar prevalence of hypertension was found as 55.3 % (Delhi, 1990)¹⁸, 49.4 % (Udaipur, 2004),¹⁹ 49.2 % (Kolkata, 2005),²⁰ and 34.3 % (Mumbai, 2005).²¹

The disorders related to musculoskeletal system were found on the 2nd rank with 49.2 % arthritis and 1.82 % fracture femur. Other studies have also reported almost similar prevalence of arthritis, viz. by NCAER study (1994-95),²² Padda et al (1998),¹⁴ Mehta et al (2000),²³ and Sarkar (2003),²⁰ and Guralnik et al (1993).²⁴

Diseases of eye and adnexa constitute 41.41 %, being more common in females (43.35 %) than males (39.22 %). Cataract was found to be the

major contributor, with prevalence of 39.22 % as also reported by Padda et al (54.0 %),¹⁴ Sarkar (51.0 %),²⁰ Prakash et al (47.4 %),¹⁹ and the NCAER survey²² (39.4 %).

The prevalence of Endocrine, nutritional and metabolic disorders was found to be 38.28 %, including 20.05 % obesity & PEM, 16.15 % diabetes mellitus and 2.08 % thyroid dysfunctions. Vijayaraghavan (2000)²⁵ reported the prevalence of obesity & PEM to be 28.4 %. The prevalence of Diabetes Mellitus in other studies was found as 7.5 % (the NCAER survey, 1994-95),²² 17.7 % (Shah & Prabhakar, 1997)²⁶, 6.8 % (Padda et al, 1998)¹⁴, 6.6 % (Mehta et al, 2000),²³ 5.0 % (Sarkar, 2003)²⁰ and 3.3 % (Prakash et al, 2004).¹⁹

The diseases of gastrointestinal system were found to be 14.32 % in the study population, the chronic gastritis being the commonest problem (6.77 %), while the constipation was found in 3.13 % population, and diarrhea & gastroenteritis in 1.82 % population. Almost similar findings were found by Padda et al¹⁴ (chronic gastritis-5.9 %), Niranjana et al¹¹ (chronic gastritis-3.1 %), Sarkar²⁰ (chronic gastritis-30.0 %, constipation-34.0 %).

The diseases of nervous system were found in 12.76 % of the study population, in comparison to those reported by Padda et al¹⁴ as 6.6 %, Mehta et al²³ as 35.5 %, and Prakash et al²¹ as 8.7 %. Hearing impairment was found to be 10.8 % in the study population, and in various studies, it was found as 9.7 % (Padda et al),¹⁴ 36 % (Sarkar),²⁰ 60.2 % (Dhar),²¹ and 19.1 % (Goel et al).¹⁷

The overall prevalence of diseases of respiratory system was found as 11.20 %. Asthma was accounting 6.51 %, chronic bronchitis 1.30 %, pulmonary T.B. 0.52 %, and URTI 2.86 %. The findings of other studies were as 12.2 % chronic bronchitis and 2.2 % pulmonary T.B. (Niranjana et al, 1996);¹¹ 14.0 % chronic bronchitis, 12.6 % asthma and 3.2 % pulmonary T.B. (Padda et al, 1998);¹⁴ 15 % chronic bronchitis and 35 % URTI (Sarkar, 2003);²⁰ and 3.2 % chronic bronchitis, 14.9 % asthma, 3.2 % URTI and 1.1 % pulm. T.B. (Prakash et al, 2004)¹⁹

Diseases of genito-urinary system were found to be 5.99 % in present study. In comparison to 4.4 % by Niranjana et al (1996),¹¹ 9.8 % by Padda et al (1998),¹⁴ and 10.0 % by Mehta et al (2000).²³

The prevalence of skin and subcutaneous tissue disorders was found to be 2.34 %, almost resembling to that reported by Sarkar (2003)²⁰ as 2.0 %. Whereas Padda et al (1998)¹⁴ reported skin diseases as 9.3 %.

Maximum numbers of elderly were using private hospital as first response in general illness (66.67 %) and in severe illness (71.35 %) with the commonest reason being better in giving health services (62.41 %) and in medical emergencies also, private hospitals were preferred by the study population (74.48 %) in contrast to the findings of Pradhan (2000).¹⁸

CONCLUSIONS

The present study among elderly in Katihar, Bihar has highlighted a high prevalence of certain morbidities like oro-dental problems, visual impairment, musculoskeletal disorders, hypertension, obesity, and other health related issues. Awareness among the elderly population should be created for regular medical check-ups to ensure prevention and early detection of the chronic diseases. It is also essential to have geriatric units with specialised professionals along with subsidized health care services in order to address geriatric morbid conditions in a proper manner. Health education and promotion should be instituted for the elderly.

Strength

The strength of the study was that the sampling of eligible subjects was done by systematic random sampling technique. The sample size is large enough to avoid biases.

Limitation

In spite of the best efforts to convince all the study subjects to participate in the study, some of them did not cooperate.

Recommendations

Comprehensive health care services including regular screening programmes, health check-ups should be promoted along with health education to deal with the morbidities among elderly at grass root level. Apart from that behaviour and life style modification through

primordial prevention strategies should be carried out to improve the overall health status among elderly.

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