# An epidemiological study on morbidity profile and predictors of health seeking behaviour among elderly population in a tribal dominant state of India: A regression analysis

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### **ABSTRACT**

Background: Ageing is defined as a process of deterioration in the functional capacity of an individual that results from structural changes, with the advancement of age. Globally the geriatric population has increased from 8% in 2012 to 8.5% in 2015 and expected to rise by 22% in 2050. Hence we planned to study morbidity profiles and predictors of health-seeking behaviour among the elderly population in Ormanjhi, Ranchi. Methodology: A community based cross sectional study was conducted in Ormanjhi, Ranchi, Jharkhand for a period of six months (March-August 2018). The study was done among 206 geriatric populations fulfilling the eligibility criteria, selected by cluster sampling and those not giving their consent were excluded from the study. Data collected were entered in Microsoft Excel and analysis was done on Statistical Package for Social Sciences (SPSS) version 20.0. Results: A total of 206 geriatric populations fulfilling the study criteria, were enrolled during the study. The majority of the age group was found between 60-69 years (71.8%). Around 202 (98.1%) of which resided in rural areas, nearly half 102 (49.5%) depended on pension for livelihood and 108 (52.4%) were illiterate. Two-fifth of the study subjects (40.3%) consulted a government doctor if any health problems occurred followed by 30.5% preferred a private doctor and 20.1% consulted unqualified practitioners. Most of the study participants (64.5%) did not seek medical care due to financial reasons followed by 14.5% considered it a minor illness than 13% complained that health facility far away and 8.1% considered that old age itself as a disease. Non tribal ethnicity, participants who had their own source of income and co-morbidity were significantly associated with health seeking behaviour. Conclusion: Most participants in this study suffered from morbidities which also affect their quality of life. It was also observed that most of them were not dependent on others for their daily activities. Health seeking behaviour was found to be appropriate in nearly two third (70%) of elderly subjects in Ranchi, Jharkhand.

Keywords: Community based study, elderly, health seeking behaviour, morbidity, regression

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### Introduction

Elderly people are afflicted and burdened by the process of ageing which causes a general decline in their health. The process of aging is brought by the decline in fertility reinforced by increasing longevity due to falling mortality in older ages. [1] Ageing is the

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process of deterioration in the functional capacity of an individual that results from the structural changes at the cellular levels called cell senescence, which is due to exposure to intrinsic and extrinsic factors, specifically leading to the gradual accumulation of damaged DNA and epigenetic changes that affect correct gene expression and lead to altered cell function.<sup>[2]</sup> Although the elderly are physically weak but are a precious asset for any country. Since the elderlies have rich experience and wisdom, they can contribute their might for sustenance and progress of the nation. Globally, the geriatric population has increased from 8% in 2012 to 8.5% in 2015 and expected to rise by 22% in 2050.<sup>[3]</sup>

According to Population Census 2011, there are nearly 104 million elderly persons in India; 53 million females and 51 million males. State-wise data on elderly population divulge that Kerala has maximum proportion of elderly people in its population (12.6 per cent) followed by Goa (11.2 per cent) and Tamil Nadu (10.4 per cent) as per Population Census 2011. This may be due to the lifestyle and better medical facilities in respective states. As per the Statement reported by the Technical Group on Population estimates for India and States 2011-2036, rise of nearly 34 million elderly persons was seen in year 2021 over the Population Census conducted in 2011 and is further anticipated to increase by around 56 million of elderly persons in 2031.

In Jharkhand, there are nearly 2357 thousand (7.1%) elderly persons Comprising of 1175 thousand females and 1182 thousand males among which 1833 thousand persons reside in rural areas while 524 thousand persons are in urban areas. [4] As per SRS Report for the year 2013, among the major states, age-specific death rate for persons aged more than 85 years was as high as 324 in Jharkhand, whereas in Jammu & Kashmir it was only 108. [4]

Old age cannot be called as a disease but because of the impairments, people are unable to do their own basic things. [6] They suffer from multiple symptoms at a time due to debility of various body functions including immunity. A fall in bone mass leads to osteoporosis and fractures, cartilage degeneration leads to musculoskeletal problems, muscle loss leads to functional weakness, a decline in immune function causes increases in infections and cancer, and increased neuronal degeneration leads to a decline of cognitive function and dementia. They are vulnerable to long term diseases of insidious onset such as cardiovascular illness, Cerebrovascular accident (CVA), cancers, diabetes, musculoskeletal disease, anemia, chronic bronchitis, cataract, hearing problem, dental problem, neurological problem and mental illnesses.[7] In order to improve the quality of life of the elderly, it is essential to reduce the burden of disease. Disability is a major health problem of the elderly. It results in difficulties in interaction with society and physical movements. Disability term includes impairments, activity limitations and participation restrictions. [8] 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., The Old age Dependency ratio projections show rise in dependency ratio for all countries.<sup>[9]</sup>

As elderly people are a largely neglected section of society, we found this topic appealing and important at the same time. Geriatric health care by primary care physicians allows patients to receive preventive care to encourage prolonged health and independence. Keeping in view the present cross-sectional study is undertaken to study morbidity profile and predictors of health seeking behaviour among geriatric population in Ormanjhi, Ranchi, Jharkhand. The findings would help Primary care Physicians in developing more effective and comprehensive strategies for improvement in geriatric health.

### **Materials and Methods**

A community based cross-sectional study was conducted, in rural field practice areas of Rajendra Institute of Medical Sciences, Ranchi, India. Three village areas including Irba, Anandi, and Chakla of Ormanjhi block in Ranchi district were randomly selected. The total population of the three areas is about 17726 comprising 7758, 5977 and 3991 in Irba, Anandi, Chakla respectively and the geriatric population (≥60 years age) is about 1000 which form the reference population. A cluster sampling method was chosen for this study. There were 21 villages in the selected area. One village was considered as one cluster. Seven (7) of them were chosen randomly using the lottery method. The selected villages were Pahantoli, Karma, Upper Chakla, Lower Chakla, Sarnatoli, Thakurtoli, and Jhiri. From each village 32 subjects were taken to meet the sample size for the study. For this purpose, every house in the selected village was allocated a number. One number was chosen randomly using the lottery method to select the first house. Then subsequent houses were visited to collect data from subjects until a sample size of 32 was achieved in that village. In this way, total of 220 subjects were included in the present study. All eligible subjects who were willing to participate from a household were enrolled in the study and if in any house there were more than one elderly person then all were considered in our study.

As there is no baseline data available on the quality of life of geriatric people in Jharkhand, therefore the sample size estimation was made on the basis of findings of the study conducted by Ganesh SK, Majumdar A and Pavithra G in Puducherry, India which revealed that the standard deviation of the overall QOL score in the elderly population was 10.<sup>[10]</sup>

Thus taking standard deviation (SD) as 10 and precision of study (D) as 2%, the sample size is calculated using the formula:

Sample size = 4\*SD\*SD/D\*D

It came out to be 100. Because cluster sampling was done, upon applying the design effect of 2, the sample size came out

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to be (2\*100 = 200). Assuming non-response rate to be 10%, 220 individuals were recruited for the study. Ten participants did not give informed consent and data was incomplete for the 4 participants, so the final sample size was 206 upon which analysis was done.

Geriatric people of ages 60 years or above of both sex interviewed in the field practice areas of the Department of PSM, RIMS, Ranchi over a period of six months from March-August 2018. All the participants fulfilling eligibility criteria and willing to participate were included in the study and acutely ill, bed ridden and mentally unsound patients and those not giving their consent were excluded from the study. A pre-tested semi structured questionnaire was used for data collection which includes parts covering socio-demographic profile, morbidity profile and health seeking behaviour. For assessing the quality of life WHO Quality of Life-Brief questionnaire was used.

The study was initiated after the prior approval of the Institutional Ethics committee, RIMS, Ranchi. Data was entered and the template was generated in Microsoft Excel and analysis was done on Statistical Package for Social Sciences (SPSS) version 20.0. Our primary analysis involved the calculation of frequencies and proportion of the study variables for the whole population. All the socio-demographic factors were cross tabulated with morbidity profile and health seeking behaviour to estimate any association. This was followed by multiple logistic regression analyses to examine factors associated with health seeking behaviour. A P value of < 0.05 was set to be significant and also their 95% confidence interval was reported in our present study.

### Results

A total of 206 participants were included in our study. People belonging to age-group of 60-69 years were 148 (71.8%) while among the participants, males were 109 (52.9%) more than females 97 (47.1%). The majority, that is, a total 90 (61%) study participants were Hindu by religion, 134 belonged to nontribal ethnicity (65%), 202 (98.1%) from the rural area, and nearly half 105 (51%) belonged to modified BG (Brahma Govind) Prasad's class 4 socioeconomic status. Educational status of the study population showed that 108 (52.4%) were illiterate, followed by middle school 88 (42.7%), and then 8 (3.9%) had attained secondary, and only 2 (1%) had educated higher secondary and above. About 134 (65%) were married and 192 (93.2%) belonged to a joint family. In our study, the source of livelihood for nearly half 102 (49.5%) of the elderly was pension followed by farming 14 (6.8%) then business 6 (2.9%), and 84 (40.8%) had no own source of income. According to our study, nearly half 101 (49%) of the elderly were taken care of by their children and the majority 137 (66.5%) of the elderly were living with their spouse and children [Table 1].

The morbidity was found to be present in 150 (73%) of study participants [Table 2].

Table 1: Socio-demographic profile of study participants (*n*=206)

Characteristics	Category	Frequency	Percentage
Age	60-69 years	148	71.8%
O	70-79 years	42	20.4%
	≥80 years	16	7.8%
Gender	Males	109	52.9%
	Females	97	47.1%
Religion	Hindu	90	61%
0	Muslim	52	25.2%
	Christian	08	3.9%
	Sarna#	56	27.2%
Ethnicity	Tribal	72	35%
,	Nontribal	134	65%
Category	General	16	7.8%
Gategory	OBC	104	50.5%
	SC	14	6.8%
	ST	72	35%
Residence	Urban	4	1.9%
residence	Rural	202	98.1%
Education	Illiterate	108	52.4%
Education	Middle	88	42.7%
	Secondary	8	3.9%
	Higher sec & above	2	1%
Past Occupation	Gov. employee	23	11.2%
Past Occupation	Private sector	23 11	5.3%
	Farming	53	25.7%
	Business	36	17.5%
	Daily wage worker	22	10.7%
	Homemaker	52	25.2%
	Unemployed	9	4.4%
Socioeconomic	Class 1	4	1.9%
status*	Class 2	22	10.7%
status	Class 3	43	20.9%
	Class 4	105	51%
	Class 5	32	15.5%
Family type	Nuclear	14	6.8%
ranny type	Joint	192	93.2%
Marital status	Married	134	65%
mantai status	Widow/Widower	72	35%
Food habit	Vegetarian Vegetarian	8	3.9%
1 Ood Habit	Non vegetarian	96	95.1%
	Occasional non vegetarian	2	1%
Source of	Pension	102	49.5%
livelihood	Business	6	2.9%
iiveiiiiood	Farming	14	6.8%
	No own source of income	84	40.8%
Caretaker	Self	43	20.9%
Caretaker		62	30.1%
	Spouse		49%
C	Son or daughter	101	
Current living	With Spouse & Children	137	66.5%
status	With Spouse	11	5.3%
	With Children	49	23.8%
	Living alone	9	4.4%

\*local religion of Jharkhand. \*As per Modified B.G. Prasad Classification 2020

The most common morbidity was found to be musculoskeletal disease (118, 35%) followed by gastrointestinal disease (60, 17.75%) then hypertension (46, 13.63%), then dental disease (34, 10.06%), cataract (24, 7.1%), deafness & diabetes mellitus both comprised of (12, 3.55%). The average number of morbidity in each participant was found to be 2.25 [Table 3].

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Table 2: Distribution of the study subjects on the basis of Morbidity (*n*=206)

Morbidity status	Frequency	Percentage
Present	150	72.8
Absent	56	27.2
Total	206	100

Table 3: Distribution of Co-morbidity\* among the study subjects (*n*=338)

Disease	Frequency	Percentage
Heart disease	12	3.55
Hypertension	46	13.63
Diabetes Mellitus (DM)	12	3.55
GIT disease	60	17.75
Musculo-skeletal disease	118	34.91
COPD	04	1.18
Cancer	04	1.18
Stroke	04	1.18
Cataract	24	7.10
Deafness	12	3.55
Genito-urinary disease	04	1.18
Dental disease	34	10.06
CNS disease	04	1.18
Total	338	100
Mean number of morbidity=338/150	2.25	

\*Multiple Morbidity

Most of the study participants 167 (81%) had normal activities of daily living and only 39 (19%) had impaired ADL [Table 4].

Health seeking behaviour was found to be appropriate in 144 (70%) of study subjects. [Table 5]

The majority of the study subjects 58 (40.3%) consulted a government doctor if any health problems occurred followed by 44 (30.5%) preferred a private doctor and 20.1% consulted an unqualified practitioner. [Table 6]

Most of the study participants 40 (64.5%) did not seek medical care due to financial reasons followed by 9 (14.5%) considered it a minor illness then 8 (13%) complained that the health facility was far away and 5 (8.1%) considered that old age as a disease. [Table 7]

Most of the participants 86 (71.8%) not prefer to visit government hospitals for their morbidity [Table 8].

Majority of the participants (29, 33.7%) did not want to visit government hospitals due to lack of available medicine followed by 14 (16.3%) who did not visit because they had no one to accompany them and also due to poor quality of care. [Table 9]

Appropriate health seeking behavior was found more among young old ages, non tribal ethnicity, Hindu religion, OBC category, who had own source of income, who had more morbidity, who had impaired activities of daily living and those

Table 4: Distribution of the study subjects on the basis of ADL (Activities of Daily Living) (*n*=206)

ADL Status	Frequency	Percentage
Normal	167	81.1
Impaired	39	18.9
Total	206	100

Table 5: Distribution of the study subjects on the basis of Health seeking behaviour (*n*=206)

Health seeking behaviour	Frequency	Percentage
Appropriate	144	69.9
Not appropriate	62	30.1
Total	206	100.0

had an excellent quality of life. The association was found statistically significant on applying Chi square test. [Table 10]

The significant associated independent variables (P < 0.05)were adjusted for determinants of health seeking behaviour in elderly participants as an outcome using binomial logistic regression and an adjusted odds ratio and 95% confidence interval (CI) was obtained. Logistic regression analysis table showed that ethnicity, participants who had their own source of income and co-morbidity were positively associated with health seeking behaviour. Health-seeking behaviour was 0.358 times (CI-0.168- 0.761, df-1) less in tribal people as compared to non tribal participants. Health seeking behaviour was 533.58 times (CI-48.07-5922.47, df-1) more in those subjects who had their own source of income present as compared to those participants who had no own source of income. Health seeking behaviour was 3.222 times (CI-1.348-7.702, df-1) more in morbid people as compared to non morbid participants. The variables like Age, Category, Education, Activity of Daily Living (ADL) and Quality of Life (QOL) were not found to be statistically significant determinants of health seeking behaviour. [Table 11]

### Discussion

In this study from Table 1, it was found that most (71.8%) of the participants were of 60 to 69 years age group, which was followed by participants from 70 to 79 years age group (20.4%) and then >80 years age group (7.8%) and mean age of the participants were 67.7 years. Suwarna *et al.*<sup>[11]</sup> in their study conducted in Miraj, Maharashtra where 64.5% belonged to the age group of 60-69 years, 28.2% belonged to 70-79 years age group and 7.2% belonged to >80 years age group. Sharma *et al.*<sup>[12]</sup> in their study conducted in Shimla found that in the rural area, about 58.5% belonged to the age group of 60-69 years, 30% belonged to 70-79 years age group and 11% belonged to >80 years age group. Karmakar *et al.*<sup>[13]</sup> in their study conducted in rural Tripura found that 45% belonged to the age group of 60-69 years, 29% belonged to the 70-79 years age group and 26% belonged to >80 years age group.

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Table 6: Distribution of the study subjects on the basis of type of health facility availed (*n*=144)

Type of health facility availed	Frequency	Percentage
Take medicine from pharmacy	06	4.2
Consult gov. doctor	58	40.3
Consult priv. Doctor	44	30.5
Jharphuk/Ojha	07	4.9
Unqualified practitioner	29	20.1
Total	144	100

Table 7: Distribution of the study subjects on the basis of reason for not seeking medical care for chronic disease (*n*=62)

Reason for not seeking medical care	Frequency	Percentage
Financial reason	40	64.5
Old age disease	05	8.1
Consider minor illness	09	14.5
Health facility far away	08	12.9
Total	62	100.0

Table 8: Distribution of the study subjects on the basis of utilization of government health facility for chronic disease (*n*=144)

Visiting Gov. Hospital	Frequency	Percentage
Yes	58	28.2
No	86	71.8
Total	144	100

Table 9: Distribution of the study subjects on the basis of reason for not utilizing government health facility for chronic disease (*n*=86)

	/	
Reason for not using Gov. health facility	Frequency	Percentage
Far away	08	9.3
Staff not co-operative	11	12.8
No one to accompany	14	16.3
Lack of medicine	29	33.7
Not aware	02	2.3
Poor quality of care	14	16.3
Long waiting time	08	9.3
Total	86	100.0

In the present study, the majority (52.9%) of the elderly were males and 47.1% of the elderly were females [Table 1]. Similar findings by Karmakar *et al.*<sup>[13]</sup> in their study conducted in rural Tripura found that 58% were male and 42% were female. Shraddha K *et al.*<sup>[14]</sup> their study conducted in Mysore, Karnataka found that 39.4% were males and 60.6% were females. Chauhan *et al.*<sup>[15]</sup> in a study conducted in the Venkatachalem village in Nellore district, AP found that 33.4% were males and 66.2% were females.

In our study, majority (43.7%) of participants were Hindu by religion, followed by Sarna (27.2%), Muslim (25.2%) and Christian (4%) [Table 1]. In a study conducted by Karmakar *et al.*<sup>[13]</sup> in rural Tripura also found that the majority (61%) were Hindu by religion.

In this study, on the basis of ethnicity, most of the participants (134, 65%) were non tribal and the rest (72, 35%) belonged to the tribal community [Table 1]. According to the 2011 census, the tribal population of Jharkhand constitutes 26.3% of the total population of the state and in Ranchi district 41.8-44.6% of tribal populations are present.

The present study revealed that 52.4% were illiterate, 42.7% studied up to primary class, 3.9% studied till secondary school, and 1% were attained higher secondary & above [Table 1]. Narapureddy B *et al.*<sup>[16]</sup> in a study conducted in a rural area of Allahabad District, UP found that 70.1% of the elderly were illiterate. SH Parray *et al.*<sup>[17]</sup> in their study conducted in Kashmir found that 67.8% of the elderly in the rural area were illiterate. Findings of more literacy labels in our study as compared to others may be due to the close proximity of the field practice area to the capital Ranchi.

In this study, 72.8% of participants had one or other morbidities [Table 2]. In studies done in other parts of the world prevalence of morbidities among the elderly ranged from 65.2% to 88.9%. [18,19] The mean number of morbidities reported in this study was 2.4 [Table 3], which ranged from 1.6 to 6.1 in other studies. [18-20]

It was observed in our study that joint pain was the commonest morbidity with 35% of the population suffering from it, followed by gastro-intestinal problems (17.75%), hypertension (13.63%) and dental problems contributing 10% [Table 3]. Similar results were revealed by Jacob A *et al.* (Tamil Nadu),<sup>[21]</sup> Gaur DR *et al.* (North India)<sup>[22]</sup> and Padda AS *et al.* (Amritsar)<sup>[23]</sup> observed in their respective studies that the most common morbidity was joint pain/joint stiffness (43.4%, 46% and 60.6%), cataract (68%, 45.3% and 54.01%) and dental problems (45.3%, and 21.9%) respectively.

This study revealed that health seeking behaviour was found to be appropriate in 144 (70%) of study subjects [Table 5]. Out of 144, more than one third of the study subjects (40.3%) consulted government doctor if any health problems occurred followed by less than one third (30.5%) preferred private doctors 20.1% consulted unqualified practitioners and 9% still believed in Ojha/Jharphuk [Table 6]. This revealed that awareness among the elderly about health facility was lacking, so proper health education and IEC was required in these areas for appropriate health seeking behaviour. Majority of the study participants (40, 64.5%) did not seek medical care due to financial reasons followed by 9 (14.5%) considered it a minor illness then 8 (13%) complained that the health facility was far away and 5 (8.1%) considered that old age as a disease [Table 7].

In our study it was observed that the majority (71.8%) of subjects did not generally seek health care from the government

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Table 10: Association between health seeking behaviour with Socio-demographic variables (*n*=144)

Variables	Health facility utilized	P	
Age of Mothers			
60-69 yrs	96 (64.9%)	0.022*	
70-79 yrs	33 (78.6%)		
80 yrs & above	15 (93.7%)		
Religion			
Hindu	69 (76.7%)	0.020*	
Muslim	39 (75%)		
Christian	06 (75%)		
Sarna	36 (56.3%)		
Ethnicity			
Tribal	36 (50%)	0.000*	
Nontribal	108 (80.6%)		
Category	,		
General	12 (75%)	0.000*	
OBC	85 (81.7%)		
SC	11 (78.6%)		
ST	36 (50%)		
Education	,		
Illiterate	74 (68.5%)	0.210	
Primary	60 (68.2%)		
Secondary	08 (100%)		
Higher Sec. & above	02 (100%)		
Gender	,		
Male	72 (66%)	0.202	
Female	72 (74.2%)		
Socioeconomic Status	,		
Class I	03 (75%)	0.354	
Class II	12 (54.5%)		
Class III	36 (75%)		
Class IV	77 (74%)		
Class V	16 (57.1%)		
Own source of income	,		
Present	114 (93.5%)	0.000*	
Absent	30 (35.7%)		
Morbidity	,		
Present	122 (81.3%)	0.000*	
Absent	22 (39.3%)		
Activities of Daily Living (ADL)	,		
Normal	110 (65.9%)	0.009*	
Impaired	34 (87.2%)		
QOL	` '		
Fair	41 (85.4%)	0.000*	
Good	84 (67.7%)		
Excellent	19 (55.9%)		

source [Table 8] and the most common reason for not utilizing government facilities was lack of medicine availability (33.7%) and poor quality of care (16.3%) [Table 9]. NFHS-4 data<sup>[24]</sup> also showed that 72% of households generally do not seek health care from government facility.

Appropriate health seeking behavior was found more among young old ages, non tribal ethnicity, Hindu religion, OBC category, who had own source of income, who had more morbidity and who had impaired activities of daily living on applying Chi square test. [Table 10]. Bivariate logistic regression analysis was done to find out the various predictors of health seeking behaviour.

Table 11: Binary Logistic Regression Analysis for Determinants of Health Seeking Behaviour

Variables	Category	AOR	95% CI	P
Age (in years)	60-69	2.187	0.228-20.947	0.497
	70-79	1.883	0.188-18.856	0.591
	>80	1		
Category	General	1		
	OBC	0.852	0.205-3.547	0.826
	SC	1.226	0.144-10.410	0.852
	ST	0.882	0.421-1.845	0.742
Ethnicity	Tribal	1		
	Non tribal	0.358	0.168-0.761	0.007*
Education	Illiterate	0.898	0.482-1.674	0.735
	Literate	1		
Own income source	Yes	533.584	48.07-5922.47	0.000*
	No	1		
Morbidity	Present	3.222	1.348-7.702	0.004*
	Absent	1		
Activity of daily living	Normal	1.048	0.317-3.462	0.939
	Impaired	1		
Quality of life	Poor	0.640	0.152-2.698	0.543
	Fair	1.025	0.335-3.138	0.966
	Good	1		

The statistically significant relationships showing adjusted odds ratios (Adj OR) with P < 0.05 are described in Table 11. Non tribal ethnicity, subjects who had their own source of income, and who had more morbidity were the predictors of health seeking behaviour. Srivastava and Gill<sup>[25]</sup> also found that people with lower socioeconomic status were less likely to seek treatment. Barua *et al.*<sup>[26]</sup> in their article also observed that barriers such as gender, religion, caste, socioeconomic status, social stigma and economic dependence hamper the access of the elderly population to health care services. So it is the responsibility of the primary care physician to deal with the geriatrics problem and help them to overcome that, also to sensitize and create awareness among them about health seeking behavior.

### **Study limitation**

The study has methodological limitations that should be considered. We have conducted cross-sectional study for data collection, so a clear temporal association between the study factors and health seeking behaviour cannot be established.

### **Conclusion and Summary**

Our study suggests that overall health seeking behaviour was found to be appropriate in nearly two third (70%) of elderly subjects in Ranchi, Jharkhand was not up to the mark which could be improved by collective efforts from family as well as by a network of geriatric support groups. A positive outcome in the health seeking behaviour could be achieved if family support, financial support and level of education are improved in the community. Non tribal ethnicity, the elderly person having own source of income and person having more co-morbidity; were significantly associated with health seeking behaviour. It

is a joint responsibility of health care providers, primary care physicians, programme managers and family caregivers to deal with these predictors and understand their effect on health seeking behaviour.

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### Ethical approval

The study was approved by Institutional Ethics Committee.

### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### **Conflicts of interest**

There are no conflicts of interest.

### References

- Hoffman R. Socioeconomic Differences in Old Age Mortality. Rostock: Springer; 2008.
- Rodríguez-Rodero S, Fernández-Morera JL, Menéndez-Torre E, Calvanese V, Fernández AF, Fraga MF. Aging genetics and aging. Aging Dis 2011;2:186-95.
- 3. NIH census bureau report "An aging world: 2015" Available from: https://www.nia.nih.gov/research/dbsr/global-aging.
- Census of India. Chapter 2. Population Composition. SRS Statistical Report. 2013. Available from: https://www.censusindia.gov.in/vital\_statistics/SRS\_Reports\_2013. html. [Last accessed on 2021 Oct 11].
- 5. Elderly in India, National Statistical Office, Ministry of Statistics & Programme Implementation, Government of India, New Delhi. NSO; 2021. Available from: https://www.mospi.gov.in/search?p\_p\_id=com\_liferay\_portal\_search\_web\_search\_results\_portlet\_SearchResultsPortlet\_INSTANCE\_ydeuXS3UEOqI&p\_p\_lifecycle=0&p\_p\_state=maximized&p\_p\_mode=view&\_com\_liferay\_portal\_search\_web\_search\_results\_portlet\_SearchResultsPortlet\_INSTANCE\_ydeuXS3UEOqI\_mvcPath=%2Fview\_content.jsp&\_com\_liferay\_portal\_search\_web\_search\_results\_portlet\_SearchResultsPortlet\_INSTANCE\_ydeuXS3UEOqI\_redirect=%2Fsearch%3Fq%3D%2522elderly%2522&\_com\_liferay\_portal\_search\_web\_search\_results\_portlet\_SearchResultsPortlet\_INSTANCE\_ydeuXS3UEOqI\_assetEntryId=1234299&\_com\_liferay\_portal\_search\_web\_

- search\_results\_portlet\_SearchResultsPortlet\_INSTANCE\_ydeuXS3UEOqI\_type=document. [Last assessed on 2022 Jan 17].
- 6. Adhikari D, Rijal DP. Factors affecting health-seeking behaviour of senior citizens of Dharan. J Nobel Med Coll 2014;3:50-7.
- Kamble SV, Ghodke YD, Dhumale GB, Avchat SS, Goyal RC. Health status of elderly persons in rural area of India. Indian Med Gaz 2012;295-9.
- 8. Fellinghauer B, Reinhardt JD, Stucki G, Bickenbach J. Explaining the disability paradox: A cross-sectional analysis of the Swiss general population. BMC Public Health 2012;12:655.
- Wachs D, Roman-Urrestarazu A, Brayne C, Onrubia-Fernández J. Dependency ratios in healthy ageing. BMJ Glob Health 2020;5:e002117.
- 10. Ganesh SK, Majumdar A, Pavithra G. Quality of life and its associated factors using WHOQOL-BREF among elderly in urban Puducherry, India. J Clin Diagn Res 2014;8:54-7.
- 11. Suwarna M, Jayashree N. An epidemiological study in elderly and its morbidity in urban slum population in Miraj district, Maharashtra. Int J Public Health Hum Rights 2011;1:05-10.
- 12. Sharma D, Mazta SR, Parashar A. Morbidity pattern and health seeking behaviour of aged population residing in Shimla Hills of North India. J Fam Med Prim Care 2013;2:188-93.
- 13. Karmakar N, Datta A, Nag K, Tripura K. Quality of life among geriatric population: A cross-sectional study in a rural area of Sepahijala District, Tripura. Indian J Public Health 2018;62:95-9.
- Shraddha K, Prashantha B, Prakash B. Study on morbidity pattern among elderly in an urban population of Mysore, Karnataka. Int J Med Biomed Res 2012;1:215-23.
- 15. Chauhan P, Chandrashekar V. A study on the morbidity pattern among the geriatric people of Venkatachalem village in Nellore district, AP. J Health Sci 2013;1:48-53.
- 16. Narapureddy B, Naveen KH, Madithati P, Singh RK, Pirabu RA. Sociodemographic profile and health care seeking behaviour of rural geriatric population of Allahabad district of UP: A cross sectional study. Int J Med Sci Public Health 2012;1:87-92.
- 17. Parray SH, Ahmed D, Ahmed M, Gaash B. Morbidity profile of geriatric population in Kashmir. Indian J Practis Doct 2008;4:6.
- 18. Joshi K, Kumar R, Avasthi A. Morbidity profile and its relationship with disability and psychological distress among elderly people in Northern India. Int J Epidemiol 2003;32:978-87.
- Purty AJ, Bazroy J, Kar M, Vasudevan K, Veliath A, Panda P. Morbidity pattern among the elderly population in the rural area of Tamil Nadu, India. Turk J Med Sci 2006;36:45-50.
- 20. Piramanayagam A, Bayapareddy N, Pallavi M, Madhavi E, Nagarjuna Reddy N, Radhakrishna L. A cross sectional study of the morbidity pattern among the elderly people: South India. Int J Med Res Health Sci 2013;2:372-9.
- Jacob AP, Bazroy J, Vasudevan K, Veliath A, Panda P. Morbidity pattern among the elderly population in rural area of Tamil Nadu, India. Turk J Med Sci 2006;36:45-50.
- 22. Gaur DR, Goel MK, Goel M, Das A, Arora V. A study of morbidity profile of elderly in urban areas of North India. Int J Epidemiol 2008;5:1-4.

- 23. Padda AS, Mohan V, Singh J, Deepti SS, Singh G, Dhillon HS. Health profile of aged persons in urban & rural field practice areas of medical college, Amritsar. Indian J Com Med 1998;23:72-6.
- 24. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-4), 2015-16: India. Mumbai: IIPS; 2017.
- 25. Srivastava S, Gill A. Untreated morbidity and treatment-seeking behaviour among the elderly in India: analysis based on National Sample Survey 2004 and 2014. SSM Popul Health 2020;10;100557.
- 26. Barua K, Borah M, Deka C, Kakati R. Morbidity pattern and health seeking behavior of elderly in urban slums of Assam, India. J Family Med Prim Care 2017;6:345-50.