

Community based Appraisal of Healthcare Service Utilisation and Determinants of Health Seeking Behaviour among the Elderly Population of Rural Western Maharashtra

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ABSTRACT

Introduction: To mitigate an inevitable phenomenon of population ageing, which has impact on nation's development as well as on quality of life of population, health seeking behaviour and health service utilisation need to be increased, especially in rural areas.

Aim: To assess health seeking behaviour, identify hurdles and measure health services utilisation.

Materials and Methods: A community based observational descriptive cross-sectional study was conducted with 210 elderly population (60 years of age and above) to assess health seeking behaviour and to measure health service utilisation for the period from October 2020 to October 2021, in rural area of Tasgaon block of Sangli district of Maharashtra by Department of Community Medicine, Government Medical College, Miraj, Maharashtra, India. A pretested, prevalidated, semi-structured proforma and interview schedule were used to collect information. Descriptive statistics along with Chi-square test and Binary logistic regression were used as inferential statistical analysis. The p-value to be significant at $p < 0.05$.

Results: Out of total 210 participants, 48.09% and 51.91% were males and females respectively with male to female ratio

of 0.93:1. Mean ages of males and females were 63.85 and 65.23 years respectively. Out of total 210 participants, 82% of participants had at least one chronic morbidity at the time of study. Musculoskeletal morbidities were most common (46.67%). Among morbid participants, 56% utilised government health facility. Health service utilisation rate was 75.86%. Lack of enough money was most common reason (76.19%) for non utilisation of health services. Gender, educational level, residential arrangements and socio-economic class showed statistically significant association with appropriate or inappropriate health seeking behaviour. About 61% participants showed appropriate health seeking behaviour. The odds of having inappropriate health seeking behaviour were 7.76 and 10.19 times greater for middle class and lower class as opposed to upper class, respectively. Illiterates had 17.53 times higher odds to seek health inappropriately.

Conclusion: Quality of health seeking behaviour can be improved by narrowing gender gap, increasing literacy rate and giving social assistance to elderly persons. It is an important need of hour to pay more attention to age related issues and promote holistic approach to deal with ageing society.

Keywords: Geriatric population, Health inequality, Treatment, Unmet needs

INTRODUCTION

A sustained change in the age composition of population is continuously experienced by the whole World including India due to increased life expectancy and reduced levels of fertility. People aged 60 years and above are considered as elderly in India. According to Census 2011, 8.6% population was elderly and mostly residing in rural areas (8.8%) than urban areas (8.1%). Percentage change in decadal growth of general population shows declining trends from 24.8% (period 1961-71) to 8.4% (projected in period 2021-31) while that in case of elderly population shows inclined trend from 25.2% (period 1991-2001) to 40.5% (projected in period 2021-31) [1]. This phenomenon is recognised as 'population ageing' which has impact on not only a country's development but also quality of life of population [2].

Health seeking behaviour is an effort taken to maintain, attain or regain good health and prevent illness [3]. In India, locomotor disability is the most common disability in elderly followed by hearing and visual impairments (more common in rural area). More than 50% of elderly have taken treatment for disability from doctors [1]. Health seeking behaviour is prerequisite for health service utilisation and in elderly both of these are mainly affected by presence of affordable and accessible health infrastructure, financial status, health consciousness, locomotive capacity, literacy level, family support, rural-urban gap and gender [4].

A systematic review of 70 research studies [4], a study based on National Sample Survey (NSS) (75th round) [5] and study conducted in rural areas of Telangana [3] between 2015 to 2020 highlighted the factors like illiteracy, poverty, poor health infrastructure and gender inequalities as the main hurdles in health seeking behaviour. To mitigate this and to prioritise the needs of elderly, understanding of factors affecting health seeking behaviour and non utilisation of health services is necessary. As very few studies were conducted in rural setup of Maharashtra and with COVID-19 background with respect to Coronavirus Disease-2019 (COVID-19) centric health services, increased out of pocket health expenditure and fear of getting COVID-19 while utilisation, this study was planned to assess health seeking behaviour, identify hurdles and measure health services utilisation among elderly rural population.

MATERIALS AND METHODS

This was a community based observational descriptive cross-sectional study, conducted from October 2020 to October 2021, undertaken by Department of Community Medicine, Government Medical College, Miraj, Maharashtra, India, at rural area in Sangli district of Maharashtra. The study area is situated 40 kilometres away from district headquarter with total population of about 40,700 with 7868 households [6]. Out of this, the total number of elderly people (>60 years of age) is 3,132 according to data available with rural

health centre. Permission of Institutional Ethical Committee (IEC) was taken before data collection (Letter no. GMCM/IEC-C/31).

A written informed consent was taken from each study participant before data collection and examination. Assurance of anonymity and confidentiality in local language as well as information about study procedure was given before taking consent.

Sample size calculation: Sample size was calculated for descriptive study design (proportion) by using OpenEpi software. Proportion of participants with health seeking behaviour was 83.7% in previous study [7]. By taking 5% as absolute precision and 5% alpha-error, calculated sample size was 210. Systematic random sampling with PPSS (population proportionate to sample size) sampling technique was used to select 210 samples from a total of 20 wards.

Inclusion criteria: All elderly people of age 60 years and above residing in study area and willing to participate in study were included.

Exclusion criteria: People who were not available at the time of home visit for three successive visits, or those residing in study area for less than six months, those elderly who were seriously ill and not able to give information were excluded from study.

Procedure

A pilot study was conducted during month of March 2021 to check out the feasibility and correctness of proforma. Data collected during pilot study phase was not utilised in this study. There are 20 wards/administrative areas in study area. A ward wise data of general and geriatric population was collected from rural health centre. After that samples that to be collected from particular ward was calculated by Probability Proportional to Size (PPS) sampling technique. Samples were selected from line listing by lottery method. After that house visits were given by researcher to collect information.

Questionnaire: After explaining study procedure, a pretested, prevalidated, semi-structured proforma and interview schedule were used to collect information about socio-demographic data, socio-economic condition (modified BG Prasad classification) [8], chronic morbidity status, type of health service utilisation, preferred system of medicine used, quality of healthy seeking behaviour and reasons for non utilisation of services. A detailed history of past and present illness was taken. Thorough local and systemic examination was conducted. Anthropometric measurements were taken. Blood pressure measurement and blood sugar estimation was done using calibrated instruments. Blood pressure was measured thrice in right arm at one minute interval using adult cuff size in sitting position. Finally average of second and third observations was considered and the first measurement was discarded. Fasting blood sugar level was measured. Overnight or 8-12 hours fasting was ensured before blood sugar estimation.

Based on the above assessment, provisional diagnosis of morbidity was made. Elderly with atleast one chronic morbidity were considered for inquiry about health seeking behaviour. Seeking health service from trained doctors (Allopathy or AYUSH) from private or government health facility was considered as 'appropriate health seeking behaviour' [7]. Standard operational definitions and protocols were established before data collection and followed till end of study to avoid bias(es).

STATISTICAL ANALYSIS

Data was recorded in Microsoft (MS)-Excel 2010 application and analysed by using Epi-Info and Statistical Package for Social Sciences (SPSS) version 16.0 software. Descriptive statistics like frequency and proportion were used for qualitative data. Chi-square test and binary logistic regression were used as inferential statistical analysis. The p-value <0.05 to be considered level of significance.

RESULTS

Total of 210 elderly subjects participated in the study and their socio-demographic details have been depicted [Table/Fig-1]. Most

of the participants of either gender belonged to age group of 60-64 years (39.05%). Religion wise Hindu participants were predominant (70%). About 82% study participants were literate and 18.10% were illiterate. Percentage of illiterate women (22.94%) was more than that of male (12.87%). Among literates, most were educated up to primary level (32.86%). About 39% were widow(er) and unmarried. Nine percent were staying alone while 25% were staying with spouse only. About 72% were financially dependent on children or another person. Most of the study participants belonged to middle class (39.52%) followed by lower class and upper class [Table/Fig-1].

Attributes		Male (n=101)	Female (n=109)	Total (n=210)
		N (%)	N (%)	N (%)
Age group (years)	60-64	47 (46.53)	35 (32.11)	82 (39.05)
	65-69	21 (20.79)	31 (28.44)	52 (24.76)
	70-74	23 (22.77)	17 (15.60)	40 (19.05)
	75 and above	10 (9.90)	26 (23.85)	36 (17.14)
Religion	Hinduism	81 (80.20)	66 (60.55)	147 (70.00)
	Islam	16 (15.84)	8 (7.34)	24 (11.43)
	Others	4 (3.96)	35 (32.11)	39 (18.57)
Education	Illiterate	13 (12.87)	25 (22.94)	38 (18.10)
	Primary	37 (36.63)	32 (29.36)	69 (32.86)
	Secondary	16 (15.84)	30 (27.52)	46 (21.90)
	Higher secondary	21 (20.79)	16 (14.68)	37 (17.62)
	Graduate	14 (13.86)	6 (5.50)	20 (9.52)
Marital status	Married	64 (63.37)	65 (59.63)	129 (61.43)
	Unmarried	0 (0.00)	1 (0.92)	1 (0.48)
	Widow(er)	37 (36.63)	43 (39.45)	80 (38.10)
Residential arrangement	Staying alone	11 (10.89)	7 (6.42)	18 (8.57)
	With spouse only	28 (27.72)	25 (22.94)	53 (25.24)
	With child/children	62 (61.39)	77 (70.64)	139 (66.19)
Financial dependence	Dependent	54 (53.47)	98 (89.91)	152 (72.38)
	Independent	47 (46.53)	11 (10.09)	58 (27.62)
Socio-economic classification	Class 1 and 2	17 (16.83)	40 (36.70)	57 (27.14)
	Class 3	45 (44.55)	38 (34.86)	83 (39.52)
	Class 4 and 5	39 (38.61)	31 (28.44)	70 (33.33)

[Table/Fig-1]: Socio-demographic profile of study participants (n=210).

As shown in [Table/Fig-2], mean number of morbidities among total participants were 1.74. Morbidities related to musculoskeletal system were most common (46.66%) among participants of either gender. Among male participants, hypertension was second most common (35.64%) morbidity while among female participants, anaemia was second most common (33.94%) morbidity. Out of total 210 participants, 36 participants (17.14%) did not have any chronic morbidity at the time of study [Table/Fig-2].

Pattern of health services utilisation of 174 study participants having atleast one chronic morbidity at the time of study has been depicted in [Table/Fig-3]. Out of total 174 morbid participants, 75.86% utilised either government or private or other type of health services and 24.14% did not utilised any health service due to various reasons. Among 132 participants, 80% utilised either government health facility or private facility while 19% participants took over the counter medicines. Almost half of the participants preferred allopathy. Interestingly, 5.3% participants were preferred faith healers over established systems of medicine [Table/Fig-3].

[Table/Fig-4] highlighted various reasons of non utilisation of health services. Lack of enough money was most common reason (76.19%) for non utilisation of health services followed by waiting for recovery (54.76%). Fear of getting COVID-19 was third common cause for non utilisation. Ignorance, unaware of own morbidity and unable to reach to health facility were other common reasons [Table/Fig-4].

Type of morbidity	Male (n=101)	Female (n=109)	Total (n=210)
	N (%)	N (%)	N (%)
Hypertension	36 (35.64)	34 (31.19)	70 (33.33)
Diabetes	16 (15.84)	9 (8.25)	25 (11.90)
Asthma	3 (2.97)	2 (1.83)	5 (2.38)
Musculoskeletal problems	45 (44.55)	53 (48.62)	98 (46.66)
Dental problems	17 (16.83)	8 (7.33)	25 (11.90)
Visual impairments/Cataract	21 (20.79)	9 (8.25)	30 (14.28)
Hearing impairments	9 (8.911)	6 (5.50)	15 (7.14)
Gastrointestinal problems	14 (13.86)	6 (5.50)	20 (9.52)
Urinary problems	3 (2.97)	6 (5.50)	9 (4.28)
Anaemia	8 (7.92)	37 (33.94)	45 (21.42)
Tuberculosis	1 (0.99)	0 (0)	1 (0.47)
Cancer	2 (1.98)	3 (2.75)	5 (2.38)
Others	6 (5.94)	11 (10.09)	17 (8.09)
Normal	15 (14.85)	21 (19.26)	36 (17.14)
Mean no. of morbidities	1.79	1.82	1.74

[Table/Fig-2]: Morbidity status among study participants.

Attributes			No. (%)
Health service utilisation by morbid elderly (n=174)	Utilised (n=132)	PHC/CHC/Government Hospitals	74 (56.06)
		Private hospital/Practitioner	32 (24.24)
		Over the counter medications	19 (14.39)
		Faith healers	07 (5.30)
		Not utilised (n=42)	Not used any service
Preference of system of medicine utilised (n=132)		Allopathic	63 (47.73)
		AYUSH	15 (11.36)
		Allopathic and AYUSH	47 (35.61)
		Faith healers	07 (5.30)

[Table/Fig-3]: Pattern of health services utilisation among morbid participants (n=174). PHC: Primary health centre; CHC: Community health centre; AYUSH: Ayurveda, yoga, unani, sidha and homeopathy

Reasons for not seeking treatment outside home	N (%)
Living alone and no one to take him/her to hospital	6 (14.29)
Unaware about their own morbidity	19 (45.24)
Waiting for recovery	23 (54.76)
Lack of money	32 (76.19)
Distance of health facility	14 (33.33)
Fear of getting COVID in health facility visit	22 (52.38)
Aware about morbidity but not paying any attention	9 (21.43)

[Table/Fig-4]: Reasons for non utilisation of health services among study participants (n=42)*.

*Multiple responses; COVID: Coronavirus disease

[Table/Fig-5] shows factors affecting appropriate and inappropriate health seeking behaviours. One study participant having a diabetes was on metformin prescribed by an allopathic practitioner along with one ayurvedic medicine suggested by friend, so, at the time of analysis, it was considered under OTC section (19). But as above participant was taking diabetic allopathic medicine as per prescription, he was considered under appropriate category [Table/Fig-5]. Appropriate health seeking behaviour found more in males (72.09%) than females (51.14%). Inappropriate health seeking behaviour was most common among illiterate participants (61.29%) and participants belonging to lower socio-economic class (67.24%). Participants who were financially independent (75%) and staying with family (69.29%) had appropriate health seeking behaviour. Gender, educational level, residential arrangements and socio-economic class showed statistically significant association with type and behaviours of healthcare sought. [Table/Fig-5] also

highlights effect of multiple independent factors on health seeking behaviour by binary logistic regression technique. The odds of having inappropriate health seeking behaviour are 7.76 and 10.19 times greater for middle class and lower class as opposed to upper class, respectively. Illiterates have 17.53 times higher odds to seek health inappropriately [Table/Fig-6].

Attributes	Appropriate behaviour (n=107)	Not appropriate (n=67)	Statistical test and level of significance
	N (%)	N (%)	
Age group (years)			
60-64 (n=75)	51 (68)	24 (32)	p=0.27
65-69 (n=44)	26 (59.09)	18 (40.90)	
70-74 (n=31)	19 (61.29)	12 (38.70)	
75 and above (n=24)	11 (45.83)	13 (54.16)	
Gender			
Male (n=86)	62 (72.09)	24 (27.90)	p=0.0045
Female (n=88)	45 (51.13)	43 (48.86)	
Education			
Illiterate (n=31)	12 (38.70)	19 (61.29)	p=0.0473
Primary (n=62)	40 (64.51)	22 (35.48)	
Secondary (n=39)	25 (64.10)	14 (35.89)	
Higher secondary (n=27)	18 (66.66)	9 (33.33)	
Graduate (n=15)	12 (80)	3 (20)	
Marital status			
Married (n=110)	67 (60.90)	43 (39.09)	p=0.72
Unmarried (n=01)	1 (100)	0 (0)	
Widow(er) (n=63)	39 (61.90)	24 (38.09)	
Residential arrangement			
Staying alone (n=09)	3 (33.33)	6 (66.66)	p=0.0021
With spouse only (n=38)	16 (42.10)	22 (57.89)	
With child/children (n=127)	88 (69.29)	39 (30.70)	
Financial dependence			
Dependent (n=138)	80 (57.97)	58 (42.02)	p=0.062
Independent (n=36)	27 (75)	9 (25)	
Socio-economic classification			
Class 1 and 2 (n=47)	42 (89.36)	5 (10.63)	p<0.0001
Class 3 (n=69)	46 (66.66)	23 (33.33)	
Class 4 and 5 (n=58)	19 (32.75)	39 (67.24)	

[Table/Fig-5]: Determinants of health seeking behaviour among study participants (n=174).

bold p-values denote significance; p-values calculated by Chi-square test; one study participant having a diabetes was on metformin prescribed by an allopathic practitioner along with one ayurvedic medicine suggested by friend (not prescribed by Ayurvedic practitioner). But as above participant was taking diabetic allopathic medicine as per prescription, he was considered under appropriate category in this table

Variables	S.E	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
						Lower	Upper
Gender (1)	0.31	3.28	1	0.049	1.76	0.96	3.23
Educational level (1)	0.44	41.88	1	0.001	17.53	7.36	41.73
Residential arrangements (1)	0.42	0.17	1	0.683	1.17	0.52	2.73
Socioeconomic class		33.64	3	<0.001			
Socioeconomic class (1)	0.61	10.94	1	0.001	7.76	2.28	25.05
Socioeconomic class (2)	0.63	13.54	1	<0.001	10.19	2.95	34.87

[Table/Fig-6]: Logistic regression analysis between appropriateness of health seeking behaviour and various independent variables; bold p-values denote significance. SE: Standard error; df: Degrees of freedom; Sig.: Significance; Exp: Exponential; C.I.: Confidence interval

DISCUSSION

Greater number of elderly population is residing in rural part of India and almost 80% of them had unmet need for healthcare along with poor health seeking behaviour due to multidimensional reasons [5]. Present study was conducted at town located near inter-state border (Maharashtra and Karnataka) in Maharashtra to measure health services utilisation and to assess health seeking behaviour among old age population with respect to their chronic morbidities. This study was conducted among 210 elderly participants. Only one-fourth participants were financially independent, rest were dependant on children. Dependency was more in female participants as compared to male participants. In 2011, dependency ratio of old age population in India was around 14% [9]. Overall illiteracy rate was 18.10% which was higher in females (22.94%) as compared to males (12.87%). According to World Bank statistics, overall illiteracy rate of India was 25.60% while in males and females; it was 17.60% and 34.21%, respectively, which is higher than findings reported in present study [10].

Important current study findings like demographic factors, population background, morbidity pattern and healthcare services utilisation are highlighted and compared with previous studies done in various parts of India [Table/Fig-7]. Health service utilisation noted in current study was much better than studies conducted in different parts of India. Use of government health facilities was comparable with many previous studies except two multicentric studies mentioned in table, where it is greater than findings reported in those studies. Studies conducted in Assam (2015-16) and Puducherry (2015) reported 3-4.5% of subjects went to faith healers. Literacy level of study subjects, peer pressure and less faith in system of medicine were the reasons behind that [7,11-16].

In present study, females had more morbidities compared to males. This may be due to less attention paid by females to their own health. Musculoskeletal problems were most common morbidity in current study. This was due to age related changes. Allopathy was most preferred system of medicine. Almost 6% participants still preferred faith healers over established system of medicine and illiteracy was one of the common reason behind them. Study done in Shimoga by Nandini C and Saranya R, reported government

health facility use in 94.3% participants and quacks were visited by 2.9% participants [17]. Concurrent findings were reported by Gnanasabai G et al., and Teyib A et al., in their studies. Over the counter drug utilisation was seen in significant number of elderly participants [18,19].

In present study, 42 participants had suffered from morbidity but did not utilise healthcare facility outside home. Lack of enough money (76.19%) was commonest reason followed by waiting for recovery, fear of getting COVID-19 and unaware about own morbidity were common reasons. Study conducted at Bhopal city in 2016 reported considering age related morbidity (36%) and lack of money were commonest reasons in their study [20]. Study done in 2019 in Jaipur reported unawareness, absence of transport facility and cost as common reasons for not utilising healthcare services [21]. Concurrent findings were reported by studies done by, Barua K et al., Kumar D et al., and Nandini C and Saranya R [7,11,17].

Quality of health seeking behaviour is also an important concept. Depending upon availing evidence based established health services, it was classified into two categories viz., appropriate and inappropriate [7]. Appropriate health seeking behaviour was observed more in males as compared to females. Multicentric study done in six states of India in 2019 by Patel R and Chauhan S, reported similar gender difference in their study [16]. An inferential statistical analysis highlighted significant statistical association between quality of health seeking behaviour (appropriate and inappropriate) and gender, educational level, residential arrangements and socio-economic class. Age of participants, marital status and financial dependency did not show statistical association. Logistic regression analysis showed elderly study participants with male gender, literates and upper socio-economic class have greater odds of having appropriate health seeking behaviour. In study done by Barua K et al., in Assam, only residential arrangement was significant factor [7]. Study done by Baral R and Sapkota P in Nepal, reported ethnicity, religion and type of health problem were significant factors [22]. Study based on data of national sample survey done Ranjan A and Muraleedharan VR and pan India study done by Srivastava S and by Gill A reported similar study findings [15,23].

Attributes	Current study	Kumar D et al., [11]	Barua K et al., [7]	Pati S et al., [13]	Dhar R and Vidya GS [14]	Areekal B et al., [12]	Ranjan A and Muraleedharan VR [15]	Patel R and Chauhan S [16]
Time of study	2020-21	2013-14	2015-16	2013-14	2016-17	2019-20	2017-19	2019
Location	Maharashtra	Uttar Pradesh	Assam	Odisha	Karnataka	Kerala	Pan India	Six states in India
Population type	Rural and slum areas	Rural	Semiurban slum	Semiurban; Rural	Urban	Rural	National sample survey 75 th round	Rural and Urban area (WHO SAGE study)
Illiteracy (%)	18.10	63.90	19.00	38.10	52.50	5.70	54.10	NA*
Proportion of chronic morbidities	82.85	85	78.4	28.3 (multimorbidity)	NA*	82.7	22.4	NA*
Mean no of morbidities	females (1.82); males (1.79)	females (1.88); males (1.77)	males >females	females >males	males > females	NA*	males >females	males >females
Common morbidities	Musculoskeletal problem; Hypertension	Arthritis; Hypertension	Arthritis; Visual impairments	Acid peptic diseases; arthritis; backpain	NA*	Hypertension; Diabetes; Musculoskeletal Problems	Cardiovascular; nutritional; musculoskeletal problems	NA*
Health service utilisation (%)	75.86	74	65.6	61	89.8	around 80%	Hospitalisation: 39.8%; OPD [†] :22.4%	In patient care: 61%; OPD [†] :85%
Government service utilisation (%)	56.06	61.07	48.7	More in private health facilities	58	<50% (Private health facilities preferred)	Hospitalisation: 48.3%; OPD [†] :33.5%	In patient care: 36%; OPD [†] :21%
Preferred system of medicine	Allopathy	Allopathy	Allopathy	NA*	Allopathy	Allopathy	NA*	NA*

[Table/Fig-7]: Comparison of current study findings with other studies [7,11-16].

*NA: Not available; [†]OPD: Out-patient department; WHO: World health organisation; SAGE: Strategic advisory group of experts

Limitation(s)

In current study, out of pocket expenditure of past illness and availability of social assistance measures for health in nearby government health facility were not studied. A multicentric comparative study with different geographical (urban, rural and tribal) and demographic background along with more independent attributes will be more useful.

CONCLUSION(S)

This study not only highlighted the chronic morbidity pattern among geriatric population due to senile physical, mental, physiological and biochemical changes but also assess the impact of social factors like financial dependency, poverty, illiteracy, gender inequalities and loss of caring members of family on quality of health seeking behaviour and health services utilisation. Poverty, ignorance and fear of getting COVID-19 were commonest reasons for non utilisation of health services. Gender, literacy level and economic condition had greater impact on health seeking behaviour. Quality of health seeking behaviour can be improved by narrowing gender gap, increasing literacy rate and giving social assistance to elderly persons. Proactive geriatric services should be provided which can cater free of cost or low-cost promotive, preventive, curative and rehabilitative healthcare through specialised geriatric health clinics, mobile clinics, nutritional support and intense Information, Education and Communication (IEC) activities to create awareness. Proper enforcement of existing laws should be done to control problem of over-the-counter drugs and faith healers.

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