

# Health care services: Utilization and perception among elderly in an urban resettlement colony of Delhi

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## ABSTRACT

**Context:** Health care utilization informs us about the utility of services which are available. We have a paucity of studies related to health care utilization among elderly in India. **Aims:** The aim of this study is to find out utilization of health care services by elderly ( $\geq 60$  years), pattern, factors associated with, and perception of the elderly population regarding facilitators and barriers for the same. **Settings and Design:** A community based cross-sectional, observational study was conducted in a resettlement colony of East Delhi. **Materials and Methods:** A pretested, semi-structured, and interviewer-administered questionnaire was used. Duration of data collection was November 2018 to January 2020. **Statistical Analysis Used:** For quantitative variables, mean, median, proportion, Chi-square test, binary logistic regression using Statistical Package for the Social Sciences (SPSS), and for qualitative variables thematic analysis were done. **Results:** The study included 288 study participants. Although utilization of health care services in last 15 days among elderly is 90%, it was also found that 69% of the elderly consulted a licensed medical practitioner. A private facility was visited by 58% of the study participants. Female gender (OR: 1.97;  $P = 0.02$ ), religion as Hindu (OR, 2.09;  $P = 0.04$ ), and marital status "single" (OR, 1.8;  $P = 0.04$ ) were observed to be significant predictors of health care utilization. The participants expressed less waiting time, cashless facility for visits, availability of an accompanying person, behavior of staffs work as facilitators for utilization of services. **Conclusions:** Considering the unique characteristics of this age group, a shift from facility to community-based approach may be considered. Efforts may be made to create elderly friendly health facilities.

**Keywords:** Elderly friendly health facilities, health care, utilization

## Introduction

In India, elderly population accounts for 8.14% of the total population as per census 2011 and likely to increase to 34% by the end of this century.<sup>[1]</sup> The health care system of the country need to be prepared to deal with disease burden of this age group. National Program of Health Care for Elderly puts emphasis on availability of accessible and affordable dedicated health care services.<sup>[2]</sup> To build an effective system, information is required about health care utilization. Utilization informs us about the utility of services<sup>[3,4]</sup> and is often determined by

proximity, availability, waiting time, privacy, affordability, and treatment effectiveness.<sup>[5]</sup> It is important to examine how these factors play roles and shapes the health care service utilization of elderly who are usually considered a vulnerable age group.

The available information may guide the policymakers to develop an accessible elderly friendly primary health care services having a patient centric approach and effective referral system which is essential for low and middle income countries.

We conducted a cross sectional study to find out utilization of health care services by elderly in last 15 days in an urban resettlement colony of East Delhi. Attempt was also made to find out the pattern of health care services utilization among elderly, factors associated with and perception of the elderly regarding facilitators and barriers of health care service utilization.

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## Subjects and Methods

A community-based cross-sectional, observational study was conducted in a resettlement colony located in East Delhi among people aged 60 years and above residing in the study area at least for the past 6 months. The area was a field practice area of Department of Community Medicine of a medical college of Delhi. The period of data collection was from November 2018 to January 2020.

The resettlement colony had an approximate population of 65,000. Considering an expected prevalence of health services utilization in last 15 days by elderly as 25%,<sup>[6]</sup> taking 95% confidence level, and absolute error of 5%, the sample size calculated was 288 (Epi Info 7.2.0.1.).

The study area has around 10,000 households and is divided into 5 blocks and 21 sub-blocks. Around 30% households in urban area estimated to have one or more elderly residing.<sup>[7]</sup> Therefore, 3 sub-blocks were selected randomly expecting 143 elderly in each sub-block. If a house had more than one elderly, only one elderly per house was recruited for the study. Sampling was stopped from each sub-block as soon as desired sample size was achieved. Study participants not available on the day of visit were revisited after 1 week and if could not be contacted despite 3 consecutive visits were excluded from the study.

The age of the participants was ensured from documents issued by the Government. If any records were not available, age was calculated using some past significant national/local event and cross questioning the participants regarding their major life events.

Approval was obtained from the Institutional Ethics Committee for conduction of the study. Written informed consent was obtained from all the participants.

A pretested, semi-structured and interviewer-administered questionnaire was used for the study. This questionnaire had four sections. Section one, identification details; section two, information regarding sociodemographic profile, and section three collected information about any episode of illness in last 15 days from date of visit and health care service utilization for the same. Section four contained open ended questions regarding factors perceived by elderly which helped or prevented them from utilizing health care services for illness.

The data collected were entered into a computer-based spreadsheet using MS-Excel and analyzed using SPSS 20.0. The statistical analysis comprises calculating means and proportions. Chi-square test was used to find out the statistical association between outcome and independent variables for categorical data. The  $P$  value  $< 0.05$  was taken as statistically significant. Binary logistic regression analysis was done to find factors significantly associated with health care service utilization. For this analysis, independent variables with  $P$  value  $< 0.25$ , as found in Chi-square

test were entered in the model. To find out perceived facilitators and barriers for health service utilization qualitative analysis was done. A coding scheme was developed and it was refined progressively with time. The collected data were scrutinized and emerging themes were presented in tabular form.

The following operational definition were used:

**Acute illness:** Any new onset of disease as perceived by study participants within last 15 days from date of visit by the researcher.

**Chronic illness:** Any illness which required prolonged treatment (6 months or more) even if diagnosed within last 15 days from date of visit by the researcher.

**Health care service utilization:** Utilization of any health facility from any streams of medical practices, that is, Allopathic, AYUSH (Ayurvedic, Yoga, Unani, Siddha, Homeopathy) or traditional medicine, or any laboratory facilities for therapeutic, diagnostic, promotive, or rehabilitative purpose in last 15 days.

**Licensed medical practitioner:** Those medical practitioners who had a valid license to practice as reported.

**Non-licensed medical practitioner:** Those medical practitioners who reported not having a valid license to prescribe and practice medicine. It included chemists, clinic-based allopathic or AYUSH system of Medicine, and traditional healers.

**Traditional healers:** Non-licensed medical practitioners who practice system of medicine other than allopathy and AYUSH. Usually referred in the study area as “Bengali Doctors,” “Desi Medicine practitioners,” and “Spiritual healers.”

## Results

A total of 288 study participants were included in the study.

### Basic characteristics of the study participants

The mean age was 66.8 years ( $SD \pm 5.8$  years) while median was 66 (IQR 62;70). Approximately half (48.6%) of the elderly were in the age group of 60 to 65 years and 20% (57) were more than 70 years old. Most (85.1%) of the elderly belonged to Hindu community and 61.5% of the study participants were females. More than half of the elderly were single (55.9%) and around three-fourths were illiterate (73.3%). Most (84.7%) of the elderly were not working currently.

### Utilization of health care services

The utilization of health care services in last 15 days among elderly was found to be 90%. Around 42% of the elderly had reported episodes of acute illness and 68% had chronic illness. Ninety-two percent of those who had acute illness and 86% of study participants who had chronic illness used health care

services. More than two-third (69%) of the elderly consulted a licensed medical practitioner. Private facility was visited by 58% of the study participants. Allopathy was the most commonly (86%) used system of medicine as a whole [Table 1].

### Factors associated with health care service utilization among the study participants

On bivariate analysis, association of gender, religion, family size, and per capita income with the utilization of health care services by the elderly were found statistically significant [Table 2].

Being female (OR: 1.97; 95% CI 1.07–3.66,  $P = 0.02$ ), Hindu (OR, 2.09; 95% CI 1.01–4.34,  $P = 0.04$ ), and single (OR, 1.8; 95% CI 1.01–3.22,  $P = 0.04$ ) were observed to be significant predictors in Binomial logistic regression analysis [Table 3]. Hosmer–Lemeshow goodness of fit test was applied ( $P = 0.70$ ), Nagelkerke R-square was 0.111 implying that 11% of health care service utilization among elderly could be explained by this model. Using this model, 75% of the cases can be classified; 97% in whom health care utilization was present and in 7% it was absent.

### Perceptions of the participants about various factors which facilitated or worked as a barrier in utilizing any kind of health care services for their perceived illness

The responses for facilitators of utilization of services were “affordability,” “location of health facility near the residence,” “trust” on a particular health facility, “less waiting time,” “behavior” of the health care personnel’s, and “quality of services” which motivated elderly to use some kind of health care facility for their perceived illness [Table 4].

**Table 1: Health care service utilization and pattern among elderly study participants**

Characteristics	n	Percentage
Any health care service utilization (n=240)	217	90.4
Acute illness (n=120)	110	91.7
Chronic illness (n=197)	170	86.3
Pattern of utilisation according to Licensing status of medical practitioner (n=217)	149	68.7
Licensed Medical Practitioner	26	11.9
Non-Licensed Medical Practitioner	42	19.4
Both		
Non licensed medical practitioner (NLMP) (n=68)		
Chemist	30	44
Allopathy and AYUSH	17	25
Traditional healers*	21	31
Pattern of Health care Service setting used (n=217)		
Government facility	91	42.0
Private facility	83	38.2
Both Government and Private	43	19.8
Service type used (n=217)		
Allopathy only	187	86.2
AYUSH only	6	2.7
Others**	7	3.2
More than one systems of medicine	17	7.8

\*Those who practice system of medicine other than allopathy and AYUSH from home or clinics. It includes desi medicines, Bengali medicines, and spiritual healers. \*\*include system of medicine other than allopathy and AYUSH. For example, Bengali medicine, desi medicine, and spiritual healing

Various factors which acted as barriers in utilization of health care services by elderly were “prolonged waiting time,” “financial stress,” and “lack of trust,” “staff’s behavior,” “unavailability of basic item and facilities,” “loss of income” because of health care service utilization, “health facilities location far away from residence,” and “no one to accompany” [Table 5].

## Discussion

Proportion of elderly utilizing health care services at different studies ranges from 25% to 90%.<sup>[8-16]</sup> Variability in health care service utilization may be due to different study settings and varying recall or reference period ranging from 15 days to 1 year.

It was found that 10% of the participants inspite of perceiving some health problem did not utilize any health care services. The participants mentioned nonavailability of any personnel in the household as a barrier to avail health care services. Considering the vulnerability of this particular age group, community monitoring of health with the help of health workers may be helpful. Provision of appointment of community volunteers who may accompany elderly while availing health care services if needed may be incorporated in the current program.

This study found participants who were single had more chances of utilizing health care services compared with those who were married contrary to the study conducted in Kanyakumari, India.<sup>[17]</sup>

We also found that female participants had more chances of utilizing health care services than male participants. This was Consistent with studies conducted in India as well as abroad.<sup>[18-20]</sup>

It was found that 58% of the participants in our study had visited a private facility and 31% visited a non-licensed medical practitioner for their illness. As this vulnerable cohort population is expanding with time, it is important to understand the pattern of health care services utilization by them. To ensure quality medical care, it is time that we move from fixed facility centered care to patient centered care for this age group.<sup>[21,22]</sup> For patient-centered care, perception and feedback is important,<sup>[23]</sup> and this study highlights it. The systemic barrier which exists in most Government facilities like long waiting time, overcrowding, and lack of cleanliness need to be addressed.

The strengths of this study are as follows: It was one of the few community-based study to find out the health care services utilization among elderly in India. A rigorous methodology was followed in recruitment of study participants, as from one household only one elderly was recruited. House to house visit was done for selection of the study participants and they were interviewed in their own house. Data collection was done by a single interviewer, so there was no chance of interobserver bias/multiple observer bias. The time span within which health care services utilization was seen among elderly was kept 15 days to minimize limitation of recall.

**Table 2: Sociodemographic factors associated with health care service utilization among elderly**

Variables	Health care services utilization		Total	$\chi^2$ (P)	Unadjusted OR (95% CI)
	Utilized n (%)	Not utilized n (%)			
Age (in years)					
≤70	177 (77.3)	52 (22.7)	229	2.28 (0.13)	0.62 (0.33-1.16)
>70	40 (67.8)	19 (32.2)	59		
Gender					
Male	75 (67.6)	36 (32.4)	111	5.89 (0.02)	0.51 (0.30-0.88)
Female	142 (80.2)	35 (19.8)	177		
Religion					
Hindu	191 (80)	54 (20)	245	6.03 (0.01)	0.43 (0.22-0.86)
Muslim	26 (60.5)	17 (39.5)	43		
Marital status					
Married	91 (71.6)	36 (28.4)	127	1.67 (0.20)	1.42 (0.83-2.44)
Single	126 (78.3)	35 (21.7)	161		
Literacy status					
Illiterate	162 (76.8)	49 (23.2)	211	0.87 (0.35)	0.75 (0.42-1.36)
Literate	55 (71.4)	22 (28.6)	77		
Employment status					
Working	187 (76.6)	57 (23.4)	244	1.44 (0.23)	0.65 (0.32-1.31)
Not working	30 (68.2)	14 (31.8)	44		
Per capita income					
≤Rs. 2000	160 (78.8)	43 (21.2)	203	4.46 (0.03)	0.55 (0.31-0.96)
<Rs. 2000	57 (67.0)	28 (33.0)	85		
Poverty status					
BPL	60 (80.0)	15 (20.0)	75	1.18 (0.28)	0.70 (0.35-1.33)
APL	157 (74.0)	56 (26.0)	213		
Socioeconomic status					
Lower	79 (77.0)	24 (23.0)	103	0.158 (0.69)	0.89 (0.51-1.57)
Upper lower & above	138 (75.0)	47 (25.0)	85		
Family type					
Nuclear	71 (72.4)	27 (27.6)	98	0.67 (0.41)	1.26 (0.72-2.20)
Joint	146 (76.8)	44 (23.2)	190		
Family size					
<5 members	98 (70.0)	43 (30.0)	141	5.08 (0.02)	1.87 (1.08-3.23)
≥5 members	119 (81.0)	28 (19.0)	147		

**Table 3: Binominal logistic regression analysis for significant predictors health care services utilization among elderly**

Predictor variable	Category	Number (%)	B	S.E.	Adjusted odds ratio (95% C.I.)	P
Age	≤70 years	229 (80)	0.55	0.34	1.74 (0.89-3.41)	0.10
	>70 years*	59 (20)				
Gender	Female	177 (62)	0.67	0.31	1.97 (1.07-3.66)	0.02
	Male*	111 (38)				
Religion	Hindu	245 (85)	0.73	0.37	2.09 (1.01-4.34)	0.04
	Muslim*	43 (15)				
Marital status	Single	161 (56)	0.59	0.29	1.79 (1.01-3.22)	0.04
	Married*	127 (44)				
Family size	≥5 members	147 (51)	0.44	0.30	1.56 (0.86-2.82)	0.14
	<5 members*	141 (49)				
Current employment status	Working	44 (15)	0.11	0.30	1.12 (0.50-2.49)	0.78
	Not working/Retired*	244 (85)				
Per capita income	≤ Rs. 2000	203 (70)	0.54	0.32	1.72 (0.93-3.18)	0.08
	>Rs. 2000*	85 (30)				

\*Reference category

However, the study has certain limitations. The study was based on self-perceived illness of participants, no attempt was done

to determine the need, and thus might have resulted in over or under utilization of health care services.

**Table 4: Thematic representation of factors which facilitated in health care services utilization among elderly following the question: “what factors in the health care facility you had visited had helped you to utilize it?”**

Theme	Verbatim Examples
Less waiting time	“Waiting time is very less in private hospitals and I can’t stand for too long at this age.” “X Govt hospital runs Sunday OPD specially for old age people. No crowd is there on Sunday.” “The desi doctor we go to, takes maximum 30 min.” “Chemist shop is near our house, so we directly go there and tell them our symptoms, we get medicine within minutes.”
Availability for 24 h	“Usually one of the nearby medicine shops is open all the time so I don’t have to look at time of the day”
Cashless facility for visits	“In government hospitals we never have to pay fees to doctors or for investigations and medicines,” “We only have to spend in transportation to reach government dispensary apart from that we don’t have to spend any money at the facility,” “Nearby shop of medicines will only charge for the medicines they give.”
Trust	“A boy of our locality runs a clinic. He is not MBBS, but has good knowledge. All of my family members take treatment from him,” “We all know desi system of medicine is thousands of years old. It was practiced even before my great grandparents times. Also, these medicines do not have any side effects,” “Ayurveda has no side effects this is why I prefer it over all other system of medicines.”
Behavior of staff	“I am getting my treatment from Government Hospital. The doctor who treats me is so polite and calm while examining me that half of my disease is cured because just by taking to him. He counsels me so nicely that I never miss my medicines even for a single day.”
Quality of services	“I have a heart disease which worsened few months back. I am alive because of Government doctors and nurses. They provided very good treatment and care. Even now during my follow ups days they keep track of all my investigation reports.”

**Table 5: Thematic representation of factors which prevented health care services utilization among elderly following the question “whenever you have utilized/non utilized a facility what factors worked as a barrier?”**

Theme	Verbatim Examples
Waiting time	“Going to any Government hospital consumes whole day, they are very time consuming,” “At this age it is very difficult for me to stand in sun for long hours,” “When we go to government hospitals, even if we are very sick still we have to wait a lot,” “I was asked to undergo gallbladder stone operation. But I got dates of 3 months from now.” “Hospital is so far from my house that I need someone to accompany me. But all my sons go to work every day. They get leave on Sunday but then no OPD functions on that day.”
Non-affordability	“Going to private health facility is very expensive, we even have to borrow money from others. So sometimes it’s better not to go.” “I know that I should not bring medicines directly from medical shops, they are not doctors, but going to any doctor means extra money will be spent and I can’t waste money like that. I have very limited amount and I get relieved by their medicines.” “I am sick for many days but I can’t visit a doctor because my work timings and OPD timings of government dispensary are same. I can’t afford private health service.” “I am a daily wage worker, if we take a day off due to some reason, we will lose that day’s wages. So when it is really important only then I do so otherwise I had to ignore. Before taking a off day, I arrange for money.” “My son has to take leave on my follow up date. He does not get salary for that day.”
Unavailability of basic facilities	“Government facilities do not have all the medicines and in private they are very expensive, so I prefer not going anywhere. I follow home remedies,” “Government hospitals are very dirty, if we will go there we will catch infections instead of getting well,” “Just for one investigation I have to go to hospital again and again. But every time they say that machine is not working.”
Behavior of staff	“In government hospitals no one talks to us properly, they think that we are illiterate people,” “Sometimes the staff in private hospitals misbehaves with me, because I refuse to avail all their facilities.”

## Conclusion

It needs to be kept in mind in health system that nonutilizers and nonappropriate utilizers of health care services are important stakeholders. Efforts may be made to strengthen the facilitators listed in our study and improve the various factors that act as barriers for elderly population and thus to create elderly friendly health facilities. Social supportive services, informal education, and awareness programs targeting the elderly population are required. Studies covering a diverse population and geographical location are recommended. The visit to health care facilities may be utilized for different opportunistic screening and awareness creation.

## 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.

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