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Original Research Article

Exploring reasons for non-utilization of healthcare services among older adults with non-communicable diseases in India: evidence from a nationally representative study

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ABSTRACT

Background: Non-communicable diseases (NCDs) are the leading cause of morbidity and mortality among Indian older adults, accounting for over two-thirds of the national disease burden. Despite increased access to healthcare, disparities in utilization and treatment-seeking behaviour remain. This study explores the reasons for non-utilization of healthcare services among older adults with NCDs.
Methods: This study used 2,598 samples aged 60 and above who reported major reasons for not-visiting healthcare facilities despite their disease diagnosis, from the Longitudinal Ageing Study in India (LASI) wave-1, a nationally representative dataset. The self-reported reasons for non-utilization of healthcare services were used as the dependent variable. Bivariate analysis and multinomial logistic regression were employed to examine the association between non-utilization of healthcare service and NCDs, while socio-demographic and economic characteristics were used as covariates in the analysis.
Results: The most cited reasons for not seeking care were illness not serious (41.3%), followed by having medicine at home (32.3%), and financial and work constraints (13.7). Regression results revealed that the elderly with cancer (RRR 47.54), stroke (RRR 8.28), arthritis (RRR 3.46), and lung disease (RRR 2.37) were more likely to report low treatment effectiveness, while psychological issues were more frequently reported reasons due to financial/work constraints (RRR 3.03), and family/other constraints (RRR 4.29) significantly.
Conclusions: The findings highlight the reliance on private facilities and the non-utilization of disease-specific healthcare among the elderly. Policies should prioritize financial protection, decentralized chronic care, and interventions to address socioeconomic inequalities, thereby advancing health coverage for India's ageing population.

Keywords: Healthcare utilization, India, Non-communicable diseases, Older adults, Treatment gap

INTRODUCTION

Noncommunicable diseases (NCDs) have emerged as a serious global public health concern, particularly in low- and middle-income countries such as India.[1,2] Increasing population ageing in India, combined with urbanization and lifestyle changes, has resulted in a significant rise in the prevalence of noncommunicable diseases among older persons. Currently, NCDs account for about two-thirds of the country's overall disease burden and significantly contribute to morbidity and mortality among the aged.[1,3,4] As life expectancy rises, managing chronic diseases among older adults has become a crucial public health concern. Despite advancements in healthcare infrastructure and policy initiatives focused on combating NCDs, a considerable minority of older individuals in India continue to face difficulties in receiving healthcare services. Financial barriers, geographic inaccessibility,

inadequate healthcare infrastructure, and individual perceptions of the effectiveness of available services are common constraints to timely and ongoing treatment for chronic diseases.[5] Evidence from large-scale studies shows significant differences in healthcare utilization among older persons with NCDs. For example, Chauhan and colleagues found that approximately one-fifth of older people diagnosed with major NCDs did not seek care at healthcare facilities, owing to financial constraints, long distances to healthcare facilities, and perceived low-quality care.[4] Furthermore, economically disadvantaged and socially marginalized individuals rely more heavily on public health facilities, which frequently experience staff shortages, limited drug availability, and infrastructural limitations.[6]

In India, healthcare facilities and services are frequently unavailable and expensive for older persons, contributing significantly to the expanding treatment gap for NCDs, which account for more than 63% of all fatalities.[2,7] This disparity is exacerbated by challenges such as geographic inaccessibility, high costs, and limited geriatric infrastructure, as noted in studies on older adults' healthcare utilization.[8,9] Despite a rapidly growing older population of approximately 138 million, research on their NCD-specific requirements is inadequate, in contrast to wealthy countries, where health promotion initiatives have successfully narrowed access gaps and reduced expenditures.[10,11]

Recognizing these issues, the Indian government has developed several programs to increase older individuals' access to healthcare. The National Programme for Health Care of the Elderly (NPHCE), which began in 2011, aims to integrate geriatric services into the public health system by establishing dedicated geriatric clinics at district hospitals, strengthening community health centers, and providing specialized training to healthcare professionals.[12] Furthermore, wider health-care reforms such as Ayushman Bharat and the National Programme for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS) demonstrate the government's commitment to addressing the rising burden of chronic diseases. Despite these efforts, major gaps remain in ensuring equal access and continuity of care for chronic diseases, particularly at the primary healthcare level.[5] Socioeconomic and demographic factors also influence differences in healthcare utilization among older persons. Several studies have found that factors such as wealth, education, caste, and place of residence have a significant impact on both the prevalence of NCDs and the likelihood of receiving treatment, with poorer and less educated individuals experiencing higher treatment gaps.[3,13-16] Gender differences also play a role, since older females, particularly those who are widowed or living alone, frequently encounter significant barriers to healthcare access.[17] Rural older females, in particular, face multiple disadvantages due to gender, socioeconomic position, and geographic location.[18] In addition to individual-level determinants, systematic problems such as fragmented service delivery, insufficient integration of NCD screening and management into primary care, limited community outreach, and insufficient financial protection for chronic disease care all contribute to disparities in treatment access.[19-22]

Addressing these disparities requires not just increasing the availability of healthcare services, but also understanding the underlying reasons why people fail to utilize available care. Older persons are frequently discouraged from obtaining healthcare services due to barriers such as inadequate health awareness, low health literacy, perceived lack of need for treatment, skepticism towards healthcare systems, and transportation challenges.[8,12,22,23] For example, some people may discontinue treatment when their symptoms improve, while others skip repeat visits due to travel difficulties or a perceived low quality of care in governmental facilities.[21] Evidence suggests that targeted interventions, such as community-based screening programs, greater financial protection for chronic disease care, and the involvement of community health workers, can help improve healthcare utilization and treatment adherence.[24,25]

However, despite increasing evidence of treatment gaps in NCD care, few studies have comprehensively investigated the particular reasons for non-utilization of healthcare services among older individuals in India. Most previous studies have focused on the incidence of NCDs or the size of treatment gaps, with little effort paid to understanding why people with identified diseases do not seek or discontinued treatment. Furthermore, earlier research frequently used small-scale or disease-specific data, which limited their capacity to capture national patterns and variances across socioeconomic and demographic categories. Understanding the reasons is critical for developing successful policy measures to increase healthcare utilization among older individuals. Therefore, this study aims to explore the reasons for the non-utilization of healthcare services among older adults with NCDs in India and examine their association with socioeconomic characteristics. By identifying the major barriers to healthcare utilization, the study contributes to the existing literature by providing nationally representative evidence on the reasons for treatment gaps among older persons and is intended to inform policies and actions aimed at improving healthcare access, reducing treatment disparities, and promoting healthy ageing.

METHODS

Data source

The present study is a cross-sectional study, utilizing data from the Longitudinal Ageing Study in India (LASI), wave 1 (2017-18). LASI is a nationally representative

longitudinal household survey conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, in collaboration with the International Institute for Population Sciences (IIPS), Harvard T. H. Chan School of Public Health, and the University of Southern California. The LASI survey is a multistage stratified area probability cluster sampling design applied to the LASI survey to determine the eventual observation units collects comprehensive information on the health, economic, and social well-being of 73,396 individuals aged 45 years and above and their spouses, regardless of age, across all states and union territories of India.[26]

National level data collection was conducted from April 2017 to December 2018 (excluding Sikkim). Data collection of Sikkim started in March 2020 (a small portion), and then it resumed from March 2021 to October 2021 for the rest of the Sikkim state. To achieve the study objective, a subset of the LASI dataset was extracted to include only respondents aged 60 years and above who had not visited a healthcare facility in the last 12 months despite suffering from NCDs.

Respondents aged below 60 years (n=41,494) were excluded, leaving 31,902 older adults aged 60 years and above. Among them, 9,117 respondents reported not visiting healthcare facility in the last 12 months due to NCDs. Respondents with missing information on NCD and missing data on reasons for not visiting healthcare facilities were further excluded. Additionally, those who reported "did not get sick" or had incomplete responses regarding reasons for non-utilization of healthcare services were excluded. Final analytical sample consisted of 2,598 older adults with complete information. The selection of study participants is presented in Figure 1.

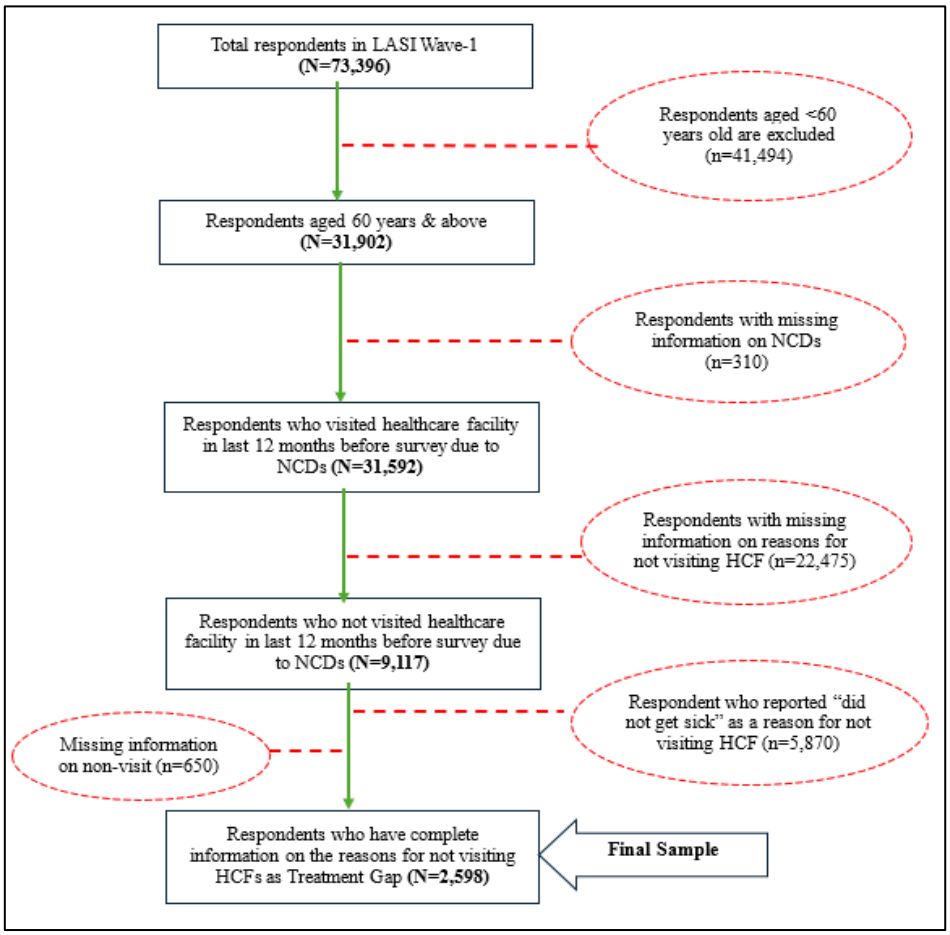

Figure 1: Flow chart showing a selection of respondents aged 60 and above years for this analysis from the LASI wave-1 (2017-18) dataset.

Methodology

Description of the variables

The analysis was structured around reasons for not visiting healthcare facilities by the older adults living with non-communicable diseases (NCDs).

Dependent variables

To examine the reasons for not seeking healthcare among the older adults, the original question on the primary reason for not visiting a healthcare facility, comprising 12 response options, was recoded into six broader analytical categories to support clearer interpretation and facilitate

regression analysis. Responses such as illness was not serious, treatment was unlikely to be effective, and had medicine at home were retained as standalone categories. Reasons related to financial/work-related constraints, including "needed to work," "didn't want to give up a day's work," and "not enough money or cost was too high. Issues on service availability and quality, namely "no quality facilities available nearby" and "no healthcare facility nearby," were merged into a single category labelled facility access issues. Finally, responses reflecting social or family-related barriers, such as "nobody to accompany," "family member(s) decided it wasn't required," and "other," were grouped under family/other constraints.

Mediating variables

The study examines major non-communicable diseases (NCDs) such as hypertension, diabetes, cancer, lung disease, heart disease, stroke, bone disease (e.g., arthritis, osteoporosis), psychological disorders (e.g., depression, Alzheimer's, Parkinson's), and high cholesterol. The above disease-specific question was asked as "has any health professional ever told you that you have…?" Further, all of these diseases were coded as 0 "no" (not reporting the specific disease) or 1 "yes" (reporting the disease) for analysis purposes.

Predictor variables

The independent variables included socio-demographic characteristics (age, sex, place of residence, marital status, education, caste, religion, region), and economic status (work status and monthly per capita expenditure (MPCE) quintile).

Statistical approach

Descriptive statistics and bivariate analyses were used to summarize the distribution of major demographic and socioeconomic characteristics of the older population. Cross-tabulations were performed to examine reasons for not seeking care and the prevalence of NCDs. All descriptive analyses were weighted using national individual sampling weights to ensure representativeness. To assess the factors associated with reasons for not visiting healthcare facilities, multinomial logistic regression models were employed. National weights were applied to ensure national representativeness. All statistical analyses were performed using STATA 17.

STROBE statement

This study was conducted and reported in accordance with the strengthening the reporting of observational studies in epidemiology (STROBE) guidelines for cross-sectional studies.

RESULTS

The distribution of the study population by healthcare utilization is presented in Table 1, which shows that approximately 24% of older adults with NCDs had not visited a healthcare facility in the 12 months preceding the survey date. Non-visits were highest among those aged 60-69 years (25.1%), followed by the oldest group aged 80 years and above (24.4%). Males (25.4%) were slightly more likely not to seek healthcare.

Table 1: Distribution of older adults by use of healthcare facilities in India.

Background characteristics		Healthcare facility		Total (N)
		Not visited	Visited	
Overall	(N)	9,117	22,475	31,592
Age groups (years)	60-69	25.1	74.9	19,029
	70-79	22.0	78.0	9,155
	80+	24.4	75.6	3,408
Sex	Male	25.4	74.6	15,157
	Female	22.9	77.1	16,435
Place of residence	Urban	22.3	77.7	10,665
	Rural	24.8	75.2	20,927
Marital status	Currently married	24.5	75.5	20,007
	Widowed	23.2	76.8	10,746
	Others[1]	27.7	72.3	839
	None of them	21.1	78.9	9,178
Living arrangement	Living alone	20.8	79.2	1,614
	Living with spouse only	23.6	76.4	4,649
	Living with spouse and children	24.9	75.1	13,586
	Living with children and others	23.3	76.7	8,621
	Living with others	25.5	74.5	3,122
Region	North	21.4	78.6	5,746
	Central	28.6	71.4	4,242

Continued.

Background characteristics		Healthcare facility		Total (N)
		Not visited	Visited	
	East	19.7	80.3	5,729
	Northeast	44.8	55.2	4,164
	West	20.0	80.0	4,214
	South	26.2	73.8	7,497
Education level	No education	24.8	75.2	17,052
	Primary	22.3	77.7	7,567
	Secondary	22.7	77.3	4,578
	Higher and above	26.7	73.3	2,395
Work status	Never worked	23.9	76.1	8,963
	Currently working	27.5	72.5	9,258
	Not currently working	21.5	78.5	10,971
	Retired	22.5	77.5	2,375
MPCE	Poorest	30.8	69.2	6,510
	Poorer	25.0	75.0	6,512
	Middle	23.9	76.1	6,438
	Richer	21.2	78.8	6,214
	Richest	17.5	82.5	5,918
Total		24.1	75.9	100

Note: Others[1] includes divorced, separated, live-in relationships, and singles.

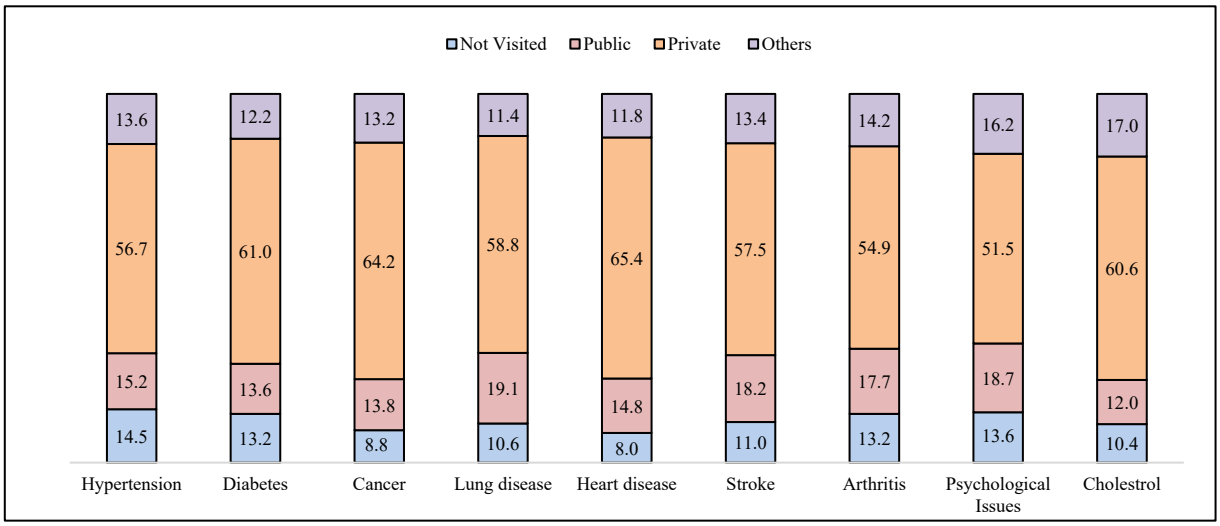

Figure 2: Distribution of disease-specific diagnosed older adults visited in the healthcare facilities in India.

Rural residents (24.8%) had a higher proportion of non-visits, highlighting geographic disparities, and it is more common among those who were divorced, separated, single, or in live-in relationships (27.7%). Regarding living arrangements, older adults living with others (25.5%) and those living with their spouse and children (24.9%) showed higher levels of non-utilization.

Regionally, the northeast (44.8%) had the highest share of older adults who did not visit any healthcare facility, while the east (19.7%) region reported the lowest. Non-visits were relatively similar across education levels, though highest among those with higher education (26.7%) and no education (24.8%). Older adults currently working had the highest non-visits (27.5%), whereas those not currently working had the lowest (21.5%). Lastly, the poorest group had the highest non-visits (30.8%), and those in the richest group had the lowest (17.5%), underscoring the persistent role of economic inequality in healthcare utilization.

Pattern of healthcare utilization for older adults suffering from NCDs

Figure 2 shows the percentage distribution of older adults diagnosed with specific NCDs by the type of healthcare facility accessed in India. The most commonly reported conditions were high cholesterol (17%) and psychological problems (16.2%), followed by hypertension (13.6%), cancer (13.2%), diabetes (12.2%), heart disease (11.8%), and lung disease (11.4%), suggesting a broad and overlapping burden of cardio-metabolic and mental health disorders in this population.

Table 2: Distribution of the reasons for not visiting healthcare facilities by socioeconomic characteristics of the Indian older adults.

Socioeconomic characteristics	Reasons for not visiting healthcare facilities						
	Illness not serious	Financial/ work constraints	Low treatment effectiveness	Had medicine at home	Facility access issues	Family/other constraints	Total N
Overall (N)	1145	424	62	754	63	150	2598
Age groups (years)							
60-69	40.4	14.2	2.2	33.8	1.2	8.1	1461
70-79	42.6	13.0	2.7	31.9	2.2	7.6	760
80+	42.1	12.8	1.9	27.1	1.5	14.6	377
Sex							
Male	38.8	13.7	2.6	34.8	1.2	8.9	1172
Female	43.4	13.6	2.0	30.2	1.8	8.9	1426
Place of residence							
Urban	43.7	11.5	3.2	36.0	0.4	5.2	708
Rural	40.7	14.2	2.1	31.3	1.9	9.8	1890
Marital status							
Currently married	39.3	13.6	2.8	35.5	1.2	7.7	1503
Widowed	43.3	13.1	1.6	28.9	2.1	11	1009
Others	53.3	23.7	3.0	16.9	0.4	2.7	86
Living arrangement							
Living alone	48.2	14.3	0.6	20.4	3.9	12.6	149
Living with spouse only	37.5	14.9	2.8	38.9	1.8	4.0	349
Living with spouse and children	40.2	12.3	3.0	34.0	1.2	9.3	1010
Living with children and others	40.2	14.3	1.7	32.5	1.8	9.6	803
Living with others	47.6	14.4	2.0	26.1	0.6	9.3	287
Education level							
No education	42	15.9	2.2	29.2	1.9	8.8	1596
Primary	42	12.3	3.1	35.3	1.3	6.1	549
Secondary	39.4	7.9	0.9	38.9	0.1	12.8	307
Higher and above	34.3	2.5	4.2	46.7	1.6	10.7	146
Work status							
Never worked	49.5	11.4	1.9	30.5	2.5	4.3	821
Currently working	42	13.7	0.8	28.2	0.5	14.8	766
Not currently working	33.1	16.3	3.1	37.3	1.7	8.4	860
Retired	47.2	7.9	9.3	32.6	1.6	1.4	150
MPCE							
Poorest	42.6	17.3	1.1	29.0	1.7	8.4	773
Poorer	43.0	10.2	1.7	33.8	1.7	9.6	541
Middle	34.0	14.2	4.7	34.6	0.3	12.2	536
Richer	46.0	10.4	2.7	33.9	2.5	4.5	423
Richest	41.4	12.4	2.1	33.6	1.9	8.6	325
Region							
North	48.7	11.5	1.7	34.6	0.2	3.2	386
Central	30.0	5.3	1.3	33.4	1.8	28.1	347
East	50.0	9.2	1.0	36.5	1.2	2.1	463
Northeast	39.3	33.0	1.9	15.6	6.2	4.1	730
West	29.0	49.5	2.0	13.7	0.0	5.9	166
South	44.1	9.3	5.6	37.3	1.6	2.1	506
Total	41.3	13.7	2.3	32.3	1.6	8.9	100

Note: *Includes Family decided it is not important/ nobody to accompany/any others.

Reasons for not visiting healthcare facilities despite suffering from NCDs

Table 2 provides major reasons why Indian older adults do not seek healthcare services, disaggregated by demographic and socio-economic characteristics. With increasing age, the share of older adults reporting family and other constraints (family decided not important/nobody to accompany/or any others) doubled from 7.6% (70-79 years) to 14.6% oldest-old (80+ years). The oldest-old also had higher reporting of illness not serious (42.1%), which may reflect higher dependency and caregiving issues in old age. Females were more likely than males to report illness not serious (38.8% versus 43.4%), while access to healthcare facilities is higher among females (1.8%) than males. Rural older adults more commonly cited financial/work-related constraints (14.2%), family and other constraints (9.8%), and healthcare facility access issues (1.9%) than their urban counterparts (11.5%, 5.2%, and 0.4%, respectively).

Nearly half of the older adults who were living alone reported illness not serious (48.2%) as a major reason for not seeking treatment, despite having NCDs, whereas 12.6% elders had reported family or other constraints as a major reason for not seeking treatment, while those not living alone had reported fewer barriers overall. Older adults with no education reported higher levels of financial/work constraints (15.9%), while among higher educated older adults, nearly 47% reported taking medicine at home, 5.2% elders reported less effectiveness of treatment, and higher levels of family constraints (10.7%) as a reason for not visiting healthcare facilities. Among work status categories, reporting illness as not serious was highest among those who never worked (49.5%). Whereas 33.1% of elders who are not currently working reported illness as not serious, which is the lowest in that category, 16.3% reported financial/work constraints. Family or other constraints were reported most often by the currently working group (14.8%) and least often by the retired (1.4%). On the other side, the middle class in the MPCE has reported the highest level of financial/work-related (14.2%) and family/other constraints (12.2%), followed by treatment effectiveness concern (4.7%), whereas illness not serious was reported lowest compared to other MPCE categories for the reasons for not visiting healthcare facilities. Almost half of the older population living in the Western region of India reported that they are facing financial/work-related barriers to visiting healthcare facilities. Whereas 6.2% older adults from Northeast India have reported healthcare facility access issues, while 28% older adults from central India have reported family or other constraints as reasons for not visiting healthcare facilities.

Figure 3 presents overall reasons reported by older adults for not visiting healthcare facilities despite suffering from NCDs, such as the illness not serious (41.3%), followed by having medicine at home (32.3%), and financial/work-related constraints (13.7%). Less frequent but notable were family or other constraints (8.9%), while low treatment effectiveness (2.3%) and facility access issues (1.6%) were the least cited reasons by the older adults.

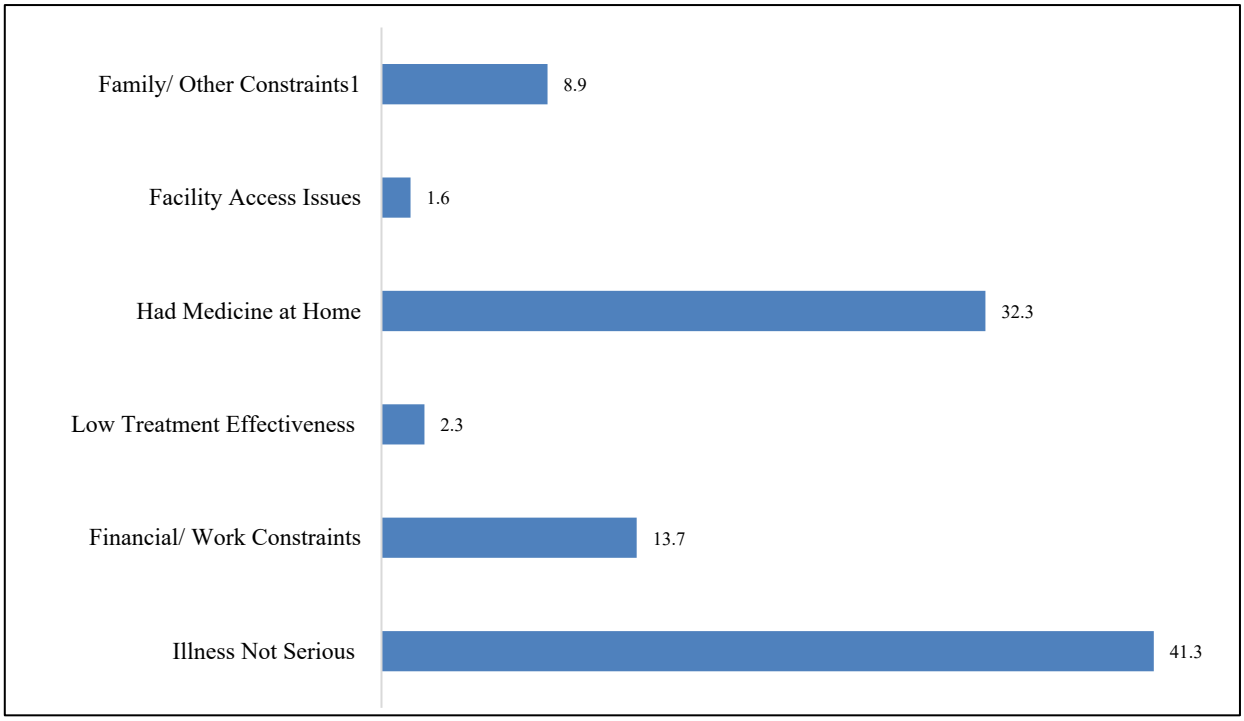

Figure 3: Reasons for not visiting healthcare facilities despite suffering from NCDs among the older adults in India.
Note: include Family decided it is not important/ nobody to accompany/any others.

Table 3: Reasons for not visiting healthcare facilities by type of disease among the older adults in India.

Type of diseases	Main reasons for not visiting						Total N
	Illness not serious	Financial/ work constraints	Low treatment effectiveness	Had medicine at home	Facility access issues	Family/ other constraints*	
Hypertension	32.9	13.9	3.7	43.8	2.4	3.4	632
Diabetes	29.7	11.0	3.0	50.5	2.2	3.7	243
Cancer	0.0	3.8	96.2	0.0	0.0	0.0	2
Lung disease	3.5	4.5	9.6	75.0	0.0	7.4	36
Heart disease	30.4	11.2	0.0	57.2	0.0	1.2	39
Stroke	15.0	23.2	6.7	46.8	0.0	8.4	51
Arthritis	29.8	16.5	4.9	45.3	1.6	1.9	270
Psychological Issues	28.4	24.2	3.7	36.2	0.0	7.4	58
Cholesterol	42.4	0.4	0.0	48.7	0.0	8.5	30

Note: * include Family decided it is not important/ nobody to accompany/any others.

Association of reasons for not visiting healthcare facilities and socioeconomic factors and disease types

Table 3 presents the multinomial logistic regression analysis, highlighting several significant factors contributing to treatment gaps among the older adults in India. Older adults living in rural areas (RRR=0.71) were significantly less likely to report financial or work-related constraints than their urban counterparts. Living arrangements show that those living with a spouse only (RRR=0.43), a spouse and children (RRR=0.32), children and others (RRR=0.55), and others (RRR=0.47) are significantly less likely to report financial constraints compared to those living alone. Higher education was associated with a markedly lower likelihood of reporting financial/work constraints, with those educated at higher levels having the lowest relative risk (RRR=0.19). In contrast, work status showed that the older adults currently not working (RRR=1.73) were significantly more likely to report financial or work-related constraints. In the MPCE, the richer (RRR=0.49) and richest (RRR=0.58) groups were significantly less likely to report financial or work-related constraints. Regionally, those living in the northeast (RRR=3.78) and western (RRR=3.36) India are significantly more likely to report financial/work constraints than those in the north.

Low treatment effectiveness as a reason for non-utilization was significantly higher among the retired older adults (RRR=2.90), the middle class of the MPCE (RRR=2.18), and those living in the South (RRR=3.49). Having medicine at home significantly increased the likelihood of not visiting healthcare facilities among those currently not working (RRR=1.50), as well as among residents of central (RRR=1.67), South (RRR=1.32), and East (RRR=1.63) regions of India. Interestingly, the older adults from the Northeast were significantly less likely to report this reason (RRR=0.63). Facility access issues were strikingly higher among rural residents (RRR=17.25) and those from the Northeast region (RRR=19.62), indicating severe accessibility challenges in these areas. Family or other constraints significantly influenced care-seeking behaviour for several socioeconomic groups. The likelihood was higher among the oldest-old (80+) (RRR=2.26) and females (RRR=1.57). Rural residents were significantly less likely to report family constraints (RRR=0.59), whereas currently not working older adults (RRR=1.63) were more likely to report this as a reason. Living arrangements strongly influenced this outcome, with all other respondents who are not living alone significantly less likely to report family constraints compared to those living alone. According to MPCE, the middle class (RRR=2.35) had the highest likelihood of reporting family constraints. Regionally, older adults living in the central (RRR=8.64), western (RRR=2.71), and southern (RRR=1.98) regions had a significantly higher likelihood of experiencing family and other constraints.

Table 4: Multinomial logistic regression for reasons for not visiting healthcare facilities by background characteristics among the older adults in India

Background characteristics	Financial/ work constraints	Low treatment effectiveness	Had medicine at home	Facility access issues	Family/ other constraints*
	RRR (95% CI)				
Age (years)	**Illness not serious ®**				
60-69 ®					
70-79	0.84 (0.63-1.1)	1.04 (0.56-1.94)	1.13 (0.9-1.41)	1.22 (0.67-2.22)	1.27 (0.81-1.97)
80+	0.74 (0.51-1.09)	0.92 (0.41-2.05)	1.08 (0.8-1.45)	0.91 (0.4-2.1)	2.26*** (1.35-3.79)
Sex					
Male ®					
Female	1.06 (0.79-1.42)	1.13 (0.57-2.22)	1.03 (0.8-1.32)	0.8 (0.42-1.54)	1.57* (0.98-2.52)

Continued.

Background characteristics	Financial/ work constraints	Low treatment effectiveness	Had medicine at home	Facility access issues	Family/ other constraints*
Place of residence					
Urban ®					
Rural	0.71** (0.53-0.96)	0.98 (0.53-1.82)	0.85 (0.67-1.08)	17.25*** (2.28-130.32)	0.59** (0.38-0.91)
Marital status					
Currently married ®					
Widowed	0.6 (0.32-1.13)	1.5 (0.29-7.89)	0.64 (0.38-1.09)	3.16 (0.35-28.68)	0.85 (0.3-2.35)
Others	0.56 (0.26-1.21)	4.01 (0.7-22.89)	0.39**(0.18-0.86)	0.93 (0.05-16.26)	0.85 (0.23-3.13)
Living arrangement					
Living alone ®					
Living with spouse only	0.43** (0.19-0.97)	2.06 (0.21-20.07)	0.74 (0.37-1.51)	4.64 (0.39-54.75)	0.29* (0.08-1.03)
Living with spouse and children	0.32*** (0.15-0.69)	3.66 (0.42-31.7)	0.68 (0.35-1.35)	1.71 (0.15-19.97)	0.34* (0.11-1.09)
Living with children and others	0.55** (0.33-0.92)	2.09 (0.46-9.48)	1.06 (0.66-1.69)	0.82 (0.26-2.57)	0.4*** (0.21-0.77)
Living with others	0.47** (0.25-0.88)	2.2 (0.43-11.31)	0.56* (0.32-1)	0.9 (0.21-3.87)	0.25*** (0.1-0.58)
Education level					
No education ®					
Primary	0.93 (0.69-1.25)	1.27 (0.67-2.41)	0.98 (0.76-1.26)	0.76 (0.37-1.56)	0.81 (0.48-1.37)
Secondary	0.68* (0.44-1.06)	0.34* (0.11-1.07)	0.92 (0.66-1.27)	0.75 (0.24-2.32)	1.3 (0.7-2.42)
Higher and above	0.19*** (0.07-0.56)	0.87 (0.26-2.9)	1.29 (0.82-2.02)	2.11 (0.42-10.59)	1.2 (0.48-2.95)
Work status					
Never worked ®					
Currently working	1.39* (0.99-1.93)	0.36** (0.13-0.97)	0.82 (0.61-1.1)	0.63 (0.31-1.28)	1.31 (0.76-2.28)
Not currently working	1.73*** (1.26-2.39)	1.67 (0.85-3.28)	1.5*** (1.15-1.94)	0.81 (0.4-1.62)	1.63* (1-2.66)
Retired	0.9 (0.45-1.79)	2.9** (1.04-8.07)	0.92 (0.57-1.46)	0.25 (0.03-2.1)	0.86 (0.31-2.38)
MPCE					
Poorest ®					
Poorer	0.77 (0.56-1.07)	0.95 (0.4-2.24)	1.17 (0.89-1.53)	0.79 (0.38-1.63)	1.56* (0.94-2.6)
Middle	0.81 (0.58-1.13)	2.18** (1.06-4.5)	1.25 (0.94-1.65)	0.46* (0.19-1.1)	2.35*** (1.44-3.84)
Richer	0.49*** (0.33-0.71)	1.61 (0.71-3.63)	1.13 (0.84-1.52)	0.81 (0.38-1.73)	0.81 (0.42-1.56)
Richest	0.58** (0.38-0.89)	1.12 (0.42-2.99)	1.21 (0.87-1.69)	0.54 (0.21-1.38)	1.06 (0.53-2.13)
Region					
North ®					
Central	0.88 (0.5-1.56)	0.91 (0.26-3.18)	1.67*** (1.18-2.38)	7.15* (0.86-59.63)	8.64*** (4.43-16.84)
East	0.94 (0.57-1.56)	0.7 (0.22-2.23)	1.63***(1.19-2.22)	2.93 (0.33-25.61)	0.95 (0.41-2.17)
Northeast	3.78*** (2.51-5.67)	1.06 (0.42-2.66)	0.63*** (0.45-0.86)	19.62*** (2.66-145.04)	0.92 (0.43-1.95)
West	3.36***(1.98-5.69)	1.57 (0.45-5.56)	0.9 (0.56-1.44)	0 (0)	2.71** (1.17-6.29)
South	1.1 (0.68-1.78)	3.49***(1.5-8.11)	1.32*(0.96-1.8)	5.56 (0.67-46.38)	1.98* (0.99-3.96)

Note: ® Reference; Levels of significance: *** p<0.01, ** p<0.05, * p<0.10; RRR: relative risk ratio; 95% CI: confidence interval at 95%; *Includes family decided it is not important/nobody to accompany/any others.

Table 5: Multinomial logistic regression on reasons for not visiting healthcare facilities by disease type among the older adults in India.

Main reasons for not visiting healthcare facilities	Hypertension RRR (95% CI)	Diabetes RRR (95% CI)	Cancer RRR (95% CI)	Lung Disease RRR (95% CI)	Heart Disease RRR (95% CI)	Stroke RRR (95% CI)	Arthritis RRR (95% CI)	Psychological Issues RRR (95% CI)	Cholesterol RRR (95% CI)
Illness not serious	®	®	®	®	®	®	®	®	®
Financial/ work constraints	1.13 (0.85-1.49)	0.84 (0.53-1.32)	6.04 (0.54-66.97)	1.66* (1-2.74)	0.95 (0.4-2.25)	3.38** (1.33-8.58)	1.43* (0.98-2.09)	3.03*** (1.4-6.57)	0.32 (0.07-1.47)

Continued.

Main reasons for not visiting healthcare facilities	Hypertension RRR (95% CI)	Diabetes RRR (95% CI)	Cancer RRR (95% CI)	Lung Disease RRR (95% CI)	Heart Disease RRR (95% CI)	Stroke RRR (95% CI)	Arthritis RRR (95% CI)	Psychological Issues RRR (95% CI)	Cholesterol RRR (95% CI)
Low treatment effectiveness	1.38 (0.76-2.51)	1.4 (0.61-3.21)	47.54*** (4.14-546.49)	2.37* (0.94-5.98)	0.85 (0.17-4.18)	8.28*** (2.31-29.7)	3.46*** (1.82-6.6)	2.55 (0.66-9.86)	0.71 (0.09-5.94)
Had medicine at home	1.13 (0.9-1.42)	1.72*** (1.25-2.37)	1.36 (0.08-22.27)	1.24 (0.79-1.97)	1.57 (0.84-2.94)	4.1*** (1.81-9.28)	1.74*** (1.28-2.36)	1.99* (0.95-4.16)	0.7 (0.3-1.64)
Facility access issues	1.43 (0.78-2.61)	1.49 (0.63-3.49)	0 (0)	0.45 (0.06-3.36)	0 (0)	0 (0)	0.83 (0.29-2.36)	0 (0)	0 (0)
Family/ other constraints1	1.19 (0.78-1.81)	1.17 (0.63-2.17)	7.92 (0.49-128.26)	1.31 (0.59-2.9)	0.88 (0.24-3.14)	3.28* (0.95-11.26)	0.91 (0.48-1.73)	4.29*** (1.62-11.34)	1.38 (0.37-5.09)

Note: ® reference category; levels of significance: *** p<0.01, ** p<0.05, * p<0.10; RRR: relative risk ratio; 95% CI: confidence interval at 95%; 1Includes Family decided it is not important/ nobody to accompany /any others.

Table 4 shows that approximately half of the older adult respondents were taking medication at home for various diseases, followed by illnesses not serious, citing this as a reason for not visiting healthcare facilities. Further, among those with hypertension, 32.9% reported that their illness was not serious, and 13.9% reported financial/work constraints as a reason for not visiting healthcare facilities. Whereas the older adults suffering from psychological issues and stroke reported that financial or work-related (24.2% and 23.2%) and family or other constraints (7.4% and 8.4%) were major reasons for not visiting healthcare facilities.

Table 5 presents the results of a multinomial logistic regression examining the association between disease type and various self-reported reasons for not visiting healthcare facilities by the older adults in India. The analysis reveals that older adults suffering from diabetes, having medication at home (RRR=1.72), significantly increased the likelihood of not visiting healthcare facilities, indicating that older people who already had medication were more likely to skip their healthcare visits. However, financial/work constraints (RRR=0.84), low treatment effectiveness (RRR=1.40), facility access concerns (RRR=1.49), and family or other constraints (RRR=1.17) were all non-significant. Cancer patients had a notably higher risk of reporting low treatment effectiveness as a reason for not visiting a facility (RRR=47.54), indicating a very strong and significant association.

Financial/work constraints (RRR=6.04) and family or other constraints (RRR=7.92) were elevated but not statistically significant. For the older adults with lung disease, financial or work-related constraints (RRR=1.66) and low treatment effectiveness (RRR=2.37) were both marginally significant, indicating a moderately higher risk of avoiding healthcare due to these reasons. Having medicine at home (RRR=1.24) and family/other constraints (RRR=1.31) were not significant. Elders with a history of stroke had a significantly higher likelihood of citing financial/work constraints (RRR=3.38), low treatment effectiveness (RRR=8.28), and having medicine at home (RRR=4.10) as reasons for not visiting healthcare. Family/other constraints (RRR=3.28) were marginally significant. Older patients with arthritis exhibit a significantly increased likelihood of not visiting healthcare facilities due to low treatment effectiveness (RRR=3.46) and having medication at home (RRR=1.74). Financial or work-related constraints (RRR=1.43) were marginally significant. Elders with psychological conditions were significantly more likely to avoid healthcare due to financial/work constraints (RRR=3.03) and family/other constraints (RRR=4.29). Low treatment effectiveness (RRR=2.55) did not show significant associations. Lastly, hypertension, heart disease, and cholesterol were not significantly associated with any of the reasons for not visiting healthcare facilities, although some of the reasons show a positive association with avoiding healthcare facilities.

DISCUSSION

The present study examined the reasons for non-utilization of healthcare services among older adults suffering from non-communicable diseases (NCDs) in India. The findings reveal that a considerable proportion of older adults with diagnosed NCDs do not regularly access healthcare services, highlighting persistent gaps in treatment despite the availability of health programs aimed at addressing chronic diseases in India. One of the key findings of this study is that nearly one-fourth of older persons with NCDs did not visit any healthcare facilities in the 12 months before the survey. This suggests that people who have already been identified with chronic diseases have a significant treatment gap. Similar trends have been found in earlier studies, indicating that a sizable portion of older adults in India either put off or avoid receiving healthcare because of financial limitations, the perception that they don't need it, and obstacles to accessibility and high-quality care.[4,5] The relatively higher proportion of non-utilization among males may reflect gender differences in health-seeking behavior, where males often delay seeking care due to work-related responsibilities or perceptions of illness severity. The results also show that older adults in rural

areas have somewhat higher rates of non-utilization than their urban counterparts, which is in line with previous research showing ongoing differences in healthcare access between rural and urban areas because of infrastructure constraints, a lack of medical professionals, and more significant geographic barriers.[27,28]

The findings suggest that healthcare utilization among older persons is still significantly influenced by socioeconomic disadvantages, especially financial factors. In India, where out-of-pocket costs continue to be a major burden for households seeking treatment for chronic diseases, this pattern demonstrates the continued impact of financial constraint on healthcare access.[7,14,29] The findings of this study suggest that healthcare-seeking behavior is also significantly influenced by education. This may be explained by the role of education in improving health literacy, disease management awareness, and the ability to navigate healthcare systems more effectively. The study further highlights the importance of living arrangements and social support in determining healthcare utilization. This finding suggests that family support plays a protective role in facilitating healthcare access among older adults, especially those living alone. Family members often provide assistance in decision-making, financial support, and transportation, which are critical factors influencing healthcare utilization in later life.[17,24] Conversely, socially isolated older adults may face additional difficulties in accessing healthcare services, making them particularly vulnerable to untreated morbidity.

Another important finding of the study is most frequently reported reason was illness was not serious, followed by the availability of medication at home and financial or work-related constraints. These findings highlight the role of individual perceptions and health awareness in affecting healthcare-seeking behavior. The belief that symptoms are not serious may reflect limited health literacy or the normalization of chronic health problems as a natural part of ageing, which discourages individuals from seeking medical attention.[30,31] In addition, the reliance on medication available at home suggests a tendency toward self-medication or discontinuation of regular medical follow-ups once symptoms appear to be controlled. Gender differences were also evident, with females being more likely to report family-related constraints. This observation is consistent with previous research showing that older females often face greater dependency, limited financial autonomy, and caregiving responsibilities that may restrict their ability to seek timely healthcare.[17]

Regional disparities were particularly evident in the northeast and western regions, where financial constraints and difficulties accessing facilities were reported more frequently. These differences likely reflect variations in healthcare infrastructure, economic development, and service availability across regions of India. Additionally, rural residence was strongly associated with reporting facility access issues, indicating that geographical barriers continue to limit healthcare access in rural areas. These barriers may include long travel distances, limited transportation options, and the absence of specialized healthcare services, which disproportionately affect older populations with limited mobility.[8,9] Disease-specific patterns of healthcare avoidance also provide important insights. Older adults suffering from stroke, psychological conditions, and lung diseases were more likely to report financial constraints, low treatment effectiveness, or family-related barriers as reasons for not visiting healthcare facilities. The higher likelihood of treatment avoidance among individuals with psychological conditions is consistent with earlier evidence highlighting stigma, low awareness, and inadequate mental health services as major barriers to treatment.[9,27] Overall, the findings of the study demonstrate that the treatment gap among older adults with NCDs in India is shaped by a complex interaction of socioeconomic, demographic, behavioral, and systemic factors. Financial constraints, perceived lack of illness severity, reliance on medication at home, and limited access to healthcare facilities all contribute to the non-utilization of healthcare services among older adults.

This study has some limitations that must be addressed when evaluating the results. First, the research is based on cross-sectional data from LASI wave 1, which makes it difficult to establish causal links between socioeconomic characteristics and healthcare non-utilization. Second, data on NCDs, healthcare visits, and reasons for non-utilization are self-reported and may be influenced by recall bias or misreporting. Third, the severity and stage of diseases could not be determined, which may influence treatment-seeking behaviour. Despite these limitations, the use of nationally representative data provides light on the barriers to healthcare utilization among older persons with NCDs in India.

CONCLUSION

The findings of this study underscore a multifaceted inequity in healthcare utilization among the elderly in India, with private healthcare continuing to dominate service use, but large segments of the population, particularly the poorest, rural residents, females, and the oldest-old, remain underserved. The substantial treatment gaps observed across several non-communicable diseases, especially mental health conditions and stroke, reflect deep structural, socioeconomic, and cultural barriers that limit timely care. These disparities are further exacerbated by social isolation, lower educational attainment, and regional differences in healthcare infrastructure. Overall, the study emphasizes that improving healthcare utilization among the older population requires targeted interventions to strengthen rural health systems, reduce financial barriers, enhance health literacy, and address social vulnerabilities that hinder access to care. Such efforts are crucial for ensuring

equitable and effective healthcare in an ageing population like India.

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