

The role of social capital in healthcare utilization among the older adults in India: Evidence from LASI wave-1

Jitender Prasad^{a,*}, T.V. Sekher^b

^a PhD Scholar, International Institute for Population Sciences, Mumbai, 400088, India

^b Professor, Department of Family & Generations, International Institute for Population Sciences, Mumbai, 400088, Maharashtra, India

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ABSTRACT

Background: India is witnessing rapid demographic changes with growing ageing population, and ensuring access to better healthcare services for older adults is critical public health concern. Despite evidence linking social capital to health outcomes, its role in healthcare utilization among the older adults in India remains underexplored at the national level. Therefore, this study examines the association of social capital with healthcare utilization among older adults in India.

Methodology: The study utilizes data from the Longitudinal Ageing Study in India (LASI) Wave-1, which comprises 31,534 individuals aged 60 and above. Social capital was measured using 24-questions from LASI, demonstrating strong internal consistency (Cronbach's alpha 0.72). It was further categorized into cognitive and structural social capital. Descriptive statistics, bivariate and multivariate analysis were employed along with national survey weights.

Findings: The study found that the older adults with high social capital were more likely male, married, educated, urban, wealthy, and physically active. Distribution patterns revealed that high social capital decreased significantly with increasing age, particularly after 75-years, indicating reduced participation and network connections. In terms of healthcare utilization, older adults with higher social capital were more likely to use private facilities (RRR = 1.37). They also showed higher reliance on private transportation (RRR = 2.06) to health facilities.

Conclusion: The findings suggest that higher social capital is significantly associated with healthcare utilization. Therefore, enhancing social engagement and strengthening social capital among older adults will reduce inequalities and improve access to healthcare, ultimately leading to better outcomes for healthy ageing.

1. Introduction

Social capital has received considerable scholarly interest due to its linkage with individuals' behavior and overall well-being. Generally, it refers to the resources embedded in social networks, shared norms, and interpersonal trust that allow cooperation and coordinated action. Scholars such as Pierre Bourdieu (1986), Robert Putnam (1994, 2000), James Coleman (1988), and Ichiro Kawachi (2001; 1999) have offered distinct but complementary perspectives on social capital. In public health, social capital is substantially associated with healthcare usage, as it influences health-related decision-making, access to information and services, and the mobilization of social support. Strong social ties and community participation, particularly among older adults, can affect the timing, frequency, and appropriateness of healthcare-seeking

behavior. Hence, social capital has been conceptualized in various ways across disciplines. Bourdieu (1986) viewed it as the resources linked to durable networks, emphasizing its unequal distribution and role in sustaining social hierarchies. Coleman (1988) took a functionalist approach, defining it as aspects of social structures that facilitate coordinated action, particularly within families and educational contexts. Putnam (1994, 2000) adopted a communitarian perspective, framing social capital as networks, norms, and trust that promote cooperation, while warning of its decline due to reduced civic engagement. In public health, Kawachi (2001) highlighted social capital as resources accessed through social networks that encourage health behaviours and outcomes. Collectively, these perspectives demonstrate that social capital operates at individual, community, and institutional levels, and is increasingly utilized to explain disparities in healthcare access and

* Corresponding author.

E-mail addresses: jitenderprasad18@gmail.com (J. Prasad), tvsekher@gmail.com (T.V. Sekher).

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outcomes, particularly among older adults in India.

Social capital is often understood through two key dimensions: structural and cognitive, a framework introduced by Nahapiet and Ghoshal (1998). Structural social capital refers to the observable aspects of relationships, such as network size, interaction frequency, and group participation, which are embedded in formal or informal institutions. Cognitive social capital encompasses subjective elements such as trust, reciprocity, shared norms, and social cohesion, reflecting the moral and attitudinal resources that guide individual behavior. Harpham et al. (2002) and De Silva et al. (2007) emphasized distinguishing between measurable participation and perceived belonging when assessing social capital in health studies. Structural capital facilitates access to resources and services, while cognitive capital mitigates stress and fosters resilience (Claridge, 2018; Harpham, 2008). Both dimensions intersect yet provide distinct contributions to health, especially for older adults, where trust and a sense of belonging can mitigate isolation and support better health outcomes.

Social capital is widely recognized as a key determinant of health, with evidence linking it to better self-rated health, fewer chronic conditions, reduced depression, and improved physical functioning, particularly among older adults (Cao & Rammohan, 2016; Gray, 2009; Kawachi et al., 1999; Kawachi & Berkman, 2000). It has an effect on health through direct pathways, such as emotional support, stress reduction, and promotion of healthy behaviours, and indirect pathways, including access to information, transport, and motivation for timely care (WHO, 2015). Both cognitive and structural social capital shape healthcare use. Trust within communities boosts preventive service use and positive health perceptions among older adults (Dauner et al., 2015; Ichida et al., 2009), while group participation and neighbourly interaction improve treatment adherence and reduce hospitalizations (Liang et al., 2020; Litwin & Shiovitz-Ezra, 2006). Strong networks can lower hospital re-admissions (Rodríguez-Artalejo et al., 2006) and mortality risk (Brinkhues et al., 2017). In India, where family support is eroding due to nuclearization and migration, higher social capital among the older adults facilitates access to emergency assistance and timely healthcare despite socio-economic barriers (Islam, 2019).

India's older adults population is growing rapidly, projected to reach about 11% in 2025 and more than 21% by 2050 (IIPS & UNFPA, 2023). Despite longer life expectancy, many older adults, particularly those in rural areas or living alone, face challenges in healthcare utilization due to poor infrastructure, limited mobility, and financial insecurity. Where traditional family support systems are weakening due to migration and urbanization, social capital (through trust, community participation, and social networks) emerges as a crucial resource to bridge healthcare gaps by fostering collective support, reducing isolation, and facilitating access to essential services. India's social capital landscape is shaped by deep inequalities across regions, caste, gender, and urban-rural divides. Older individuals in contexts with higher cohesion, trust, and reciprocity often enjoy better healthcare access, greater satisfaction with services, and fewer unmet needs (Singh et al., 2017). As traditional support systems weaken, particularly in rural and marginalized areas, neighbourhood networks, community groups, and informal associations have become vital, aiding crisis management and promoting daily functioning, mental health, and the control of chronic diseases (Kawachi et al., 2008; Liang et al., 2020; Rodríguez-Artalejo et al., 2006). A multidimensional approach, as advocated by Berkman et al. (2012), considers both family and non-family ties, recognizing older population as both care recipients and providers. Yet, the benefits of social capital are not universal; excessive bonding can lead to social closure, discrimination, and restricted access to resources (Evens et al., 2022; Szreter & Woolcock, 2004).

Empirical evidence from India underscores the multifaceted relationship between social capital and healthcare access & utilization. Hasan et al. (2021) demonstrated that higher household social support increased the likelihood of acquiring external financial support for healthcare payments, though high community social cohesion

sometimes constrained access to such resources, revealing the unintended consequences of strong social ties. Abhishek and Kannuri (2021) have observed that migrants with higher cognitive and structural social capital experienced improved access to healthcare, particularly among vulnerable populations such as women, older adults, and persons with disabilities. Another cross-sectional study by Mishra and Sekher (2022) found that higher social capital was significantly associated with better self-rated health among older adults, after controlling for other determinants. The positive effect was evident for both physical and mental health, underscoring the importance of cohesive social networks for the well-being of older adults. Additionally, Jyoti et al. (2023) found that several forms of social capital, including trust, reciprocity, and community engagement, are strongly linked to better self-rated health, psychological well-being, and daily functioning among older adults in India.

Although existing research highlights the importance of social capital in healthcare, India still lacks nationally representative evidence on how the cognitive and structural dimensions of social capital associated with healthcare utilization among older adults. This study addresses gap by examining the role of social capital in healthcare use among older adults in India using nationally representative data. The findings aim to strengthen the understanding of social capital's contribution to healthcare utilization and support the development of age-friendly, socially cohesive health policies.

2. Data and methodology

2.1. Data source and study design

Data for the analysis were drawn from the Longitudinal Ageing Study in India (LASI), Wave-1, collected from 2017 to 2018. It is a nationally representative survey of 73,396 individuals, comprising 31,135 males and 42,261 females aged 45 years and above, and their spouses (regardless of their age) across all states and union territories of India. A multistage stratified area probability cluster sampling design was applied to the LASI survey to determine the eventual observation units (International Institute for Population Sciences (IIPS), National Programme for Health Care of Elderly (NPHCE), MoHFW, Harvard T. H. Chan School of Public Health (HSPH) and the University of Southern California (USC), 2020) (IIPS et al., 2020). A total of 31,902 older adults aged 60 years and above were eligible for this study, as shown in Fig. 1. Out of these, 367 respondents were excluded due to missing information on social capital, and the final analytical sample was included in the present study. A comparison between the excluded and included respondents indicated no statistically significant difference in age or cognitive status.

2.2. Study variables

2.2.1. Independent variable

Understanding the distinction between structural and cognitive social capital is essential for accurately categorizing various social behaviours and perceptions. Based on the variables available in the LASI data, we have categorized them into two broad categories (Table 1). The primary exposure variable in this study is Social Capital, which is measured in both cognitive and structural forms.

All items in Table 1 were recoded into dichotomous variables (0 and 1), and separate composite scores were generated for cognitive and structural social capital by summing the relevant items. These scores were categorized into low, medium, and high levels based on their frequency and cumulative distributions (Supplementary Table S1A-S1C). Cognitive social capital ranged from 0 to 5, with scores of 0–1 classified as low, 2 as medium, and 3–5 as high. Structural social capital ranged from 0 to 17; scores of 0–2 was categorized as low, 3–5 as medium, and ≥6 as high. Overall social capital, obtained by combining cognitive and structural components, ranged from 0 to 20 and was categorized as low

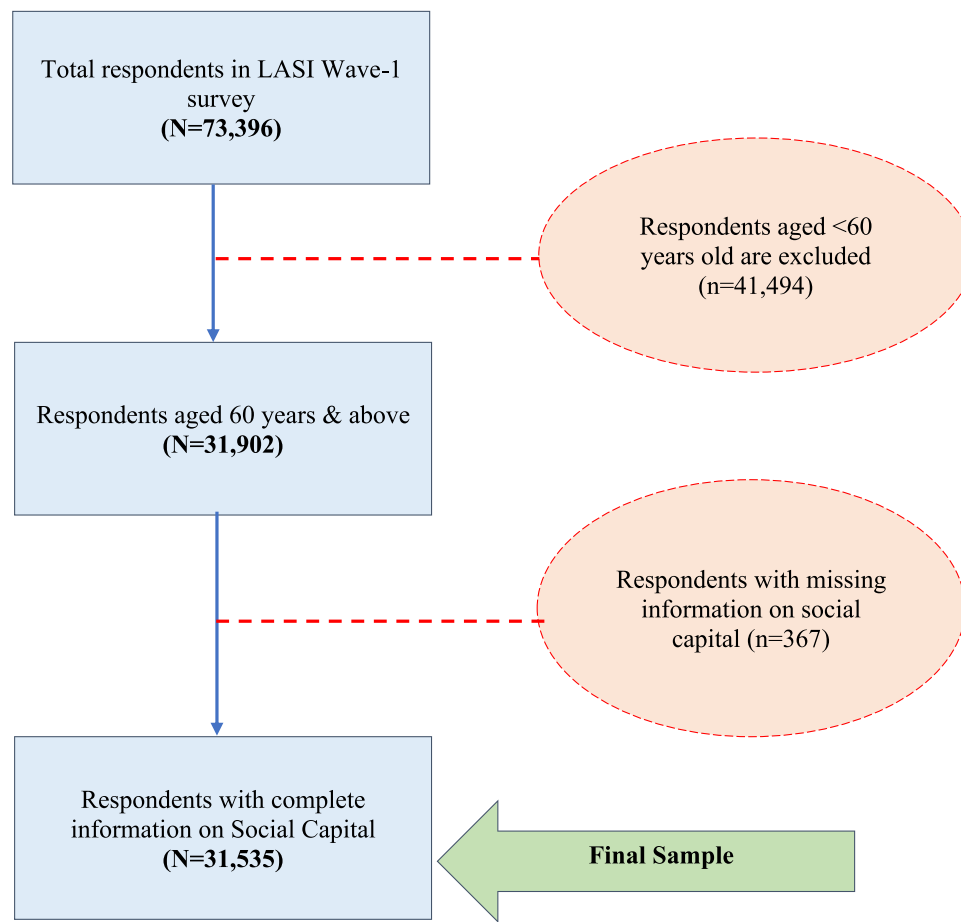


Fig. 1. Flow chart showing selection of respondents (aged 60 and above years) for the analysis from the LASI Wave-1 (2017–18).

Table 1

Descriptions of the variables considered in the determinants of social capital in LASI.

Category	Description
Structural Social Capital	
Membership and Participation in Organizations	Membership in organizations, Frequency of meetings within organizations
Social and Recreational Activities	Visits to parks/beaches for relaxation or entertainment, Participation in cultural performances, shows, or cinema, Engagement in indoor games like cards, Participation in outdoor activities such as sports, exercise, jogging, or yoga, Attendance at cultural performances, shows, or cinema, Participation in religious functions or events, Attendance at political, community, or organizational group meetings, Reading books, newspapers, or magazines, Watching television or listening to the radio, Using a computer for email or internet surfing
Friends and Meetings	Having friends, Frequency of meeting up with friends, Visiting relatives/friends
Civic Engagement	Voting in the last panchayat/municipal/assembly/parliament elections
Financial Support	Financial support received from family and others, Financial support provided to family and others
Cognitive Social Capital	
Trust and Reciprocity	Sharing personal matters with relatives, friends, or others (indicating levels of trust), Not sharing personal matters (suggesting a lack of trust)
Perceived Safety	Feeling of safety from crime and violence when alone at home, Feeling of safety when walking alone in the locality after dark
Self-Perceived Social Status	Self-perceived status in society, reflecting one's perceived social standing

(0–4), medium (5–7), and high (≥ 8) using cumulative percentage thresholds. Internal consistency was acceptable, with a Cronbach's alpha of 0.72, and no evidence of multicollinearity was observed.

2.2.2. Outcome variables

The outcome variable in this study is healthcare utilization, which includes the type of healthcare facility visited, type of provider consulted, reason for the last visit, distance to the facility, out-of-pocket expenditure (OOPE), mode of transportation used and health insurance. The type of healthcare facility visited was derived from the question “*In the past 12 months, have you visited any healthcare facility or has any health professional visited you?*”, and categorized as *public*, *private*, or *other* sources of care based on the most recent visit. The type of healthcare provider consulted was based on the question “*In the past 12 months, have you consulted any healthcare provider?*”, with responses grouped into *MBBS-qualified doctors*, *pharmacists*, and *other providers* (such as AYUSH practitioners, dentists, nurses, physiotherapists, or traditional healers). Out-of-Pocket Expenditure (OOPE) was calculated using item-wise data on consultation, medicines, diagnostics, hospitalization, surgery, transportation, and related costs, with reimbursements subtracted to estimate actual spending. Total OOPE was then categorized into three quintiles (low, medium, and high) to represent the economic burden of care. The mode of transportation to the healthcare facility was derived from the question “*What was the main mode of transportation you used last time you visited that facility?*”, with responses regrouped into *public*, *private*, and *other* modes. The distance to a healthcare facility was calculated from the reported distance between the respondent's residence and the nearest facility, based on “*How far is the healthcare facility from your residence?*”, and categorized into five groups: <1 km, 1.1–5 km, 5.1–10 km, 10.1–25 km, and >25 km. Non-

communicable diseases (NCDs) were calculated based on respondents reporting chronic conditions, including hypertension, diabetes, cancer, chronic lung disease, chronic heart disease, stroke, arthritis, neurological or psychiatric problems, and high cholesterol, using row total and categorized as 0, 1, and 2+ NCDs. Lastly, the status of individuals' health insurance was taken as dichotomous, presented as yes (1) and no (0).

2.2.3. Other covariates

The demographic variables included age (60–69, 70–79, and 80+), sex (male, female), place of residence (urban, rural), and marital status (currently married, widowed, and others). socioeconomic characteristics comprised religion (hindu, muslim, christian, and others), caste (scheduled caste, scheduled tribe, other backward class, and none of them), living arrangement (living alone, with spouse only, with spouse and children, with children and other, and with others), education level (no education, primary, secondary, higher and above), work status (never worked, currently working, not currently working, retired), and household economic status measured through monthly per capita expenditure (MPCE) (poorest, poorer, middle, richer, and richest). Regional classification of India follows six zones: north, central, east, northeast, west, and south. Health behavior included physical activity level (low, medium, high), tobacco use (yes, no), and alcohol use (yes, no). Functional health limitations were assessed using activities of daily living (ADL) and instrumental activities of daily living (IADL), categorized as 0, 1, and 2 or more limitations. Additionally, subjected health indicators included self-rated health (excellent, very good, good, fair, poor) and life satisfaction (strongly dissatisfied, dissatisfied, neutral, satisfied, strongly satisfied).

2.3. Statistical analysis

Descriptive statistics and weighted percentages were used to assess patterns of social capital (cognitive, structural, and overall, which is classified as low, medium, and high) across sociodemographic and health characteristics. Bivariate cross-tabulations were conducted to analyze healthcare utilization indicators, including type of facility, service provider, NCD burden, transportation mode, distance to facility, and OOE level (low, medium, high). The Pearson chi-square test ($p < 0.05$) was used to assess the significance of the associations between social capital and healthcare utilization. To further examine these associations, a multinomial regression model was employed. Separate models were estimated to assess the effect of social capital on healthcare utilization, controlling for relevant covariates. Results were presented as relative risk ratio (RRR) with 95% confidence intervals (CIs). All analyses were performed using national survey weights to account for the complex sampling design and were conducted in STATA version 17.

2.4. 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. A completed STROBE checklist indicating the relevant page and line numbers for each item is provided as a supplementary Table S2.

3. Findings

3.1. Socioeconomic and health characteristics of respondents by types of social capital

The distribution of cognitive, structural, and overall social capital among older adults in India is presented in Table 2. As age increases, the proportion of individuals with low cognitive social capital rises from 10.9% among those aged 60–69 to 15.0% among those aged 70–79, and 17.8% among those aged 80 and above, while the proportion with high cognitive capital declines from 39.7% to 35.1% across the same groups.

Structural social capital shows a steeper decline, with low structural capital increasing sharply from 34.1% in the 60–69 age group to 57.1% among those aged 80 and above, whereas high structural capital drops from 21.1% to 12.4%. Gender differences are pronounced, as older women report higher levels of low cognitive social capital (15.7%) than men (9.8%) and lower high cognitive capital (34.8% vs. 41.9%). Structural disparities are even greater, with 44.9% of women having low structural capital compared to 32.5% of men, and only 13.4% reporting high structural capital versus 25.6% among men. Consequently, overall social capital is lower among women 40.7% report low levels and only 16.2% report high levels, compared to 29.4% and 30.7%, respectively, among men. Urban older individuals demonstrate higher proportions of high cognitive (49.0%) and structural (29.4%) capital compared to rural counterparts (33.7% and 15.0%), while rural residents are more concentrated in the low categories across all domains. Currently married individuals report higher overall social capital (27.3%) compared to widowed (15.9%) or others, highlighting the protective and supportive role of marital companionship in sustaining social networks in old age.

Religious, caste, and socioeconomic differences reveal notable disparities in social capital among older adults in India. Muslims, as a minority, show the lowest social capital in all dimensions. Followed by Scheduled Tribes (STs), Scheduled Castes (SCs) are overrepresented in the low cognitive and structural capital categories, indicating persistent caste-based disadvantage. Those living with a spouse and children exhibit much higher social capital than those living alone or with non-family members. Older adults with higher education report 71.9% high cognitive and 51.5% high structural capital, while those with no education have only 14.6% and 51.4%, respectively. Similarly, the richest group (MPCE) shows 48.3% with high cognitive and 31.2% with high structural capital, compared to just 30.4% and 11.0% in the poorest group. Retired individuals also display the highest cognitive (65.1%) and structural (42.2%) capital levels, while those never or not currently working show less favourable distributions. Regionally, higher social capital is observed in the Northeast (36.0%), the West (35.3%), and the South (27.1%), compared with Central and Eastern India. Health behaviours and functional ability are key correlates, physically active, non-smoking, and non-alcohol-using older adults show higher social capital, whereas those with two or more ADL or IADL limitations demonstrate lower levels. Finally, subjective wellbeing aligns closely with social capital: older adults individuals reporting excellent or very good health show high cognitive (59.3% and 51.1%) and structural (32.4% and 28.8%) capital, while those satisfied or strongly satisfied with life have the highest overall levels of high social capital (29.9% and 31.9%, respectively), compared to much lower levels among the dissatisfied.

3.2. Distribution of the type of social capital

Fig. 2 shows that most older individuals in India report medium levels of social capital across all domains. In the cognitive domain, 49% fall into the medium category, while 38.1% report high levels and only 12.9% report low levels. Structural social capital is more evenly distributed, with 41.8% at medium, 39.1% at low, and 19.1% at high levels. The overall social capital is also mostly medium (41.6%), followed by low (35.4%) and high (23.0%). These patterns suggest that while moderate social connections are common, high levels of active engagement and support are less frequent among older adults.

The distribution of social capital across five-year age groups shows a consistent decline in both cognitive and structural dimensions as age increases (Table 3). In terms of cognitive social capital, the proportion of older adults with high levels decreases from 31.5% at ages 60–64 to just 0.5% among those aged 95 and above, with a particularly steep drop after age 75 and above year old. Medium and low cognitive social capital also show declining trends with increasing age, suggesting that older age groups are less engaged in trust-based relationships, reciprocity, and shared norms. The marked drop after the age of 75 years old indicates a critical stage where interventions to maintain social capital could be

Table 2

Weighted Percent Distribution of Type of Social Capital by Socioeconomic and Health Characteristics of the Indian Older Adults.

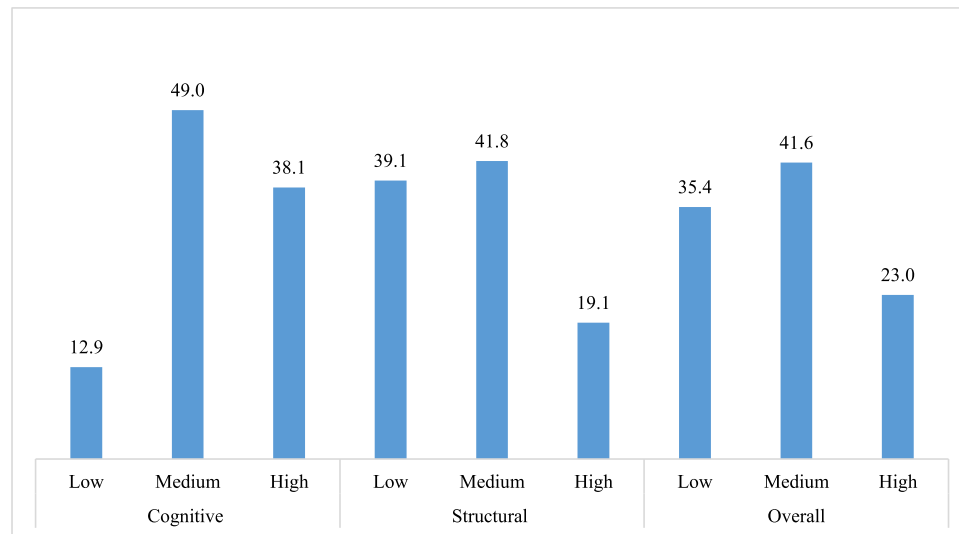
Socioeconomic and Health Characteristics	Cognitive				Structural			Overall	
	Low	Medi-um	High	Low	Medi-um	High	Low	Medi-um	High
Overall (N)	3503	14,826	13,206	11,224	13,310	7001	9931	13,031	8573
Age									
60–69	10.9	49.4	39.7	34.1	44.8	21.1	30.7	43.6	25.7
70–79	15.0	48.9	36.1	42.0	40.2	17.8	38.2	41.1	20.7
80+	17.8	47.1	35.1	57.1	30.5	12.4	52	32.8	15.2
Sex									
Male	9.8	48.4	41.9	32.5	41.9	25.6	29.4	39.8	30.7
Female	15.7	49.5	34.8	44.9	41.8	13.4	40.7	43.2	16.2
Place of Residence									
Urban	12.9	38.2	49.0	24.0	46.6	29.4	19.8	45.5	34.7
Rural	12.9	53.4	33.7	45.2	39.9	15.0	41.7	40.0	18.3
Marital Status									
Currently married	10.4	48.8	40.8	34.5	43	22.6	30.9	41.7	27.3
Widowed	17.1	49.4	33.5	46.7	39.8	13.4	42.8	41.4	15.9
Others ¹	13.7	46.4	39.9	40.7	42.5	16.8	36.8	40.8	22.4
Religion									
Hindu	12.7	48.5	38.8	39.1	41.7	19.2	35.2	41.5	23.3
Muslims	15.3	52.2	32.5	43.0	41.1	16	39.7	41.8	18.6
Christian	13.4	48.7	37.9	28.6	43.5	27.9	29.5	37.7	32.9
Others ²	9.9	49.5	40.6	35.3	44.7	20.1	30.8	46.2	23.0
Caste									
SC	14.5	57.0	28.5	46.7	41.2	12.2	44.0	41.1	14.9
ST	15.9	57.5	26.6	46.8	39.3	13.9	45.7	37.6	16.7
OBC	12.7	47.6	39.8	37.8	41.7	20.5	33.6	42.2	24.2
None of them	11.3	43.3	45.4	33.7	43.1	23.2	29.2	42.2	28.6
Living Arrangement									
Living alone	15.9	54.3	29.8	44.7	42.4	12.9	43.5	38.6	17.9
Living with spouse only	10.9	55.8	33.3	37.7	42.9	19.4	36.0	40.5	23.5
Living with spouse & children	10.1	46.6	43.3	32.9	42.8	24.3	29.0	41.7	29.2
Living with children & others	16.9	48.0	35.1	45.5	39.7	14.8	41.0	42.3	16.7
Living with others	14.6	47.9	37.5	44.9	41.6	13.6	39.6	42.5	17.9
Education Level									
No education	14.6	55.8	29.6	51.4	39.3	9.3	47.3	41.0	11.7
Primary	11.2	49.2	39.6	29.6	47.3	23.1	26.2	45.3	28.5
Secondary	12.6	33.3	54.1	17.9	45.0	37.2	14.9	43.4	41.7
Higher & above	5.4	22.7	71.9	10.2	38.3	51.5	7.5	30.7	61.9
Work Status									
Never worked	15.7	42.9	41.4	45.2	41.8	13.0	39.1	45.3	15.7
Currently working	9.2	55.3	35.4	33.8	42.5	23.7	31.1	41.5	27.4
Not currently working	15.0	51.7	33.2	43.2	41.2	15.6	40.5	39.7	19.7
Retired	6.8	28.1	65.1	15.9	42.0	42.2	11.3	37.2	51.5
MPCE									
Poorest	14.0	55.7	30.4	51.0	38.1	11.0	47.8	38.7	13.4
Poorer	12.6	52.2	35.2	43.8	40.5	15.7	39.2	41.7	19.1
Middle	10.8	50.5	38.7	37.9	42.4	19.7	34.2	41.6	24.2
Richer	14.3	44.8	40.9	31.3	47.4	21.3	28.1	44.7	27.3
Richest	13.0	38.8	48.3	27.7	41.2	31.2	23.8	41.6	34.6
Region									
North	9.4	49.4	41.2	44.1	40.9	15.0	37.8	43.7	18.5
Central	13.0	54.6	32.4	46.0	38.7	15.2	43.0	38.1	18.8
East	13.2	52.4	34.4	47.4	41.1	11.6	43.4	41.6	15.0
Northeast	6.5	44.5	49.0	27.6	42.0	30.4	23.8	40.2	36.0
West	11.1	46.3	42.6	26.4	43.6	30.0	23.7	41.0	35.3
South	16.8	42.4	40.9	32.0	44.6	23.5	28.6	44.4	27.1
Physical Activity									
Low	14.9	47.4	37.8	48.2	38.0	13.8	43.6	38.5	17.9
Medium	12.2	47.5	40.3	35.4	43.9	20.7	31.3	44.4	24.3
High	10.7	54.8	34.4	30.2	44.4	25.4	28.8	41.5	29.7
Tobacco use									
No	13.0	46.2	40.9	39.9	41.7	18.5	34.9	42.6	22.5
Yes	12.8	53.2	34.0	37.8	42.0	20.1	36.1	40.1	23.9
Alcohol use									
No	13.2	48.4	38.4	40.2	41.7	18.2	36.1	41.9	22.1
Yes	11.4	52.2	36.4	32.4	42.7	24.9	30.9	40.2	28.9
ADL Limitations									
0	11.3	49.0	39.7	36.1	43.4	20.5	32.3	42.9	24.7
1	13.6	48.5	37.9	39.8	42.5	17.7	36.3	41.6	22.1
2+	21.2	49.1	29.7	54.4	33.0	12.6	51.0	34.3	14.7
IADL Limitations									
0	8.7	48.9	42.4	32.5	43.9	23.6	28.7	42.4	28.9
1	10.5	51.3	38.2	34.0	44.5	21.6	31.3	43.2	25.5
2+	19.4	48.4	32.2	49.7	38.1	12.2	45.8	40.0	14.3
NCDs									

(continued on next page)

Table 2 (continued)

Socioeconomic and Health Characteristics	Cognitive				Structural			Overall	
	Low	Medi-um	High	Low	Medi-um	High	Low	Medi-um	High
0	11.3	52.5	36.2	42.3	41.0	16.7	38.4	41.3	20.3
1	11.6	49.2	39.2	39.3	41.5	19.3	35.1	40.8	24.2
2+	16.2	44.5	39.4	35.0	43.2	21.9	32.1	42.7	25.2
Self-Rated Health									
Excellent	5.5	35.2	59.3	23.7	43.9	32.4	18.1	42.7	39.2
Very Good	6.5	42.4	51.1	26.7	44.5	28.8	21.9	42.1	36.0
Good	11.0	48.4	40.7	35.1	43.4	21.5	31.5	43.6	24.9
Fair	11.9	53.3	34.8	42.0	41.6	16.4	38.0	42.2	19.8
Poor	15.3	56.1	28.6	50.3	39.3	10.4	46.4	39.9	13.7
Life Satisfaction									
Strongly Dissatisfied	15.1	59.2	25.7	44.3	40.9	14.8	43.9	38.3	17.8
Dissatisfied	10.5	57.1	32.4	42.0	42.2	15.8	38.2	43.1	18.6
Neutral	10.9	49.0	40.1	36.6	43.9	19.5	31.5	45.9	22.7
Satisfied	7.9	44.2	47.9	33.9	42.4	23.7	28.8	41.3	29.9
Strongly Satisfied	7.6	38.3	54.1	31.2	42.9	25.9	24.5	43.6	31.9
Total	12.9	49.0	38.1	39.1	41.8	19.1	35.4	41.6	23.0

Note: Others¹ includes divorced, separated, never married, and individuals in live-in relationships. Others² includes all religious affiliations other than those listed explicitly in LASI Wave-1. All estimates are presented as weighted percentages using national survey weights.

**Fig. 2.** Distribution of the Type of Social Capital among the Elderly in India.**Table 3**

Distribution of Cognitive, Structural, and Overall Social Capital across Age Groups among Older Adults in India.

Type of Social Capital		Age Groups							
		60–64	65–69	70–74	75–79	80–84	85–89	90–94	95+
Cognitive	Low	22.0	27.6	21.6	13.3	8.6	3.3	1.9	1.8
	Medium	31.0	28.2	18.5	11.4	6.5	2.6	1.2	0.5
	High	31.5	29.7	18.3	10.1	5.8	3.1	1.0	0.5
Structural	Low	25.5	25.7	19.3	12.9	8.9	4.0	2.2	1.4
	Medium	31.8	31.1	18.0	10.8	5.1	2.2	0.7	0.3
	High	35.2	29.7	19.5	8.3	4.7	2.2	0.4	0.0
Overall	Low	25.2	25.8	19.4	13.0	9.1	3.9	2.2	1.4
	Medium	30.7	30.7	18.8	10.8	5.3	2.5	0.8	0.4
	High	36.0	29.6	17.9	9.0	4.8	2.1	0.5	0.1

Note: All estimates are presented as weighted percentages using national survey weights.

particularly impactful in supporting well-being and healthcare access among older adults.

3.3. Distribution of healthcare utilization by types of social capital

Table 4 presents the distribution of healthcare utilization among older adults in India across different levels of cognitive, structural, and

overall social capital. Notably, older adults with high cognitive and overall social capital are more likely to use private healthcare facilities (39.5% and 25.6%, respectively) and services provided by MBBS doctors (39.1% and 25.8%, respectively), suggesting a preference for higher-quality care. In contrast, individuals with low levels of social capital across various domains tend to exhibit lower healthcare engagement. For instance, individuals with low cognitive social capital tend to use

Table 4

Distribution of Types of Social Capital by Healthcare Utilization among Older Adults in India.

Type of Healthcare Utilization	Cognitive			Structural			Overall			Total Samples
	Low	Medi- um	High	Low	Med- ium	High	Low	Medi- um	High	
Type of Healthcare Facility										
Public	15.2	51.3	33.5	39.1	44.7	16.2	36.6	43.6	19.8	5858
Private	12.3	48.3	39.5	35.9	42.7	21.5	32.4	42.0	25.6	12,721
Others	16.1	49.0	35.0	37.2	43.8	19.1	34.2	42.5	23.4	3850
Type of Healthcare Service Provider										
MBBS-Doctor	14.6	46.3	39.1	34.1	44.1	21.8	31.0	43.2	25.8	15,445
Pharmacist	8.9	54.3	36.8	37.1	45.2	17.7	33.5	43.9	22.7	2730
Others	12.8	55.1	32.1	41.8	41.3	16.8	39.3	40.4	20.3	3572
NCDs										
0 NCD	11.3	52.5	36.2	42.3	41.0	16.7	38.4	41.3	20.3	11,843
1 NCDs	11.6	49.2	39.2	39.3	41.5	19.3	35.1	40.8	24.2	9629
2+NCDs	16.2	44.5	39.4	35.0	43.2	21.9	32.1	42.7	25.2	10,063
Type of Transportation										
Public	14.1	50.8	35.0	35.9	45.3	18.8	34.1	42.7	23.3	8461
Private	12.5	40.3	47.2	29.7	42.1	28.2	24.9	43.4	31.7	4950
Others	10.7	56.5	32.8	38.0	43.5	18.5	35.0	42.5	22.5	4497
Distance to Healthcare Facilities										
<1km	10.1	52.4	37.5	33.4	45.9	20.6	30.1	44.2	25.8	4381
1.1–5km	15.2	50.1	34.8	33.6	44.4	22.0	31.3	44.1	24.6	5346
5.1–10km	11.3	50.6	38.1	35.6	42.0	22.5	34.4	39.7	25.9	2613
10.1–25km	14.2	49.6	36.3	38.9	41.9	19.2	33.6	43.1	23.3	2667
>25.1km	12.3	44.3	43.4	35.3	43.8	20.9	32.4	40.7	26.9	2702
OOPE										
Low	12.1	49.8	38.1	34.8	43.0	22.2	32.8	40.2	27.0	4871
Medium	17.1	50.0	32.8	30.9	45.5	23.5	30.3	45.1	24.6	4577
High	11.8	50.0	38.2	35.9	45.5	18.6	31.8	44.0	24.2	4701
Health Insurance										
No	13.1	48.4	38.5	40.6	40.9	18.5	36.4	41.4	22.2	24,936
Yes	12.0	51.5	36.5	32.3	45.6	22.2	30.9	42.4	26.7	6562

Note: All estimates are presented as weighted percentages using national survey weights.

public facilities (15.2%). Similarly, low structural social capital corresponds with higher utilization of public facilities (39.1%) and lower rates of MBBS doctor consultations (34.1%). These individuals are also

less likely to travel long distances to access healthcare, with only 10.1% residing within 1 km of a facility and 33.4% travelling <1 km. Older adults with two or more NCDs show higher representation in the high

Table 5

Multinomial Logistic Regression on Type of Social Capital by Healthcare Utilization among Older Adults in India.

Healthcare Utilization	Cognitive (RRR) C.I. 95%		Structural (RRR) C.I. 95%		Overall (RRR) C.I. 95%	
	Medium	High	Medium	High	Medium	High
Type of HC Facility	Low ®		Low ®		Low ®	
Public Facility ®						
Private Facility	1.14** (1.00 - 1.30)	1.37*** (1.19 - 1.56)	1.02 (0.92 - 1.12)	1.11* (0.99 - 1.24)	1.04 (0.94 - 1.15)	1.21*** (1.09 - 1.36)
Others	0.80** (0.63 - 1.00)	1.02 (0.81 - 1.28)	1.25*** (1.06 - 1.48)	1.64*** (1.35 - 1.99)	1.18* (0.99 - 1.40)	1.66*** (1.38 - 2.01)
Type of HC Service Provider						
MBBS Doctor ®						
Pharmacist	1.44*** (1.13 - 1.83)	1.07 (0.83 - 1.37)	0.85* (0.73 - 1.00)	0.63*** (0.52 - 0.77)	0.84** (0.71 - 1.00)	0.63*** (0.52 - 0.76)
Others	1.17* (0.98 - 1.40)	0.99 (0.82 - 1.19)	0.95 (0.84 - 1.07)	0.91 (0.79 - 1.05)	0.91 (0.8 - 1.03)	0.85** (0.74 - 0.98)
NCDs						
0 NCDs ®						
1 NCDs	1.01 (0.87 - 1.17)	1.16* (0.99 - 1.35)	1.09 (0.98 - 1.20)	1.14** (1.01 - 1.29)	1.11** (1.00 - 1.24)	1.15** (1.02 - 1.30)
2+NCDs	0.82*** (0.71 - 0.94)	0.96 (0.84 - 1.11)	1.15*** (1.04 - 1.27)	1.32*** (1.17 - 1.48)	1.06 (0.96 - 1.17)	1.23*** (1.1 - 1.38)
Type of Transportation						
Public ®						
Private	0.94 (0.82 - 1.07)	1.72*** (1.50 - 1.96)	1.18*** (1.07 - 1.30)	1.88*** (1.68 - 2.09)	1.26*** (1.13 - 1.39)	2.06*** (1.85 - 2.29)
Others	1.38*** (1.14 - 1.67)	1.11 (0.91 - 1.35)	0.95 (0.83 - 1.08)	0.99 (0.85 - 1.16)	0.92 (0.81 - 1.06)	0.95 (0.82 - 1.11)
Distance to HCFs						
<1 km ®						
1.1–5km	0.92 (0.76 - 1.12)	0.74*** (0.61 - 0.9)	0.86** (0.76 - 0.99)	0.74*** (0.64 - 0.87)	0.88* (0.77 - 1.01)	0.72*** (0.62 - 0.83)
5.1–10km	0.91 (0.73 - 1.14)	0.68*** (0.54 - 0.85)	0.71*** (0.61 - 0.83)	0.59*** (0.49 - 0.70)	0.74*** (0.63 - 0.88)	0.55*** (0.46 - 0.66)
10.1–25km	0.81* (0.65 - 1.01)	0.58*** (0.46 - 0.72)	0.72*** (0.62 - 0.84)	0.58*** (0.48 - 0.69)	0.74*** (0.63 - 0.87)	0.53*** (0.45 - 0.64)
>25.1km	0.9 (0.72 - 1.13)	0.80* (0.63 - 1.00)	0.79*** (0.68 - 0.93)	0.72*** (0.60 - 0.87)	0.80*** (0.68 - 0.95)	0.70*** (0.58 - 0.83)
Out-Of-Pocket Expenditure						
Low ®						
Medium	0.97 (0.85 - 1.12)	0.89* (0.77 - 1.02)	1.17*** (1.06 - 1.29)	1.06 (0.95 - 1.20)	1.15** (1.03 - 1.27)	1.03 (0.92 - 1.16)
High	1.09 (0.95 - 1.27)	1.01 (0.87 - 1.17)	1.02 (0.93 - 1.13)	0.87** (0.77 - 0.98)	1.10* (0.99 - 1.23)	0.91 (0.81 - 1.02)
Health Insurance						
No ®						
Yes	0.98 (0.86 - 1.12)	0.80*** (0.70 - 0.92)	1.22*** (1.10 - 1.34)	1.36*** (1.21 - 1.52)	1.04 (0.94 - 1.15)	1.20*** (1.07 - 1.33)

Note: ® Reference Category; Levels of significance: *** p < 0.01, ** p < 0.05, * p < 0.10; 95% CI: Confidence Interval at 95%; RRR: relative risk ratio.

social capital category across all dimensions, particularly overall (25.2%), highlighting the importance of social capital in managing chronic conditions. Those with low overall social capital are more likely to use public transportation (34.1%).

In contrast, private transportation is more commonly used by those with high social capital, particularly among individuals with cognitive (47.2%) and overall (31.7%) social capital, suggesting better access to mobility or financial resources. Interestingly, the share of those living far from healthcare facilities (over 25 km) is highest among the high overall social capital group (26.9%), implying that social capital may help overcome geographical barriers. Lastly, higher out-of-pocket expenditure (OOPE) correlates with increased levels of social capital, especially in the cognitive (38.2%) and overall (27.0%) domains, possibly reflecting a greater ability or willingness to invest in health services. The majority of insured older persons (51.5%) report medium cognitive social capital, whereas 36.5% have high cognitive social capital. Structural social capital is mostly medium (45.6%), with 22.2% in the high range. Overall, 42.4% have medium social capital, and 26.7% have high social capital.

3.4. Association of types of social capital with healthcare utilization

Table 5 summarizes the key findings from the multinomial logistic regression analysis, with low social capital as the reference category. The use of private healthcare facilities was significantly associated with higher cognitive social capital, with older adults being more likely to report medium (RRR = 1.14) and high levels (RRR = 1.37) compared to those using public facilities. Private facility use was also significantly associated with higher overall social capital at the high level (RRR = 1.21). Visiting pharmacists was significantly associated with a higher likelihood of medium cognitive social capital (RRR = 1.44), but with a significantly lower likelihood of high structural (RRR = 0.63) and high overall social capital (RRR = 0.63). Older adults with two or more NCDs were significantly more likely to report high structural (RRR = 1.32) and high overall social capital (RRR = 1.23), while they were significantly less likely to report medium cognitive social capital (RRR = 0.82). Having one NCD was also significantly associated with higher structural and overall social capital.

Furthermore, the use of private transportation was significantly associated with higher levels of social capital across dimensions, particularly high overall social capital (RRR = 2.06). In contrast, increasing distance to healthcare facilities was significantly and negatively associated with medium and high levels of cognitive, structural, and overall social capital. Higher out-of-pocket expenditure was significantly associated with lower high structural social capital (RRR = 0.87), while medium expenditure was significantly associated with higher medium structural (RRR = 1.17) and medium overall social capital (RRR = 1.15). Health insurance coverage was significantly associated with higher structural social capital at both medium (RRR = 1.22) and high levels (RRR = 1.36), as well as with higher overall social capital at the high level (RRR = 1.20). Health insurance coverage was significantly associated with high structural social capital (RRR = 1.36) and overall high social capital (RRR 1.20).

4. Discussion

This study examines the association between social capital (cognitive, structural, and overall) and healthcare utilization patterns among older adults in India using nationally representative LASI data. Conceptualizing social capital as a community-level resource, operationalized through individual responses, the analysis aligns with the Behavioral Model of Health Service Use (Andersen, 1995) and the social network framework proposed by Berkman and Glass (2000). A consistent pattern observed is the decline in both cognitive and structural social capital with increasing age, particularly beyond 75 years old, reflecting global evidence on social network decline due to retirement,

migration of family members, reduced mobility, and loss of peers (Cao & Rammohan, 2016; Cornwell, 2011; Litwin & Shiovitz-Ezra, 2006).

In the Indian context, where institutional eldercare remains underdeveloped, lower social capital is associated with greater difficulty navigating healthcare services that often depend on informal mediation and support. Prior research has similarly linked lower social capital with poorer health outcomes, including depression, functional decline, and increased mortality risk (Cacioppo & Cacioppo, 2014; Holt-Lunstad et al., 2015). This study also discovered significant gender disparities, with older women having lower cognitive and structural social capital than men. These disparities can be attributed to structural barriers, including limited economic independence, gendered caregiving responsibilities, and cultural norms restricting women's mobility, social consequences of widowhood and civic participation, which remains prevalent among older Indian women (Bhandari & Yasunobu, 2009; Ranjan & Muraleedharan, 2020). Lower social capital among women is associated with delayed care-seeking and unmet healthcare needs, underscoring the need for gender-sensitive community platforms and outreach strategies (Himanshu et al., 2019).

Higher education, wealth, and urban residence are consistently associated with stronger social capital, which is linked to increased healthcare utilization. Education likely enhances cognitive capital by improving health literacy and communication with healthcare providers (Coleman, 1988; Jyoti et al., 2023; Kawachi et al., 1999; Kawachi & Berkman, 2001), while economic resources facilitate participation in social and civic networks that strengthen structural capital. However, the cross-sectional nature of the data warrants caution, as reverse causality may be present, where healthcare utilization itself may strengthen social capital by increasing education and wealth, which in turn may enhance social participation and networks. These findings are consistent with Bourdieu's (1986) and Putnam's (2000) observations that higher socioeconomic status is associated with greater social networks. Urban residence further supports these processes by providing denser institutional and social infrastructures.

Caste and religion-based disparities result in lower social capital for those who belong to the Scheduled Castes (SCs) and the Scheduled Tribes (STs), and minorities, which reflects systemic exclusion, a well-established finding in various studies across India. Lower social capital among SCs/STs and religious minorities reflects a longstanding structural exclusion from education, employment, as well as health, especially for women (Bansod et al., 2022; Thorat & Newman, 2007). This exclusion is not merely a social phenomenon but is structurally embedded, limiting the ability of SC/STs and minorities to form connections that could lead to upward mobility. Thapa et al. (2021) also highlighted how the traditional caste system has created a rigid social stratification, where individuals from marginalized castes are systematically excluded from mainstream social and economic institutions. This study's findings align with those of previous studies, which demonstrate that social capital in India is predominantly driven by homogeneous links within caste and religious groups, rather than formal organizational involvement. Their evidence that non-structural, trust-based interactions are more influential than structural social capital, and that education and income play a minor role once ethnicity is taken into account, supports our findings and emphasizes the long-standing role of caste and religion in shaping social relations and access to social resources (Aliha, 2018; Sarkar & Sengupta, 2014; Sengupta & Sarkar, 2012). Such patterns highlight how historical and ongoing discrimination shapes access to social resources and, indirectly, healthcare utilization opportunities.

This study also found a negative association with functional limits (ADL/IADL difficulties) and social capital, highlighting how disability and mobility constraints restrict social participation and weaken trust-based and structural ties (Litwin & Shiovitz-Ezra, 2011; Mishra & Sekher, 2022). Studies reaffirm that engaging in healthy behaviours, such as physical activity, is positively linked to higher social capital (Takele et al., 2024). Furthermore, recent findings underscore that

functional limitations serve as a significant barrier to social capital, as they directly affect social relationships and participation, which in turn negatively impact mental well-being (Backe et al., 2018). This bidirectional relationship suggests a potential simultaneity bias, where declining health and diminishing social capital reinforce each other rather than operating in a single causal direction. (Mishra & Sekher, 2022). The study further finds that there are crucial channels through which social capital influences healthcare usage patterns. Higher social capital is associated with a preference for private healthcare facilities and a greater likelihood of consulting qualified MBBS doctors, which illustrates that the dual roles of social capital are played by both its cognitive and structural components (Cramm et al., 2013; Deshmukh et al., 2015; George et al., 2023; Ichida et al., 2009).

At the same time, structural social capital facilitates access to healthcare through mechanisms such as transportation support, financial assistance, and support in navigating complex bureaucratic procedures (Patil et al., 2023; Rodríguez-Artalejo et al., 2006). Structural social capital is also positively associated with higher out-of-pocket expenditure (OOPE), suggesting the mobilization of financial resources to support the older population in affording their preferred, and often more expensive, healthcare services, particularly in the private sector (Bourdieu, 1986; Mohanty et al., 2021; Rodríguez-Artalejo et al., 2006; Szreter & Woolcock, 2004). Although health insurance coverage was significantly associated with higher structural and overall social capital, elevated OOPE persisted, indicating that the insurance schemes in India provide insufficient financial protection due to coverage gaps and continue to rely on private providers. This pattern reflects structural limitations of existing insurance schemes in India, including partial coverage, exclusions, and continued reliance on private providers. Consequently, higher OOPE may reflect both enhanced access facilitated by social networks and constrained choices, arising from limited trust in the availability of public healthcare services, thereby increasing the potential risk of financial strain or catastrophic health expenditures among older adults.

Finally, the findings suggest a "social capital of necessity" in remote and rural settings, where formal services are sparse, and residents may be compelled to rely more heavily on one another for healthcare services. Rural areas also show that even with limited access to services, strong community ties can improve people's sense of support and belonging (Joseph & Hallman, 1998). In contrast, those living in peri-urban areas may face the downsides of both urban and rural life, fewer social connections, and weaker community networks (Derose & Varda, 2009; Evens et al., 2022). Together, these patterns suggested the complex role of social capital in shaping healthcare utilization among older adults in India.

5. Limitations

This study uses cross-sectional data from LASI Wave-1; thus, causal relationships between social capital and healthcare utilization cannot be established. Better health, mobility, and prior relationship with healthcare services may all contribute to higher levels of structural and cognitive social capital, raising the possibility of reverse causality. Furthermore, simultaneity bias cannot be ruled out, as health and social capital can influence one another over time. These limitations should be acknowledged when interpreting the observed relationships.

6. Conclusion

Higher levels of social capital are significantly associated with healthcare access among older adults, particularly in relation to challenges such as treatment costs, health-related stigma, and limited awareness of available services. Supportive social networks are associated with access to essential information on where and how to seek care, as well as the availability of financial, logistical, and emotional support, including shared transportation, collective resource pooling, and

reassurance that encourages timely healthcare seeking. While such networks may partially compensate for service delivery gaps, they cannot fully substitute for systemic deficiencies, such as inadequate healthcare infrastructure or transportation constraints. Both cognitive and structural dimensions of social capital are associated with health attitudes, trust in care providers, and preventive health behaviors. Within India's mixed healthcare system, characterized by fragmented formal services and weakening family-based care, structural social capital is associated with the pattern of healthcare access among older adults, thereby strengthening community bonds in the context of systemic inequity. Based on the findings of this study, two priority policy actions emerge for the government to consider: first, establishing *community-based Elder Health Support Groups* at the village and ward levels as platforms to facilitate social interaction, information exchange, and collective navigation of healthcare and transportation services. Additionally, national and state health programs may consider incorporating social capital indicators, such as social participation, trust, and inter-generational support, into healthcare planning frameworks to better align service outreach with existing community networks, particularly in underserved rural and semi-urban regions.

Ethics approval and consent to participate

In the present study, a secondary data set (LASI wave-I, 2017–18) has been used. The Indian Council of Medical Research (ICMR) extended the necessary guidance and ethical approval for conducting the LASI survey. However, information from respondents is not collected as part of the study, so consent to participate is not required for this study.

Consent for publication

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CRediT authorship contribution statement

Jitender Prasad: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **T.V. Sekher:** Writing – review & editing, Supervision, Conceptualization.

Declaration of competing interest

The authors affirm that they have no financial conflicts of interest or close personal ties that might have looked to have affected the current study.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.aggp.2026.100302](https://doi.org/10.1016/j.aggp.2026.100302).

Data availability

https://www.iipsdata.ac.in/datacatalog_detail/5 (The study utilizes a secondary source of data that is freely available in the public domain through a request on).

References

- Abhishek, S., & Kannuri, N. K. (2021). On the margins of healthcare: Role of social capital in health of migrants in India. *CASTE: A Global Journal on Social Exclusion*, 2 (2), 341–358. <https://www.jstor.org/stable/48645686>.
- Alha, A. (2018). The other side of caste as social capital. *Social Change*, 48(4), 575–588. <https://doi.org/10.1177/0049085718801490> (Original work published 2018).
- Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1), 1. <https://psycnet.apa.org/doi/10.2307/2137284>.
- Backe, I. F., Patil, G. G., Nes, R. B., & Clench-Aas, J. (2018). The relationship between physical functional limitations, and psychological distress: Considering a possible mediating role of pain, social support and sense of mastery. *SSM-population health*, 4, 153–163. <https://doi.org/10.1016/j.ssmph.2017.12.005>
- Bansod, D. W., Salve, P. S., & Jungari, S. (2022). Caste disparities in health care utilization in India. In S. S. Acharya, & S. Christopher (Eds.), *Caste, COVID-19, and inequalities of care. people, cultures and societies: Exploring and documenting diversities*. Springer, Singapore. https://doi.org/10.1007/978-981-16-6917-0_15.
- Berkman, L. F., & Glass, T. (2000). Social integration, social networks, social support, and health. In L. F. Berkman, & I. Kawachi (Eds.), *Social epidemiology* (pp. 137–173). Oxford University Press. <https://doi.org/10.1093/oso/9780195083316.003.0007>.
- Berkman, L. F., Sekher, T. V., Capistrant, B., & Zheng, Y. (2012). Social networks, family, and care giving among older adults in India. *Aging in asia: Findings from new and emerging data initiatives*. national academies press (US). <https://www.ncbi.nlm.nih.gov/books/NBK109207/>.
- Bhandari, H., & Yasunobu, K. (2009). What is social capital? A comprehensive review of the concept. *Asian Journal of Social Science*, 37(3), 480–510. <https://doi.org/10.1163/156853109x436847>
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood.
- Brinkhues, S., Dukers-Muijters, N. H. T. M., Hoebe, C. J. P. A., Bosma, H., van der Kallen, C. J. H., Henry, R. M. A., Schram, M. T., Stehouwer, C. D. A., & Savelkoul, P. H. M. (2017). Socially isolated individuals are more prone to have newly diagnosed and prevalent type 2 diabetes mellitus—The Maastricht study. *BMC Public Health*, 17, 955. <https://doi.org/10.1186/s12889-017-4948-6>
- Cacioppo, J. T., & Cacioppo, S. (2014). Social relationships and health: The toxic effects of perceived social isolation. *Social and Personality Psychology Compass*, 8(2), 58–72. <https://pubmed.ncbi.nlm.nih.gov/24839458/>.
- Cao, J., & Rammohan, A. (2016). Social capital and healthy ageing in Indonesia. *BMC Public Health*, 16(1), 631. <https://doi.org/10.1186/s12889-016-3257-9>
- Claridge, T. (2018). Dimensions of Social Capital-structural, cognitive, and relational. *Social Capital Research*, 1, 1–4. <https://www.socialcapitalresearch.com/structural-cognitive-relational-social-capital/>.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94(Supplement), S95–S120. The University of Chicago Press <https://www.jstor.org/stable/2780243>.
- Cornwell, B. (2011). Age trends in daily social contact patterns. *Research on Aging*, 33(3), 598–631. <https://doi.org/10.1177/0164027511409442>
- Cramm, J. M., van Dijk, H. M., & Nieboer, A. P. (2013). The importance of neighborhood social cohesion and social capital for the well being of older adults in the community. *The Gerontologist*, 53(1), 142–152. <https://doi.org/10.1093/geront/gns052>
- Dauner, K. N., Wilmot, N. A., & Schultz, J. F. (2015). Investigating the temporal relationship between individual-level social capital and health in fragile families. *BMC Public Health*, 15, 1130. <https://doi.org/10.1186/s12889-015-2437-3>
- De Silva, M. J., Huttly, S. R., Harpham, T., & Kenward, M. G. (2007). Social capital and mental health: A comparative analysis of four low income countries. *Social Science & Medicine*, 64(1), 5–20. <https://doi.org/10.1016/j.socscimed.2006.08.044>
- Deroe, K. P., & Varda, D. M. (2009). Social capital and health care access: A systematic review. *Medical Care Research And Review: MCRR*, 66(3), 272–306. <https://doi.org/10.1177/1077558708330428>
- Deshmukh, P. R., Dongre, A. R., Rajendran, K. P., & Kumar, S. (2015). Role of social, cultural and economic capitals in perceived quality of life among old age people in Kerala, India. *Indian Journal Of Palliative Care*, 21(1), 39. <https://pubmed.ncbi.nlm.nih.gov/25709184/>.
- Evans, M. V., Andréambeloson, T., Randriamihaja, M., Ihantamalala, F., Cordier, L., Cowley, G., Finnegan, K., Hanitriniaina, F., Miller, A. C., Ralantomalala, L. M., Randriamahaso, A., Razafinjato, B., Razanahanitriniaina, E., Rakotonanahary, R. J. L., Andriamiandra, I. J., Bonds, M. H., & Garchitorea, A. (2022). Geographic barriers to care persist at the community healthcare level: Evidence from rural Madagascar. *PLOS Global Public Health*, 2(12), Article e0001028. <https://doi.org/10.1371/journal.pgph.0001028>
- George, M. S., Gaitonde, R., Davey, R., Sukumaran, V., Mohanty, I., & Upton, P. (2023). Social networks and their impact on access to health care: Insights from older widows living alone in Kottayam, South India. *Ageing and Society*, 43(5), 1141–1163. <https://doi.org/10.1017/S0144686x21001100>
- Gray, A. (2009). The social capital of older people. *Ageing and Society*, 29(1), 5–31. <https://doi.org/10.1017/S0144686x08007617>
- Harpham, T. (2008). The measurement of community social capital through surveys. In I. Kawachi, S. V. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 51–62). New York, NY: Springer. https://doi.org/10.1007/978-0-387-71311-3_3.
- Harpham, T., Grant, E., & Thomas, E. (2002). Measuring social capital within health surveys: Key issues. *Health Policy and Planning*, 17(1), 106–111. <https://doi.org/10.1093/heapol/17.1.106>
- Hasan, M. Z., Story, W. T., Bishai, D. M., Ahuja, A., Rao, K. D., & Gupta, S. (2021). Does social capital increase healthcare financing's projection? Results from the rural household of Uttar Pradesh, India. *SSM-Population Health*, 15, Article 100901. <https://doi.org/10.1016/j.ssmph.2021.100901>
- Himanshu, H., Arokiasamy, P., & Talukdar, B. (2019). Illustrative effects of social capital on health and quality of life among older adult in India: Results from WHO-SAGE India. *Archives of Gerontology and Geriatrics*, 82, 15–21. <https://doi.org/10.1016/j.archger.2019.01.005>
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, 10(2), 227–237. <https://doi.org/10.1177/1745691614568352>
- Ichida, Y., Kondo, K., Hirai, H., Hanibuchi, T., Yoshikawa, G., & Murata, C. (2009). Social capital, income inequality and self-rated health in Chita peninsula, Japan: A multilevel analysis of older people in 25 communities. *Social Science & Medicine*, 69 (4), 489–499. <https://doi.org/10.1016/j.socscimed.2009.05.006>
- International Institute for Population Sciences (IIPS), & United Nations Population Fund (UNFPA). (2023). *India ageing report 2023: Caring for our elders – institutional responses*. New Delhi, Delhi: United Nations Population Fund (India). https://india.unfpa.org/sites/default/files/pub-pdf/iar_2023_rgb_web.pdf.
- International Institute for Population Sciences (IIPS), NPHCE, MoHFW, Harvard T. H. Chan School of Public Health (HSPH) and the University of Southern California (USC). (2020). *Longitudinal ageing study in India (LASI) wave 1, 2017-18, India report*. Mumbai: International Institute for Population Sciences. https://www.iipsindia.ac.in/sites/default/files/LASI_India_Report_2020_compressed.pdf.
- Islam, M. S. (2019). Social capital and health care access among the older adults in Bangladesh. *Working with Older People*, 23(1), 54–63. <https://doi.org/10.1108/WWOP-05-2018-0012>
- Joseph, A. E., & Hallman, B. C. (1998). Over the hill and far away: Distance as a barrier to the provision of assistance to elderly relatives. *Social Science & Medicine*, 46(6), 631–639. [https://doi.org/10.1016/s0277-9536\(97\)00181-0](https://doi.org/10.1016/s0277-9536(97)00181-0)
- Jyoti, J., Singh, S. P., & Malik, M. A. (2023). Social capital and health outcomes among older adults in India: A multilevel analysis. *Working with Older People*, 27(2), 149–163. <https://doi.org/10.1108/WWOP-05-2022-0019>
- Kawachi, I. (2001). Social capital for health and human development. *Development (Cambridge, England)*, 44(1), 31–35. <https://doi.org/10.1057/palgrave.development.1110211>
- Kawachi, I., & Berkman, L. F. (2000). Social cohesion, social capital, and health. In L. F. Berkman, & I. Kawachi (Eds.), *Social epidemiology* (pp. 290–319). Oxford University Press. <https://doi.org/10.1093/med/9780195377903.003.0008>.
- Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health*, 78(3), 458–467. <https://doi.org/10.1093/jurban/78.3.458>
- Kawachi, I., Kennedy, B. P., & Glass, R. (1999). Social capital and self-rated health: a contextual analysis. *American journal of public health*, 89(8), 1187–1193. <https://doi.org/10.2105/ajph.89.8.1187>
- Kawachi, I., Subramanian, S. V., & Kim, D. (2008). Social capital and health: A decade of progress and beyond. *Social capital and health* (pp. 1–26). New York, NY: Springer New York. https://doi.org/10.1007/978-0-387-71311-3_1
- Liang, H., Yue, Z., Liu, E., & Xiang, N. (2020). How does social capital affect individual health among the elderly in rural China?—Mediating effect analysis of physical exercise and positive attitude. *PLoS one*, 15(7), Article e0231318. <https://doi.org/10.1371/journal.pone.0231318>
- Litwin, H., & Shiovitz-Ezra, S. (2006). Network type and mortality risk in later life. *The Gerontologist*, 46(6), 735–743. <https://doi.org/10.1093/geront/46.6.735>
- Litwin, H., & Shiovitz-Ezra, S. (2011). Social network type and subjective well-being in a national sample of older Americans. *The Gerontologist*, 51(3), 379–388. <https://doi.org/10.1093/geront/gnq094>
- Mishra, R., & Sekher, T. V. (2022). Social capital and subjective well-being contribute happiness among the elderly? A study in India. In S. Deb, & B. A. Gerrard (Eds.), *Handbook of health and well-being*. Singapore: Springer. https://doi.org/10.1007/978-981-16-8263-6_18.
- Mohanty, S. K., Pedgaonkar, S. P., Upadhyay, A. K., Kämpfen, F., Shekhar, P., Mishra, R. S., Maurer, J., & O'Donnell, O. (2021). Awareness, treatment, and control of hypertension in adults aged 45 years and over and their spouses in India: A nationally representative cross-sectional study. *PLoS medicine*, 18(8), Article e1003740. <https://doi.org/10.1371/journal.pmed.1003740>
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242. <https://www.jstor.org/stable/259373>.
- Patil, D. S., Bailey, A., George, S., Hyde, M., & Ashok, L. (2023). Unpacking the role of transport inequalities among older adults for accessing healthcare in Bengaluru, India. *Global public health*, 18(1), Article 2274438. <https://doi.org/10.1080/17441692.2023.2274438>
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster. <https://psycnet.apa.org/doi/10.1145/358916.361990>.
- Putnam, R. D., Nanetti, R. Y., & Leonardi, R. (1994). *Making democracy work: Civic traditions in modern Italy*. Princeton University Press. <https://www.jstor.org/stable/j.ctt7s8r7>.

- Ranjan, A., & Muraleedharan, V. R. (2020). Equity and elderly health in India: Reflections from 75th round National Sample Survey, 2017–18, amidst the COVID-19 pandemic. *Globalization and Health*, 16(1), 93. <https://doi.org/10.1186/s12992-020-00619-7>
- Rodríguez-Artalejo, F., Guallar-Castillón, P., Herrera, M. C., Otero, C. M., Chiva, M. O., Ochoa, C. C., Banegas, J. R., & Pascual, C. R. (2006). Social network as a predictor of hospital readmission and mortality among older patients with heart failure. *Journal of Cardiac Failure*, 12(8), 621–627. <https://doi.org/10.1016/j.cardfail.2006.06.471>
- Sarkar, D., & Sengupta, J. (2014). Structural versus nonstructural forms of social capital: Impact of ethnicity along caste and religious dimensions in the Indian context. *Asian Ethnicity*, 15(1), 78–110. <https://doi.org/10.1080/14631369.2013.806640>
- Sengupta, J., & Sarkar, D. (2012). Caste and religious diversity on formation of social capital: A field survey in India and measurement issues. *Equality, Diversity and Inclusion: An International Journal*, 31(2), 158–175. <https://doi.org/10.1108/02610151211202808>
- Singh, G. K., Daus, G. P., Allender, M., Ramey, C. T., Martin, E. K., Perry, C., ... Vedamuthu, I. P. (2017). Social determinants of health in the United States: Addressing major health inequality trends for the nation, 1935–2016. *International Journal of MCH and AIDS*, 6(2), 139–164. <https://doi.org/10.21106/ijma.236>
- Szreter, S., & Woolcock, M. (2004). Health by association? Social capital, social theory, and the political economy of public health. *International Journal of Epidemiology*, 33(4), 650–667. <https://doi.org/10.1093/ije/dyh013>
- Takele, M. D., Eriku, G. A., Merawie, D. M., Zinabu, F. S., Fentanew, M., Belay, G. J., & Kibret, A. K. (2024). Functional disability and its associated factors among community-dweller older adults living in Gondar Town, Ethiopia: a community-based cross-sectional study. *BMC Public Health*, 24(1), 647. <https://doi.org/10.1186/s12889-024-18110-y>
- Thapa, R., van Teijlingen, E., Regmi, P. R., & Heaslip, V. (2021). Caste Exclusion and health discrimination in South Asia: A systematic review. *Asia-Pacific journal of Public Health*, 33(8), 828–838. <https://doi.org/10.1177/10105395211014648>
- Thorat, S., & Newman, K. S. (2007). Caste and economic discrimination: Causes, consequences and remedies. *Economic and Political Weekly*, 42(41), 4121–4124. <https://www.jstor.org/stable/440010882>
- World Health Organization. (2015). *World report on ageing and health*. WHO Press. <http://www.who.int/publications/i/item/9789241565042>.

Further reading

- Norstrand, J. A., & Xu, Q. (2012). Social capital and health outcomes among older adults in China: The urban–rural dimension. *The Gerontologist*, 52(3), 325–334. <https://doi.org/10.1093/geront/gnr072>