Decomposing socio-economic inequality for routine medical check-ups among older adults in India

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Research article

Keywords: Health check-up, Older adults, Decomposition, Inequality, India

Posted Date: September 28th, 2020

DOI: https://doi.org/10.21203/rs.3.rs-72308/v1

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Abstract

Background: Routine medical check-ups not only reduce the health-care costs over time by detecting potentially life-threatening health conditions at an early stage but also reduces the risk of getting sick and thereby increasing the life span and improving overall health. Therefore, this study examined the prevalence and factors associated with medical check-ups among older adults in India.

Methods: The study utilized data from Building a Knowledge Base on Population Aging in India (BKPAI). The routine medical check-up is the outcome variable of this study. Multivariate analysis has been implemented to fulfil the objectives of the study. Concentration index and decomposition analysis were carried out to examine observed socio-economic inequality in the routine medical check-ups.

Results: Nearly one-fourth (23.1%) of the older adults were undergoing the routine medical check-up. Older adults with below five years (OR, 1.31; CI: 1.13-1.51), 6 to 10 years (OR, 1.36; CI: 1.16-1.60), and 11+ years of schooling (OR, 2.02; CI: 1.6-2.54) were significantly more likely to go for routine medical check-ups than illiterate older adults. The concentration Index value of 0.19 depicts the pro-rich inequality in health check-ups among older adults. Furthermore, the results from the decomposition analysis revealed that the wealth quintile of the household contributed nearly 57 percent to the observed socio-economic inequality in the prevalence of routine medical check-up. Education and working status of older adults made a substantial contribution to the inequalities in routine medical check-ups and explained 16.9 percent, and 4.2 percent of the total inequality, respectively.

Conclusions: From a policy perspective, at first, there is a dire need to spread awareness about the usefulness of routine medical check-ups among older adults. Further, this study reflects the association between education and routine medical check-up, and therefore there is a need to promote literacy at the grass-root level; also, it is recommended to promote health literacy among the older adults. A low level of medical check-up among older adults in rural areas could be reduced by offering free health check-ups regularly. Furthermore, the care of the elderly needs to be prioritized while policy formulation.

Keywords: Health check-up; Older adults; Decomposition; Inequality; India.

Introduction:

Today, the world is gripped with struggles of ageing and age-related issues [1]. Irreversible demographic transition is, by far and large, changing the age structure all around the globe [2]. Initially, what seemed like a developed country problem, is seeping in to even low and middle-income countries, i.e., developing countries [3], [4]. It is presumed that by 2050, 80% of the elderly population would be living in low and middle-income countries [5]. According to WHO (2011), an escalation of 250% among the elderly population can be predicted in low and middle-income countries, while just a 71% increase in the developed countries during the period of 40 years, starting from 2010 to 2050.

India is home to nearly 104 million older adults (age 60+), Census 2011, and it is expected to grow to 173 million by 2026 [6]. The elderly in India mostly suffer from cardio-vascular diseases, circulatory illnesses, and cancer [7]–[9]. Thus, it is imperative to turn our attention to health care practices of the elderly, given the state of the increasing burden of diseases of the growing older adult population. The ageing population comes across as the most vulnerable group and in dire need of health care attention and healthy intervention. Hence, there exists a need to promote certain behavioral practices that ensure healthy ageing, the most important being regular health checkups. Even in general terms, the people who adopt health care strategies can control the onset of various health conditions, which further may result in morbidity or mortality [10].

In recent times, the promotion of health check-ups has proved to be one of the advantageous practices. It was identified that those who underwent regular health check-ups from a pre-elderly stage of life turned out to be healthier in older stages [11]. It was also found that healthy practices, including regular health check-ups, led to early detection of the disease, which in turn

paved the way towards hale and hearty older population [12]. Early detection of long-term morbidities also decreases the socio-economic burden on patients and communities [13]. However, older adults have little or almost no awareness and the importance of regular health check-ups in disease detection [14]. India, notably, lags in this aspect of regular health check-ups.

Most of the research work done on the Indian elderly population highlights the prevalence of morbidities, comorbidities, or focuses on the health-seeking behavior of older adults [15], [16]. However, none seek to emphasize the behavioral aspect of health check-up. Regular and thorough health check-ups have been established as one of the primary habits that can sustain and ensure a healthier ageing process, yet there is a dearth of literature on the same Existing studies point towards health-seeking behavior; however, the aspect of regular health check-ups remains untouched. Prevention is better than cure - this phrase is particularly important regarding the elderly. Even the people who seem more or less healthy are advised to seek routine health check-ups in order to prevent the onset of various non-communicable diseases such as hypertension, type 2 diabetes, cancers, liver and kidney disorders [17]. Preventive health care practice is an important yet widely neglected factor that can avoid or slow the progression of any medical condition. It also opens the door for the assessment of well-being, especially in the elderly [18].

Therefore, understanding the need of the hour, it is crucial to identify the socio-economic and demographic factors that influence the routine medical check-up seeking behavior in the older adults in India. The study seeks to understand this profile of older adults residing in seven states of India and their health check-up seeking behavior and thereby identify the areas which need special attention in order to bring forth the importance of routine health check-ups. This study

also tries to discover the aspects that encourage older adults to go through a routine health check-up. The study would be of immense help for the policy-makers to encourage a routine medical check-up by identifying the factors that prove to be a hurdle and intervening to rectify them.

Methods

Data source

The present research used data from Building a Knowledge Base on Population Aging in India (BKPAI), which was a national-level survey and was conducted in 2011, across seven states of India. The survey was sponsored by the Institute for social and economic change (ISEC), Tata Institute for social sciences (TISS), Institute for economic growth (IEG), and UNFPA, New Delhi. The survey gathered information on various socio-economic and health aspects of ageing among households of those aged 60 years and above with the written consent of the respondents. Seven major regionally representative states were selected for the survey with the highest 60+ years population than the national average. This survey was carried out on a representative sample in the northern, western, eastern, and southern parts of India following a random sampling process.

The primary sampling unit (PSU) was villages for rural areas and urban wards in urban areas. The sample of 1280 elderly households was fixed for each state. Further details on the sampling procedure, the sample size is available in national and state reports of BKPAI, 2011 [19]. For the current study, the effective sample size was of 9541 older adults residing in seven states aged 60+ years were selected.

Outcome variables

The routine medical check-up was the outcome variable of this study. The variable of health check-up was framed from the question that "Do you go for routine medical check-up?" The response was recoded as 0 means "no," and 1 means "yes."

Predictor variables

The predictors included age (60-69, 70-79 and 80+ years), gender (men and women), education (No education, below five years, 6-10 years and 11+ years), marital status (not in union and currently in union), living arrangement (alone, with spouse, with children and others), economic independence (independent, pension and dependent), working status (no, yes and retired), chronic disease (no and yes), wealth (poorest, poorer, middle, richer, and richest), religion (Hindu, Muslim, Sikh, and others), caste (scheduled caste (SC), scheduled tribe (ST), other backward class, and others), residence (rural and urban) and states (Himachal Pradesh, Punjab, West Bengal, Orrisa, Maharashtra, Kerala, and Tamil Nadu).

Statistical analysis

Descriptive statistics and bivariate analysis were used to find the preliminary results. Further, multivariate analysis (binary logistic) has been done to fulfil the objectives of the study. The results were presented in the form of an odds ratio (OR) with a 95% confidence interval (CI).

The model is usually put into a more compact form as follows:

$$\ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 x_1 + \cdots + \beta_M x_{m-1},$$

Where $\beta_0, \ldots\ldots, \beta_M$ are the regression coefficient indicating the relative effect of a particular explanatory variable on the outcome. These coefficients change as per the context in the analysis in the study.

Moreover, the wealth quintile was the key variable to measure the economic status of the household. A household wealth index was calculated in the survey by combining household amenities, assets, and durables and characterizing households in a range varying from the poorest to the richest, corresponding to wealth quintiles ranging from the lowest to the highest.

The study used wealth score (continuous variable) for decomposition analysis, and for the calculation of the Concentration Index (CI), the study used a wealth quintile, which was divided into five equal sizes of the population.

Concentration index

Concentration index represents the magnitude of inequality by measuring the area between the concentration curve and line of equality and calculated as twice the weighted covariance between the outcome and fractional rank in the wealth distribution divided by the variable mean.

The concentration index can be written as follows:

$$\boldsymbol{C = \frac{2}{\mu} cov(y_{i,} R_i)}$$

Where, C is the concentration index; y_i is the outcome variable index; $\boldsymbol{R}$ is the fractional rank of individual $\boldsymbol{i}$ in the distribution of socio-economic position; $\boldsymbol{\mu}$ is the mean of the outcome variable of the sample, and $\boldsymbol{cov}$ denotes the covariance [20]. The index value lies between -1 to +1.

Further, the study decomposes the concentration index to understand the relative contribution of various socio-economic factors to the routine medical check-ups among older adults. To do this, the study used a regression-based decomposition technique, which was proposed by Wagstaff et al. [21]. In this model, routine medical check-up among older adults was considered as the outcome variable for assessing the effect of SES on inequalities.

Results:

The socio-demographic profile of older adults was presented in *Table 1*. Overall, about one-fourth of the older adults went for medical check-ups. Three-fifth of the older adults belonged to 60-69 years age group, half of the older adults were women and illiterate. Nearly six percent of older adults were lived alone, 48% were economic dependent, and one-fourth of older adults were working. Around 65% of older adults were suffered from chronic diseases, and the majority of older adults were Hindu.

The percentage of older adults who went for routine medical check-ups were presented in *Table 2*. Older adults aged 70-79 years (26.2%) went more for medical check-ups than 60-69 years (21.6%) and 80+ years (24.2%) age group. Interestingly, women (24.3%) went more for medical check-ups than men. Only 18% of older adults lived alone went for routine medical check-ups, whereas one-fourth of economically dependent older adults went for medical check-ups. About 28% of retired and one-third of older adults had chronic diseases went for medical check-ups. Wealth quintile had a positive association with routine medical check-ups of older adults. For instance, rich older adults went more for medical check-ups than poor ones. Moreover, low caste groups (SC-19.8% and ST-9.7%) went less for medical check-ups. Older adults who belonged to urban areas (26.8%) went more for medical check-ups than rural areas (21.8%). Around 40% of older adults in Kerala, 27% in West Bengal, 25% in Maharashtra, and 24.6% in Punjab went for routine medical check-ups.

Estimates from logistic regression analysis for routine medical check-ups were presented in *Table 3*. Older adults aged 70-79 years were 1.13 times more likely to go for routine medical check-ups compared to 60-69 years age group. Older adults with below five years (OR, 1.31; CI: 1.13-1.51), 6 to 10 years (OR, 1.36; CI: 1.16-1.60), and 11+ years of schooling (OR, 2.02; CI:

1.6-2.54) were significantly more likely to go for routine medical check-ups than illiterate older adults. Working older adults (OR, 0.72; CI: 0.60-0.87) were less likely to go for routine medical check-ups than their counterparts. Older adults who suffered from chronic diseases were 7.71 times more likely to go for routine medical check-ups compared to those who did not. With reference to the poorest category, middle, richer, and richest older adults were 1.47 times, 1.68 times, and 2.21 times more likely to go for routine medical check-ups. Muslim older adults were 1.41 times more likely, and other religions were 0.71 times less likely to go for routine medical check-ups compared to Hindu. Urban older adults (OR, 1.06; CI: 1.01-1.19) were more likely to go for routine medical check-ups than rural counterparts. With reference to Himachal Pradesh, West Bengal, Maharashtra, and Kerala were 1.44 times, 1.24 times, and 1.37 times more likely to go for routine medical check-ups, respectively.

Figure 1 depicts the concentration curve for routine medical check-ups among older adults in India. If the curve is formed below the line of equality than the inequality is concentrated towards rich and vice-versa. Moreover, more the area between the line of equality and curve higher the inequality. India was having an inequality of 0.19, which depicts the pro-rich bias of health check-ups among older adults.

Estimates from decomposition analysis for routine medical check-ups among older adults were presented in *Table 4*. The positive CI denotes that routine medical check-ups among older adults were concentrated in rich for that particular variable and vice-versa. Older adults aged 70-79 years, working older adults, and older adults who belonged to Other Backward Classes were concentrated more among the disadvantaged population in terms of routine medical check-ups. On the other hand, years of schooling suffered from chronic diseases, household's wealth status, and place of residence inclined to concentrate among better off. Wealth status of the household,

education status, suffered from chronic diseases, and the working status of older adults were the significant contributors to the inequalities. For instance, the wealth quintile of the household was responsible for 57 percent of the socio-economic status related inequality, while older adults suffered from chronic diseases explained 18.9 percent of the socio-economic status related inequality. Education and working status of older adults made a substantial contribution to the inequalities in routine medical check-ups, and explained 16.9 percent, and 4.2 percent of the total inequality, respectively.

Discussion:

Regular medical examination is a well-accepted form of preventive medicine. Routine medical check-up preferably involves a thorough history, physical examination, and screening of asymptomatic individuals by physicians on a timely basis [22]. A routine medical check-up is reckoned as an effective illness and promoting health and eliminating morbidity and mortality. This study is therefore intended to examine routine medical check-ups by older adults in India and its associated factors. This study also examined observed socio-economic inequality in the prevalence of routine check-up by older adults. This study adds relevant information to the missing literature as previously very limited studies have directly examined the prevalence and factors associated with regular medical check-ups among older adults. Previously, studies have examined health-seeking behavior among older adults in combination with various ageing-related diseases [23]–[25]. We were able to find a few studies examining medical check-ups among people in other countries, not specifically older adults and routine medical check-ups [22], [26]–[28]; however, we were unable to find any study in Indian context examining the prevalence and factors associated with routine medical check-up among older adults in India.

The result found that only around one-fourth (23.1%) of the older adults were regularly going for a routine check-up, which further varied by various socio-economic characteristics of the older adults. A study examining ethical differences in participation in medical check-ups among the elderly found a higher prevalence of routine medical check-up among Malay (59.68%), Chinese (60.85%), and Indian population (68.07%), respectively [26]. Abuduxike et al. (2020), in their study, noticed that half of the participants (51.7%) in Northern Cyprus visited the health center for a routine medical check; however, these participants were previously associated with some medical conditions. Routine medical check-up varied by various background characteristics; highly educated older adults, richest older adults, and urban older adults were more likely to opt for a routine medical check-up than their counterparts. Furthermore, older adults with some chronic diseases were more likely to opt for a routine medical check-up than their counterparts [29].

Results from cross-tabulation noticed that a higher prevalence of women older adults were seeking routine medical check-ups than men older adults; however, this finding could not be statistically approved as the results from logistic regression could not find a significant relationship. Previously, various studies have noted that men tend to have lower levels of health-seeking than women [30]–[33], based on routinely collected primary care consultation data, observed that the consultation rate was much lower among men than in women. Women live longer than men, and as a result, they may have a higher number of visits to medical personnel for a routine check-up as compared to men [34]. However, few studies found that men older adults were more likely to seek health-care than women older adults [23], [35].

Education status is one of the important factors affecting routine medical check-ups among older adults. This study noticed that frequency of routine medical check-ups is higher among older

adults with higher education. Previous studies have confirmed the positive association between education and routine medical check-up among older adults [36], [37]. Education enhances knowledge about the importance of routine health check-ups, which further brings a positive change in attitude and practice of routine medical check-ups among older adults [28]. Results profoundly concluded that older adults with chronic diseases were around 7.7 times more likely to opt for a routine medical check-up than their counterparts. The hospitalization rate is higher for chronic diseases as these can be deadly diseases, and hence people with chronic diseases are more likely to opt for a routine medical check-up [38].

Richest older adults were better at routine medical check-ups than poorest older adults. It is no paradox and can be attributed to the fact that richest older adults had enough money to invest in routine medical check-ups, while poorest older adults may not have enough money to go for a routine medical check-up. Rich-poor inequalities in health-care are widely documented across various settings, and researchers unanimously agreed that poor people tend to have low preventive care or routine medical check-up than richer people [39], [40]. Few researchers believe that poorer people tend to consume more health-care as they are sicker than richer people; however, richer people tend to have a more routine check-up as they have enough money to invest in preventive care [40]. The results from the decomposition analysis also found that wealth contributed to more than half of the observed socio-economic inequality in routine medical check-ups among older adults in India. Educational status of the older adults, chronic diseases among older adults, and wealth quintile of the households defined nearly 92 percent of the observed socio-economic inequality in routine health check-ups among older adults in India. It means that education and wealth are the two important factors along with chronic disease among older adults that define socio-economic inequality in routine health check-ups. The rural-

urban differentials in routine medical check-up are visible in this study. The routine medical check-up was higher among older adults in urban areas. People in rural areas may have less routine medical check-up due to various reasons accounting from the unavailability of doctors to low income among people in rural households [41], [42]. Furthermore, older adults in rural areas may have poor health literacy, which can further impact their routine medical check-up [43].

This study has some potential limitations. One of the predictor variables, namely chronic disease, was self-reported. However, it can be assumed that the self-reporting of chronic disease may not have much effect on the overall structure of the study. Furthermore, the cross-sectional nature of data limits our understanding of the causal relationship. Despite these limitations, this study provides first-hand information on routine medical check-ups among older adults in India.

Conclusion:

For a long time now, people have been visiting health facilities only when they fall ill. However, with recent escalation in focus on health care practices, people have started to give routine medical check-ups a thought. People are now pre-emptively striving for better medical services to live a disease-free life. In this context, this study examined the prevalence and factors associated with routine medical check-ups among older adults in India. This study noticed a low prevalence of routine medical check-ups among older adults in India. From a policy perspective, at first, there is a need to spread awareness about the usefulness of routine medical check-ups. Further, this study reflects the association between education and routine medical check-up, and therefore there is a need to promote literacy at the grass-root level; also, it is recommended to promote health literacy among the older adults. A low level of medical check-up among older adults in rural areas could be reduced by offering free health check-ups regularly. Furthermore, the care of the elderly needs to be prioritized while policy formulation.

List of abbreviations:

BKPAI: Building a Knowledge Base on Population Aging in India

WHO: World Health Organization

ISEC: Institute for social and economic change

TISS: Tata Institute for social sciences

IGE: Institute for economic growth

PSU: Primary Sampling Unit

CI: Concentration Index

SES: Socio-Economic Status

OR: Odds Ratio

Declarations:

1. **Ethics approval and consent to participate:** The study is based on secondary data, which is in public domain and available on request. Therefore, ethical approval and consent to participate was taken by ISEC Bangalore.
2. **Funding:** We declare that we did not receive any funding for this work.
3. **Availability of data and material:** We have provided details of the data in the methodology section. The BKPAI data can be obtained from the ISEC Bangalore. The report and the survey tools are also available on the website: https://india.unfpa.org/sites/default/files/pub-pdf/AgeingReport_2012_F.pdf
4. **Authors' contributions:** Conception and design of the study: SS and PK; analysis and/or interpretation of data: SS and PK; drafting the manuscript: SC, RP and SG; revising the

manuscript critically for important intellectual content: DW; reading and approving the manuscript: SS, PK, SC, RP, SG and DW.

5. **Competing interests:** Authors declare that they do not have any competing interest.
6. **Consent for publication:** Not applicable.

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Table-1 Socio-economic Profile of older adults in India		
Variables	**Sample**	**Percentage**
Medical Check-ups		
No	7,334	76.9
Yes	2,205	23.1
Age (years)		
60-69	5,890	61.8
70-79	2,612	27.4
80+	1,036	10.9
Gender		
Men	4,525	47.4
Women	5,014	52.6
Educational Status		
No Education	4,871	51.1
Below 5 years	1,954	20.5
6 to 10 Years	2,136	22.4
11+ years	578	6.1
Marital Status		
Not in Union	3,759	39.4
Currently in Union	5,780	60.6
Living Arrangement		
Alone	561	5.9
With Spouse	1,521	15.9
With children	6,717	70.4
Others	740	7.8
Economic independence		
Independent	2,178	22.8
Pension	2,769	29.0
Dependent	4,588	48.1
Working Status		
No	6,419	67.3
Yes	2,310	24.2
Retired	810	8.5
Chronic disease		
No	3,364	35.3
Yes	6,175	64.7
Wealth quintile		
Poorest	2,248	23.6

Poorer	2,114	22.2
Middle	1,970	20.7
Richer	1,771	18.6
Richest	1,433	15.0
Religion		
Hindu	7,570	79.4
Muslim	671	7.0
Sikh	898	9.4
Others	400	4.2
Caste		
Scheduled Caste	1,979	20.7
Scheduled Tribe	531	5.6
Other Backward Class	3,507	36.8
Others	3,522	36.9
Place of residence		
Rural	7,042	73.8
Urban	2,497	26.2
State		
Himachal Pradesh	1,470	15.4
Punjab	1,351	14.2
West Bengal	1,127	11.8
Orissa	1,453	15.2
Maharashtra	1,380	14.5
Kerala	1,356	14.2
Tamil Nadu	1,403	14.7
Total	9,539	100.0

Table-2 Percentage of older adults went for routine medical check-ups by background characteristics in India

Variables	Percentage	P-value
Age (years)		*
60-69	21.6	
70-79	26.2	
80+	24.2	
Gender		*
Men	21.8	
Women	24.3	
Educational Status		*
No Education	19.0	
Below 5 years	26.3	
6 to 10 Years	25.8	
11+ years	37.2	
Marital Status		
Not in Union	23.8	
Currently in Union	22.7	
Living Arrangement		*
Alone	18.3	
With Spouse	20.9	
With children	23.7	
Others	25.9	
Economic independence		*
Independent	17.4	
Pension	26.2	
Dependent	24.0	
Working Status		*
No	25.0	
Yes	15.9	
Retired	28.4	
Chronic disease		*
No	5.7	
Yes	32.6	
Wealth quintile		*
Poorest	13.7	
Poorer	18.6	
Middle	24.4	
Richer	27.0	
Richest	38.0	
Religion		*
Hindu	21.1	
Muslim	38.5	
Sikh	24.9	
Others	31.0	
Caste		*
Scheduled Caste	19.8	

Scheduled Tribe	9.7	
Other Backward Class	23.1	
Others	27.0	
Place of residence		*
Rural	21.8	
Urban	26.8	
State		*
Himachal Pradesh	21.6	
Punjab	24.6	
West Bengal	27.4	
Orissa	13.0	
Maharashtra	25.8	
Kerala	40.2	
Tamil Nadu	11.3	
Total	23.1	

*p<0.05

Table-3 Logistic regression estimates for routine medical check-ups among older adults in India

Variables	OR(95% CI)
Age (years)	
60-69	Ref.
70-79	1.13*(1.01,1.28)
80+	0.88(0.74,1.06)
Gender	
Men	Ref.
Women	1.06(0.93,1.21)
Educational Status	
No Education	Ref.
Below 5 years	1.31*(1.13,1.51)
6 to 10 Years	1.36*(1.16,1.6)
11+ years	2.02*(1.6,2.54)
Marital Status	
Not in Union	Ref.
Currently in Union	0.98(0.85,1.12)
Living Arrangement	
Alone	Ref.
With Spouse	0.92(0.69,1.22)
With children	0.84(0.66,1.08)
Others	0.75*(0.55,0.99)
Economic independence	
Independent	Ref.
Pension	1.08(0.89,1.3)
Dependent	0.99(0.82,1.19)
Working Status	
No	Ref.
Yes	0.72*(0.6,0.87)
Retired	1.02(0.82,1.25)
Chronic disease	
No	Ref.
Yes	7.71*(6.56,9.05)
Wealth quintile	
Poorest	Ref.
Poorer	1.17(0.96,1.43)
Middle	1.47*(1.2,1.8)
Richer	1.68*(1.36,2.08)
Richest	2.21*(1.76,2.78)
Religion	
Hindu	Ref.
Muslim	1.41*(1.16,1.72)
Sikh	1.09(0.85,1.4)
Others	0.71*(0.55,0.92)
Caste	
Scheduled Caste	Ref.

Scheduled Tribe	1.07(0.91,1.25)
Other Backward Class	0.67*(0.48,0.93)
Others	1.19*(1.04,1.37)
Place of residence	
Rural	Ref.
Urban	1.06*(1.01,1.19)
State	
Himachal Pradesh	Ref.
Punjab	0.83(0.65,1.04)
West Bengal	1.44*(1.18,1.76)
Orissa	0.86(0.69,1.06)
Maharashtra	1.24*(1.02,1.51)
Kerala	1.37*(1.12,1.68)
Tamil Nadu	0.64*(0.5,0.82)

*p<0.05; OR: Odds ratio; CI: confidence interval

Table-4 Estimates from decomposition analysis for routine medical check-ups among older adults in India

Variables	Coefficients	Elasticity	Concentration Index	Absolute contribution	% contribution	Total % contribution
Age (years)						
60-69						
70-79	0.13*	0.005	-0.014	0.000	-0.2	
80+	-0.12	-0.002	0.018	0.000	-0.1	-0.3
Gender						
Men						
Women	0.06	0.009	-0.033	-0.001	-0.7	-0.7
Educational Status						
No Education						
Below 5 years	0.27*	0.008	0.002	0.000	0.1	
6 to 10 Years	0.31*	0.012	0.260	0.012	7.6	
11+ years	0.7*	0.006	0.613	0.015	9.2	16.9
Marital Status						
Not in Union						
Currently in Union	-0.02	-0.003	0.040	-0.001	-0.3	-0.3
Living Arrangement						
Alone						
With Spouse	-0.09	0.002	-0.197	-0.001	-0.8	
With children	-0.17	-0.012	0.089	-0.004	-2.6	
Others	-0.29*	-0.002	0.092	-0.001	-0.5	-3.9
Economic independence						
Independent						
Pension	0.08	0.002	0.066	0.000	0.2	
Dependent	-0.01	-0.001	-0.009	0.000	0.1	0.3
Working Status						
No						
Yes	-0.33*	-0.011	-0.174	0.008	4.8	
Retired	0.02	-0.001	0.518	-0.001	-0.6	4.2
Chronic disease						
No						
yes	2.04*	0.153	0.051	0.031	18.9	18.9
Wealth quintile						
Poorest						
Poorer	0.16	0.002	-0.338	-0.003	-2.0	
Middle	0.39*	0.010	0.138	0.005	3.2	
Richer	0.52*	0.014	0.522	0.028	17.4	
Richest	0.79*	0.021	0.760	0.063	38.6	57.3
Religion						
Hindu						
Muslim	0.34*	0.005	0.146	0.003	1.6	
Sikh	0.09	0.003	0.311	0.003	2.0	
Others	-0.34*	-0.003	0.296	-0.003	-2.0	1.5
Caste						
Scheduled Caste						

Scheduled Tribe	0.07	-0.003	-0.444	0.006	3.4	
Other Backward Class	-0.4*	0.000	-0.029	0.000	0.0	
Others	0.18*	-0.008	0.219	-0.007	-4.2	-0.7
Place of residence						
Rural						
Urban	0.06*	0.001	0.247	0.001	0.4	0.4
State						
Himachal Pradesh						
Punjab	-0.19	-0.005	0.331	-0.006	-3.8	
West Bengal	0.36*	0.008	-0.163	-0.005	-3.3	
Orissa	-0.16	0.000	-0.368	0.000	0.0	
Maharashtra	0.22*	0.006	-0.125	-0.003	-1.8	
Kerala	0.32*	0.014	0.349	0.020	12.1	
Tamil Nadu	-0.45*	-0.006	-0.222	0.005	3.3	6.4
Calculated CI				0.163	100	
Actual CI				0.181		
Residual				0.018		

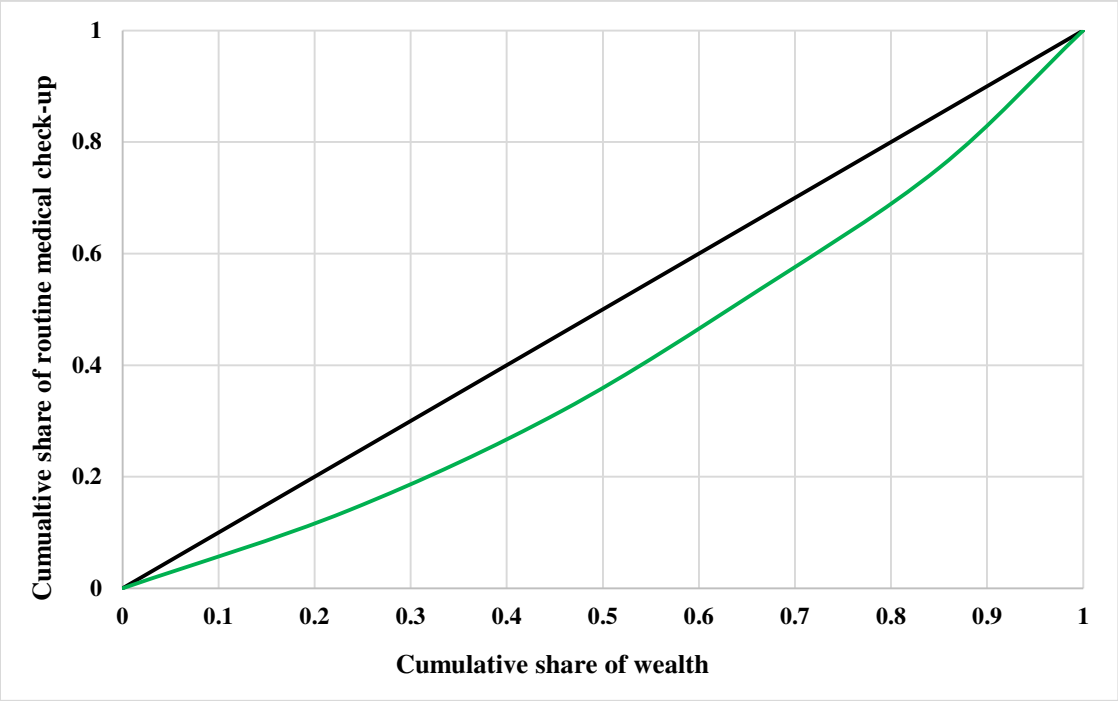

Figure 1: Concentration curve for routine medical check-ups among older adults in India

Figures

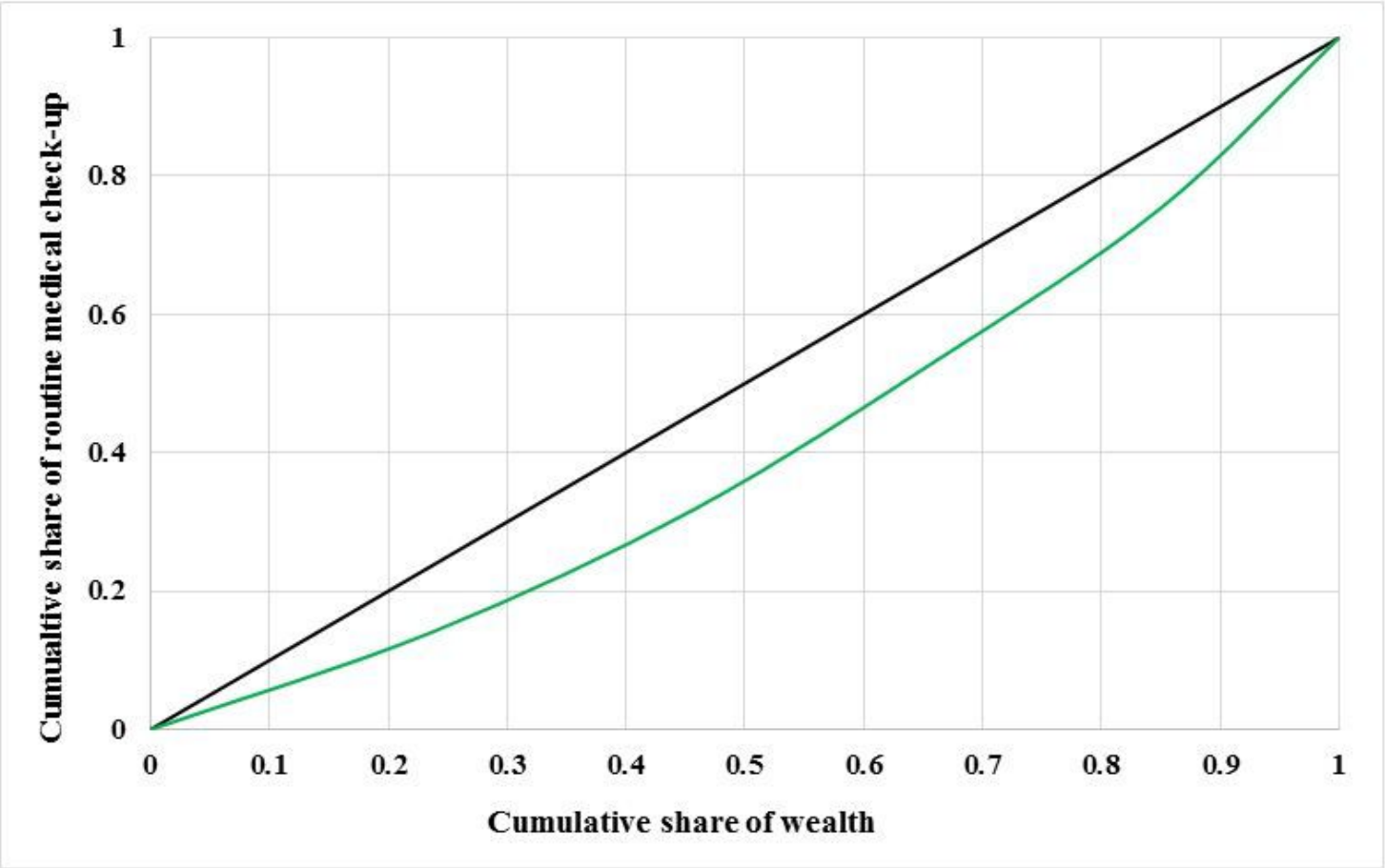

Figure 1

Concentration curve for routine medical check-ups among older adults in India