



**DETERMINANTS OF HEALTH CARE UTILIZATION AMONG
ELDERLY PEOPLE: INDIA'S PICTURE - AN ANALYSIS OF
NSSO 71ST ROUND DATA**

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Abstract: India is experiencing rapid change in its population structure. According to the population census of India, the proportion of the elderly population is rising. About half of the elderly population in India is of poor economic status. Even though the Indian government is investing in primary health care services, healthcare utilization among the elderly is unsatisfactory. This study uses secondary data from the NSSO 71st round to understand the factors influencing healthcare utilization among the elderly. Variables were identified from the literature and selected from the data. The data is filtered to exclude the age group below 60 years. From those who are 60 years and above those who reported any ailments during the last 15 days of the survey were selected as samples for the study. The total sample selected for the study is 2853. Health care utilization among the elderly was found to be very high in this sample i.e. out of a total of 2853 samples who reported any ailment during the last 15 days of the survey, 2780 participants i.e. 97.4 percent utilized health care. In this study, there are two factors found to be associated with healthcare utilization among the elderly population, age, and economic independence.

Keywords: Healthcare utilization, Elderly, economic independence.

1. INTRODUCTION

The last few decades show a growing trend in the elderly population in developing countries like India. Globally about 12 percent of the total population comprises elderly people [1] and over two-thirds of the world's sixty-plus population lived in the developing regions. As per world population prospects, one in six global populations will be in the age group 65 years and above by 2050 [2]. According to the population census, there are approximately 104 million persons aged 60 years and above in India and is expected to grow by 173 million in 2026 [1], [3]. The share of the elderly population is growing over time. The proportion has increased from 5.6 percent in 1961 to 8.6 percent in 2011 [4].

The age-specific death rate per 1000 population was 18.4 for the age group 60 - 64 years [3]. The old-age dependency ratio climbed from 10.9 percent in 1961 to 14.2 percent in 2011 for India [4]. The prevalence of morbidity has increased considerably during the past years in India. The rise in the morbidity level coupled with

an increase in chronic conditions and disabilities, were as expected to enlarge the demand for healthcare services especially among the elderly population [4]. Increasing longevity also poses a concern across the globe about its impact on health care utilization [5]

Despite substantial investments in developing and maintaining a widespread network of public health facilities, the consumption of health services is still far from satisfactory. Very old people, due to their reduced mobility and disabilities, require others to do things for them. With the ever-increasing trend of nuclear families and the lesser number of children in the family, the care of older persons in the families becomes progressively difficult [6].

Some studies were done in India about the use of health services by the elderly. There are so many factors that put the elderly population into the vulnerable group. The health is compromised in the elderly and they are less productive. According to the UNFPA India report, loss of spouse and living arrangement adds significant vulnerability in the older population [1]. Older adults living with their spouses and children are having a higher chance of healthcare utilization than those who live alone [7]. Economic independence is another factor that determines the vulnerability and healthcare utilization among the sixty above population. Perceived health status is an important factor that determines health care utilization [4]. The distance to the healthcare facilities determines the healthcare utilization among the elderly especially when they're physically immobile or in case of restricted mobility [7]. The urban-rural disparity is a matter of concern in the health sector. In remote rural areas accessibility of health care is more difficult because of the lesser number of hospitals and if present, they only have limited services. The elderly population residing in rural areas tend to avoid health needs because of this inaccessibility of the health facilities. Gender, education, socio-economic class, place of residence, etc have an impact on healthcare utilization [8]. When considering the educational status, compared to illiterate people, older adults with higher education show higher healthcare utilization. People with a middle-level education and from higher castes reported greater hospitalizations than those who are uneducated and belong to the scheduled tribe social group [4]. A person with a higher Monthly Per Capita Expenditure Quantile (MPC quantiles) reported high health care utilization [8]. The MPCE had significant associations with both hospital admission and the intensity of hospital use. People with higher per capita monthly household consumption expenditure were more likely to seek hospital admission and use it [4]. The marital status of the elderly is important because married far better than the single on several degrees such as economic, social, emotional, and care given during the development through the older life. Women suffer more during widowhood than men because most women are dependent on others [9]. The frequency of hospitalizations among hospitalized males was slightly higher than among females [4].

Therefore, the current study has developed a conceptual framework that seeks to achieve the following objectives; to assess the health care utilization among the elderly in India and to identify the factors influencing health care utilization among the elderly.

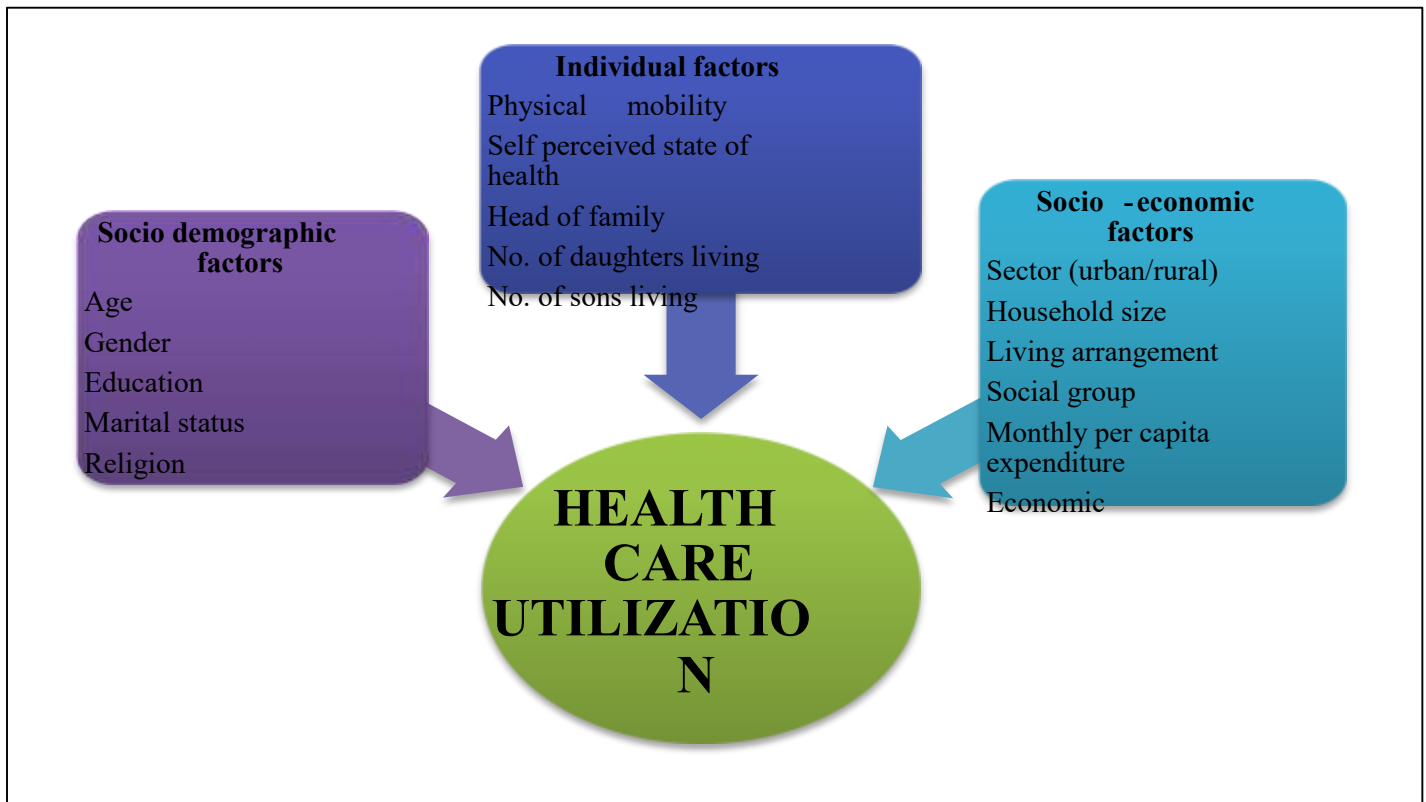


Fig. 1: A structural model showing the conceptual framework of variables that determine the health care utilization

2. METHODOLOGY

This study is the secondary data analysis from the National Sample Survey Organization's 71st round. The 71st round

(January 2014 – June 2014) of NSS is devoted to the subject of Social Consumption and earmarked for surveys on

„Health“ and „Education“. National Sample Survey (NSSO) data collection is done through a descriptive cross-sectional study. This survey covers both the entire country and the individual states. The study uses a Stratified multi-stage sampling design. First Stage Units (FSU) are the census villages (Panchayath wards in the case of Kerala) in the rural sector and Urban Frame Survey (UFS) blocks in the urban sector. The ultimate stage units (USU) are households in both sectors. In the case of large FSUs, one intermediate stage of sampling is the selection of two hamlet-groups / sub-blocks from each rural/ urban FSU. Stratum has been formed at the district level. Within each district of a State/UT, two basic strata have been formed; one is the rural stratum comprising all rural areas of the district and the next is the urban stratum comprising all the urban areas of the district. Within the urban areas of a district, if there are one or more towns with a population of 1 lakh or more as per Census 2011, each of them formed a separate basic stratum, and the remaining urban areas of the district has been considered as another basic stratum. From the household list, 3 each Second Stage Strata (SSS) is formed for Schedule 25.0 (Social Consumption: Health) and Schedule 25.2 (Social Consumption: Education). From each SSS, for both the schedules, the sample households are selected by Simple Random Sampling without Replacement (SRSWOR). Data collection was done through the interview method using a structured questionnaire. Information collected from individuals from the selected household. The period of the survey is of six months duration starting on 1st January 2014 and ending on 30th June 2014. The survey period is divided into

two sub-rounds of three months' duration each as follows: sub round 1 - January to March 2014 and sub round 2 – April to June 2014.

In the current study through the literature review, the variables were identified and those variables were selected from the NSSO data. After data cleaning missing data is identified and treated. The total sample for the NSSO is 333631. Study subjects for the present study are the elderly population of the age group 60 and above. The sample is filtered and cases that fulfill the criteria of age ≥ 60 were selected. After filtering the cases the sample size becomes 27444. The final sample consists of only those people who reported any ailment during the last 15 days which is 2853.

Data were analyzed using Statistical Package for Social Sciences (SPSS) software version 23.0. Some continuous variables like age, household size, no. of living sons and daughters are re-coded into categorical variables. Variables like „chronic diseases“ and „any other ailment during the last 15 days“ combined to create a new variable named „presence of ailment“ (Yes/No). Cases selected giving the criteria; “the presence of ailment = yes”. Data analysis for the study used different statistical methods. Descriptive statistics were used initially for the variables. Frequency tables were made for the categorical variables. The data was then analyzed using the chi-square test as the variables were categorical. Crosstabs were created to understand the results. Binary logistic regression was used to identify the amount of change of a dependent variable with respect to the change in the independent variable.

3. RESULTS

Descriptive statistics

The study included 2853 participants of which males were 1431 which account for 50.2 percent of the total and females were 1422 (49.8 percent). The participants were in the age group from 60 to 106 years with a mean age of 68.02 years and a standard deviation of 7.275 years. About 42 percent of the sample was included in the 70 years or above age group. Among the total sample of this study, 1717 (60.2 percent) elderly people from the urban area, and 1136 (39.8 percent) were from the rural area. Eight-tenths of the sample was never married, 64.4 percent were currently married, separated/divorced individuals were 0.5 percent, and 34.3 percent individuals were widowed. Most of the subjects are from the Hindu religion (76.7 percent), 13.5 percent from Islam, and the remaining 9.9 percent included Sikhs, Christians, Jainism, and others. Nearly half of the participants are belonging to any of the reservation groups (SC/ST/OBC). The majority of persons are from the family whose Monthly Per Capita Expenditure (MPCE) is less than or equal to 3000 (78.3 percent), remaining 21.7 percent having MPCE > 3000. Out of the total sample, 42.6 percent were illiterate and only 2.3 percent completed postgraduate and above. Household size is an independent factor in the study. In the sample majority of the subjects are from a family having five or more members (67.71 percent), 17.9 percent from a family having three to four members, and about 14.3 percent from a family having only one or two members. Out of the total sample, 54.9 percent of persons are the head of their family. Considering the living arrangement, about half of the study participants were living with a spouse and other members (52.7 percent), 10.4 percent people living with spouse only, 31.7 percent persons were living without a spouse; but with children, 3.1 percent were without a spouse but with relatives or other, about 1.8 percent were living alone and 6 people (0.2 percent) were living as an inmate of old age home. More than half of people have two or more sons living (59.4 percent), 30.1 percent having one living son, and 10.4 percent not having living sons. Considering the number of daughters 49 percent of older persons having two or more daughters living, 31.6 percent having one daughter living, 19.4 percent of participants do not have any daughters. As healthcare utilization depends on the self-perceived state of health, it is considered as one of the independent variables in the study. Only 2.8 percent reported that they are having excellent health, 57.2 percent reported the good status of health and the remaining 40 percent reported that they are having poor health status. Economic independence is another predictor variable that determines health service utilization. Out of the total sample 25.6 percent are economically independent, 17.5 percent were partially dependent on others, more than half (56.9 percent) of the sample was fully dependent on others. Because of the increasing healthcare

expenditure, coverage of any type of health insurance will reduce the financial burden due to disease. Health insurance coverage is an independent factor in the study. It's a notable point that the majority (78.1 percent) of persons not covered by any insurance scheme, and the remaining 21.9 percent are covered by any of the insurance schemes that can be government-funded, employer-supported, arranged by a household with the insurance company, etc. Among the total sample, 84.7 percent of participants are physically mobile, 4.5 percent are physically immobile; confined to bed, 10 percent of participants are confined to their home, and 0.8 percent of participants were able to move outside but only in a wheelchair.

While considering the dependent variable „healthcare utilization“, out of a total of 2853 samples who reported any ailment during the last 15 days of the survey, 2780 participants i.e. 97.4 percent utilized the health care.

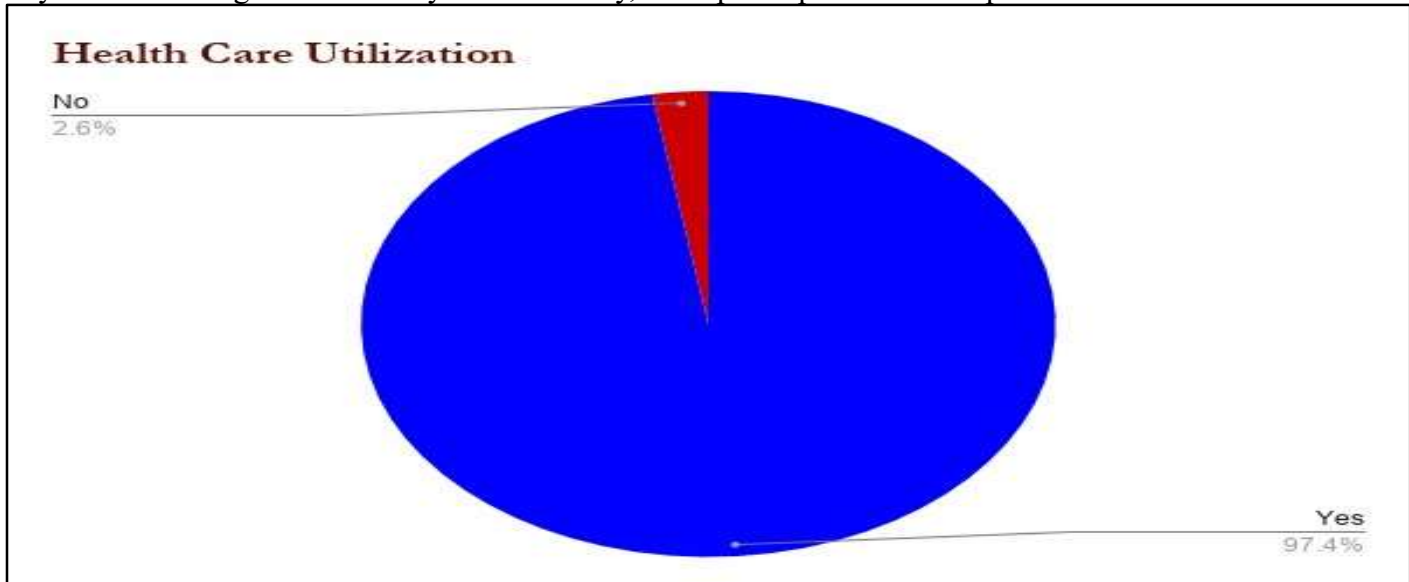


Fig.2: Figure Showing Health Care Utilization Among The Study Participants

Chi-Square tests

The chi-square between the „Healthcare Utilization“ and „Age“ showed significant association $X^2(2, N=2853) = 6.047, p < 0.05$. Further health care utilization was significantly associated with „Gender“ $X^2(1, N=2853) = 3.954, P < 0.05$ and „Economic dependency“ $X^2(2, N=2853) = 6.395, P < 0.05$. Other independent variables didn't show any association with the outcome variable.

Binary regression analysis

Binary logistic regression analysis was done for identifying the variation of healthcare utilization with each of the predictor variables. The constant $b_0 = 3.855$. The regression analysis showed that the health care utilization had a significant variation with respect to the independent variables, with an odds ratio for each variable, with a confidence interval of 99%, age (Exp B = 1.937), Economic dependence (Exp B = 0.581).

4. DISCUSSION

This study sought to assess all factors influencing healthcare utilization among the geriatric group in a representative sample taken from the NSSO 71st round data on social consumption, education, and health. Of all those people in the age group, 60 years and above, 28 percent reported any of the ailment during the last 15 days of the survey. Those 28 percent who reported any ailment are considered as the sample for this study. Even though self-reported ailment cannot be considered as a true healthcare utilization need, it will give an approximate picture of health care needs among the population. NSSO 60th round shows somewhat the same (29.3 percent) reported ailment among the sixty above population [7]. Health care utilization among the elderly is 97.4 percent in the current study which is far higher than that of Ghana

(31.5 Percent) according to the sage data analysis [10]. Age is significantly associated with healthcare utilization. Some previous studies also reported an association between age and health care utilization [11]. Compared to the age group 70 years and above, 60 to 64 years are 1.93 times more likely to use health care. According to another study conducted in Ghana, people 60 to 69 years are more likely to utilize health care [12]. A retrospective study conducted in a primary care practice in Canada reported significantly high healthcare utilization among 80+ age groups [13]. However, in a study conducted in individuals over 75 years, age was not a significant factor that affected healthcare utilization [14]. Another factor protectively associated with health care utilization among the elderly is economic independence. Compared with economically dependent groups, the independent population is 0.5 times less likely to utilize healthcare. Out of the total persons who utilized health care services, only 25.3 percent are economically independent. Most economically independent people are the head of their family and the responsibility to take care of others in the family makes them irresponsible about their health. The Healthcare utilization among the economically independent elderly in India, according to NSSO 2006 is nearly equal to the present study (22 percent) [15]. Other literature also reports low healthcare utilization among economically independent populations [7]. In line with the literature, there is not any difference between healthcare utilization among males and females [10]. Studies show a higher likelihood of healthcare utilization among Muslims and other religions compared to Hindus and also there is a strong association between education and healthcare utilization [7]. But in this study, there is no significant association found between religion and healthcare utilization.

5. CONCLUSION

Issues of health and healthcare utilization is a predominant factor that need special attention in every country. In this study, there are two factors found to be associated with healthcare utilization among the elderly population (60 years and above). Health care utilization among the elderly was found to be very high in this sample. Literature shows many factors associated with health care utilization among the elderly such as socio-demographic factors, individual factors, and socioeconomic factors, but this study found only 2 factors like age and economic independence.

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