HEALTH STATUS AND HEALTH CARE ACCESSIBILITY AMONG THE RURAL ELDERLY POPULATION IN VELHE (RAJGAD) TALUKA, PUNE DISTRICT, MAHARASHTRA: A CROSS-SECTIONAL STUDY

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Abstract: The present pilot study examines the health status, healthcare accessibility, and socio-economic conditions of older adults residing in rural areas of Velhe (Rajgad) Taluka, Pune district, Maharashtra. A cross-sectional descriptive research design was adopted to assess health problems, chronic conditions, healthcare-seeking patterns, economic circumstances, and barriers to healthcare access among adults aged 60 years and above. The study was conducted in selected rural villages characterised by hilly and geographically scattered settlements, limited transportation, and restricted access to healthcare services.

The findings indicate a considerable burden of health problems among rural older adults, including arthritis, visual problems, hypertension, diabetes, and other age-related conditions. Economic dependency, healthcare expenditure, inadequate health insurance coverage, geographical distance, transportation difficulties, and limited awareness of government health and social security schemes were identified as important barriers to timely and appropriate healthcare utilisation. The findings indicate that the health needs of rural older adults are closely associated with their socio-economic circumstances and accessibility to essential services.

The study highlights the need to strengthen accessible, affordable, continuous, and age-friendly primary healthcare services in rural areas. Regular health screening, improved referral and transport mechanisms, greater awareness of government schemes, expanded health insurance coverage, and community-based geriatric services are recommended to address the healthcare needs of rural older adults.

Keywords - Rural Older Adults; Ageing; Health Status; Healthcare Accessibility; Chronic Diseases; Socio-economic Conditions; Healthcare Utilisation; Velhe Taluka.

1. INTRODUCTION:

The health status of the elderly population is influenced by several interrelated factors, including age, income, nutrition, lifestyle, living conditions, family support, and access to healthcare. Common health concerns among older adults include hypertension, diabetes mellitus, arthritis, cardiovascular and respiratory diseases, visual impairment, and mobility-related difficulties. Many of these conditions require regular medical consultations, timely diagnosis, continuous medication, and periodic monitoring. However, limited awareness of preventive healthcare, financial constraints, and difficulties in reaching medical facilities may result in delayed treatment and inadequate disease management. In addition to physical health, psychological and social factors, including loneliness, social isolation, and dependence on family members, may also influence the overall well-being of older adults.

Healthcare accessibility is an important determinant of health outcomes among rural elderly populations. The presence of healthcare facilities does not necessarily ensure that individuals can obtain appropriate medical care when required. Physical accessibility, availability of healthcare personnel and medicines, affordability of treatment, and actual utilization of services collectively determine the extent to which healthcare needs are met. For older adults living in remote villages, poor transport connectivity, long travel distances, limited financial resources, and dependence on caregivers may create additional barriers to seeking medical attention. These challenges can be particularly consequential for individuals with chronic illnesses or restricted mobility who require regular follow-up and long-term care.

Velhe (Rajgad) Taluka, situated in Pune district, Maharashtra, represents a rural setting in which geographical and socioeconomic conditions are relevant to understanding elderly health and healthcare access. According to Census of India 2011 data, the taluka had a population of 54,516 and covered approximately 569 square kilometres. Its predominantly rural settlements and hilly terrain make the accessibility of essential services an important consideration, particularly for older residents living in geographically dispersed villages. Differences in household income, transport availability, living conditions, family support, and proximity to healthcare facilities may influence the ability of elderly individuals to obtain timely and appropriate medical care.

The Government of India has introduced programmes such as the National Programme for Health Care of the Elderly (NPHCE) to strengthen preventive, curative, rehabilitative, and other healthcare services for older adults. Nevertheless, understanding the practical accessibility and utilization of healthcare services at the local level remains important for identifying gaps between healthcare needs and service delivery. Local evidence can help clarify the health concerns experienced by older adults and the socioeconomic, geographical, and service-related factors that influence their access to care.

Against this background, the present study examines the health status and healthcare accessibility of the rural elderly population in Velhe (Rajgad) Taluka, Pune district, Maharashtra. It focuses on understanding the major health concerns of older adults and the factors affecting their access to and utilization of healthcare services. By documenting these aspects in a specific rural context, the study seeks to contribute to the local evidence base for public health planning, elderly care services, and initiatives aimed at improving healthcare access and promoting healthy ageing.

2. RESEARCH METHODOLOGY:

The study adopted a cross-sectional descriptive research design and was conducted as a pilot study to assess the health status, socioeconomic conditions, and healthcare accessibility of the rural elderly population in selected villages of Velhe (Rajgad) Taluka, Pune district, Maharashtra. The study included 77 elderly individuals aged 60 years and above, selected through non-probability convenience sampling supported by

purposive selection. Eligible participants were permanent residents of the selected villages who were willing to participate in the study.

Data were collected through field visits and face-to-face interviews using a structured questionnaire administered in Marathi. The questionnaire covered demographic and socioeconomic characteristics, housing and basic amenities, lifestyle habits, health conditions, mental well-being, healthcare accessibility and utilization, and awareness of government health schemes. Data were compiled and analysed using Microsoft Excel through frequency distributions, percentage analysis, tables, and graphical representations. Qualitative responses were examined thematically.

Informed consent was obtained from all participants, participation was voluntary, and confidentiality and anonymity were maintained. The study was subject to limitations arising from its small sample size, non-random sampling technique, limited geographical coverage, and reliance on self-reported health conditions. Therefore, the findings are exploratory and cannot be generalized to the entire elderly population of Velhe Taluka.

3. Results and Discussion:

3.1 Demographic Profile of Respondents:

Table - 1: Age-wise Distribution of Respondents

Age Group	Number	Percentage (%)
60–69	35	45%
70–79	26	34%
80+	16	21%
Total	**77**	**100%**

The age-wise distribution of respondents (n = 77) indicates that the largest proportion of the study population belongs to the 60–69 age group, accounting for 45% (35 respondents), followed by 34% (26 respondents) in the 70–79 age group, and 21% (16 respondents) in the 80+ category. This clearly shows a declining trend in the number of respondents as age increases. The data suggests that the sample is skewed toward the younger elderly population, while the oldest-old (80+) are underrepresented.

The main finding of this distribution is that nearly half of the respondents are in the early elderly stage (60–69 years), which means that the study largely reflects the conditions and experiences of relatively younger elderly individuals. As age advances, participation decreases, which indicates a gap in representation of the more vulnerable and dependent elderly population. This has important implications, as healthcare needs, physical limitations, and social dependency tend to increase significantly with age.

In conclusion, the study sample does not equally represent all age groups within the elderly population, and therefore, the findings may not fully capture the issues faced by individuals aged 80 years and above.

The Chi-square test shows that the age distribution is **not uniform** and the difference is **statistically significant ($p < 0.05$)**. This means the sample is skewed, with more respondents in the 60–69 age group and fewer in the 80+ group than expected.

Table 2: Gender Distribution

Gender	Number	Percentage (%)
Male	42	55%
Female	35	45%

Table 2 indicates that 42 (55%) respondents were male, while 35 (45%) were female. Although male respondents were slightly more numerous than female respondents, the difference was not statistically

significant ($\chi^2 = 0.636$, df = 1, $p > 0.05$). Hence, the sample demonstrated a relatively balanced gender distribution.

The study included a slightly higher proportion of male respondents (**55%**) compared with female respondents (**45%**). However, the Chi-square goodness-of-fit test indicates that this difference is **not statistically significant**. Therefore, the sample does not demonstrate a significant gender imbalance.

The findings indicate that the study population had **relatively balanced representation of males and females**, despite males being marginally more numerous. The observed difference of 7 respondents may be due to sampling variation and cannot be considered statistically significant. Therefore, **gender distribution in the sample may be regarded as approximately equal**.

Table 3: Economic Dependency

Status	Number	Percentage (%)
Fully dependent	46	60%
Partially dependent	19	25%
Independent	12	15%

Table 3 shows the economic dependency status of the 77 respondents. The findings indicate that 46 respondents (60%) were fully economically dependent, 19 (25%) were partially dependent, while only 12 (15%) were economically independent. Thus, a large majority (85%) of the respondents had some degree of economic dependency, indicating limited financial independence among the study population.

The Chi-square goodness-of-fit test showed a statistically significant difference in the distribution of the three categories ($\chi^2 = 28.39$, df = 2, $p < 0.001$). This indicates that the observed distribution was significantly different from an equal distribution across the three economic dependency categories.

The study concludes that economic dependency was highly prevalent among the respondents, with fully dependent respondents forming the largest group. The findings highlight the importance of economic security and financial support in the lives of the respondents.

3.2 Health Status of Respondents

Table 4: Prevalence of Health Conditions

Health Condition	Respondents (Approx. No.)	Percentage (%)
Hypertension	37	48%
Diabetes	25	32%
Joint Pain / Arthritis	50	65%
Vision Problems	45	58%
Hearing Issues	23	30%

Table 4 presents the prevalence of major health conditions among the 77 respondents. Joint pain/arthritis was the most commonly reported condition (65%), followed by vision problems (58%) and hypertension (48%). Diabetes was reported by 32% of respondents, while hearing issues were reported by 30%. The findings indicate that musculoskeletal, visual and chronic health problems were common among the study population.

The results suggest a considerable burden of health problems among the respondents, particularly joint pain/arthritis and vision-related difficulties. Since respondents could have more than one health condition, the percentages are not expected to total 100%.

The study concludes that multiple health conditions were prevalent among the respondents, with joint pain/arthritis, vision problems and hypertension being the most frequently reported. This indicates a substantial burden of chronic and age-related health problems in the study population and highlights the need for accessible healthcare, regular screening and appropriate management of these conditions.

3.3 Accessibility to Healthcare Services:

Table 5: Distance to Nearest Healthcare Facility

Distance (km)	Number	Percentage (%)
<2 km	15	20%
2–5 km	27	35%
>5 km	35	45%

Table 5 shows the distance of respondents from the nearest healthcare facility. Among the 77 respondents, 15 (20%) lived within 2 km, 27 (35%) lived 2–5 km away, while 35 (45%) lived more than 5 km away. Thus, the largest proportion of respondents had to travel more than 5 km to access the nearest healthcare facility, indicating limited geographical accessibility to healthcare for a substantial proportion of the study population.

The findings suggest that distance may be an important barrier to healthcare access, particularly for respondents living in remote or rural areas. A Chi-square goodness-of-fit test can be used to assess whether the three distance categories are equally distributed. The test gives $\chi^2 = 7.74$, df = 2, $p < 0.05$, indicating a statistically significant difference in the distribution of respondents across the distance categories.

The study concludes that 45% of respondents lived more than 5 km from the nearest healthcare facility, highlighting a significant geographical challenge in accessing healthcare services. The findings support the need for improved local healthcare facilities and accessible outreach services for populations living farther from healthcare centres.

Table 6: Mode of Transport

Mode	Number	Percentage (%)
Walking	23	30%
Public Transport	19	25%
Private Vehicle	15	20%
Dependent on Others	20	25%

Table 6 presents the mode of transport used by the 77 respondents to access healthcare services. The findings show that 23 respondents (30%) travelled by walking, 19 (25%) used public transport, 15 (20%) used private vehicles, while 20 (25%) were dependent on others for transportation. Thus, walking was the most common mode of transport, while nearly half of the respondents (50%) depended on public transport or others for accessing healthcare.

The findings indicate that transportation may be an important barrier to healthcare accessibility, particularly for respondents who depend on others or public transport. A Chi-square goodness-of-fit test showed $\chi^2 = 1.87$, df = 3, $p > 0.05$, indicating that the differences among the four transport categories were not statistically significant.

The study concludes that respondents used varied modes of transport to access healthcare, with walking being the most common. However, the considerable dependence on public transport and others highlights the need for better and more accessible transportation facilities, particularly for elderly people living in rural areas.

3.4 Healthcare Utilization:

Table 7: Type of Healthcare Facility Used

Facility Type	Number	Percentage (%)
Government (PHC)	42	55%
Private Clinics	27	35%
Traditional Healers	8	10%

Table 7 presents the type of healthcare facility used by the 77 respondents. The majority, 42 respondents (55%), used Government Primary Health Centres (PHCs), while 27 (35%) preferred private clinics and 8

(10%) used traditional healers. This indicates that government healthcare facilities were the most commonly used source of healthcare among the respondents.

The findings suggest that government PHCs play an important role in providing healthcare services to the rural elderly population, although a considerable proportion still relies on private clinics. A Chi-square goodness-of-fit test showed $\chi^2 = 25.95$, df = 2, $p < 0.001$, indicating a statistically significant difference in the distribution across the three types of healthcare facilities.

The study concludes that Government PHCs were the predominant healthcare facility used by the respondents, followed by private clinics and traditional healers. The findings highlight the importance of strengthening government primary healthcare services to ensure accessible and affordable healthcare for the rural elderly population.

Table 8: Frequency of Healthcare Visits

Frequency	Number	Percentage (%)
Regular (monthly)	19	25%
Occasional	39	50%
Rare	19	25%

Table 8 shows that among the 77 respondents, 39 (50%) visited healthcare facilities occasionally, while 19 (25%) reported regular monthly visits and 19 (25%) reported rare visits. Thus, occasional healthcare utilization was the most common pattern among the respondents.

The findings indicate that only one-fourth of respondents accessed healthcare regularly, while half sought healthcare only occasionally. This may suggest limited use of preventive and routine healthcare services. A Chi-square goodness-of-fit test shows $\chi^2 = 10.39$, df = 2, $p < 0.01$, indicating a statistically significant difference in the distribution of healthcare-visit frequency.

The study concludes that occasional healthcare visits were predominant, while regular monthly healthcare utilization was relatively low. This highlights the need to encourage regular health check-ups and preventive healthcare among the study population.

3.5 Financial Accessibility:

Table 9: Healthcare Expenditure

Expense Type	Number	Percentage (%)
Low (<₹500/month)	23	30%
Moderate (₹500–₹2000)	35	45%
High (>₹2000)	19	25%

Table 9 presents the monthly healthcare expenditure of the 77 respondents. The majority, 35 respondents (45%), reported moderate healthcare expenditure of ₹500–₹2,000 per month, followed by 23 respondents (30%) with low expenditure of less than ₹500 and 19 respondents (25%) with high expenditure of more than ₹2,000. Thus, 70% of respondents spent ₹500 or more per month on healthcare.

The findings indicate that healthcare expenditure represents a considerable financial burden for a substantial proportion of respondents, particularly those with higher healthcare needs. A Chi-square goodness-of-fit test showed $\chi^2 = 6.34$, df = 2, $p < 0.05$, indicating a statistically significant difference in the distribution of expenditure categories.

The study concludes that moderate healthcare expenditure was most common among the respondents, while one-fourth incurred high monthly expenditure. The findings highlight the importance of affordable and accessible healthcare services to reduce the financial burden on the study population.

Table 10: Health Insurance Coverage

Status	Number	Percentage (%)
Covered	15	20%
Not Covered	62	80%

Table 10 indicates that health insurance coverage among the respondents was considerably low. Out of 77 respondents, only 15 (20%) had health insurance, whereas 62 (80%) were without any insurance coverage. This shows that most respondents may have to meet healthcare expenses through their own income, savings or family support.

The marked difference between insured and uninsured respondents was statistically significant ($\chi^2 = 28.58$, df = 1, $p < 0.001$), confirming that the distribution was not due to an equal proportion of insured and uninsured respondents.

Overall, the data reveal a substantial gap in health insurance protection among the respondents. The low level of coverage may increase vulnerability to unexpected medical expenditure and indicates a need for greater awareness and access to suitable health insurance or government health-support schemes.

3.6 Barriers to Healthcare Access:

Table 11: Major Barriers Reported

Barrier Type	Number	Percentage (%)
Distance	35	45%
Financial Constraints	46	60%
Lack of Transport	31	40%
Lack of Awareness	27	35%
Dependency on Others	39	50%

Table 11 presents the major barriers experienced by the respondents in accessing healthcare services. Financial constraints were the most frequently reported barrier, affecting 46 respondents (60%), followed by dependency on others (50%), distance (45%), lack of transport (40%), and lack of awareness (35%). The findings indicate that healthcare accessibility is influenced by both economic and practical difficulties, with financial limitations emerging as the most prominent concern.

The results suggest that many respondents face more than one barrier while seeking healthcare. Since the categories may overlap, the percentages exceed what would be expected from mutually exclusive responses. Therefore, frequency and percentage are the appropriate descriptive measures, and a Chi-square goodness-of-fit test should not be applied to these data unless each respondent has been classified into only one barrier category.

The findings demonstrate that financial difficulty is the leading barrier to healthcare access, while dependence on others, distance and transportation problems also contribute substantially. The overall pattern points to the need for affordable healthcare, improved transport facilities and greater support for elderly persons who depend on others to reach healthcare services.

3.7 Awareness of Government Schemes:

Table 12: Awareness of Health Schemes

Awareness Level	Number	Percentage (%)
Aware	27	35%
Not Aware	50	65%

Table 12 presents the respondents' awareness of available health schemes. Out of 77 respondents, 27 (35%) were aware of health schemes, whereas 50 (65%) were not aware. The findings therefore indicate a considerable gap in awareness, with nearly two-thirds of the respondents lacking knowledge about available health-related schemes and benefits.

The difference between the aware and unaware groups was statistically significant according to the Chi-square goodness-of-fit test ($\chi^2 = 7.00$, $df = 1$, $p < 0.01$). This indicates that the proportion of respondents who were not aware was significantly higher than those who were aware.

The findings demonstrate that awareness of health schemes among the respondents was inadequate. The high proportion of unaware respondents may limit their ability to access available healthcare benefits and financial assistance. Strengthening awareness through community-level information, health camps and frontline health workers could help improve utilisation of such schemes.

4. DISCUSSION:

The present pilot study highlights the considerable health and healthcare-access challenges experienced by older adults living in rural Velhe (Rajgad) Taluka, Pune. Although the gender distribution was relatively balanced, economic dependency was high, with 85% of respondents being either fully or partially dependent on others. The health profile further indicates a substantial burden of age-related and chronic conditions, particularly joint pain/arthritis (65%), vision problems (58%), and hypertension (48%), followed by diabetes (32%) and hearing problems (30%). The occurrence of multiple health conditions among the respondents suggests that rural older adults may require continuous and comprehensive healthcare rather than episodic treatment. At the same time, geographical accessibility remains an important concern, as 45% of respondents reported living more than 5 km from the nearest healthcare facility. Government Primary Health Centres were the most commonly used healthcare facilities (55%), indicating their important role in rural elderly healthcare; however, half of the respondents reported only occasional healthcare visits. This pattern may reflect the combined influence of distance, transportation difficulties, financial limitations, and dependence on family members or others for accessing services.

The findings also demonstrate important socioeconomic and preventive healthcare gaps. Seventy percent of respondents reported monthly healthcare expenditure of ₹500 or more, while 80% had no health insurance, indicating potential financial vulnerability in the event of illness or hospitalization. Financial constraints were the most frequently reported barrier (60%), followed by dependency on others (50%), distance from healthcare facilities (45%), lack of transport (40%), and lack of awareness (35%). Furthermore, only 35% of respondents were aware of available health schemes, suggesting that the existence of healthcare programmes does not necessarily ensure their utilisation by rural older adults. Taken together, these findings indicate that healthcare accessibility among rural elderly people is influenced by an interconnected combination of health needs, economic dependency, geographic distance, transportation, insurance coverage, and awareness. The study therefore supports the need for an integrated rural elderly healthcare approach that combines accessible primary healthcare, regular screening and follow-up, affordable treatment, transport support, health-insurance and scheme-awareness initiatives, and community-based outreach. Strengthening coordination between

primary healthcare services, local health workers, community organisations, and social-support systems may improve timely healthcare utilisation and contribute to healthier ageing in rural communities.

5. CONCLUSION:

The present pilot study demonstrates that rural older adults in Velhe Taluka experience a considerable burden of health problems along with significant barriers to healthcare access. Economic dependency, multiple chronic and age-related health conditions, geographical distance, transportation difficulties, healthcare expenditure, low insurance coverage, and limited awareness of health schemes collectively influence their ability to obtain timely and appropriate care. The findings emphasise the need to strengthen accessible, affordable and continuous primary healthcare for rural older adults, together with regular health screening, community-based outreach, transport support, and greater awareness of government health and social-security schemes. An integrated and community-oriented approach is essential to promote healthy ageing and improve the overall well-being of the rural elderly population.

REFERENCES:

1. International Institute for Population Sciences (IIPS), & National Programme for Health Care of the Elderly (NPHCE). (2021). Longitudinal Ageing Study in India (LASI) Wave 1, 2017–18: India report. International Institute for Population Sciences.
2. Ministry of Health and Family Welfare, Government of India. (2011). National programme for health care of the elderly (NPHCE): Operational guidelines. Government of India.
3. Ministry of Health and Family Welfare, Government of India. (2018). National programme for prevention and control of cancer, diabetes, cardiovascular diseases and stroke (NPCDCS): Operational guidelines. Government of India.
4. Ministry of Social Justice and Empowerment, Government of India. (2021). Atal Vayo Abhyuday Yojana (AVYAY): Scheme guidelines. Government of India.
5. United Nations, Department of Economic and Social Affairs, Population Division. (2020). World population ageing 2020 highlights. United Nations.
6. United Nations, Department of Economic and Social Affairs, Population Division. (2022). World population prospects 2022. United Nations.
7. World Health Organization. (2015). World report on ageing and health. World Health Organization.
8. World Health Organization. (2017). Integrated care for older people: Guidelines on community-level interventions to manage declines in intrinsic capacity. World Health Organization.
9. World Health Organization. (2021). Decade of healthy ageing: Baseline report. World Health Organization.
10. World Health Organization. (2022). Integrated care for older people (ICOPE): Implementation framework. World Health Organization.

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