
AGEING IN THE SHADOW OF DEVELOPMENT: IMPACTS OF THE LOWER SUKTEL DAM PROJECT ON ELDERLY DISPLACED PERSONS IN ODISHA

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Large dam projects in India have contributed significantly to economic development, but they have also resulted in large-scale displacement of rural populations. Among the displaced, elderly persons remain one of the most vulnerable and least visible groups in rehabilitation and resettlement processes. This study examines the impacts of the Lower Suktel Dam Project on elderly displaced persons in Balangir district of Odisha, with specific focus on socio-economic conditions, health status, and access to rehabilitation and social security measures. The study is based on primary data collected from 60 elderly respondents residing in six rehabilitation colonies, using the direct interview method. Simple descriptive statistical tools such as frequencies and percentages were used for data analysis. The findings reveal a significant decline in livelihood security and economic independence among elderly persons after displacement, accompanied by worsening health conditions and limited access to health care facilities. The study also highlights gaps in compensation delivery and inadequate coverage under social security schemes, leading to increased dependency and social exclusion. The paper concludes that rehabilitation policies lack age-sensitive planning, and emphasizes the need for inclusive, rights-based approaches to ensure dignified ageing in development-induced displacement contexts.

Keywords: Lower Suktel Dam Project; Development-Induced Displacement; Elderly Persons; Rehabilitation and Resettlement; Socio-Economic Impact; Odisha)

INTRODUCTION:

Large-scale development projects such as dams have long been promoted as instruments of economic growth, irrigation expansion, and regional development in India. However, these projects often lead to development-induced displacement, resulting in the loss of land, livelihoods, and social networks for affected communities. India accounts for one of the highest numbers of people displaced by development projects globally, with dams constituting a major source of involuntary displacement (Cernea, 2000; Fernandes, 2008)¹. While displacement affects all sections of society, its impacts are unevenly distributed, with elderly persons emerging as one of the most vulnerable yet least studied groups. Elderly persons face unique challenges in displacement situations due to age-related physical limitations, declining health, reduced adaptability, and dependence on social and familial support systems. Studies have shown that forced displacement often disrupts traditional care structures, increases economic dependency, and exacerbates health risks among older adults (Bartolomé et al.,

¹ Cernea, M. M. (2000). Risks, safeguards, and reconstruction: A model for population displacement and resettlement. *Economic and Political Weekly*, 35(41), 3659–3678. Fernandes, W. (2008). India's forced displacement policy and practice. *Social Change*, 38(3), 369–386.

2000; Scudder, 2012)². The loss of ancestral land and familiar environments also carries deep psychological consequences for elderly persons, who are more emotionally attached to place and community than younger populations. In the Indian context, rehabilitation and resettlement (R&R) policies have largely focused on economically productive groups, often overlooking the specific needs of elderly displaced persons, such as healthcare access, social security, and dignified ageing (Fernandes & Thukral, 1989; Mathur, 2023)³. Although policy frameworks mention vulnerable groups, their implementation remains weak, resulting in exclusion and marginalization of older persons in post-displacement settings.

Study Area and Rationale of the Study:

The Lower Suktel Irrigation Project, located on the River Suktel, a tributary of the River Tel in Balangir district of Odisha, is one of the largest irrigation and rehabilitation projects undertaken in western Odisha. Originally approved in 1999 with an estimated cost of ₹217.13 crore, the project has undergone several revisions, and the estimated cost has increased to ₹5,259.82 crore. The project is designed to provide irrigation facilities to 40,135.59 hectares of cultivable command area across Balangir and Subarnapur districts and to supply drinking water to the towns of Balangir, Patnagarh, and Kantabanji (Lower Suktel Irrigation Project Office, 2024)⁴.

The implementation of the project has resulted in substantial land acquisition and population displacement. According to the official records of the Lower Suktel Irrigation Project Office, a total of 29 villages have been affected by submergence and land acquisition processes. The project has generated 7,212 displaced families, 4,126 affected families, and 268 landless families, making it one of the most significant cases of development-induced displacement in Odisha (Lower Suktel Irrigation Project Office, 2024)⁵. Rehabilitation and resettlement measures have been implemented through several Rehabilitation and Resettlement (R&R) colonies established for displaced households.

Although a number of studies have examined issues relating to land acquisition, compensation, livelihood loss, and rehabilitation under the Lower Suktel Dam Project, limited scholarly attention has been given to the experiences of elderly displaced persons. Elderly individuals often face multiple vulnerabilities arising from declining physical capacity, deteriorating health conditions, reduced livelihood opportunities, and dependence on family support systems. In the context of rural Odisha, where healthcare infrastructure and social security coverage remain inadequate, displacement can further intensify the socio-economic and psychological challenges faced by older persons.

² Bartolomé, L. J., de Wet, C., Mander, H., & Nagraj, V. K. (2000). *Displacement, resettlement, rehabilitation, reparation and development*. World Commission on Dams. Scudder, T. (2012). *The future of large dams: Dealing with social, environmental, institutional and political costs*. Routledge.

³ Fernandes, W., & Thukral, E. G. (1989). *Development, displacement and rehabilitation: Issues for a national debate*. Indian Social Institute. Mathur, H. M. (2023). *Displacement and resettlement in India: The human cost of development*. Routledge.

⁴ Lower Suktel Irrigation Project Office. (2024). *Status Report on Lower Suktel Irrigation Project, Balangir*. Department of Water Resources, Government of Odisha.

⁵ Lower Suktel Irrigation Project Office. (2024). *Status Report on Lower Suktel Irrigation Project, Balangir*. Department of Water Resources, Government of Odisha.

Against this backdrop, the present study focuses on elderly displaced persons residing in selected rehabilitation colonies affected by the Lower Suktel Irrigation Project. The study seeks to examine the socio-economic consequences of displacement, assess health and well-being conditions, and evaluate the adequacy of rehabilitation and social security support available to elderly persons. By generating micro-level evidence, the study contributes to the growing discourse on ageing and development-induced displacement and highlights the need for age-sensitive rehabilitation policies within large-scale development projects.

REVIEW OF LITERATURE:

Development-induced displacement has been a major area of scholarly concern, particularly in countries like India where large infrastructure projects have led to widespread social and economic disruptions. Cernea (2000)⁶ introduced the Impoverishment Risks and Reconstruction (IRR) model, identifying key risks such as landlessness, joblessness, homelessness, marginalization, food insecurity, and social disarticulation faced by displaced populations. Several studies have critically examined the impacts of dam projects on displaced communities in India. Fernandes and Thukral (1989)⁷ highlighted that displacement often leads to the erosion of livelihood systems and social capital, particularly among rural and tribal populations. Mathur (2023)⁸ observed that rehabilitation policies in India tend to prioritize physical resettlement over livelihood restoration and social well-being, resulting in prolonged impoverishment.

A growing body of literature has focused on vulnerable sections within displaced populations, including women, children, and indigenous communities; however, elderly persons have received relatively limited scholarly attention. Bartolomé et al. (2000)⁹ argued that older persons face heightened risks during displacement due to declining physical capacity, limited income-generating opportunities, and increased dependency. The loss of ancestral land and familiar social environments has been identified as a major source of psychological stress among elderly displaced persons. Health-related impacts of displacement on elderly populations have also been documented. Studies by Rao (2025) and Patel and Sinha (2018)¹⁰ found that displacement often results in reduced access to healthcare services, poor living conditions, and increased prevalence of chronic illnesses among older adults. These studies underline that inadequate healthcare infrastructure in resettlement areas disproportionately affects elderly persons, leading to deterioration in both physical and mental health.

In the context of ageing and social security, HelpAge India (2016)¹¹ reported that a significant proportion of elderly persons in rural India lack adequate pension coverage and healthcare support. Displacement further

⁶Cernea, M. M. (2000). *Risks, safeguards, and reconstruction: A model for population displacement and resettlement*. Economic and Political Weekly, 35(41), 3659–3678.

⁷Fernandes, W., & Thukral, E. G. (1989). *Development, displacement and rehabilitation: Issues for a national debate*. Indian Social Institute.

⁸Mathur, H. M. (2023). *Displacement and resettlement in India: The human cost of development*. Routledge.

⁹Bartolomé, L. J., de Wet, C., Mander, H., & Nagraj, V. K. (2000). *Displacement, resettlement, rehabilitation, reparation and development*. World Commission on Dams.

¹⁰Rao, S. (2025). Health consequences of development-induced displacement in India. *Journal of Social and Economic Development*, 17(1), 74–90. Patel, R., & Sinha, S. (2018). Displacement and health vulnerabilities among older adults in India. *Indian Journal of Gerontology*, 32(2), 145–160.

¹¹ HelpAge India. (2016). *State of elderly in India report*. HelpAge India.

aggravates this vulnerability by disrupting access to welfare schemes and documentation required for benefit enrollment. Fernandes (2008)¹² noted that elderly persons are frequently excluded from compensation and rehabilitation processes due to administrative barriers and lack of legal awareness. Studies focusing on Odisha have highlighted similar concerns. Patnaik (2020)¹³ observed that dam-induced displacement in Odisha often leads to prolonged marginalization due to weak implementation of rehabilitation policies. Mohanty (2022)¹⁴ noted that displaced elderly persons in Odisha face challenges related to housing inadequacy, loss of social networks, and limited livelihood options. Despite these insights, empirical studies specifically addressing elderly persons in dam-induced displacement contexts remain sparse.

Existing literature thus indicates a significant research gap regarding the age-specific impacts of displacement, particularly in micro-level contexts. While theoretical frameworks and macro-level analyses are well developed, limited empirical attention has been given to the lived experiences of elderly displaced persons in specific dam projects. The present study seeks to bridge this gap by focusing on the Lower Suktel Dam Project in Odisha, providing micro-level evidence on the socio-economic, health, and welfare impacts of displacement on elderly persons.

RESEARCH OBJECTIVE:

1. To examine the socio-economic impacts of displacement caused by the Lower Suktel Irrigation Project on elderly persons.
2. To assess the health conditions, well-being, rehabilitation support, and social security coverage of elderly displaced persons affected by the Lower Suktel Irrigation Project.

RESEARCH METHODOLOGY

The present study adopts a descriptive and analytical research design to examine the socio-economic impacts, health conditions, and rehabilitation experiences of elderly persons displaced by the Lower Suktel Irrigation Project in Balangir district of Odisha. The study is based on both primary and secondary data sources to provide a comprehensive understanding of the issues faced by elderly displaced persons.

Study Area

The study was conducted in the Rehabilitation and Resettlement (R&R) colonies established under the Lower Suktel Irrigation Project in Balangir district of Odisha. The Lower Suktel Irrigation Project, constructed on the River Suktel, a tributary of the River Tel, is one of the major irrigation projects in western Odisha. The project aims to provide irrigation facilities to 40,135.59 hectares of cultivable command area and drinking water to Balangir, Patnagarh, and Kantabanji towns. According to official records, the project has affected 29 villages

¹² Fernandes, W. (2008). India's forced displacement policy and practice. *Social Change*, 38(3), 369–386.

¹³ Patnaik, S. (2020). Development projects and displacement in Odisha. *Economic and Political Weekly*, 46(26–27), 53–60.

¹⁴ Mohanty, B. (2022). Development-induced displacement and rehabilitation in Odisha. *Indian Journal of Regional Science*, 49(2), 85–97.

and resulted in large-scale displacement and rehabilitation of affected families (Lower Suktel Irrigation Project Office, 2024).¹⁵ The present study focuses on six major R&R colonies, namely Larkipali, Khujenpali, Jhankarpali, Hardatal, Dhulusar, and Kusmel North, where a substantial number of displaced families have been resettled.

Sampling Design

A purposive sampling technique was adopted for the selection of respondents. The study specifically targeted elderly displaced persons aged 60 years and above who had experienced displacement due to the implementation of the Lower Suktel Irrigation Project. A total of 60 respondents were selected from six R&R colonies, with 10 respondents chosen from each colony to ensure adequate representation of elderly persons across the rehabilitation settlements.

Table 1: Distribution of Sample Respondents across Rehabilitation Colonies

Sl. No.	Name of R&R Colony	Number of Elderly Respondents
1	Larkipali	10
2	Khujenpali	10
3	Jhankarpali	10
4	Hardatal	10
5	Dhulusar	10
6	Kusmel North	10
Total		60

Source: Field Survey, 2024.

Table 2: Socio-Demographic Profile of Respondents

Variable	Category	Frequency
Gender	Male	40
	Female	20
Age Group	60–69 Years	36
	70–79 Years	19
	80 Years and Above	5
Education	Illiterate	23
	Primary Education	16
	Secondary Education	12
	Higher Secondary and Above	9
Social Category	SC	8
	ST	9
	OBC	32
	General	11
Marital Status	Married	53
	Widowed	7

¹⁵ Lower Suktel Irrigation Project Office. (2024). Status Report on Lower Suktel Irrigation Project, Balangir. Department of Water Resources, Government of Odisha.

Source: Field Survey, 2024

Data Collection

Primary data were collected through direct personal interviews using a structured interview schedule. The interview schedule covered issues relating to livelihood conditions, income status, health problems, access to healthcare facilities, rehabilitation benefits, social security coverage, and overall well-being. Personal interviews were preferred to facilitate detailed interaction with elderly respondents, many of whom had limited educational backgrounds.

Secondary data were collected from official project reports, government publications, census reports, rehabilitation records, research articles, books, and policy documents related to development-induced displacement, ageing, rehabilitation, and social security.

RESULT AND DISCUSSIONS:

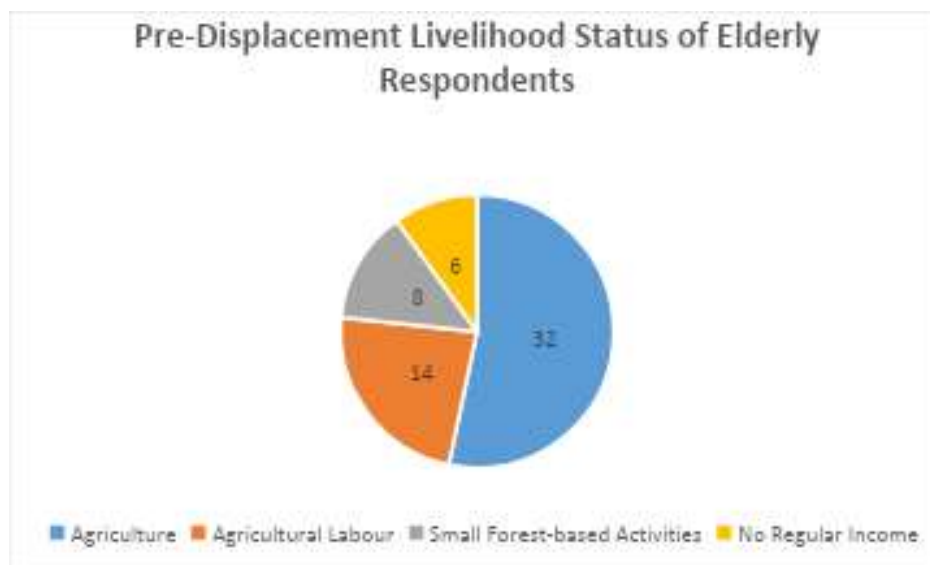
The collected data were analysed using descriptive statistical techniques such as frequencies, percentages, averages, and cross-tabulation. Tabular presentation was used to summarise and interpret the findings. In addition, qualitative information gathered during field interactions was used to supplement the quantitative analysis and provide a deeper understanding of the lived experiences of elderly displaced persons.

Livelihood Status of Elderly Persons Before Displacement:

Table 1: Pre-Displacement Livelihood Status of Elderly Respondents

Livelihood Type	Number of Respondents	Percentage (%)
Agriculture	32	53.3
Agricultural Labour	14	23.3
Small Forest-based Activities	8	13.3
No Regular Income	6	10.1
Total	60	100

Sources: Field Survey, 2024



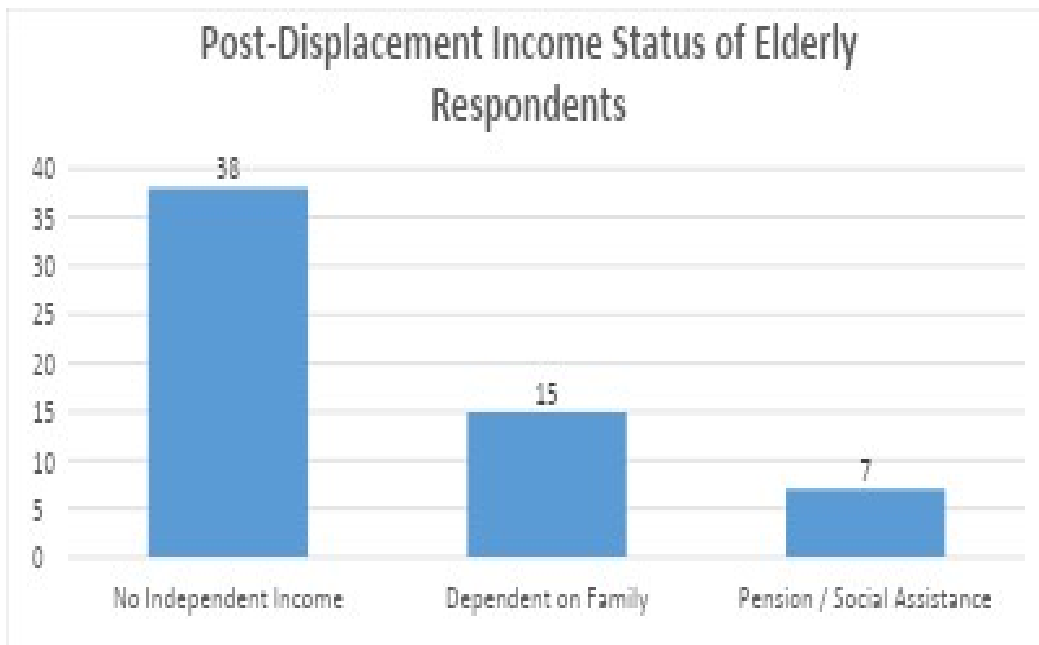
Above table shows, before displacement, a majority of elderly respondents (53.3%) were engaged in agriculture, indicating strong dependence on land for livelihood and subsistence. Agricultural labour constituted 23.3%, while 13.3% depended on forest-based activities such as collection of minor forest produce. Only 10.1% reported having no regular income prior to displacement. This data highlights that most elderly persons were economically active before displacement and had access to traditional livelihood sources. The loss of land and common property resources due to the Lower Suktel Dam Project has significantly disrupted these livelihood patterns, increasing economic insecurity among the elderly displaced population.

Economic Status of Elderly Persons After Displacement:

Table 2: Post-Displacement Income Status of Elderly Respondents

Income Status	Number of Respondents	Percentage (%)
No Independent Income	38	63.3
Dependent on Family	15	25
Pension / Social Assistance	7	11.7
Total	60	100

Sources: Field Survey,2024



In the above table it is showing that after displacement, 63.3% of elderly respondents reported having no independent source of income, reflecting a sharp decline in economic self-reliance. About 25% became fully dependent on family members, particularly adult children, while only 11.7% received pensions or social assistance. The transition from productive engagement to dependency has negatively affected the dignity and

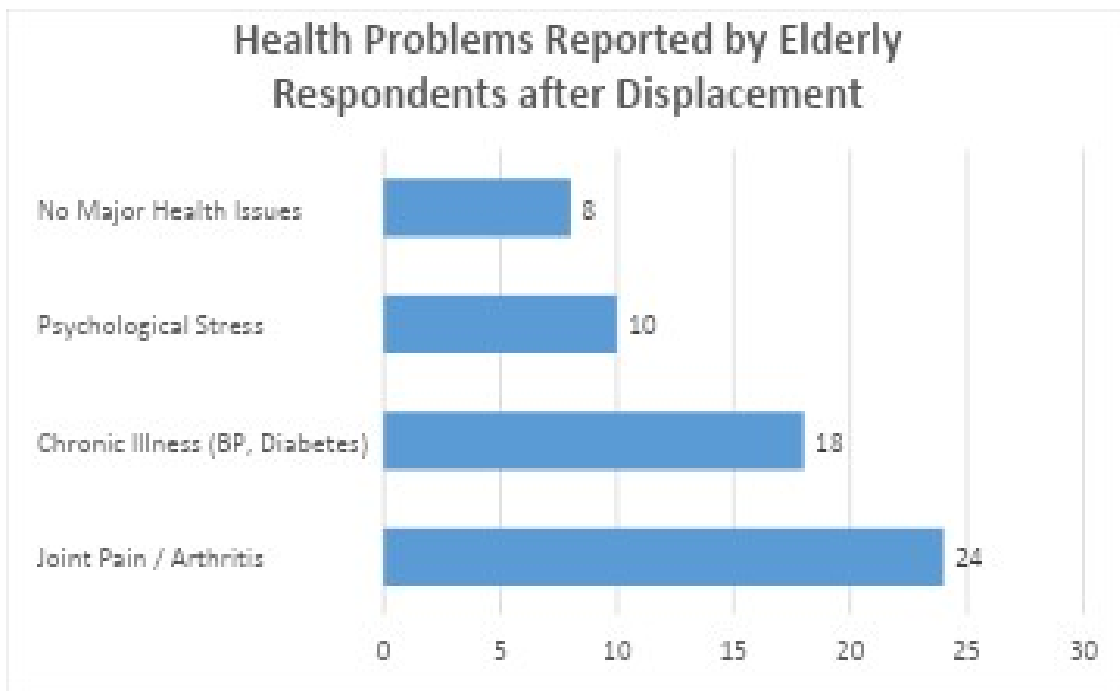
autonomy of elderly persons. The findings suggest that rehabilitation efforts have inadequately addressed livelihood restoration for older persons, making them economically vulnerable and dependent in the post-displacement setting.

Physical and Psychological Health Impacts of Displacement on Elderly Persons:

Table 3: Health Problems Reported by Elderly Respondents after Displacement

Type of Health Problem	Number of Respondents	Percentage (%)
Joint Pain / Arthritis	24	40
Chronic Illness (BP, Diabetes)	18	30
Psychological Stress	10	16.7
No Major Health Issues	8	13.3
Total	60	100

Sources: Field Survey, 2024



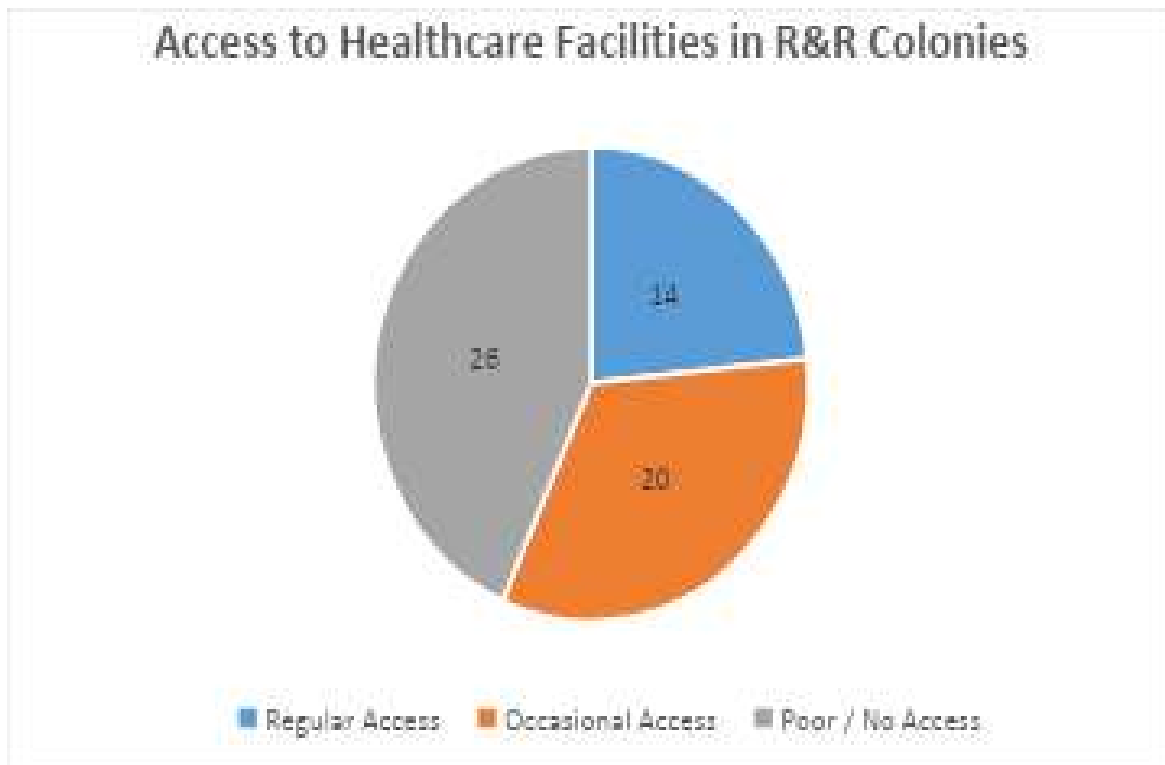
The table shows that 40% of elderly respondents suffer from joint pain and arthritis, which may be aggravated by poor housing and lack of proper facilities in rehabilitation colonies. Chronic illnesses such as blood pressure and diabetes were reported by 30% of respondents. Psychological stress, including anxiety and depression due to displacement and loss of social networks, affected 16.7% of the elderly. Only 13.3% reported no major health issues. These findings indicate that displacement has significantly worsened the physical and mental health of older persons, while access to regular healthcare remains limited.

Healthcare Accessibility and Service Utilization among Elderly Respondents:

Table 4: Access to Healthcare Facilities in R&R Colonies

Access Level	Number of Respondents	Percentage (%)
Regular Access	14	23.3
Occasional Access	20	33.3
Poor / No Access	26	43.4
Total	60	100

Sources: Field Survey, 2024



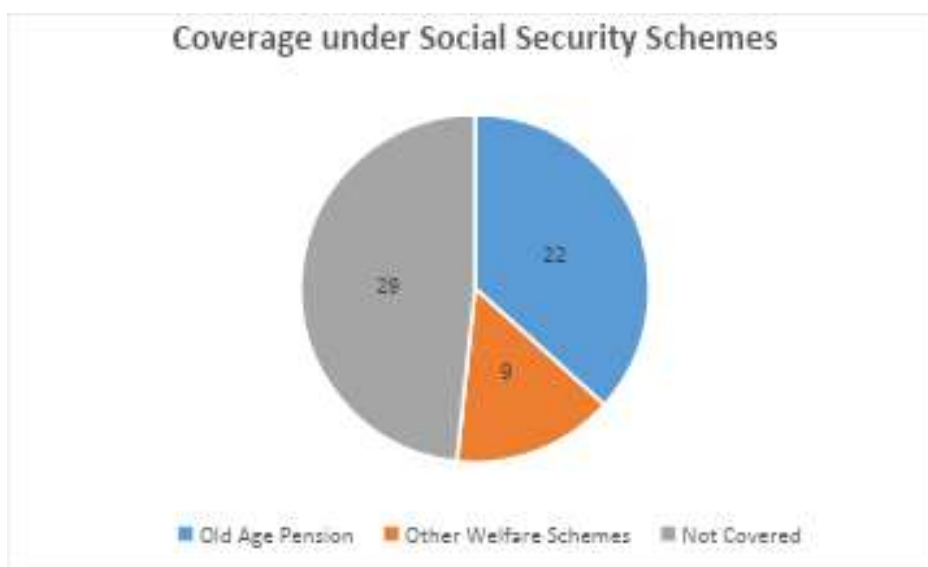
In the above table which reflect only 23.3% of elderly respondents reported regular access to healthcare facilities, while 33.3% had occasional access. A significant 43.4% faced poor or no access to medical services in the rehabilitation colonies. Long distances to health centres, lack of transportation, and financial constraints were cited as major barriers. Poor healthcare access further intensifies health risks among displaced elderly persons. This indicates that rehabilitation planning has not adequately incorporated age-sensitive health infrastructure, leading to increased vulnerability and neglect of elderly health needs.

Inclusion of Elderly Respondents in Social Security Programmes:

Table 5: Coverage under Social Security Schemes

Scheme Coverage	Number of Respondents	Percentage (%)
Old Age Pension	22	36.7
Other Welfare Schemes	9	15
Not Covered	29	48.3
Total	60	100

Sources: Field Survey,2024



The table reveals that only 36.7% of elderly respondents were covered under old age pension schemes, while 15% benefited from other welfare schemes. Nearly half (48.3%) were not covered under any social security programme. Exclusion from welfare schemes has increased economic and social vulnerability among displaced elderly persons. The findings highlight the need for improved identification, enrollment, and delivery of social security benefits in rehabilitation areas, with special focus on age-specific vulnerabilities.

FINDING OF THE STUDY:

- The study reveals that a majority of elderly respondents were economically active before displacement and primarily depended on agriculture, agricultural labour, and forest-based activities for their livelihood.
- Displacement caused significant loss of land, livelihood assets, and traditional income sources, resulting in increased economic insecurity among elderly persons.
- A substantial proportion of elderly respondents reported having no independent source of income after displacement and became dependent on family members or social assistance schemes for survival.

- The absence of age-appropriate livelihood opportunities in the rehabilitation colonies has reduced the economic autonomy and financial security of elderly displaced persons.
- Health conditions of elderly respondents have deteriorated after displacement, with joint pain, arthritis, blood pressure, diabetes, and other chronic illnesses being widely reported.
- Psychological stress, anxiety, and emotional distress were observed among elderly persons due to the loss of ancestral land, familiar surroundings, and long-established social networks.
- Access to healthcare facilities remains inadequate in several rehabilitation colonies, particularly for elderly persons with mobility constraints and chronic health conditions.
- Although rehabilitation and compensation measures have been implemented under the Lower Suktel Irrigation Project, many elderly respondents reported partial receipt, delayed disbursement, or difficulties in accessing benefits.
- Administrative procedures, documentation requirements, and lack of awareness have contributed to the exclusion of some elderly persons from rehabilitation and compensation programmes.
- Social security coverage among elderly displaced persons remains inadequate, with many respondents not receiving old-age pensions or other welfare benefits.
- Even among beneficiaries, the amount and regularity of social security assistance were often found to be insufficient to meet healthcare expenses and daily living requirements.
- The findings indicate that rehabilitation efforts have largely focused on physical resettlement, while the specific needs of elderly persons relating to health, livelihood security, social protection, and emotional well-being have received limited attention.
- Overall, elderly displaced persons continue to remain one of the most vulnerable groups in the development-induced displacement process, highlighting the need for age-sensitive rehabilitation policies and stronger social protection mechanisms.

SUGGESTIONS:

- Rehabilitation policies should incorporate age-sensitive measures to address the specific needs of elderly displaced persons.
- Healthcare facilities in rehabilitation colonies should be strengthened through regular health camps, mobile medical services, and improved access to medicines.
- All eligible elderly persons should be covered under social security schemes such as old-age pensions and health insurance.
- Compensation and rehabilitation benefits should be disbursed timely and transparently to avoid exclusion and delays.
- Community-based support systems and social activities should be promoted to reduce isolation and improve the quality of life of elderly displaced persons.

CONCLUSION:

The study concludes that the Lower Suktel Dam Project, while undertaken in the name of development, has imposed disproportionate socio-economic and health burdens on elderly displaced persons. Displacement has disrupted their traditional livelihoods, weakened social support systems, and increased economic dependency,

thereby undermining their dignity and quality of life in old age. The loss of land, familiar surroundings, and community networks has emerged as a critical factor contributing to physical and psychological distress among elderly persons.

The findings further indicate that existing rehabilitation and resettlement measures are inadequate in addressing age-specific needs. Gaps in compensation delivery, limited access to healthcare services, and exclusion from social security schemes have intensified vulnerability among the elderly displaced population. The absence of focused policy attention towards ageing in displacement contexts reflects a broader neglect within development planning frameworks.

Overall, the study underscores the urgent need for inclusive, humane, and age-sensitive development policies that recognise elderly persons as a distinct and vulnerable group in displacement scenarios. Ensuring livelihood security, healthcare access, and social protection for elderly displaced persons is essential not only for achieving equitable rehabilitation but also for promoting sustainable and just development outcomes.

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