

Sociodemographic, Housing and Sanitation Conditions in Rural Northern Maharashtra state of India: A Cross-sectional Study

Jagdish D. Powar, Prerana S. Gosavi*, Akhil R. Nair, Manasi Padhyegurjar, Shekhar Padhyegurjar, Shyam Ashtekar, Amit Gujrathi, Rakesh Patil, Neelam, Pallavi Dhabekar, Rucha Ingale

ABSTRACT

Background: The sociodemographic study investigates the social, economic, and cultural concerns that have an impact on and are influenced by population dynamics. It helps to understand how different aspects of society are influenced by demographic characteristics and fluctuations. Housing conditions in rural India vary based on location, economic status, and cultural practices. Despite poverty reduction, one-third of the population lacks sufficient housing.

Objective: This research was conducted with the objective of providing a comprehensive overview of sociodemographic factors, housing, and sanitation conditions in rural northern Maharashtra.

Methodology: The survey was conducted at the RHTC from January to August 2023, involving 143 families from three villages. Data was collected by medical students after obtaining informed consent from the head of the family. The variables included family types, gender distribution, socioeconomic status, house types, overcrowding, and cross ventilation. Data entry and analysis were performed using MS Excel and Jamovi software.

Result: The study analyzed 143 families, with 42% being nuclear, 29% joint, and 29% were three generations. Out of the total population, 51% were females and 73% of the population belonged to the age group of 15-64 years of age, 49% of the people were educated up to 12th standard. Approximately 80% lived in their own homes, with overcrowding and cross-ventilation being common. Most households had separate kitchens, LPG for cooking, and tap water was the most common water source. Only 24% of families were using chlorination for water purification. 62% of families disposed of solid waste in open spaces. Most of the families had yellow and orange ration card (91% combined).

Conclusion: According to the survey, the proportion of women and men is equal in rural northern Maharashtra, where most families are provided with tap water by Gramme Panchayats and belong to classes IV and V. The study shows significant improvements in socioeconomic status, literacy rate, family size, sex ratio, sanitation, water safety, and LPG cooking in four tribal block villages.

Keywords: Housing Condition, Sanitation, Sociodemography.

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INTRODUCTION

The sociodemographic study investigates the social, economic, and cultural concerns that have an impact on and are influenced by population dynamics. It helps to understand how different aspects of society are influenced by demographic characteristics and fluctuations. Sociodemographic status refers to a person's social and economic factors, including their income, education level, occupation, and social support which have a significant impact on an individual's health outcomes. Various sociodemographic factors, such as income, education, occupation, and housing, and their association with health outcomes.

Housing is one of the basic requirements of human well-being for survival. The housing conditions in rural India can vary significantly depending on factors such as location, economic status, and cultural practices. In rural areas, almost three out of four Indians and 77% of the Indian population live in poor conditions.¹ Although poverty has been reduced during the past four decades, it remains painfully high.¹ In both urban and rural areas of the country, approximately

Department of Community Medicine, SMBT, IMS&RC, Dhamangaon, Nashik, Maharashtra, India.

Corresponding Author: Prerana Gosavi, Department of Community Medicine, SMBT, IMS&RC, Dhamangaon, Igatpuri, Nashik, Maharashtra 422403. Email: drprerana.cm@gmail.com

one-third of the population lacks sufficient housing. In India, there are an estimated 200 million families, of which 65 to 70 million lack access to suitable housing.² This research article aims to provide a comprehensive overview of sociodemographic factors and housing conditions in Northern Maharashtra.

MATERIALS AND METHODS

The survey was conducted at the rural health training centre (RHTC), tribal area nearby SMBT, Institute of Medical Sciences and Research Center, Dhamangaon, Nashik. The study period was from January to August 2023. Primary data was collected preferably from the head of the family using structured and pretested Proforma. Data was collected by medical

students after receiving adequate training in data collection. Consent was obtained from the head of the family before the interview. A total of 143 families from three different villages were surveyed. Families who refused to participate were excluded from the survey. The study variables of this survey were types of families, gender distribution, socioeconomic status, type of houses, overcrowding, and cross ventilation. Data entry and data cleaning were performed using MS Excel. Statistical analysis was performed using EPI Info7.2 and Jamovi software.

RESULTS

Figure 1 shows the distribution of families according to village of residence. Maximum families were surveyed from Sakur Village.

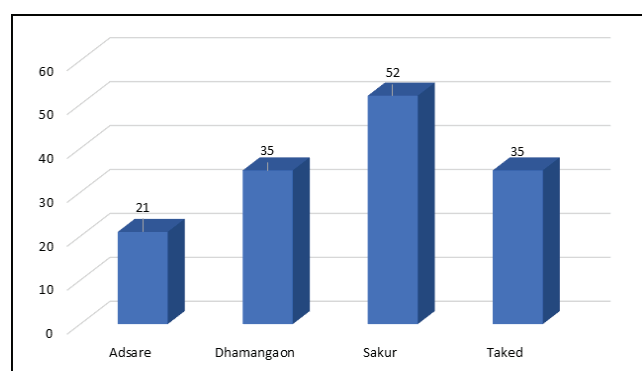


Figure 1: Distribution of families according to village of residence.

Table 3: Sanitation.

Variable	Level	n	%
Solid waste disposal	Composting	7	5%
	Open space	88	62%
	Public dustbin/ Ghanta Gadi	48	34%
Toilet facility	Open space	5	4%
	Private Sanitary latrine	129	90%
	Public toilet	9	6%
Mosquito breeding sites	Absent	60	42%
	Present	83	58%

Table 1 shows the sociodemographic conditions of 143 families from study area. In the present study of 143 families, 42% families were nuclear in composition, 29% families were joint and three generations, respectively. Among the total population covered, 51% were female and observed sex ratio was 1.05. 73% of the population belonged to age group of

15 to 64 years, which was a productive age group. 49% of the population under study were educated up to the 12th standard followed 26% graduates. It was noted that 22% of the study population were illiterate and only 4% were postgraduates. In addition, 45% of the families were having orange ration colored card and 39% had yellow colored ration card. 95.8% families in the study area belonged to Hindu religion. In study area, 57.3% of the families were having farming as major occupation.

Figure 2 shows the socioeconomic status of families according to BG Prasad classification. According to BG Prasad classification, the majority of the families belong to Lower-middle Class (27%) followed by Middle Class (23%).

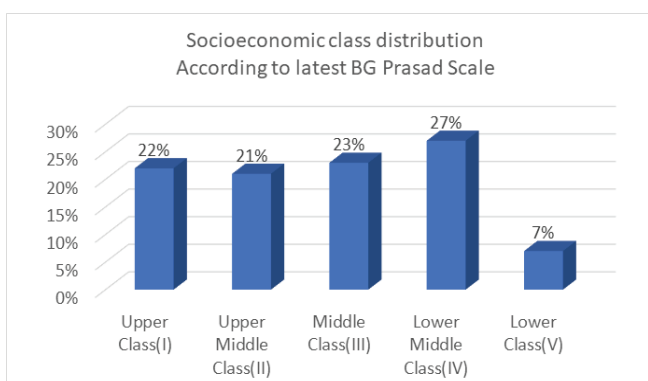


Figure 2: Socioeconomic status of the families.

Table 2: Housing conditions.

Variable	Level	n	%
House owned/rented	Own	127	89%
	Rented	16	11%
Overcrowding	Absent	96	67%
	Present	47	33%
Cross ventilation	Absent	48	34%
	Present	95	66%
Kitchen	In living space	28	20%
	Separate	115	80%
Fuel used	Both firewood and LPG	30	21%
	Firewood	14	10%
	LPG	99	69%
Water supply	Surface water	4	3%
	Tap water	116	81%
	Well water	23	16%
A household purification method	Boiling	25	17%
	Chlorination	35	24%
	None	30	21%
	Purifier	29	20%
	Straining	24	17%

Table 3: Sanitation.

Variable	Level	n	%
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Mosquito breeding sites	Absent	60	42%
	Present	83	58%

Table 2 shows the housing conditions of the 143 families from study area. Eighty-nine percent of the families were living in their own houses. Overcrowding was observed in 33% of the households, while cross-ventilation was observed in 66%. 80% of the families had separate kitchens, while the most commonly used fuel for cooking was LPG (69%). Tap water (81%) was the most commonly used source of water, followed by well water (16%). Only 24% of the families were using chlorination as the method of water purification, whereas 21% of the households were not using any method for water purification.

Table 3 shows the sanitation conditions in the rural areas of the study area. It was observed that 62% of the families disposed of the solid waste in open space and only 5% of families were doing composting of solid waste. 90% of the families had private sanitary latrines. Mosquito breeding sites were present in 58% of the households.

DISCUSSION

This family health survey was conducted in four different villages from a tribal block of Maharashtra. The study analyzed 143 families, revealing that 42% were nuclear, 29% were joint, and 31% were three-generational. The dependency ratio of 37.79%. The rural community had 22% non-literate and 49% persons below 12th standard. Lower middle and lower class contributed 34% to the study group. Overcrowding was absent in 67% households, with 66% of families having cross-ventilation. Most families (81%) received tap water from their Gram Panchayat, and 70% were aware of water purification methods. However, 62% of families disposed of solid waste in open spaces, suggesting lack of village panchayat mechanisms to support disposal.

The socio-economic status of the study population reveals notable levels of economic condition, family composition, and education. The presence of 34% of the families in the lower and lower middle classes in the study population shows that poverty is reducing, and the 39% share of yellow ration card is close to this estimate. Getting yellow ration card is a fairly restricted procedure, and hence this triangulates well. The 22% non-literacy is a major problem,

but we can not ascertain the age structure of this group, possibly that may be an older group. Line data could have explained this feature. Nuclear families are a major portion of this study group, suggesting a changing social structure from typical village societies. Families having non-farm occupation are about 47%, which is a change from the usual norm of 75% farm-occupation-defining villages. This is a welcome change. According to DLFS-5, sex ratio of Nashik district was 0.913 and, in our study, it was 1.05. Possibly, this is because outmigration of men in labour to cities, which is not accounted for here. Another cause could be tribal community which has no sex-preference and selection practices so far.

Improved sanitation is another major feature of this study population. NFHS-5 reported that 72% had improved sanitation facilities in Maharashtra. In our study, 81% of households have family toilet and most are using them. According to National Annual Rural Sanitation Survey in 2017, 76% of families had access to toilets and in our study, Ninety percent (90%) of the households had their own sanitary lavatory. This seems to be the effect of Swachh Bharat Mission which was launched in 2014, under which, all gram panchayats, districts, states, and union territories declared themselves Open Defecation Free by 2019.

The National Sample Survey (2019) report shows that LPG is the primary energy source for 49.4% of rural households. Our study shows 90% use of LPG at HH level, which is encouraging as a development features, and how progress has happened in the last three years. This has major importance for women and their health. This is likely due to the Prime Minister Ujjwala Yojana, which provided free LPG connections.

In this study, 81% families were using tap water as the main source of drinking water. According to the National Statistical Survey which was conducted in 2019 about 42.9% of the households in the rural areas used hand pump as the principal source of drinking water. It might be the result of Jal Jeevan Mission which was launched in 2019 and now Nal-Jal yojna giving piped water to households. This also reduces women's hard daily labor and water-safety for health. It shows that these schemes are working on the ground.

CONCLUSION

Our findings indicate that the socioeconomic status, literacy rate, family size, percentage of nuclear families, sex ratio, sanitation, water safety, and LPG cooking of these four tribal block villages have improved dramatically. Therefore, it appears that government initiatives like Swachh Bharat, PM Awas yojna, Ujjwala yojna, and Nal-Jal yojna are improving the quality of life in rural areas.

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