Published online in http://ijam.co.in ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 15 (3), 2024; 730-738

Cross-sectional study for profiling health status, health-related demographics, and health-seeking behaviour of the Scheduled Caste Population in selected areas of Chennai and Chengalpet Districts of Tamil Nadu

Research Article

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Abstract

Background: Scheduled Caste (SC) population forms a large section of the Indian population who are often marginalised and deprived of social, economic and health benefits due to ignorance and socio-cultural milieu. Though various studies have been conducted on the socio-economic and political conditions of the SC population in Tamil Nadu, limited data is available on the status and determinants of their health. Objectives: The study's objectives were to estimate the health status of the SC population, health-related socio-demographic conditions and the population's health-seeking behaviour. Method: The observational, cross-sectional study was conducted in five SC-predominant areas of Chennai and Chengalpet districts of Tamil Nadu. Their health status, socio- demographic conditions, including household conditions, and health-seeking behaviour were estimated. Result: A total of 1452 households and 6072 participants of the SC community were studied, mostly belonging to the Adidravida community. Most households were of Upper-lower socioeconomic class with basic household amenities. A total of 11.54% of the adult population had a history of diagnosed chronic illnesses. Nearly one-fifth of reproductive-age women had menstrual irregularities. Non-communicable and infectious diseases were the most frequent reason for health care centre visits. Conclusion: Extensive and continuous screening of health status and chronic diseases is essential for early diagnosis and intervention. Focused interventions on improving socio- demographic status can further strengthen the health condition of the SC community. Integrating all systems of medicine in public health can help cater to the health requirements of all sections of the community. Concerted efforts can cut down the burden of chronic diseases.

Keywords: Public health, Health survey, Household facility, Socio-demographic profile, Community-based study, Non-communicable diseases.

Introduction

The health status of any population is a critical indicator of its overall well-being and development. For India's Scheduled Caste (SC) population, understanding health dynamics involves examining various factors, including socio-demographic conditions, access and approach to healthcare services and prevalent health conditions. Between the years 2001 and 2011, the SC population in the state witnessed a growth of 20.8%. (1)Separate schemes are implemented for the welfare of the SC/ST community in various sectors like education, health, employment, housing, etc.(2)Though the sex ratio (1004), the literacy rate among SC population (73%) and work participation of the state is higher compared to the national average,(3)discrimination in opportunities, facilities and services still persists and there is a massive gap in the living standards of Scheduled Caste population, which has great impact on health status of the community as well.

The poor health status of the SC community is reflected in the higher levels of morbidity and mortality and undernutrition. The utilisation of preventive and curative services, including vaccination, is relatively low.(4) Public health services, which are of great significance in the health care of economically

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backward communities, often become inaccessible to them due to discrimination and negligence. (5)Discriminations persist in all other spheres of life, including occupation, education and housing facilities. A survey study conducted among women manual scavengers in urban Chennai showed the act of manual scavenging as a constrained work often assigned based on caste discrimination.(6)A survey study in Tamil Nadu had shown that inequalities in health status are mainly because of lack of access to resources needed to remain healthy than due to deficit in treatment seeking. Providing basic amenities like primary education, health, safe drinking water, proper nutrition, housing and electrification facilities and rural link roads is essential in uplifting the community. Improving the social determinants can help bridge the gap and ensure healthy living in the community.(7)

The study helped to profile health-related demography, health status and health-seeking trends among the SC population. By assessing these dimensions, one can comprehensively understand the existing health inequalities and design targeted interventions to address them.

Objectives

The study's objectives were to estimate the health status of the target population, health-related socio-demographic conditions, including household conditions and health-seeking behaviour of the community.

Method

Study Design and Setting:

The study was conducted as an Observational, Cross-Sectional study. Five Scheduled Caste predominant areas, Nanmangalam, Gerugambakkam and Mudichur, belonging to Chengalpet District and Palavakkam and Semmencheri, belonging to Chennai District, were selected for carrying out the study. The areas were selected after discussion and approval from the local authorities of the respective study areas. The study was initiated in April 2022 and continued up to March 2023 after obtaining approval from the Ethical Committee of the institute (IEC clearance number: F.No 4/1/2022/ALRARI/IEC/35 dated 16/4/2022).

Study Participants

The participants were recruited from selected SC-dominant areas of the Chengalpet and Chennai districts. The initial Household survey helped identify individuals in the SC community and constituted sampling frame. Data were documented from male and female participants of all age groups belonging to the SC community who expressed their willingness to take part in the survey.

Variables

Outcomes:The study was conducted using pre-designed survey formats, and information about health status, socio-demographic conditions, and health-seeking behaviour among the scheduled castes in the selected areas was collected. Data was analysed to study the population's health status, including history of chronic diseases, Immune status, Menstrual health among females between 18-50 years, Status of Haemoglobin, Random Blood Sugar Level and Blood Pressure. Health-related socio-demographic conditions of each study participant, like age, marital status, occupation, education and addiction, were studied. Household details like socio-economic status, type of house, toilet facility, drinking water facility, drainage and ventilation were estimated. The health-seeking behaviour of the community was also studied.

Data Collection

The study began in April 2022 and continued until March 2023. The survey team members were trained to use the survey tool, data recording, and management and were supervised periodically. The data on health status, socio-demographic determinants, and health-seeking behaviour were collected using a pre-designed close-ended survey format using an interview method, and they were documented and analysed. Details of health status and other demographic variables of children under 18 years were reported with the help of either one of the parents. Blood pressure, RBS, and haemoglobin were measured in the participant's health status study. Sitting blood pressure measurements were done using an automatic sphygmomanometer 'OMRON'. An automatic glucometer, 'On-call Plus', was used to record capillary Random blood sugar levels. Capillary Haemoglobin level was recorded using the Automatic Haemoglobinometer 'Quick Check Plus'. Project staff were trained and followed up to ensure the accuracy and quality of measurements.

Minimising Bias

The training was given to the survey team to ensure uniform data collection across the participants. A pre-designed close-ended survey format was used to record data, thus minimising information bias.

Study Size

The research-oriented Public health care programme was executed by CCRAS in SC-dominant areas. This programme provided health care services at the doorstep, and awareness about health, nutrition, and hygiene was created. As part of this programme, 6000 population were selected for cross-sectional study to know the SC population's health status, health-related socio-demographic data and health-seeking behaviour. The households and individual participants were selected using a convenience sampling method.

Statistical methods

All data were entered in Excel sheets. Data cleaning was done to check for accuracy, consistency and missed values. The descriptive data were presented in numbers and percentages, and the continuous data were presented in mean (SD).

Ethical considerations

Before study initiation, Ethical clearance was obtained from the Institutional Ethical Committee. The purpose and objectives of the study were explained to the participants in detail before they were enrolled in the study. The confidentiality of the study subjects was maintained.

Result

A total of 226 visits were made during the study period for data documentation. The data was collected from 1452 SC households in the selected villages during the study. A total of 6072 SC participants were surveyed during the study. Population distribution was documented age-wise (Table 1) and sex-wise (Table 2).

Table 1: Surveyed population distribution according to age (n=6072)

Surveyed population distribution according to age											
Villages/areas	0-5		5-18		18-40		40-60		60 and above		Total
	N	%	n	%	N	%	n	%	n	%	
V1 Nanmangalam	72	5.1	283	20.06	496	35.15	371	26.29	189	13.4	1411
Gerugambakkam	63	5.12	223	18.11	492	39.97	335	27.21	118	9.59	1231
Mudichur	88	7.14	252	20.45	461	37.42	303	24.6	128	10.39	1232
Palavakkam	28	4.06	132	19.13	259	37.54	189	27.39	82	11.88	690
Semmencheri	106	7.03	272	18.04	578	38.33	389	25.8	163	10.81	1508
Total	357	5.88	1162	19.14	2286	37.65	1587	26.14	680	11.19	6072

Table 2: Surveyed population distribution according to sex (n=6072)

Surveyed population distribution according to sex									
Villages	Male Child		Female Child		Male		Female		Total
	n	%	N	%	N	%	N	%	
Nanmangalam	172	12.19	183	12.97	528	37.42	528	37.42	1411
Gerugambakkam	146	11.86	140	11.37	463	37.61	482	39.16	1231
Mudichur	184	14.93	156	12.66	434	35.23	458	37.18	1232
Palavakkam	73	10.57	87	12.61	259	37.54	271	39.28	690
Semmencheri	183	12.14	195	12.92	549	36.41	581	38.53	1508
Total	758	12.48	761	12.53	2233	36.78	2320	38.21	6072

Adidravida was the most prevalent scheduled caste in all selected areas, i.e.,87.56% of surveyed households. (Table 3).

Table 3: Distribution of households according to caste (n= 1452)

Villages/areas	**Caste n(%)**							**Total**
Nanmangalam	Caste	Adi Andhra	Adidravida	Arunthathiyar	Chakkiliyan	Pallan	Paraiyan	358
	N	4	294	1	2	19	38	
	%	1.12	82.12	0.28	0.56	5.31	10.61	
Gerugambakkam	Caste	Adi Andhra	Adidravida	Arunthathiyar	Chakkiliyan	Pallan	Paraiyan	227
	N	4	219	4	0	0	0	
	%	1.76	96.48	1.76	0	0	0	
Mudichur	Caste	Adi Andhra	Adidravida	Arunthathiyar	Chakkiliyan	Pallan	Paraiyan	286
	N	0	286	0	0	0	0	
	%	0	100	0	0	0	0	
Palavakkam	Caste	Adi Andhra	Adidravida	Arunthathiyar	Chakkiliyan	Pallan	Paraiyan	160
	N	1	129	2	0	9	19	
	%	0.63	80.62	1.25	0	5.62	11.88	
Semmencheri	Caste	Adi Andhra	Adidravida	Arunthathiyar	Chakkiliyan	Pallan	Paraiyan	421
	N	2	331	5	4	20	59	
	%	0.48	78.62	1.18	0.95	4.76	14.01	

Analysing the marital status data showed that Marriage before 18 years was not reported in females, but marriage before 21 was reported among 0.44% of males. (Table 4) Study data showed that the mean age for marriage was 24.92 years among males and 21.79 among females.

Table 4: Age and sex-wise distribution of Marital Status (n=6072)

	Single		Married		Divorcee		Other	
	n	%	n	%	n	%	n	%
Marital status- Females								
<18	761	100	0	0	0	0	0	0
18 & above	309	13.32	1809	77.97	6	0.26	196	8.45
Marital status- Males								
<21	898	99.56	4	0.44	0	0	0	0
21 & above	355	16.99	1719	82.29	5	0.24	10	0.48

The study of educational status showed that 9.27% of the total surveyed population above 18 years of age remained illiterate. There were no illiterates in the age category < 18 years. The proportion of illiterates was slightly higher in females (7.53%) than males (6.35%). (Table 5).

Table 5: Age and Sex wise distribution of Education status(n=6072)

	Education level													
	Not applicable (as age <6 years)		Illiterate		Primary (5thclass)		Middle (8th class)		High School (10th class)		Intermediate or diploma		Graduate & above	
Age-wise														
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
<18	444	29.23	0	0	319	21	428	28.18	238	15.67	90	5.92	0	0
18 & above	0	0	422	9.27	474	10.41	675	14.83	1047	22.99	1083	23.79	852	18.71
Sex wise														
Male	225	7.52	190	6.35	353	11.8	471	15.75	701	23.44	595	19.89	456	15.25
Female	219	7.11	232	7.53	440	14.28	632	20.52	584	18.95	578	18.76	396	12.85

Examining the occupational status from survey data showed that no participants <18 years were reported as engaged in any occupation. (Table 6)

Table 6: Age and Sex wise distribution of Occupation status(n=6072)

	Not applicable (as age < 5 years)		Unemployed (able to work)		Unemployed (unable to work)		Unorganised		Organised Private		Government		Student		Homemaker		Self-employed		Other	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<18	444	29.23	21	1.38	15	0.99	0	0	0	0	0	0	1039	68.4	0	0	0	0	0	0
18 & above	0	0	129	2.83	191	4.2	398	8.74	1020	22.4	203	4.46	365	8.02	1333	29.28	914	20.07	0	0
Male	225	7.53	94	3.14	133	4.45	276	9.23	779	26.04	77	2.57	701	23.44	3	0.1	703	23.51	0	0
Female	219	7.11	56	1.82	73	2.37	122	3.96	241	7.82	126	4.09	703	22.82	1330	43.17	211	6.85	0	0

Addiction data revealed that the majority of the surveyed population remained free from any form of addiction. (Table 7) Addiction habits among the participants showed that 7.63% of the participants reported having a lifetime history of some addiction. Among these, 56.8% expressed willingness to quit, whereas 9.94% had already quit. 78.62% of these people were aware of the adverse effects. The average age at which the habit was started was observed to be 27 years.

Table 7: Details concerning addiction (n=6072)

Tobacco chewing (Tobacco/gutkha/ panmasala/maseri/other)		Tobacco snuffing		Smoking (Bidi/ Cigarette/Hukka/ other)		Alcohol		Cannabis derivative		Opium derivative		Other		None	
n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
78	1.29	32	0.53	160	2.63	386	6.36	11	0.18	3	0.05	0	0	5609	92.37

In this study, the socioeconomic status of the households was analysed using the Kuppuswamy scale, which showed that most of the households belonged to the upper-lower class. Most of the houses were of Pucca type and had adequate ventilation. Safe drinking water provision was available in all the surveyed houses. Sparing a few, almost all the households surveyed had toilet facilities inside the house or within their plot.The drainage facility in most surveyed households was open gutters, and indiscriminate open disposal was also reported in a few houses. (Table 8)

Table 8: Details of households (n= 1452)

	N	%
Socio-economic status		
Upper (I)	0	0
Upper middle(II)	43	2.96
Lower Middle(III)	234	16.12
Upper Lower (IV)	1095	75.41
Lower(V)	80	5.51
Types of house		
Kutcha	16	1.1
Semi Pucca	116	7.99
Pucca	1320	90.91
The proportion of households with adequate ventilation	1416	97.52
The proportion of households with availability of clean drinking water	1452	100
Source of drinking water supply		
Personal Well/Borewell/Hand pump	127	8.75
Government pipeline at the individual house	121	8.33
Common/community water tap	431	29.68
Private water supplier (Tanker etc.)	773	53.24
Toilet Facility		
Inside the house/plot	1438	99.04
Public Toilet	14	0.96
Drainage Facility		
Closed (Covered)	264	18.18
Open gutters	1107	76.24
Indiscriminate disposal in open	81	5.58

The history of chronic diseases among the population was observed as part of studying the population's health status. More than one-tenth of the surveyed population had a history of chronic diseases like Hypertension, Diabetes Mellitus, Hypothyroidism and Cardiac diseases, of which the majority were taking medications for their conditions. (Table 9).

Table 9: Proportion of participants with a history of chronic disease(n=6072)

The proportion of participants having a history of chronic disease (out of total number of population surveyed)		The proportion of participants being treated for any chronic illness (out of total number of population surveyed)	
N	%	N	%
701	11.54	679	11.18

The immune status of all participants was assessed using the Immune Status questionnaire (ISQ). The ISQ is a reliable, validated and short self–assessment questionnaire investigating the past 12 month's immune status.(8)A low immune status score of less than six (reduced immune functioning) was found in nearly 5% of the population. (Table 10)

Table 10: Proportion of participants with reduced immune function (i.e.<6 ISQ score) (n=6072)

Immune Status					
0-5 years		5-<18 years		18 years and above	
N	%	n	%	n	%
18	5.04	40	3.44	301	6.61

The menstrual history of women between the age group 18-50 years was studied. Multiple options were recorded for each participant. (Table 11)

Table 11: Distribution concerning menstruation among women of 18-50 years(n=1743)

Menstrual History	n	%
Regular	1299	74.53
Irregular	382	21.92
Painful	205	11.76
Scanty	127	7.29
Excess	353	20.25
Normal flow	1201	68.9
Menopause	55	3.16
Amenorrhoea due to pregnancy	4	0.23
Amenorrhoea	3	0.17
Menses not started	0	0
Other	0	0

Level of Haemoglobin, blood sugar and blood pressure were assessed in adult participants who gave willingness. Haemoglobin status was assessed in 2259 participants and graded based on Haemoglobin level. Hb level <8 gm/dl was reported in a few participants.(Table 12)

Table 12: Distribution of Haemoglobin Status (n=2259)

Haemoglobin Status(g/dl)							
≥12		11–11.9		8–10.9		<8	
n	%	n	%	n	%	n	%
1371	60.69	414	18.33	453	20.05	21	0.93

Random Blood Sugar level (RBS) was assessed in 3043participants above age 18 years.(Table 13)

Table 13: Age-wise Distribution of Blood sugar level status (n=3043)

Age Group (in years)	Number of Screened Population	Random Blood Sugar(mg/dl)					
		<140		140-199		≥200	
		N	%	N	%	N	%
18-40	948	629	20.67	259	8.51	60	1.97
40-60	1443	642	21.09	574	18.86	227	7.45
60 and above	652	267	8.77	262	8.60	123	4.04
TOTAL	3043	1538	50.54	1095	35.98	410	13.47

Among the population, Blood pressure level was studied in 1827 participants above 18 years of age.(Table 14)

Table 14: Age-wise Distribution of Blood Pressure level status (n=1827)

Age range	Number of Screened Population	Blood Pressure level (mm Hg)													
		<120/<80		120-129/80-84		130-139/ 85-89		140-159/90-99		160-179/100-109		≥180/≥110		≥140/<90	
		N	%	n	%	N	%	N	%	N	%	N	%	N	%
18-40	433	158	8.64	53	2.90	5	0.27	19	1.04	1	0.05	6	0.32	5	0.27
40-60	915	433	23.70	398	21.78	24	1.31	69	3.78	24	1.31	13	0.71	84	4.59
60 and above	479	200	10.94	171	9.35	9	0.49	40	2.18	12	0.65	10	0.54	93	5.09
Grand Total	1827	791	43.29	622	34.04	38	2.08	128	7	37	2.03	29	1.59	182	9.96

The health-seeking behaviour pattern was assessed regarding the most common reason for the health care centre visit. Among the 1452 houses surveyed, 1347 households reported recent visits to health care centres. The most common reasons among them were infections (43.65%) or Non-communicable Diseases (45.73%). (Table 15)The average frequency of visits to health care centres for any person residing in the household in the month was nearly one, and the cost was approximately 600 rupees per month. It was observed that despite PHCs and sub-centres available in these areas, many people still preferred to visit private practitioners and hospitals to meet their health requirements.

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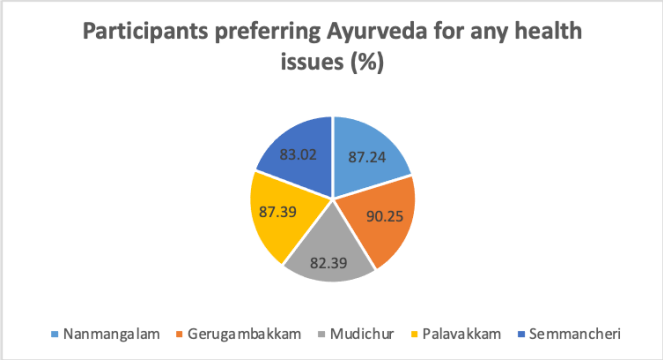
Table 15: Most common Reasons for a visit to health care centre among households (n=1347)

Infections		Ante-natal care		Post Natal care		Child health		Non-communicable Diseases		Other		Total
n	%	n	%	n	%	n	%	n	%	n	%	
588	43.65	90	6.68	5	0.37	48	3.56	616	45.73	0	0	1347

From the data collected, 5212 (85.84%) of the surveyed population showed their willingness to opt for the Ayurveda system of medicine for their health issues. Some of them were already taking Ayurvedic medications for their ailments.(Graph 1).

Graph 1: Participants preferring Ayurveda for any health issues(n=6072)



Discussion

Living standards, nutrition, health-seeking trends, accessibility to safe and healthy food, water and shelter, etc, are often influenced by socioeconomic conditions. The most prevalent community among those surveyed was Adidravida, who comprised over half of Tamil Nadu's Scheduled Caste population according to figures from the 2011 census. (9) The majority of the population belonged to low socio-economic status. A study conducted among the SC community in a district of Tamil Nadu showed that the standards of living among SC women are even more deplorable(10). Household facilities and living conditions play a significant role in health status. The properly ventilated houses in the areas help reduce indoor air pollution and the spread of infections by ensuring airflow. (11)The Chennai metro water supply does not meet the city's daily requirements; hence, most residents depend on private water tankers for their basic needs.(12) Few surveyed households in the Chennai district depended on community toilets constructed to eliminate open defecation. However, there have been challenges in assuring the sustainability of operations and maintenance of these toilets.(13) Yet another issue the residents face is open drainage and indiscriminate waste disposal, which can lead to waterborne infections. To keep up with the demands of rapid urbanisation, the government has decided to implement the underground sewerage scheme for all the needy urban local bodies in a phased manner.(14)

The SC sex ratio in Tamil Nadu (999:1000) as per the 2011 Census exceeds the national average, and most of Tamil Nadu's population belongs to the working age group of 15-59 years. The child sex ratio (0-6 years) among the SC population of Tamil Nadu is also higher than the country's SC population in the corresponding age range. Paraiyan and Adidravida are in a better situation than the rest of the state SC population in terms of the child-sex ratio. (15, 16) Though child marriage is prohibited by law, studies showed that among women of the age group 20-24 years in Tamil Nadu,12.8 per cent were married before the age of 18 years; the national average is 23.3 per cent. (17)However, no such incidents were reported in the surveyed areas. The mean age for first marriage in females was above 21, and in males was above 24. The literacy rate is the primary indicator of the development of a society. Though the literacy rate in Tamil Nadu has seen positive growth and is 80.09 per cent as per 2011 population census, the literacy rate among SC population in the state was only 73.3%.(18,19)Among the surveyed areas, literacy rate among SC population was higher than census statistics; with much lesser gender based difference. Tamil Nadu's female contribution in work force (43%) is higher than national average and most of the states.As per survey data, nearly half of female population were homemakers. Providing equal wages with males, imparting education, skill-development, access to transportation etc are few initiatives that can be taken to prevent drop out of women from employment participation.(20) As per the survey data a large part of the population remained free from all sorts of addiction. Among the persons with addiction, alcohol addiction was common. Multiple addictions were also reported among few participants. Government has taken up several awareness activities to reduce addiction; especially among adolescents and school going children considering the deleterious effect of long-term addiction and substance abuse.

During the survey, chronic diseases were reported among more than one-tenth of the population. Chronic diseases are the leading cause for premature deaths among elderly population and the probability of having chronic diseases are 1.15 times higher in urban population than in rural counterparts.(21) Nearly 95% of the population in the surveyed population had good immune status. A survey study conducted among children of 7-9 years age group in urban areas of Chennai district showed that food based approach is beneficial in improving the immune status of the children irrespective of deficiency condition or illness. (22)More than one-fifth of the female population reported as having irregular menstruation and a large percentage of them had complaints with menstrual flow. Neglect of menstrual health issues can lead to poor reproductive and sexual health in females. A study conducted among adolescent school girls in rural Tamil Nadu showed that, 87.7% of the girls had at least one menstrual problem; of which, 78.5% could not attend

school during menstruation and 51.1% were unable to perform household/sports activities ($p < 0.001$).(23) Awareness on Healthy diet, hygiene and lifestyle practices is essential for good menstrual and general health. As part of the survey study, Haemoglobin level, Blood Sugar level and Blood pressure were evaluated among the population. Haemoglobin level was low in a large percentage of population. The National Family Health Survey-5 (2019-21) shows that in Tamil Nadu, 53. 4% of women in the 15-49 age group are anaemic, and the figure for rural women is four percentage points higher than their urban counterparts. (24) Random blood sugar level was normal only in half of the population. As per previous studies, in India, risk factors, including unhealthy dietary practices, high levels of systolic blood pressure, fasting plasma glucose, total cholesterol, and body mass index together, were responsible for about one-quarter of Disability-adjusted life years. (25)

Visit to health care facilities for NCD treatment was higher than that for Communicable diseases and other conditions. Treatment choices could differ across castes due to disparities in health beliefs and practices, discrimination by health care providers, and varying returns to health-related investments.(26)A survey on NCD's conducted in Tamil Nadu showed that 18.1% of respondents had at least one NCD and that majority of the patients with hypertension and/or diabetes received treatment from a public health facility (68.2%) followed by private health-care services(31.8%) at village/town level.(27)As per previous studies, substantial proportion of households face severe burden and subsequent financial hardship due to NCD related expenditures. Concerted efforts are indispensable to augment the financial risk protection to the families, especially in regions with higher burden of NCDs.(28)Potential of traditional medicine like Ayurveda has to be tapped well for addressing the growing concern of chronic illnesses like NCD's. Public health programmes should be able to deliver patient centric treatment by devoting more time in imparting awareness and counselling patients on the importance of early diagnosis, early treatment and persistent medication, especially in case of chronic diseases.

Limitations

The households and individual respondents in survey were selected by convenient sampling method; thus there is limitation in getting the exact representation of study population. The study was carried out on working days and as a result, students and working section of the population were missed out during house to house survey.

Funding sources

The study was funded under Ayurveda Mobile Health Care Programme under Scheduled Caste Sub Plan for the year 2022-23 by Ministry of Ayush, Govt.of India.

Conclusion

This study explores the health status and health-related demographics of the Scheduled Caste population in selected areas of Chennai and Chengalpet Districts in Tamil Nadu. Adequate housing facilities with provisions for drinking water and sanitation must be accessible throughout Tamil Nadu, regardless of residents' socio-economic status. Despite various measures by authorities, female education levels and workforce participation remain significantly lower than those of males. Regular health screenings for chronic diseases are crucial for early detection and intervention. Conditions such as severe anaemia require utmost attention and prioritisation in healthcare. The study highlights the importance of planning and implementing health education and awareness programs that target all segments of the community. Integrating all systems of medicine into public health initiatives is essential to address the increasing burden of non-communicable diseases (NCDs).

Acknowledgments

The authors hereby acknowledge to the Director General, Programme officers, Nodal officers of CCRAS, Assistant Director of the centre for their support and valuable suggestions to complete the programme. We are also thankful to SCSP team for their contribution and documentation for successful completion of this study. We extend our sincere gratitude to officials of Greater Chennai Corporation and Chengalpet District for their support and cooperation throughout the study.

References

1. https://www.census2011.co.in/scheduled-castes.php dated 14-12-2023 time 20:30 IST
2. https://www.tn.gov.in/scheme/beneficiary_wise/6?page=2 dated 14-12-2023 time 21:05 IST
3. Ranjith Kumar A, Rural and Urban Disparities of Scheduled Caste Population: A Study with Special Reference to Viluppuram District, Tamil Nadu, Journal of Social Science Research,2020;Vol. 16 ISSN: 2321-1091
4. Subramaniam S. Inequities in health in India and Dalit and Adivasi populations. Health inequities in India: A synthesis of recent evidence. 2018:97-120.
5. George S. Reconciliations of caste and medical power in rural public health services. Economic and Political Weekly. 2019 Oct 5;54(40):43-50.
6. Kalyani S. Manual Scavenging in Urban Tamil Nadu: An Indelible Blot on Dalit Women with Respect to Caste Discrimination. Contemporary Voice of Dalit. 2023 Sep 18:2455328X231179799
7. Ravindran TS, Balasubramanian P, Mini GK. Inequities in health in Tamil Nadu: A study of Dharmapuri District. Rural Women's Social Education Centre (RUWSEC). www. ruwsec. org/ uploads/54. pdf. 2014.
8. WilodVersprille JF , L., J A E van de Loo, A., Mackus, M., Arnoldy, L., A L Sulzer, T., Vermeulen, S. A., Abdulahad, S., Huls, H., Baars, T., Scholey, A., Kraneveld, A. D., Garssen, J., &Verster, J. C.

(2019). Development and Validation of the Immune Status Questionnaire (ISQ). *International journal of environmental research and public health*, *16*(23), 4743. https://doi.org/10.3390/ijerph16234743

9. https://en.wikipedia.org/wiki/Adi_Dravida dated 15-12-2023 time 19:03 IST
10. Sasintha, G. Ph.D. and Yoganandham, G. "Status, Survival And Current Dilemma Of Schedule Caste Arundhathiyar Women In Ranipet District Of Tamilnadu," International Review of Business and Economics, 2020;Vol. 4: Iss. 2, Article 65
11. Wargocki P,The Effects of Ventilation in Homes on Health,International Journal of Ventilation, 2013;12:2,101-118
12. https://www.ndtv.com/chennai-news/despite-searing-heat-piped-water-supply-cut-by-40-per-cent-in-chennai-2055480 dated 15-12-2023 time 22:08 IST
13. TNUSSP, 2022. Assessment of Community and Public Toilets in Chennai, March 2022, dated 15-12-2023 time 22:32 IST
14. https://www.tnurbantree.tn.gov.in/under-ground-drainage-scheme/ dated 17-12-2023 time 15:32 IST
15. https://www.census2011.co.in/census/state/tamil+nadu.html dated 17-12-2023 time 19:05 IST
16. https://cms.tn.gov.in/sites/default/files/documents/TN_youth_policy_e_120418.pdfdated 17-12-2023 time 20:25 IST
17. https://www.newindianexpress.com/states/tamil-nadu/2023/aug/13/18-monthson-panel-yet-to-ready-anti-child-marriage-sop-in-tn-2604775.htmldated 17-12-2023 time 20:37 IST
18. https://www.censusindia.co.in/states/tamil-nadudated 17-12-2023 time 19:05 IST
19. Kumar, A. Ranjith. "Rural and Urban Inequality in Access to Education among Scheduled Castes in Tamil Nadu." Arts Social Sci J 12 ,2021; 485.
20. https://www.thehindu.com/opinion/op-ed/a-gender-paradox-in-tamil nadu/article67139580.ece dated 18-12-2023 time 20:32 IST
21. Jana A, Chattopadhyay A. Prevalence and potential determinants of chronic disease among elderly in India: Rural-urban perspectives. PLoS One. 2022 Mar 11;17(3):e0264937.
22. Sangeetha N, Premakumari S. Effect of micronutrient supplementation on the nutritional and immune status of school-going children with iron deficiency anemia. Int J Nutr Metab. 2010;2:45-55.
23. Ravi, Rama, Shah, Pankaj B., Edward, Shanthi, Gopal, Palani and Sathiyasekaran, B.W.C.. "Social impact of menstrual problems among adolescent school girls in rural Tamil Nadu" International Journal of Adolescent Medicine and Health, 2018,;vol. 30, no. 5, pp. 20160088.
24. https://timesofindia.indiatimes.com/city/chennai/why-tamil-nadus-anemia-battle-needs-to-be-fortified/articleshow/99754831.cms dated 19-12-2023 time 19:06 IST
25. https://tnhsp.org/tnhsrp/images/files/TNHSRP%20Strategy%20for%20Non%20communicable%20Diseases.pdf dated 19-12-2023 time 22:26 IST
26. Nancy Luke, KaivanMunshi, Social affiliation and the demand for health services: Caste and child health in South India, Journal of Development Economics, 2007;Volume 83, Issue 2, Pages 256-279
27. Rajalakshmi M, Dongre AR. Risk factors for non-communicable diseases in villages of Tamil Nadu-A survey. Int J Med Sci Public Health. 2019 Oct 9;8:312-8.
28. Verma VR, Kumar P, Dash U. Assessing the household economic burden of non-communicable diseases in India: evidence from repeated cross-sectional surveys. BMC public health. 2021 May 7;21(1):881.

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