Int J Ayurvedic Med,Vol 17 (1), 2026; 173-177

Ayurveda Sahiti Prabha's

International Journal of Ayurvedic Medicine

ISSN No: 0976-5921

Research Article

Socio-Demographic Characteristics and Health Status of Schedule Caste Women and Children in Rural Punjab – A Cross-Sectional Survey Study

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Received: 02-08-2025 Accepted: 16-03-2026 Published: 31-03-2026

Abstract

Background: Scheduled Caste (SC) communities of rural areas face challenges in accessing healthcare, particularly impacting women and children. 31.94% of the Punjab's population belongs to SC, nearly half are females, with the majority residing in rural areas. This study aimed to assess the socio-demographic conditions, health status and health-seeking behavior of the SC women and children. Methodology: A cross-sectional observational study was conducted from April 2022 to March 2023 in ten SC-dominated villages in Patiala and Fatehgarh Sahib Districts of Punjab. Data was collected from SC women and children through survey questionnaires and interviews conducted through door-to-door surveys. Results: It was found that52.01% were *Pucca* houses.99.67 % of houses had clean drinking water, 97.76 % had toilet facilities and96.75% had inadequate drainage facilities. The average age of marriage was 19.63 years and the divorce rate is significantly low (0.31%). 43.36% of SC women were illiterate, mostly above 35 years old. In this study, 85.02% of women were multipara and 8.49% were grand multipara, with an average of 2.54 pregnancies and a mortality rate of 0.04%.79.72% of children up to 5 years old were adequately nourished. Precocious puberty was not observed. Conclusion: Most of the households had potable water facilities and toilets but with inadequate drainage systems. Almost all the children were attending school and enjoying good health, few women held formal jobs. Menstrual health of females was good with very few cases of early menopause. Multiparty was common with a low mortality rate.

Keywords: Cross-sectional study, Demography, Health Status, Reproductive, Rural, Scheduled Caste

Access this article online

Website: https://ijam.co.in

DOI: https://doi.org/10.47552/ijam.v17i1.6424

Introduction

In rural areas, people from Scheduled Caste (SC) communities face many difficulties getting good healthcare. This affects the health of women and children. Even though healthcare has improved, where they live still affects their health and have fewer opportunities.SC population of India lives in 31 different states and union territories across the country and represents the most backward and deprived section of the society. A previous study states that among the people living in poverty, Scheduled Castes formed the largest segment of those who faced significant deprivation. (1)

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The number of SC people has been steadily increasing. According to the 1941 census the population of SC was around 48 million, and in the latest 2011 census, it went up to 1,028,610,328 million and, more than three-fourths, still live in rural areas. In Punjab, about 31.94% of the total population belongs to the SCs, the highest compared to other states of India. Among the SCs in Punjab, almost half, around 47.63%, are females, and most of these females, approximately 73.47%, live in rural areas. (2) In developing countries aiming to achieve the goals set by the United Nations, such as better health for women and children, there are big concerns about inequalities based on money and status. India is struggling with these differences in health outcomes between rich and poor families. (3)

Caste and social status strongly influence the health of women in India because the caste system is still widely followed. For a long time, the hierarchy in castes has been deeply rooted, keeping lower caste groups like SCs, STs, and OBCs outside the mainstream of society and depriving them of many health aspects. Researchers have found that differences in money and social status among people can affect the health of women and children. (4,5) It has also been observed that women and children from

Scheduled Castes and Scheduled Tribes tend to have worse health outcomes compared to other caste groups.(6,7) Different things such as income, education, occupation, access to sanitation, and housing conditions, among others, make up socio-demographic parameters. These factors affect health outcomes and influence disease prevalence and severity, nutritional status, maternal and child health, and well-being within marginalized communities. It is important to understand how things like money, education, and where people live affect the health of SC women and children. Since enough research has not been done on this area, this study may fill gaps in existing knowledge

Objectives

The objective of the study was to assess socio-demographic characteristics, health status including menstrual & reproductive health and health seeking behavior of the target population.

Methods

Study design and settings

This study was a cross-sectional observational study conducted in ten villages/areas viz. *Devgarh, Karhali Sahib, Dakala, Balbhera, Duggal Khurd, Duggal Kallan, Talwandi Malik* (Patiala district) and *Bhamarsi, Fatehgarh Channa, Salana Dulla Singh Wala* (*Fatehgarh Sahib* district). The study was carried out from April 2022 to March 2023 after visiting the selected villages to collect data on the households, women and children. The IEC clearance no. of the survey study is F.No. 8-24(1)/2022-CARI/Tech./RCH/WCH-SCSP/19 date 18/4/22.

Study population

Women aged18 & above 18 years and children less than 18 years belonging to the scheduled caste population of selected villages/areas were included.

Variables

The study objectives focused on investigating various variables related to the health and living conditions of the SC population in rural areas. The outcomes examined living conditions such as house types (*pucca, semi-pucca, kutcha*), drinking water sources, toilet and drainage facilities and health related outcome variables such as menstrual health, reproductive health, immune status and vaccination status. Analyzed exposure variables included geographical location (village/region), household size, and socio-economic factors to understand their impact. Predictors such as age, gender, educational status, and healthcare seeking behavior were studied for their potential influence on the outcomes.

Data Sources/Measurement

Data collection commenced after getting approval from the Institutional Ethics Committee and permission from the *Sarpanches* of the concerned villages. Detailed information was provided to the *Sarpanches*. The majority of willing households (SC) identified in the *Panchayat* were included. Data was gathered using semi-structured survey questionnaires and through village inspection. Door to door survey was conducted to collect the data of SC women and children. The survey questionnaires gathered information about villages, households and each adult woman (SC) aged 18 &above 18 years and children aged less than 18 years in the households. The Immune Status Questionnaire (ISQ) was used for immune status assessment and participants were marked '< 6' ISQ score as reduced immune status. The nutritional status of children up to 5 years was measured with colour coded Mid Upper Arm Circumference (MUAC) Tape.

Study size and sampling methods

This research oriented public health care programme was executed by Central Council for Research in Ayurvedic Sciences (CCRAS) in SC-dominated areas. The sample size of 6000 population of SC women and children was decided based on the convenience sampling method of the available population in the selected villages of the study site. All the SC population who was available and willing to participate in the survey study were included in the study and data was collected.

Statistical methods

A descriptive statistical analysis was done and the descriptive traits were represented by numbers (percent).

Results:

A comprehensive study survey of 1517 households of the SC population across 10 preselected villages was carried out and a total of 6028 members of the SC community were covered under the survey. The details of the participants are given in Table No. 01.

Table 01: Distribution of SC population surveyed

	Gender (Age group)
	Male child (<18 years)
	Female child (<18 years)
	Females (18 & >18 years)
	Total

General observation about the villages

The surveyed villages were predominantly inhabited by the SC population and had basic healthcare facilities. Government primary and middle schools were present in most villages for education. Water facilities provided by the Government were available. The open spaces around the villages were used for garbage disposal and there was no drainage facility for sanitation. Most roads were made of concrete.

Demographic profile of the households

The demographic data profile of 1517 surveyed houses of villages regarding type of houses such as *Pucca* houses (houses with walls and roof made of bricks, stones, cement and concrete), Semi *pucca* houses (houses with fixed walls made up of *pucca* material but roof is made up of bamboos and mud etc.) and *Kutcha* house ((house with walls, floor and roof is made up of material like bamboos, mud, thatch, loosely packed stones, etc.) was recorded in prescribed format. (8) The average area per house was (sq.ft) 726.97. The average number of family members in a house was 5.94. The details of the demographic characteristics of houses are given in Table No. 02.

Demographic profile of women aged 18 years and above(n=3185)

A total of 3185 females (age 18 years & above) were surveyed during the study. The details of the demographic profile of women are given in Table No. 03.

Demographic profile of children of age less than 18 years (n=2843)

Data of a total of 2843 children of age less than 18 years was collected out of which 1471 (51.74%)were male children and 1372 (48.26%) were female children are given in Table No. 04.

Table 2: Demographic characteristics of households (n=1517)

S.no	Variables	Number (%)
1	**Types of houses**	
	Kutcha	70 (4.61)
	Semi Pucca	658 (43.38)
	Pucca	789 (52.01)
2	**Availability of clean drinking water**	
	Yes	1512 (99.67)
	No	05 (0.33)
3	**Toilet Facility**	
	Inside the house/plot	1483 (97.76)
	Public Toilet	21 (1.38)
	Open Field	13 (0.86)
4	**Drainage Facility**	
	Closed (Covered)	49 (3.23)
	Open gutters	1465 (96.57)
	Indiscriminate disposal in open	3 (0.20)

Table 3: Demographic profile of women of 18 & above18 years (n=3185)

S.no.	Variables	Number(%)
1	**Age**	
	18 to <40	1797 (56.42)
	40 to <60	884 (27.76)
	60 and above	504 (15.82)
2	**Marital status**	
	Single	487 (15.29)
	Married	2394 (75.16)
	Divorcee	10 (0.31)
	Other (Widow)	294 (9.24)
3	**Education status**	
	Illiterate	1381 (43.36)
	Primary (5thclass)	416 (13.06)
	Middle (8th class)	305 (9.57)
	High School (10th class)	420 (13.19)
	Intermediate or diploma	391 (12.28)
	Graduate & above	271 (8.51)
	Other (without school education read & write)	1 (0.03)
4	**Occupation**	
	Unemployed (able to work)	223 (7.00)
	Unemployed (unable to work)	208 (6.53)
	Unorganized	285 (8.95)
	Organized Private	94 (2.95)
	Government	15 (0.47)
	Student	279 (8.76)
	Homemaker	2074 (65.12)
	Self-employed	6 (0.19)
	Other (retired/pensioners)	1 (0.03)

Table 4: Demographic profile of children of age less than 18 years (n=2843)

S.no	Variables	Gender	
1	**Age**	**Male Child Number (%)**	**Female Child Number (%)**
	0-5	269 (9.46)	298 (10.48)
	5-<18	1202 (42.28)	1074 (37.78)
2	**Education status**		
	Not applicable (as age <6 years)	346 (12.17)	373 (13.12)
	Illiterate	3 (0.11)	0 (0.0)
	Primary (5thclass)	352 (12.38)	351 (12.35)
	Middle (8th class)	288 (10.13)	236 (8.30)
	High School (10th class)	210 (7.39)	194 (6.82)
	Intermediate or diploma	246 (8.65)	202 (7.11)
	Graduate & above	26 (0.91)	16 (0.56)
3	**Occupation**		
	Not applicable (as age <5years)	346 (12.17)	373 (13.12)
	Unemployed (able to work)	1 (0.04)	0 (0.0)
	Unemployed (unable to work)	2 (0.08)	0 (0.0)
	Unorganized	8 (0.28)	4 (0.14)
	Organized Private	13 (0.46)	0 (0.0)
	Government	0 (0.0)	0 (0.0)
	Student	1101 (38.73)	978 (34.40)
	Homemaker	0 (0.0)	17 (0.60)
	Self-employed	0 (0.0)	0 (0.0)

Health status of study participants

The health profiles of the study participants were analysed using various parameters and the details of the health status of study participants are given in Table No. 05.

Table 5: Health status of study participants

S.no.	Variables	Number (%)
1	**History of Chronic disease (n=6028)**	
	Present	198 (3.28)
	Absent	5830 (96.72)
2	**Vaccination status of Pregnant women (n=41)**	
	Tetanus toxoid vaccine-1	12 (29.27)
	Tetanus toxoid vaccine-2	28 (68.29)
	Tetanus toxoid vaccine-Booster	1 (2.44)
3	**Vaccination Status of children (n=2843)**	
	Whether Appropriate as per age	2840 (99.89)
	Incomplete	3 (0.11)
4	**Immune status of the participants (n=6028)**	
	More than 6 ISQ Score	5979 (99.18)
	Less than 6 ISQ Score	49 (0.81)
5	**Nutritional status of children upto 5 years age (n=567)**	
	Adequate nutrition (Green)	452 (79.72)
	Moderate acute malnutrition (Yellow)	106 (18.69)
	Severe acute malnutrition (Red)	9 (1.59)

Menstrual status of females (Table No.06, 07 and 08)

The menstrual history of all surveyed females was documented to analyse the early menarche, appropriate age of menarche, delayed menarche, menstrual health and menopause. Findings of analysis of the menstrual history of female children less than 18 years showed that menarche was not observed in girls under the age of 9 years and no girls were found with delayed menarche. Most of the girls experienced painless, regular menstrual bleeding with a normal flow. Analysis of menstrual history data for women between 18-55 years of age revealed that the majority of menstruating women had painless, regular cycles with normal menstrual flow. Only 0.03% of women experienced premature menopause, while late menopause was not observed in the study population.

Table 6: Menstrual history of female children of age less than 18 years (n=1372)

S.no.	Variables	Up to 9 years (n=647)	10-15 years (n =473)	>15-<18 years (n=252)	Total (n=1372)
1	**Attainment of menarche (n=1372)**				
	Yes	0 (0)	340 (71.89)	252 (100)	592 (43.15)
	No	647 (100)	133 (28.11)	0 (0)	780 (56.85)
2	**Frequency (n=592)**				
	Regular	0 (0)	337 (56.93)	250 (42.23)	587 (99.16)
	Irregular	0 (0)	03 (0.51)	02 (0.34)	05 (0.84)
3	**Menstrual Pain(n=592)**				
	Painful	0 (0)	04 (0.68)	02 (0.34)	06 (1.01)
	Pain less	0 (0)	336 (56.76)	250 (42.23)	586 (98.99)
4	**Nature of menstrual bleeding(n=592)**				
	Scanty	0 (0)	06 (1.01)	03 (0.51)	09 (1.52)
	Excess	0 (0)	11 (1.86)	02 (0.34)	13 (2.20)
	Normal flow	0 (0)	323 (54.56)	247 (41.72)	570 (96.28)

Table 7: Menstrual history wise distribution of women between age of 18-55 years(n=3185)

S.no	Variables	No. (%)
1	Menstruating	2323
2	Amenorrhoea (Due to pregnancy)	41
3	Menopausal	821
Total		3185

Table 8: Menstrual characteristics of women by age (n=2323)

S.no.	Variables	Age (in years)			Total(n=2323)
1	**Menstrual characteristics**	**18-35 (n=1520)**	**36-55(n=803)**	**>55 (n=0)**	
a.	**Frequency**				
	Regular	1498 (64.49)	779 (33.53)	0 (0)	2227 (98.02)
	Irregular	22 (0.95)	24 (1.03)	0 (0)	46 (1.98)
b.	**Menstrual pain**				
	Painful	03 (0.13)	04 (0.17)	0 (0)	07 (0.30)
	Painless	1517 (65.30)	799 (34.40)	0 (0)	2316 (99.70)
c.	**Nature of menstrual bleeding**				
	Scanty	23 (0.99)	43 (1.85)	0 (0)	66 (2.84)
	Excess	19 (0.82)	11 (0.47)	0 (0)	30 (1.29)
	Normal flow	1478 (63.62)	749 (32.24)	0 (0)	2227 (95.87)

Reproductive history of females

The reproductive history data of all married women (n=2698) were collected and analyzed, revealing that the average age at first marriage was 19.63 years but many older women were married before the age of 18 years. 1.47 % of females had a history of hysterectomy among all surveyed women. No history of hysterectomy was observed among females aged less than 40 years. The details of the reproductive history of females are given in Table No. 08.

Health care seeking trends of the study participants

Data regarding the frequency of visits to healthcare facilities per month for individuals residing in each household was gathered. It was observed that only 1.96% of residents visited healthcare facilities, mainly for infectious diseases. The average monthly expenditure incurred to manage health issues was 1231.91 rupees. Most of the study participants (99.67%) were given their preference for Ayurveda for health issues.

Table 8: Reproductive history of females

S.no.	Variables	Number (%)
1	**Age of First marriage wise distribution (n=2698)**	
	<18 years	442 (16.38)
	18 -30 years	2250 (83.40)
	> 30 years	06 (0.22)
2	**Parity (n=2698)**	
	Nullipara	175 (6.49)
	Multipara (<5 children)	2294(85.02)
	Grand multipara (5 and >5	229(8.49)
3	**Obstetric History (per married**	
	Pregnancies	2.54
	Child births	2.52
	Live births	2.48
	Dead births	0.04
	Normal delivery	2.45
	LSCS	0.07
	Abortions	0.01

Discussion

In the current survey, it was observed that 99.67 % of houses had the availability of clean drinking water facilities and 97.76 % of households had the toilet facility inside their houses. This finding is supported by the NFHS of Punjab state as most of the rural population has potable drinking water and sanitation facilities in rural population. (9) Unfortunately, drainage facilities in these villages are notably inadequate, with 96.75% of households relying on open gutters for drainage.

The divorce rate is significantly low; standing at just 0.31%. This view to justify why rural women may be less likely to seek divorce is the strong influence of traditional and cultural values in rural communities. These values often prioritize family unity and stability and limited resources for legal aid, and social norms may play a role in why rural women may be less inclined to pursue divorce. In India, divorce rates vary across regions. Studies indicate that the Northern states generally experience lower rates of divorce compared to the Southern and Northeastern regions. (10) Additionally, divorce rates are more in urban areas compared to rural areas.(11) Furthermore, education plays a crucial role in empowering women to dissolve unhappy marriages.(12) These findings highlight the way different things work together such as socio-cultural factors, regional differences, and education, in shaping marriage dissolution patterns in India. Findings of education status reveal that most of the SC women 43.36% were illiterate and mostly were above 35 years of age. This finding aligns with a study in Punjab that highlighted the significantly lower education levels among SC women compared to women from upper castes. (13) According to this survey, all children under 18, regardless of gender, attend school based on their education status. Education plays a crucial role in advancing the population. It prepares individuals with the knowledge, skills, and information necessary for development. Therefore, it's valuable to explore the impact of education on the upliftment of the SC community in Punjab. The state's education system is primarily publicly funded, with special provisions for SC students, except in unaided schools and colleges. Consequently, there has been a substantial shift in the literacy rate among SCs over the last two to three decades. The literacy rate among SCs has quadrupled from 1971 to 2011. (14) Recent literacy data reflect substantial progress among Punjab's SC population from 1991 to 2011. The overall literacy rate for SCs, which stood at 41.1% in the 1991 census, increased to 64.81% according to the 2011 Census.(15)

In terms of health status, it was found that the rural SC women and children experienced good and progressive health outcomes as most of the study participants 99.19% showed an ISQ score of more than 6 indicating normal immune status. Pregnant women were found to have been vaccinated for tetanus. Children are also being vaccinated.79.72% of children up to 5 years of age were adequately nourished. Early and delayed menarche was not observed. Most girls under 18 years old had painless, regular menstrual cycles with normal bleeding flow. Similarly, most women experienced painless, regular menstrual cycles with normal bleeding flow.

During the study survey, it was observed that 16.38% of women in the elderly age group were married before reaching the legal age. The age at marriage significantly impacts women's reproductive health status, as marrying at a younger age extends a woman's reproductive span, subsequently enhancing fertility. As per the WHO the reproductive span for women typically ranges from 15 to 49 years, totalling 35 years. Therefore, one determining factor influencing the number of children a woman may have during her reproductive years is the age at which she enters marriage.

In this study, it was observed that 85.02% of women were multipara, having given birth to multiple children, and 8.49% were grand multipara. This suggests that early marriage leads to women having more children, as they have more time to have pregnancies during their reproductive years. Illiterate women constitute an especially vulnerable segment within the community. They face disempowerment; struggle to articulate their preferences regarding contraceptive use, and encounter limited access to healthcare services.(16) The study of human reproductive health status holds a central position in population studies for several reasons. Fertility and mortality are the primary components contributing to population growth. The current study also revealed that the average number of pregnancies was 2.54% compared to a mortality rate of 0.04%. The rate of delivery through LSCS was very low, at 0.07% among the surveyed population. This could be due to challenges in assessing healthcare promptly and its unavailability. Despite good and progressive health outcomes for SC women and children, there is a minimal frequency of visits to healthcare centres per month. Around 99.67% preferred Ayurveda for addressing their health issues.

Conclusion

The present study found that most of the houses of the SC population had the availability of clean drinking water and toilet facilities but inadequate drainage systems. Although most children attend school and enjoy good health, few women hold formal jobs. Regarding the education status of the SC women, 43.36% were illiterate and most were above 35 years of age. So the present study recommends the need of an increase in the literacy rate among the population. There are also a few cases of early menopause among women, while multiparity is common with a low mortality rate. The rate of delivery through LSCS was low. The health status of children below 5 years of age was found satisfactory.

Limitations

Self-reported data and optional participation have their own limitations in this study like refusal to take part, unreliable data

due to inaccurate reporting or misinformation. Lastly, since the study depends on respondent interviews, there is a possibility of misreporting due to recall bias. Another limitation is the absence of data on many other variables like age of onset of menarche and menopause, detailed menstrual history etc could have varying impacts on menstrual and reproductive health. Specific bio indicators may be included in the study to make an association of health status with other demographic statuses.

Interpretation

The findings provide a comprehensive view of the socio-demographic status and health status of the SC population. It also provides an essential understanding of their living conditions and access to education and healthcare services. Health status is positive. Menstrual and reproductive health is better than in urban areas.

Generalizability

The study was focused on specific villages and demographics, which might restrict the broader applicability of the findings to other populations or regions. To make the information more useful for everyone, future studies may be planned, including a wider range of people from the SC community.

Acknowledgements

The authors are grateful to the Director General, CCRAS, for his guidance and for providing all necessary aids for the smooth functioning of this study. We are also thankful to the State Government of Punjab, the WCH-SCSP team, *Sarpanch* and *Panchayat* members of the selected villages, staff of different schools and *Anganwadis* and the public of these villages/areas for their active involvement and cooperation during the survey.

Financial support and sponsorship: This work was supported and funded by CCRAS, New Delhi.

Conflicts of Interest: Nil

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