Population, health and nutrition profile of the Scheduled Tribes in India: a comparative perspective, 2016–2021

S. V. Subramanian[a,b,*] and William Joe[c]

[a]Harvard Center for Population and Development Studies, 9 Bow Street, Cambridge, MA 02138, USA
[b]Department of Social and Behavioral Sciences, Harvard T. H. Chan School of Public Health, Boston, MA, USA
[c]Institute of Economic Growth, Delhi University Enclave, North Campus, Delhi 110007, India

The Lancet Regional Health - Southeast Asia 2024;20: 100266

Published Online 30 August 2023
https://doi.org/10.1016/j.lansea.2023.100266

Introduction

The Scheduled Tribes (ST) are recognized under Article 342 of the Constitution of India.[1] But despite specific policy provisions, health and socioeconomic underdevelopment has been a long-standing policy concern with the ST population,[2] who account for 8.6% of India's population.[3] The commitment of India to the 2030 Sustainable Development Goals (SDGs) provides a new catalyst to promote the welfare of STs, especially as India still has some distance to cover with regard to its progress on SDGs.[4]

Various policies and programmes of the Ministry for Tribal Affairs, the National Commission for Scheduled Tribe (NCST), and the Scheduled Tribe Component (STC or previously known as Tribal Sub-Plan) focus on the development of the ST population.[4,5] These initiatives have twin objectives: (a) faster progress among the ST population on health and welfare priorities and (b) reducing disparities between ST and Non-ST populations. Realizing these goals necessitates robust tracking of the performance and progress of the ST population. The Census of India 2011 enumerates ST population of more than 104 million, affiliated across 705 notified ethnic groups. Recognizing this, the Report of the Expert Committee on Tribal Health calls for segregated analysis and dissemination of available data.[3,6]

The India ST Factsheet presents an analysis of key population and health indicators to reflect the status and progress of the tribal community (Table 1). The Factsheet uses data from the fourth (2015–2016, hereafter 2016) and fifth (2019–2021, hereafter 2021) waves of the National Family Health Survey (NFHS) and provides performance measures of STs, Non-STs and total population for 129 indicators following the commonly used NFHS factsheet.[7] The change in performance for ST population between 2021 and 2016 is also shown to highlight indicators that are improving or worsening.

Progress among STs between 2016 and 2021

Between 2016 and 2021, the ST population registered improvements in 83 of the selected indicators in the domains of population, health, and nutrition (Table 1). During these years, Scheduled Tribes experienced major improvements in access to improved sanitation facilities (an increase of 30.4 percentage points between 2015–2016 and 2019–2021). Similarly, more births are now being attended by skilled health personnel (an increase of 13 percentage points) and full vaccination coverage among children aged 12–23 months (an increase of 18.6 percentage points). The civil registration of births among the ST population also increased from 76% in 2016 to 88% in 2021.

Status of STs and Non-STs in 2021

In 2021, for most of the indicators (81 out of 129), the Non-ST population were better off than the STs (Table 1), who remained disadvantaged regarding the status of women, as well as prominent public health concerns such as child undernutrition, anemia, incomplete basic vaccination coverage, and fertility and mortality differentials. Nevertheless, the ST population outperformed the Non-STs in 48 of the 129 indicators, including overall sex ratio, sex ratio at birth, utilization of family planning services, better treatment adherence during pregnancy, and proper breastfeeding practices. The ST population also had a lower prevalence of diabetes and hypertension.

We categorized the 129 indicators into 10 thematic domains of health and well-being to assess the relative performance of STs and Non-STs in 2021 (Supplementary Fig. S1). The scatterplot compares the count of indicators within each domain for which the ST population outperforms the Non-STs and vice versa.

Except for indicators related to Non-Communicable Diseases (NCDs) among adults, all domains reveal a disadvantaged position for the Scheduled Tribes. Domains where they are more vulnerable deserve concerted policy engagement. The under-five mortality rate among STs continues to be high at 50 per 1000 live births. Child undernutrition is also a major concern, as over 40 percent of ST children below five years are stunted, and a similar percentage are underweight. Additionally, there are new emerging challenges for the ST population. Between 2016 and 2021, the prevalence of elevated blood pressure among ST men and women

*Corresponding author. Harvard Center for Population and Development Studies, 9 Bow Street, Cambridge, MA 02138, USA.
E-mail addresses: svsubram@hsph.harvard.edu (S.V. Subramanian), william@iegindia.org (W. Joe).

Indicators	ST (2021)	Non-ST (2021)	ST Better than non-ST (2021)	ST Change (2021-2016)	
Population and Household Profile					
Children age 2 to 4 years attending pre-primary education	43.2	37.0	●		
Children under age 5 years whose birth was registered with the civil authority	87.9	89.2	●	12.2	●
Deaths in the last 3 years registered with the civil authority	67.1	74.5	●		
Female population age 6 years and above who ever attended school	61.5	72.9	●	4.0	●
Households using clean fuel for cooking	31.2	58.7	●	14.9	●
Households using iodized salt	93.5	94.4	●	1.9	●
Households with any usual member covered in a health insurance/financing scheme	48.1	39.7	●	17.3	●
Population below age 15 years	28.7	26.3	●	-3.0	●
Population living in households that use an improved sanitation facility	56.3	71.4	●	30.4	●
Population living in households with an improved drinking-water source	86.3	96.7	●	3.2	●
Population living in households with electricity	94.5	97.0	●	12.1	●
Sex ratio at birth for children born in the last five years (females per 1,000 males)	969	923	●	-22.0	●
Sex ratio of the total population (females per 1,000 males)	1030	1019	●	17.0	●
Characteristics of Adults					
Men who are literate	75.2	85.3	●	-0.4	●
Men who have ever used the internet	42.4	58.7	●		
Men with 10 or more years of schooling	35.5	51.7	●	5.3	●
Women who are literate	58.3	72.8	●	5.3	●
Women who have ever used the internet	20.6	34.6	●		
Women with 10 or more years of schooling	26.4	42.5	●	6.2	●
Marriage and Fertility					
Adolescent fertility rate for women age 15 to 19 years	51.2	42.0	●	-15.0	●
Men age 25-29 years married before age 21 years	24.9	16.5	●	-5.3	●
Total fertility rate (children per woman)	2.1	2.0	●	-0.4	●
Women (15-19 years) who were already mothers or pregnant at the time of survey	8.7	6.6	●	-1.8	●
Women age 20-24 years married before age 18 years	25.8	21.9	●	-6.4	●
Infant and Child Mortality					
Infant mortality rate (IMR)	41.6	34.5	●	-2.8	●
Neonatal mortality rate (NNMR)	28.8	24.5	●	-2.5	●
Under-five mortality rate (U5MR)	50.3	40.9	●	-6.9	●
Current Use of Family Planning Methods (currently married women, 15–49 years)					
Any method	64.4	67.0	●	15.0	●
Any modern method	55.1	56.6	●	10.1	●
Condom	5.0	9.9	●	2.7	●
Female sterilization	40.3	37.7	●	3.8	●
Injectable	0.5	0.6	●	0.4	●
IUD/PPIUD	2.3	2.1	●	1.1	●
Male sterilization	0.7	0.3	●	0.2	●
Pill	5.0	5.1	●	0.8	●
Unmet Need for Family Planning (currently married women age 15–49 years)					
Total unmet need	9.5	9.6	●	-3.5	●
Unmet need for spacing	4.4	3.9	●	-1.8	●
Quality of Family Planning Services					
Current users ever told about side effects of current method	65.6	62.0	●	22.4	●
Health worker ever talked to female non-users about family planning	23.3	16.2	●	0.3	●
Maternal and Child Health					
Average out-of-pocket expenditure per delivery in a public health facility (Rs.)	2565	3234	●	91.0	●
Mother and Child Protection card received	96.3	95.9	●	6.1	●
Mothers who consumed IFA for 100 days or more when they were pregnant	45.3	44.2	●	18.5	●
Mothers who consumed iron folic acid for 180 days or more when they were pregnant	25.2	26.3	●	14.6	●
Mothers who had an antenatal check-up in the first trimester	68.6	70.4	●	14.9	●
Mothers who had at least 4 antenatal care visits	58.6	59.4	●	12.4	●
Mothers who received postnatal care from a health personnel within 2 days of delivery	71.6	78.0	●		
Mothers whose last birth was protected against neonatal tetanus	91.5	92.7	●	5.6	●
Delivery Care (for births in the 5 years before the survey)					
Births attended by skilled health personnel	84.5	90.0	●	13.0	●
Births delivered by caesarean section	11.2	22.6	●	2.9	●
Births in a private health facility that were delivered by caesarean section	40.6	47.8	●	6.3	●
Births in a public health facility that were delivered by caesarean section	8.8	15.0	●	1.3	●
Home births that were conducted by skilled health personnel	5.6	3.4	●	-2.1	●
Institutional births	82.3	89.3	●	14.3	●
Institutional births in public facility	69.7	61.0	●	13.8	●
Child Vaccinations and Vitamin A Supplementation					
Children age 12-23 months who have received 3 doses of penta or DPT vaccine	85.4	87.2	●	11.9	●
Children age 12-23 months who have received 3 doses of penta or hepatitis B vaccine	82.1	84.6	●	25.2	●
Children age 12-23 months who have received 3 doses of polio vaccine	80.3	80.7	●	14.0	●
Children age 12-23 months who have received 3 doses of rotavirus vaccine	40.6	36.5	●		
Children age 12-23 months who have received BCG	94.2	95.4	●	5.5	●
Children age 12-23 months who received most of their vaccinations in a private health facility	2.5	5.5	●	-0.3	●
Children age 12-23 months who received most of their vaccinations in a public health facility	96.8	93.2	●	0.6	●
First dose of measles-containing vaccine	87.0	88.7	●	9.6	●
Full vaccination	74.4	76.9	●	18.6	●
Full vaccination (Source from card only)	81.2	82.7	●	5.9	●
Second dose of measles-containing vaccine	55.5	59.7	●		
Vitamin A dose in the last 6 months	73.4	68.2	●	9.3	●

(Table 1 continues on next page)

(Continued from previous page)

Indicators	ST (2021)	Non-ST (2021)	ST Better than non-ST (2021)	ST Change (2021-2016)	
Treatment of Childhood Diseases (children under 5 years of age)					
Children with diarrhoea taken to health facility	70.9	69.4	•	6.3	•
Children with diarrhoea who received ORS	65.7	60.0	•	10.4	•
Children with diarrhoea who received zinc	33.3	30.2	•	11.9	•
Children with fever or ARI taken to health facility	51.3	57.2	•	-22.5	•
Prevalence of ARI	2.4	2.8	•	0.2	•
Prevalence of diarrhoea	7.6	7.3	•	-0.5	•
Child Feeding Practices and Nutritional Status of Children					
Breastfeeding children age 6-23 months receiving an adequate diet	11.0	10.8	•	2.2	•
Children age 6-8 months receiving solid or semi-solid food and breastmilk	43.1	46.3	•	-0.7	•
Children under 5 years who are overweight (weight-for-height)	3.3	3.5	•	1.3	•
Children under 5 years who are severely wasted (weight-for-height)	9.2	7.5	•	-1.1	•
Children under 5 years who are stunted (height-for-age)	40.2	35.0	•	-3.6	•
Children under 5 years who are underweight (weight-for-age)	39.4	31.3	•	-5.9	•
Children under 5 years who are wasted (weight-for-height)	23.1	18.8	•	-4.3	•
Children under age 3 years breastfed within one hour of birth	46.6	41.8	•	1.3	•
Children under age 6 months exclusively breastfed	71.2	63.1	•	9.7	•
Non-breastfeeding children age 6-23 months receiving an adequate diet	13.2	12.4	•	5.1	•
Total children age 6-23 months receiving an adequate diet	11.2	11.1	•	2.5	•
Nutritional Status of Adults (age 15-49 years)					
Men who are overweight or obese (BMI ≥25.0 kg/m2)	14.3	23.2	•	4.5	•
Men who have high risk waist-to-hip ratio (≥0.90)	39.4	49.4	•		
Men whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m2)	18.4	15.8	•	-6.8	•
Women who are overweight or obese (BMI ≥25.0 kg/m2)	12.6	17.9	•	2.6	•
Women who have high risk waist-to-hip ratio (≥0.85)	53.1	57.0	•		
Women whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m2)	25.5	19.0	•	-6.3	•
Anaemia among Children and Adults					
All women age 15-19 years who are anaemic	67.0	58.3	•	7.0	•
All women age 15-49 years who are anaemic	64.6	56.2	•	4.7	•
Children age 6-59 months who are anaemic (<11.0 g/dl)	73.9	67.4	•	10.6	•
Men age 15-19 years who are anaemic (<13.0 g/dl)	41.5	29.9	•	3.4	•
Men age 15-49 years who are anaemic (<13.0 g/dl)	33.7	23.9	•	1.7	•
Non-pregnant women age 15-49 years who are anaemic (<12.0 g/dl)	64.8	56.4	•	4.8	•
Pregnant women age 15-49 years who are anaemic (<11.0 g/dl)	59.3	51.3	•	0.4	•
Blood Sugar Level among Adults (age 15 years and above)					
Blood sugar level - high (141-160 mg/dl) (Men)	6.8	8.0	•	3.1	•
Blood sugar level - high (141-160 mg/dl) (Women)	5.5	6.7	•	2.7	•
Blood sugar level - very high (>160 mg/dl) (Men)	4.9	23.9	•	1.5	•
Blood sugar level - very high (>160 mg/dl) (Women)	3.9	15.6	•	1.8	•
High or very high or taking medicine (Men)	12.1	16.0	•		
High or very high or taking medicine (Women)	9.9	14.0	•		
Hypertension among Adults (age 15 years and above)					
Elevated blood pressure or on medication to control blood pressure (Men)	22.3	24.4	•	7.5	•
Elevated blood pressure or on medication to control blood pressure (Women)	19.7	21.4	•	8.9	•
Mild elevated blood pressure (Men)	13.3	16.8	•	2.8	•
Mild elevated blood pressure (Women)	13.3	13.3	•	6.3	•
Moderate or severe elevated blood pressure (Men)	5.4	6.1	•	2.5	•
Moderate or severe elevated blood pressure (Women)	5.4	5.4	•	2.5	•
Screening for Cancer among Adults (age 30-49 years)					
Ever undergone a breast examination for breast cancer	0.4	0.9	•		
Ever undergone a screening test for cervical cancer	0.9	2.1	•		
Ever undergone an oral cavity examination for oral cancer (Men)	0.5	1.3	•		
Ever undergone an oral cavity examination for oral cancer (Women)	0.5	1.0	•		
Knowledge of HIV/AIDS among Adults (age 15-49 years)					
Men who have comprehensive knowledge of HIV/AIDS	24.5	31.3	•	0.6	•
Men who know that condom use can reduce the chance of getting HIV/AIDS	76.7	82.4	•	10.8	•
Women who have comprehensive knowledge of HIV/AIDS	20.0	21.7	•	5.7	•
Women who know that condom use reduces the chance of getting HIV/AIDS	63.8	68.8	•	20.5	•
Women's Empowerment (women age 15-49 years)					
Currently married women who usually participate in three household decisions	89.3	89.4	•	0.2	•
Women having a bank or savings account that they themselves use	75.0	78.9	•	30.5	•
Women having a mobile phone that they themselves use	39.9	55.4	•	9.1	•
Women owning a house and/or land (alone or jointly with others)	47.0	41.8	•	6.8	•
Women who use hygienic methods of protection during their menstrual period	65.4	78.6	•		
Women who worked in the last 12 months and were paid in cash	37.4	23.8	•	0.4	•
Gender Based Violence					
Ever-married women age 18-49 years who have ever experienced spousal violence	32.5	29.2	•	-2.6	•
Ever-married women who experienced physical violence during any pregnancy	3.4	3.0	•	-1.2	•
Young women age 18-29 years who experienced sexual violence by age 18	1.7	1.2	•	-1.0	•
Tobacco Use and Alcohol Consumption among Adults (age 15 years and above)					
Men age 15 years and above who consume alcohol	32.8	17.4	•	-8.5	•
Men age 15 years and above who use any kind of tobacco	50.8	36.8	•	-6.0	•
Women age 15 years and above who consume alcohol	6.4	0.8	•	-0.1	•
Women age 15 years and above who use any kind of tobacco	19.4	7.9	•	2.5	•

Note: ST (2021) indicates values for the Scheduled Tribes (ST) population from the NFHS-5 (2019–2021) microdata. Non-ST (2021) indicates values for Non-Scheduled Tribes (Non-ST) population from the NFHS-5 (2019–2021) microdata. ST Better than Non-ST (2021) indicates when the values for Scheduled Tribes (ST) is better than Non Scheduled Tribes (Non-ST) in NFHS-5 (2019–2021). [• Denotes ST have better indicators; • Denotes Non-ST have better indicators] ST Change (2021–2016): indicates percentage point difference between NFHS-5 (2019–2021) and NFHS-4 (2015–2016) for Scheduled Tribes (ST). [• Denotes Performance of ST has improved; • Denotes performance of ST has worsened]. Data Rounding: values are rounded to one decimal place when applicable. Blank: indicates not applicable because the comparable indicator was not measured in NFHS-4 (2015–2016).

Table 1: **Policy indicators related to population, health, and nutrition for Scheduled Tribes (ST) and Non-Scheduled Tribes (Non-ST) for India, 2016 and 2021.**

(15–49 years) has increased by 7.5 and 8.9 percentage points, respectively.

Way forward

Improvements in the information landscape for India's Scheduled Tribes is a significant step towards the development of an efficient knowledge management repository to promote the well-being of all marginalized sections in India. With India completing more than 75 years of independence, now is an opportune moment to expand the data landscape assessing the health status of ST population vis-à-vis the Non-ST population, as well as the progress that Scheduled Tribes are making as a group. Engagement with subnational data for monitoring tribal health can support policymaking and program implementation. Data analysis of the progress of these tribal populations also has vital implications for equitably aligning resources with community needs. Nevertheless, it is worth noting that these comparisons, while informative, do not necessarily capture the differentials between ST communities across geographies. Heterogeneity[7] within tribal communities is a prominent concern and merits a disaggregated view at subnational level.[8] For instance, the ST population in the northeastern states of India perform better in maternal and child nutrition but lag behind STs from other states in utilization of basic health care services such as immunization and delivery care.

Even though measurable progress in population health and welfare indicators is occurring among India's Scheduled Tribe populations, the continued need to close the gap with Non-ST populations requires immediate and sustained policy attention. These efforts will be consistent with the SDGs Agenda of the United Nations that mandates tracking of indigenous communities on ratified developmental goals.[9] Indeed, India's performance on several policy indicators related to population, health, and nutrition will be tied to how well India's marginalized communities, of which Scheduled Tribes are a prominent group, are equally able to achieve these targets to further the well-being of their people.

Contributors

Conceptualization and Design: SVS; Data Acquisition and Analysis: WJ; Data Interpretation: SVS, WJ; Writing of the Manuscript: WJ, SVS; Critical Revisions: SVS, WJ; Overall Supervision: SVS.

Data sharing statement

The study is based on publicly available data and can be accessed from https://dhsprogram.com/data/available-datasets.cfm.

Declaration of interests

None.

Acknowledgement

The authors would like to thank the Demographic and Health Surveys program for making the National Family Health Survey data freely accessible. We would also like to acknowledge research assistance provided by Debayanti Bhowmick, Prateek Singh, Akhil Kumar, Mohit Chaurasiya and Rockli Kim.

Funding: This study was supported by a grant from the Bill & Melinda Gates Foundation INV-002992. The funders had no role in study design, data collection and analysis, decision to publish or preparation of the manuscript. All authors had access to the data.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.lansea.2023.100266.

References

1 GOI. *The constitution of India*. Government of India; 1949.
2 Subramanian SV, Smith GD, Subramanyam M. Indigenous health and socioeconomic status in India. *PLoS Med*. 2006;3(10):e421.
3 Census. *Scheduled Tribes in India as revealed in census 2011 census of India*. 2011.
4 Subramanian S, Ambade M, Kumar A, et al. Progress on sustainable development goal indicators in 707 districts of India: a quantitative mid-line assessment using the national family health Surveys, 2016 and 2021. *Lancet Reg Health Southeast Asia*. 2023;13:100155.
5 GOI. *Ministry of tribal Affairs; F. No. 11015/06/2016-SG-II*. Government of India; 2016.
6 MoHFW. *Tribal Health in India: Bridging the gap and a roadmap for the future*. Ministry of health and family welfare and Ministry of Tribal Affairs; 2018.
7 IIPS. *National Family Health Survey (NFHS-5), 2019-21: India*. Mumbai: IIPS: International Institute for Population Sciences, Mumbai; 2021.
8 Neff D, Haasnoot CW, Renner S, Sen K. *Routledge handbook of indigenous wellbeing*. Routledge; 2019.
9 Indigenous peoples and the 2030 Agenda - United Nations. Backgrounder SDG. United Nations: the United Nations permanent forum on indigenous issues; 2016.