Increasing disparity in childhood undernutrition across the caste groups in India: Trends during 1992-2016

Abstract

This paper examines trends in childhood undernutrition (stunting and underweight) across the ethnic groups of India and its regions using four rounds of the National Family Health Survey conducted during 1992-2016. The study further examines interaction effect of household wealth quintiles and mother's education with caste groups on the childhood undernutrition. Descriptive statistics and pooled logistic regression analyses were applied to measure the disparity in childhood undernutrition across the ethnic groups. The prevalence of undernutrition differs considerably between Scheduled castes/Scheduled tribes (SCs/STs) and other castes; underweight among SCs/STs children in India being substantially higher than other castes. The prevalence has declined among children of both the castes, however differences between the caste group remained constantly high over time. Pooled multivariate analyses suggest that the disparity in undernutrition has increased across the caste groups in India over past 25 years. The analysis showing interaction effect clearly indicate the SC/ST children of even richest wealth quintiles and better educated mothers are significantly vulnerable than children's other castes. The findings call for dedicated policies, in line with those already existing to improve the socio-economic status of SCs/STs population in India, to tackle rampant childhood malnutrition among SCs/STs children in the country.

1. Introduction

In India, the caste system, with its societal stratification and social restrictions, continues to have a major impact on the country. There are four castes in the Hindu society of India – Scheduled caste (SC), Scheduled Tribe (ST), Other Backward Caste (OBC), and others. The Schedule caste includes "untouchables" or *Dalits* – a group that is socially segregated and economically disadvantaged by their lower status in the traditional Hindu society. The schedules Tribes are geographically isolated and with limited economic and social interaction with the rest of the population. The other backward caste is intermediate caste and considered as low in the caste strata but above to the SCs and STs. Other caste is the remaining population and characterized with better socio-economic status than the SCs, STs, and OBC population. This caste is also known as *upper caste* or *generals* or *Swarn*.

In India the SCs/STs have been excluded from the Hindu society for thousands of years. These communities had traditionally been relegated to the most menial labor with no possibility of upward mobility, and subject to extensive social disadvantage and exclusion, in comparison to the wider community (Val de Poe and Speybroeck, 2009; Dunn, 1993). Therefore, they have been given the special priority by the Indian constitution, which designated disadvantaged tribal and caste populations as Scheduled Tribes and Castes (hereafter referred to as STs/SCs) and accorded them special protections (Parikh 1997, Planning Commission India 2002). As per the census of India 2011, the proportion of SCs and STs together constitutes more than one-third of the Indian population. This larger section of the country's population (much higher of the total population of many of the countries) is economically deprived and socially excluded from the main Indian Hindu society. Considering the status of SCs/ STs the government of India and Indian constitutions have provided reservation to SCs/STs population in education, employment opportunities. But in this process the health disadvantages of SCs/STs are completely overlooked. This could have happened due to lack of systematic evidence on caste disparity in health status in India. While one could argue that the socio-economic vulnerability of SCs/STs may propel them into health vulnerability too. The fourth round of the National Family Health Survey, 2015-16 reports that infant mortality rates are 45 per 1000 among SCs, 44 among STs, compared to 32 for the rest of the population (IIPS & ICF, 2017). Furthermore, Subramanian et al. (2006b) illustrate the larger adult mortality rates in SCs/STs as compared to the remaining population (odds-ratio of 1.28 for the STs and 1.23 for the SCs). There is clear notion that SCs/STs bears

the maximum burden of health in general and maternal and child health in particular in India. It may be because of the lower availability and accessibility of health services to the SCs/STs population.

The literature search yielded only one study that has investigated the factors responsible for persisting disparity in childhood malnutrition between SCs/STs and other castes in India (Van de Poe & Speybroeck, 2009). But there is hardly another published study that examined the trends in disparity in childhood malnutrition between SCs/STs and other castes in India. This is despite the fact that malnutrition is one of the major public health challenges India is facing today.

The burden of malnourished children in India is amongst the highest in the world and virtually twice that of Sub-Saharan African countries. India's Global Hunger Index Indian ranking of 67 the 80 nations with the worst hunger situation places us even below Korea or Sudan. Nearly 60 million Indian children are estimated to be underweight and 43 million are to be stunted (Deaton & Dreze, 2009; UNICEF, 2015). The present study, therefore, aimed to investigate the disparity in childhood malnutrition between SCs/STs and other castes in India during 1992–93, 1998–99, 2005–06, and 2015–16.

1.2 Objective

To investigate the trends in ethnic disparity in childhood malnutrition in India and its six geographic regions over last 25 years.

2. Data and Methods

2.1 Data

Data for this study is drawn from four successive rounds of the National Family Health Survey (NFHS) conducted in India during 1992–93, 1998–99, 2005–06, and 2015–16. The NFHS is similar to the Demographic and Health Survey (DHS) of other developing countries. The NFHS is a large scale and multi-round survey conducted in representative sample of households spanning across the states and union territories of India. The NFHS covered more than 99% of the India's population in each of the survey rounds. The main purpose of the NFHS is to provide reliable estimates on fertility, infant and childhood mortality, family planning, utilization of maternal and child health care services, and childhood nutritional

status in the country and state levels. The NFHS also provides these estimates by urban-rural residence.

The NFHS adopted similar sampling design in each of the four survey rounds. A two-stage sampling design was adopted in most of the rural areas – villages were selected at the first stage using probability proportional to size (PPS) sampling scheme followed by selection of households at the second stage using systematic sampling scheme. The sample in urban areas was selected in three stages. The first stage comprised of selection of urban wards using PPS sampling scheme. Census enumeration blocks (CEB) containing approximately 150-200 households were selected at the second stage. Households were selected at the third stage using systematic sampling scheme. The details of sampling design are given in the reports of the various rounds of NFHS (IIPS and ORC Macro, 1995, 2000; 2007; IIPS & ICF, 2017).

2.2 Measure

The outcome variable in the present analysis is stunting (height-for-age) and underweight (weight-for-age). Underweight is a composite indicator of childhood malnutrition and reflects both acute and chronic nutritional deficiencies (World Health Organization Working Group, 1986). This argument is also supported by previous studies which suggested that underweight (weight-for-age) deserves special attention as it is a comprehensive indicator of child's nutritional status, because it incorporates other two measures– stunting and wasting (Deaton and Drèze, 2009). Despite the theoretical premises, weight-for-age is the only anthropometric indicator which is comparable in all rounds of the NFHSs. In NFHS–1, information on stunting and wasting is not collected from few states such as, Andhra Pradesh, Himachal Pradesh, Madhya Pradesh, Tamil Nadu, and West Bengal. Thus, the national estimates for those indicators may be biased up to a certain extent.

Stunting is defined as children whose height-for-age Z-score is minus two standard deviations (–2SD) below the median of the reference population. Underweight is defined as children whose weight-for-age Z-score is less than minus two standard deviations (–2SD) below to the median values of the United States National Centre for Health Statistics (US-NCHS) international reference population as recommended by the World Health Organization (Dibley et al., 1987a; Dibley et al., 1987b). We used US-NCHS reference population due to its comparability in all four rounds. We could not use new reference population of the World Health Organization (WHO Multicenter Growth Reference Study Group, 2006) because it was not available in the first and second round of the survey.

Anthropometric measures are taken with a varying age – group of children in successive rounds of the survey. For example, NFHS 1992–93 collected information from children below four years of age and NFHS 1998–99 collected information from children below three years of age, while NFHS 2005–06 & NFHS 2015–16 collected information from children below five years of age. Therefore, to make the estimates comparable, we restricted our analysis to the children less than 3 years only.

2.3 Exposure variables

Caste is used as the main predictors in the analysis. Caste is based on the respondent's self-identification as belonging to scheduled castes, scheduled tribes, other backward classes, and other castes. All four rounds of the NFHS collected information on the caste of the respondents, but category of ethnic groups varied from NFHS-1 to other rounds of the NFHS. In NFHS 1992–93 information on caste is collected under three categories – Scheduled castes (SCs), Scheduled Tribes (STs), and Other castes. While each in the NFHS 1998–99, NFHS 2005–06, and NFHS 2015–16, information about caste group is collected in four categories – SCs, STs, Other Backward castes (OBCs), and Others. In the present analysis, we clubbed the SCs and STs under one category and named as SCs/STs (SCs and STs share same socio-economic characteristics in the Indian society and more or less similar at the deprivation level) and other caste group is "other category". Thus the whole analysis is carried out for SCs/STs and other caste. We excluded OBC from the analysis because it is not comparable over the period because of lack of information in the first round of the survey. Moreover, the prevalence of underweight among the OBC children is closer to the prevalence of SC/ST's children. We used the term "caste" and "ethnic" interchangeably in the study.

A number of other socio-economic and demographic variables have also been shown to have a significant effect on childhood malnutrition in India. Accordingly, we controlled several important socio-economic and demographic variables in the analysis. The variables that were controlled in the pooled logistic regression analysis are – sex of the newborn, birth order & preceding birth interval (first birth order; higher birth order and birth interval ≤ 24months; higher birth order and birth interval > 24 months), size of the newborn at birth (smaller than average; average; larger than average), mother's age at birth of the newborn (≤19 years, 20-29 years, and ≥30 years), maternal schooling (no schooling; 1-5 years of schooling; 6-12 years of schooling; >12 years of schooling), household wealth quintile (poorest; poorer; middle;

rich; richest), medical assistance at delivery (yes; no), mother's exposure to media (yes; no), current working status of mother (yes; no) and geographic region of residence (north; east; central; northeast; west; south). The geographic regions were based on the regional classification of NFHS (IIPS and ORC Macro, 2007).

2.4 Statistical analysis

Descriptive statistics is carried out to understand the differences in prevalence of underweight by caste groups in each round of the NFHS. The chi-square test is applied to examine the significant association between underweight and caste groups. This is done to simply give the levels and trends in prevalence of childhood malnutrition by caste groups in India. The annual rate of change (over past 25 years) is also calculated to understand the rate of decline in undernutrition between the caste groups.

Binary logistic regression analysis is used to examine the ethnic disparity in underweight after adjusting for important socio-economic and demographic variables. In the regression analysis, we pooled the data from the four rounds of NFHS to examine the interaction effect of time. We present the pooled logistic regression results as predicted probabilities for better interpretation. The analyses presented in the subsequent sections were carried out in STATA 13.0. The exposure variables were tested for possible multi-collinearity before putting them together in the pooled logistic regression analysis.

3. Preliminary findings

3.1 Trends in underweight among children across SCs/STs and others ethnic groups in India

Figure 1 presents the trends in prevalence (%) of underweight among the children aged less than three years across the ethnic groups in India during 1992-2016. The prevalence of underweight in India has declined across both SCs/STs and other ethnic groups. The prevalence of underweight among SCs/STs children has declined from 57% in 1992-93 to 50% in 2015-16. Likewise, the prevalence of underweight among children of other ethnic groups has declined from 51% in 1992-93 to 37% in 2015-16. Although the prevalence of childhood malnutrition has declined across both the ethnic groups in India but the pace of decline is higher among other castes groups than SC/STs.

Trends in childhood malnutrition by ethnic groups across the geographic region of the country remained more or less similar to that of the national scenario (Table 1). The prevalence has declined among the other ethnic groups irrespective of the region. For instance, in the north region the prevalence of underweight among the children of other ethnic groups has declined from 41% in 1992-93 to 28% in 2015-16. The corresponding decline in south region is 44% in 1992-93 to 28% in 2015-16. In contrary, the trends in prevalence underweight have either stagnated or increased among the SCs/STs children. This table also suggests that there is variation in prevalence of childhood malnutrition by ethnic groups across the regions. For instance, in 2015-16 the prevalence among the SCs/STs was 46% in the northern region, 53% in the central region, 54% in the east region, and 29% in the northeast region. The corresponding prevalence among the other ethnic group was 28% in the northern region, 37% in the central region.

Over the past 25 years, the annual rate of decline in the prevalence of underweight was much higher among children of other castes than SCs/STs. At national level, annual rate of decline was 0.56 percent among children of Other castes compared to 0.28 percent among children of SCs/STs. The similar differences are observed across different geographic regions. For instance, in the North region the rate of decline 0.17 percent among SCs/STs and 0.48 percent among other castes; in East region the rate of change was 0.36 percent and 0.77 percent among SCs/STs and other castes respectively.

3.2 Multivariate analysis

The results of the binary logistic regression analysis are shown in Table 2. The results adjusted for other important socio-economic and demographic characteristics clearly suggest a significantly higher probability of underweight among the children of SCs/STs compared to that among the other ethnic groups in India and across the geographic regions. Among the children of SCs/STs the adjusted probability of underweight was 0.434 in 2005-06. This compares with only 0.316 among the children of other ethnic groups. The result remained similar across the geographical regions of the country. The pattern remained similar in each of the four rounds of the survey indicating that considering for other factors constant, probability of undernutrition is significantly lower among children of other castes groups than SCs/STs.

The change in the probability of underweight over the four NFHS surveys across the ethnic groups in India and its geographical region is shown in Figure 2. The results adjusted for other socio-economic and demographic characteristics suggest that the prevalence of underweight has declined by 44% among the children of other ethnic groups during 1992-2016. The corresponding decline in the prevalence among children of SC/ST was only 25%. These figures clearly suggest that, in India, the decline in the prevalence of underweight among children of other ethnic groups was about twice as high as than among the children of SCs/STs during 1992-2016. Unlike the results based on descriptive statistics, the binary logistic regression results clearly suggest a significant increase in ethnic disparity in childhood malnutrition in India during 1992-2016. The pattern remained similar across the geographical regions of the country. The increase is greater across the central, east, and north regions.

3.3 Interaction effect of caste & household wealth quintile and caste and mother's education

While one could argue that children of SCs/STs ethnic groups are disadvantageous in due to their poor socioeconomic status. To get this evidence, we examined the interaction effect of caste & household wealth quintiles and caste & mother's education on child undernutrition in all four rounds of the survey. In the interaction effect we compared children of other groups (irrespective of their wealth status) with SCs/STs children of different wealth quintiles. We conducted both bivariate and multivariate analysis and results are presented in Table 3 and Table 4 respectively. Results clearly suggest that SCs/STs children of even richest wealth quintiles are more likely to be undernourished than children of other castes groups (Table 4). This pattern holds true for interaction between caste groups and mother's education.

4. Discussion and Conclusions

This study examines the trends in ethnic disparity in the prevalence of underweight among children aged less than three years in India and its geographical region using four rounds of the National Family Health Survey data conducted during 1992-93 and 2015-16. Our study indicates that in India, prevalence of childhood malnutrition has declined across the ethnic groups over the period, but the decline was lower among the SCs/STs compared to the other ethnic groups. The pattern stands true for geographic regions as well. In addition, the prevalence of childhood malnutrition is much higher among SCs/STs keeping that half of the

children aged less than three years were underweight. In last 25 years, annual rate of decline in prevalence of underweight was more than twice higher among the children of other castes than SCs/STs. Multivariate analyses further suggest that the ethnic disparity in childhood malnutrition has increased over the last 25 years in India and across the geographic regions; the increase was particularly more pronounced in the central, east, and northeast regions. Moreover, SCs/STs children of riche households are even vulnerable than the average other castes children. This clearly highlights that household's economic status is not the prime responsible factors for poor nutritional status among child of SCs/STs.

Clearly, the prevalence of childhood malnutrition has declined in both SC/ST and other ethnic groups in India during late 1990s and early 2000s. This decline in the prevalence of childhood malnutrition might be the result of interplay of numerous factors such as the rapid economic growth (with the introduction of the new Economic Policy in the early 1990's), improvement in agriculture, medicine, and information technology. In addition, the maternal and child health interventions such as Child Survival and Safe-motherhood Program (CSSM, 1992) and Reproductive and Child Health Program (RCH, 1997) might have also played a significant role in lowering the childhood malnutrition in SCs/STs and other castes in India. However, these initiatives have not succeeded in narrowing the ethnic disparity in childhood malnutrition in India. In fact, the ethnic disparity has widened during the last 25 years. Our findings clearly indicate that the fruits of economic and social development are not being shared equally by the different sections of the Indian society. Though government of India is talking about "*exclusive growth*", while findings clearly indicate that a large section of the country's population not benefitting with advantage with the growth. In India, the SCs/STs are deprived groups since thousands of years and the conditions remained similar even in 21st century too. It is the other ethnic groups who have derived maximum benefits from the economic and social development taking place in the country. Our findings are consistent with the findings of other studies that have also highlighted the vulnerability of SCs/STs children when it comes to childhood malnutrition (Van de Poel and Speybroeck, 2009).

The findings of the study have larger policy implications. The findings indicate towards greater and growing disparity in childhood malnutrition across the ethnic groups of India. There is, therefore, a need for the Government to recognize the fact that a greater section of Indian population is bearing disproportionate burden of childhood malnutrition and that their access basic services is limited. Notably, the Government must use indicators disaggregated

by ethnic (social) status instead of only focusing the on the poor (economic status) to formulate policies and programmers in the country. Even the formulation of health policies with special focus on social-cultural status is easier as the ethnic status of a person is easily identifiable with compared to the poverty status. This is requirement of the time, as in India, many rich people enjoy the government's health and other social benefits which are offered to the population "Below Poverty Line (BPL)". The Government of India has made provisions of reservation in education, employment, and other facilities for SCs/STs to improve their socio-economic status and to provide the equal opportunity. In this whole process the Government of India has completely overlooked health status of the SCs/STs population in general and women and children in particular. As the SCs/STs population contributes more than one-third of the country's population, the findings of the study call for multifaceted targeted policies to improve the health of the SCs/ST children. Our findings suggest adopting an approach which simultaneously regulates and addresses socioeconomic inequalities, as well as reducing high average childhood undernutrition in India.

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Figure 1 Prevalence of underweight among children aged less than three years by ethnic groups in India, 1992-2016

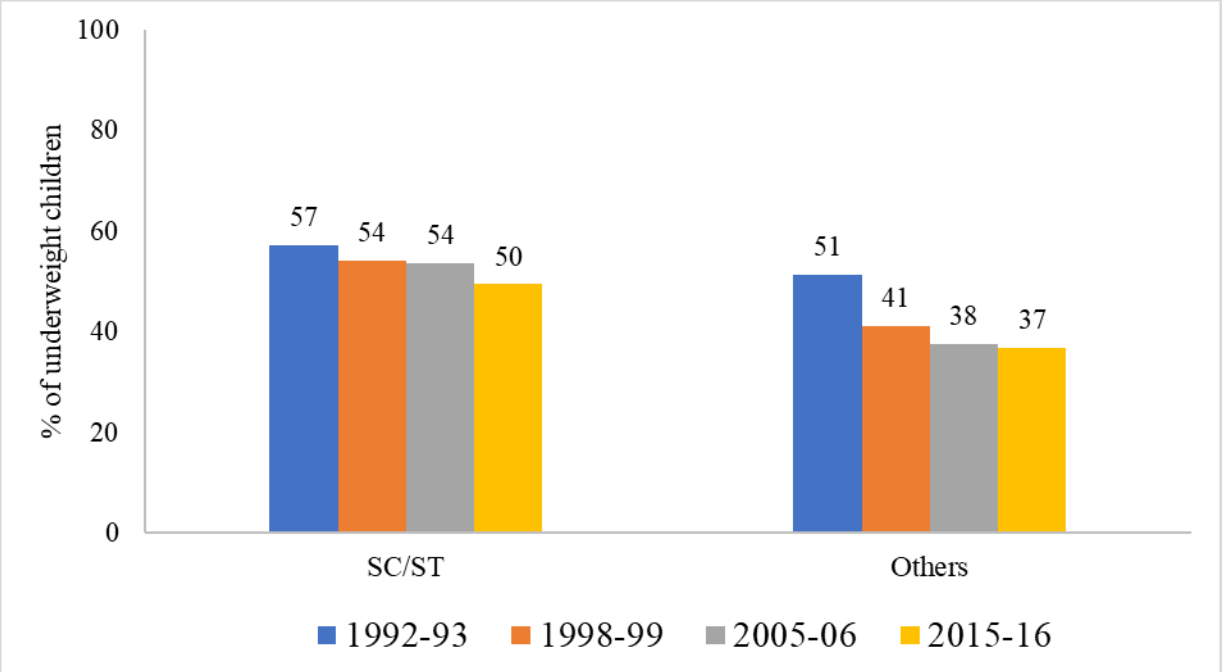

Table 1 Trends in the prevalence of underweight among children aged less than three years by ethnic groups across regions of India, 1992-2016

	1992-93		1998-99		2005-06		2015-16		% Annual change between 1992-2016	
	SC/ST	**Others**	**SC/ST**	**Others**	**SC/ST**	**Others**	**SC/ST**	**Others**	**SC/ST**	**Other**
North	49.8	40.5	50.6	35.1	44.9	32.7	45.7	28.4	0.17	0.48
Central	61.1	57.5	61.0	45.6	57.7	43.0	53.3	37.0	0.31	0.82
East	62.7	58.4	58.5	45.3	62.1	40.7	53.8	39.1	0.36	0.77
Northeast	38.6	49.9	28.9	41.4	34.9	38.0	28.9	40.0	0.39	0.40
West	60.3	48.3	55.4	44.6	54.5	35.4	54.2	43.8	0.24	0.18
South	54.0	44.1	48.0	31.7	43.0	29.3	40.5	28.0	0.54	0.64

Table 2 Predicted probabilities (95% confidence interval) showing the effect of ethnic groups on underweight among children aged less than three years in India and geographical region, 1992-2016

	1992-93				**1998-99**				**2005-06**				**2015-16**			
	SC/ST		Others		SC/ST		Others		SC/ST		Others		SC/ST		Others	
	PP	95% of CI	PP	95% of CI	PP	95% of CI	PP	95% of CI	PP	95% of CI	PP	95% of CI	PP	95% of CI	PP	95% of CI
India	**0.514**	**(0.501, 0.528)**	**0.470**	**(0.462, 0.478)**	**0.473**	**(0.461, 0.485)**	**0.346**	**(0.336, 0.357)**	**0.421**	**(0.402, 0.434)**	**0.288**	**(0.276, 0.301)**	**0.384**	**(0.372, 0.397)**	**0.261**	**(0.246, 0.276)**
North	0.489	(0.465, 0.514)	0.381	(0.366, 0.396)	0.503	(0.478, 0.529)	0.303	(0.286, 0.321)	0.409	(0.377, 0.441)	0.271	(0.247, 0.296)	0.345	(0.317, 0.373)	0.209	(0.186, 0.235)
Central	0.636	(0.610, 0.661)	0.584	(0.568, 0.600)	0.621	(0.592, 0.649)	0.445	(0.415, 0.475)	0.550	(0.522, 0.578)	0.347	(0.315, 0.380)	0.480	(0.455, 0.505)	0.339	(0.303, 0.377)
East	0.642	(0.606, 0.677)	0.573	(0.554, 0.591)	0.601	(0.573, 0.629)	0.393	(0.364, 0.423)	0.587	(0.554, 0.620)	0.312	(0.282, 0.344)	0.508	(0.480, 0.536)	0.299	(0.260, 0.341)
Northeast	0.319	(0.292, 0.347)	0.418	(0.387, 0.450)	0.258	(0.238, 0.278)	0.318	(0.286, 0.351)	0.262	(0.241, 0.284)	0.240	(0.212, 0.271)	0.194	(0.174, 0.216)	0.191	(0.152, 0.237)
West	0.598	(0.548, 0.646)	0.432	(0.410, 0.455)	0.530	(0.489, 0.571)	0.368	(0.341, 0.395)	0.493	(0.446, 0.540)	0.303	(0.271, 0.337)	0.500	(0.453, 0.547)	0.281	(0.240, 0.324)
South	0.545	(0.503, 0.587)	0.401	(0.383, 0.419)	0.482	(0.446, 0.518)	0.292	(0.261, 0.324)	0.401	(0.359, 0.445)	0.227	(0.194, 0.264)	0.347	(0.307, 0.390)	0.193	(0.141, 0.260)

Note: The models have been adjusted for sex of the child, birth order & preceding birth interval, size of the child at birth, age at birth, maternal education, safe delivery, religion, exposure to media, current working status of the mother, and duration of data collection.

PP: Predicted probability

CI: Confidence intervals

All the predicted probabilities (PP) were significant at $p<0.05$.

Figure 2: Percentage decline in predicted probability of underweight among children aged less than three years across the ethnic groups in India and geographical region, 1992-2016

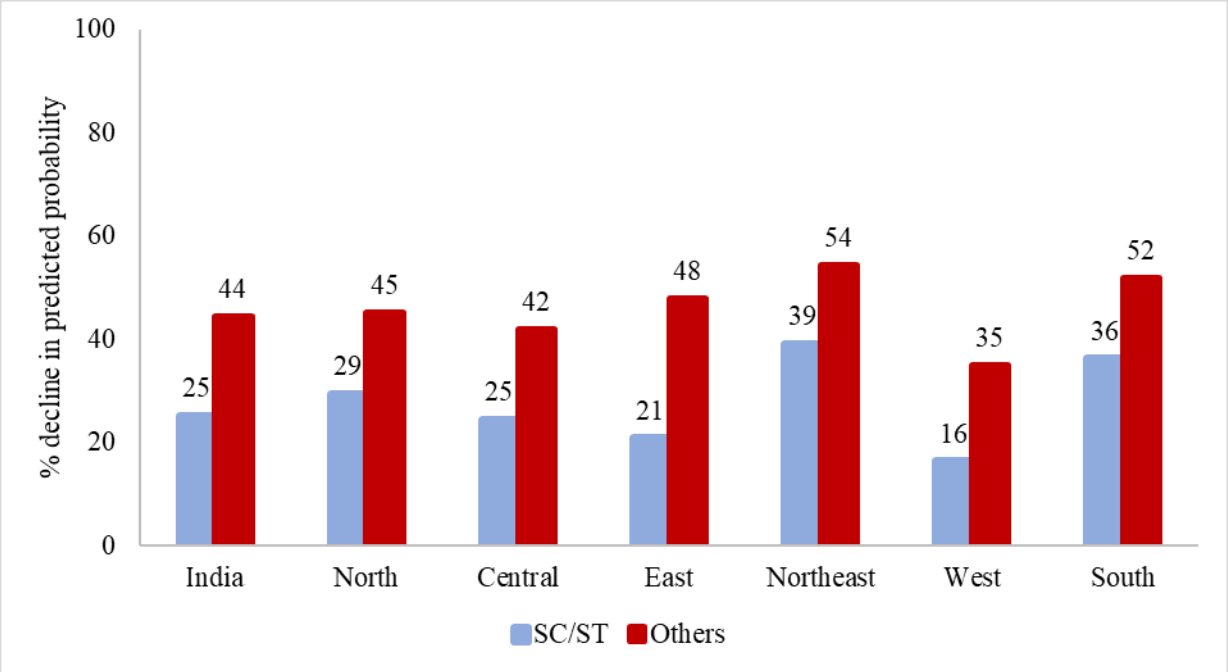

Table 3: Trends in prevalence of stunting and wasting among children aged less than three years by caste and household wealth and by caste and mothers education in India, 1992-2016

	Stunted				Underweight			
	1992-93	**1998-99**	**2005-06**	**2015-16**	**1992-93**	**1998-99**	**2005-06**	**2015-16**
Interaction of castes and household wealth quintiles								
Others	46.3	40.4	31.1	23.5	51.5	41.2	37.6	32.5
SC/ST × Poorest quintile	55.3	58.6	51.9	43.8	60.8	61.9	63.1	55.5
SC/ST × Poor quintile	53.4	56.5	48.3	37.4	59.6	59.2	60.5	49.6
SC/ST × Middle quintile	51.4	52.4	44.8	31.6	58.2	53.3	52.2	42.3
SC/ST × Rich quintile	46.0	42.8	35.5	25.8	52.5	44.7	43.1	36.2
SC/ST × Richest quintile	45.6	35.7	29.9	22.9	41.6	38.7	34.5	31.2
Interaction of caste and mothers' education								
Others	46.3	40.4	31.1	23.5	51.5	41.2	37.6	32.5
SC/ST × up to 5 years of schooling	53.1	55.4	47.9	40.7	59.0	57.6	57.7	51.7
SC/ST × 6-10 years of schooling	41.3	38.9	37.5	30.6	45.4	42.4	46.2	41.7
SC/ST × 11-12 years of schooling	24.0	34.0	28.9	24.6	33.6	35.6	36.0	37.3
SC/ST × 12+ years of schooling	46.3	22.5	17.4	18.7	24.1	21.7	24.0	28.4

Table 4: Interaction effect of caste & household wealth quintile and caste & mothers education stunting and underweight among children aged less than three years in India, 1992-2016

	Stunted				Underweight			
	1992-93	**1998-99**	**2005-06**	**2015-16**	**1992-93**	**1998-99**	**2005-06**	**2015-16**
Caste and wealth								
Others (Ref.)								
SC/ST*Poorest quintile	1.10(0.97, 1.26)	1.63(1.44, 1.84)***	1.94(1.69, 2.23)***	1.77(1.65, 1.90)***	1.11(1.00, 1.24)*	1.84(1.62, 2.08)***	2.24(1.95, 2.58)***	1.99(1.86, 2.13)***
SC/ST*Poor quintile	1.07(0.92, 1.24)	1.55(1.37, 1.75)***	1.73(1.51, 1.97)***	1.66(1.55, 1.77)***	1.15(1.02, 1.29)**	1.74(1.54, 1.97)***	2.15(1.87, 2.46)***	1.84(1.73, 1.96)***
SC/ST*Middle quintile	1.09(0.94, 1.27)	1.44(1.27, 1.64)***	1.48(1.28, 1.70)***	1.48(1.38, 1.58)***	1.22(1.08, 1.39)**	1.53(1.35, 1.74)***	1.63(1.42, 1.88)***	1.51(1.41, 1.61)***
SC/ST*Rich quintile	1.09(0.93, 1.29)	1.16(1.00, 1.33)**	1.18(1.01, 1.36)**	1.20(1.11, 1.29)***	1.20(1.04, 1.38)**	1.25(1.09, 1.44)**	1.30(1.12, 1.50)***	1.24(1.15, 1.32)***
SC/ST*Richest quintile	1.38(1.12, 1.71)	1.19(0.99, 1.42)*	1.15(0.95, 1.40)	1.26(1.15, 1.37)***	0.98(0.81, 1.19)	1.29(1.08, 1.54)**	1.21(1.01, 1.45)**	1.17(1.08, 1.27)***
Caste and mother education								
Others (Ref.)								
SC/ST*up to 5 years of schooling	1.09(1.01, 1.19)**	1.48(1.36, 1.61)***	1.44(1.30, 1.61)***	1.62(1.53, 1.72)***	1.13(1.05, 1.21)**	1.56(1.43, 1.70)***	1.60(1.44, 1.78)***	1.58(1.50, 1.67)***
SC/ST*6-10 years of schooling	1.16(0.94, 1.43)	1.23(1.06, 1.41)**	1.29(1.12, 1.48)***	1.43(1.35, 1.51)***	1.02(0.85, 1.22)	1.36(1.18, 1.56)***	1.52(1.33, 1.74)***	1.46(1.38, 1.54)***
SC/ST*11-12 years of schooling	0.36(0.16, 0.82)**	1.37(0.97, 0.94)*	1.19(0.87, 1.62)	1.29(1.17, 1.42)***	0.74(0.44, 1.26)	1.32(0.93, 1.87)	1.45(1.08, 1.94)**	1.44(1.32, 1.58)***
SC/ST*12+ years of schooling	2.25(1.01, 5.05)**	0.92(0.54, 1.59)*	0.85(0.53, 1.34)	0.98(0.88, 1.10)	0.62(0.26, 1.45)	0.78 (0.45, 1.36)	0.98(0.64, 1.48)	1.08(0.97, 1.19)

Multivariate analyses are adjusted for sex of the child, birth order & preceding birth interval, size of the child at birth, age at birth, maternal education, safe delivery, religion, exposure to media, current working status of the mother, duration of data collection, and region of the country.
Ref.: Reference category
Figures in parenthesis are 95% of confidence intervals.
***p<0.01; **p<0.05; *p<0.10