



Growth and Nutrition:

Preliminary Findings from the 2016 Young Lives Survey (Round 5): United Andhra Pradesh

This fact sheet presents findings from the fifth round of the Young Lives survey of children in United Andhra Pradesh¹ in 2016. Young Lives has followed two cohorts of children since 2002. This fact sheet gives a snapshot of key growth and nutrition indicators for 15-year-olds in 2016 (Younger Cohort) and considers changes since this cohort was age one in 2002. The fact sheet also compares that to the data for 15-year-olds in 2009 (Older Cohort) to show changes in the context of children's nutrition and growth over that seven-year period. As the key findings show, there has been an important reduction in stunting rates between the two cohorts but socio-economic inequalities remain large. Meanwhile, although access to clean water has improved, half the sample remains without access to sanitation. Improving the nutritional status of children requires efforts to reduce poverty and to improve sanitation and child health as well as to improve access to good nutrition. To tackle undernutrition equitably requires a concerted focus on the most marginalised social groups.

Key Findings

- Despite significant economic growth, over one quarter of our cohort of 15-year-old children continued to suffer from malnutrition (28% stunting and 25% thinness). But we observe a considerable reduction of malnutrition in 2016 compared to 15-year-olds in 2009 (28% compared to 36%).
- Significant inequalities persist in malnutrition status across socio-economic groups. For example, 17% of Other Caste children were stunted in 2016 compared to 37% of Scheduled Caste children.
- The food intake of children is changing over time. In 2016, 56% of Younger Cohort children had eaten pulses, legumes and nuts within the previous 24 hours, which is a substantial increase from 32% in 2009 for children of the same age.
- Sanitation must be a priority since only half of the households in our sample possessed sanitation facilities in 2016.
- Socially marginalised groups and the poorest households need to be targeted in efforts to reduce malnutrition.

The context

Despite significant economic growth (around 7%) over the past decade, social indicators in India have not improved. Particularly across a range of indicators of nutritional status of adults and children, India continues to lag behind other fast-growing economies. The Human Development Report 2016 ranked India 131st of 188 countries, placing it in the Medium Human Development category. 39% of children under five years of age are stunted in India and the under-five mortality rate is 48 per 1,000 live births as against 27% and 42 per 1,000 live births globally (Human Development Report 2016). Results from the National Family Health Survey (NFHS-4) conducted in 2015-16 showed a considerable reduction in the numbers of malnourished children in India over a decade, but substantial differences in nutritional status across socio-economic groups and States. Malnutrition not only undermines physical growth but also children's learning.

Government of India initiatives

The Government of India has initiated several programmes to tackle the issue of malnutrition including, for example: National Food Security Act, 2013, Mid Day Meal, Rashtriya Swasthya Bima Yojana (Health Insurance), and Swachh Bharat Abhiyan (Clean India Mission). The Ministry of Finance Economic Survey 2015-16 highlighted that 'health and nutrition programs offer very high returns on investment' (Ministry of Finance 2016). Furthermore, in 2017 the National Institution for Transforming India (Niti Aayog) finalised a nutrition strategy entitled 'Toward Kuposhan Mukh Bharat: National Nutrition Strategy'. Some of the core strategies suggested in the report are: convergence of State/District implementation plans; a continuum of care that includes preventive, promotive and curative care; innovative service delivery models with evidence of impact and community-based monitoring.

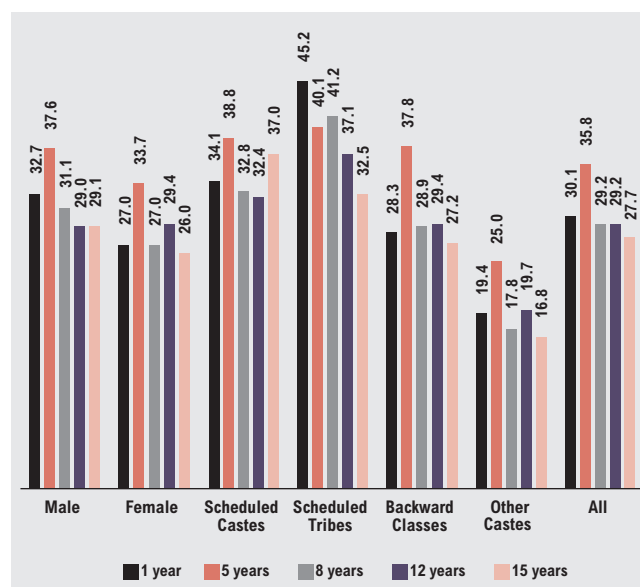
Incidence of stunting and thinness

Stunting² reflects the cumulative effects of under-nutrition and infections. Young Lives data show that, irrespective of gender and social group, 28% of Younger Cohort children aged 15 years are stunted. The fact that 30% of these children were stunted when they were one year old in 2002 suggests a marginal average improvement in the nutritional status of these children. There are large differences across social groups with 37% Scheduled Caste stunted at age 15 compared to 17% Other Caste adolescents. While the incidence of stunting has improved over the years among Scheduled Tribe children, one third of them continue to be stunted at age 15 (Figure 1). The poorest children, children whose mothers have no schooling, children living in rural areas, and children living in Telangana State are the most likely to be stunted.

Cross-cohort comparison shows that the incidence of stunting among 15-year-old children declined from 36% in 2009 to 28% in 2016. This decline is true across all socio-economic groups. It indicates that while development has resulted in some measurable improvement in nutrition status, malnutrition levels remain high.

The incidence of thinness³ among 15-year-old children in the years 2009 and 2016 reveals a marginal change (from an average of 27% to 25%). However, the reduction in the incidence of thinness during the same period is remarkable among boys (from 41% to 33%). Nevertheless, the incidence of thinness among boys is substantially higher than was observed among girls. In 2016 this was 17% while it was only 13% for 15-year-old girls in 2009. Increased incidence of thinness among all 15-year-olds between 2009 and 2016 is also specific to socially marginalised groups such as Scheduled Caste and Scheduled Tribe children and to children whose mothers have no schooling.

Figure 1. Incidence of stunting among Younger Cohort children at 1, 5, 8, 12 and 15 years of age (%)



Food security and diversity

Food security and nutrition are essential dimensions of sustainable development. Young Lives results indicate substantial improvements in levels of food security. While 89% of the Younger Cohort households reported food security in the year 2009, this increased to 95% in 2016.

With regard to food diversity⁴, the number of food groups eaten by 15-year-olds in 2016 has increased from 4 out of 7 in 2009 to 5 out of 7 groups⁵ in 2016. There is a substantial increase in the percentage of children consuming pulses, legumes and nuts, and meat, poultry and fish products in 2016 over 2009. Three quarters of the children consumed

² Stunting, or prevalence of stunting, is defined as percentage of children having height-for-age z-scores less than <-2 SD from the median height of a reference population of the same age and gender.

³ In this factsheet, 'thinness' is defined by low body mass index (BMI) relative to the chronological age of the child. 'Incidence of thinness' is defined as the percentage of children who have a BMI-for-age z-scores <-2 SD from the reference population of the same age group (WHO 2017).

⁴ Dietary diversity is computed based on answers to questions about different food items eaten using 24 hours recall method.

⁵ The seven food groups are: (1) grains, roots, tubers, (2) fruits and vegetables, (3) meat, poultry, fish, seafood, (4) eggs, (5) pulses, legumes, nuts, (6) milk and milk products, (7) foods cooked in oil or fat.

milk and milk products, and this has not increased during this period.

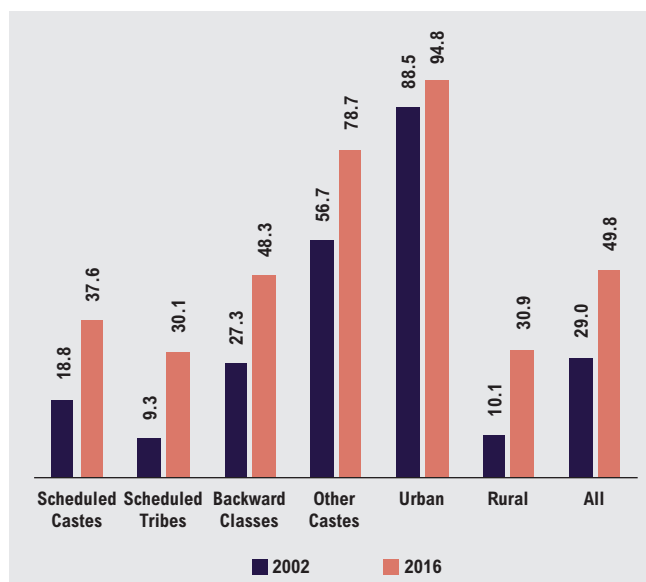
With rising global concerns on the co-existing incidences of overweight, obesity and underweight, India should be aware of its rising rate of overweight children (IFPRI 2016). Young Lives data reveal that the incidences of overweight and obesity amongst Younger Cohort children at age 15 are nearly 7% and 2% respectively, an increase from 6% and 1% for the same children at age 12. Young Lives has also captured incidence of overweight and obesity of the Older Cohort children now aged 22 (13% overweight and 2% obese).

Access to water and sanitation

Current evidence suggests that lack of access to clean water, sanitation and hygiene is an important determinant of childhood stunting (Cumming and Cairncross 2016) and extending access has long been recognised as a critical intervention for improving the health of infants and young children in particular. Amongst our Younger Cohort, access to clean water has become almost universal in rural and urban areas alike by 2016, as compared to 84% in 2002.

It is a different story with regards to access to sanitation: even though there have been considerable improvements, with access increasing from a third of households in 2002, still only half of the households had access to sanitation⁶ in 2016. Moreover, there are huge differences among socio-economic groups and between rural and urban areas. For instance, around 30% of Scheduled Tribes, 38% of Scheduled Castes and 31% of rural Younger Cohort households have access to sanitation compared to 79% of Other Caste households and 95% of urban households (Figure 2). Because poor or no sanitation facilities are associated with malnourishment, the inequalities observed in access to sanitation are likely to be part of the explanation of the higher prevalence of stunting in children living in rural areas and among children from Scheduled Tribes and Scheduled Castes noted earlier.

Figure 2. Access to sanitation among Younger Cohort households, 2002 and 2016 (%)



Healthy development: Menarche and menstrual hygiene

In India, menarche can result in early discontinuation of studies, especially for those girls who do not have access to proper infrastructure and sanitary products. 22% and 95% of the Younger Cohort girls experienced menarche by age 12 and 15 respectively, with 87% of them using home-made cotton napkins during menstruation. In 2011/12 United Andhra Pradesh initiated distribution of free sanitary napkins to girls studying in grade 7 and 8 in government and Kasturba Gandhi Balika Vidyalaya (residential) schools to increase attendance of girl students. In 2016, fewer than one third of the girls reported that their schools supply sanitary napkins, and 18% reported avoiding going to school during menstruation. Amongst the girls who attended school irregularly during menstruation, 28% cited lack of disposal facilities while 19% cited lack of soap and water as reasons for missing school. Further investigation is required around whether schools supply sanitary napkins free of charge or whether girls need to pay for the products. Also, more information is needed on whether menstrual hygiene management is discussed as part of school curricula.

Conclusions

Marginal progress is observed in the reduction of stunting among Younger Cohort children since 2002, with 28% of the children continuing to be stunted in 2016 despite steady progress in both food security and dietary diversity. Inequalities among socio-economic groups continue to exist, though the gap in stunting levels between 15-year-old Other Castes and Scheduled Castes children has decreased from 20 percentage points in 2009 to 16 percentage points in 2016. Cross-cohort analysis of these children reveals an overall decline of 8 percentage points in stunting among 15-year-olds in 2016 compared to 2009. However, thinness has increased among Scheduled Tribes and Scheduled Castes children. Meanwhile, only 30% of Scheduled Tribes and 37% of Scheduled Castes households have access to sanitation in 2016. This highlights the critical need to focus on ensuring that all rural and socially disadvantaged households have access not only to food security and water, but also to sanitation if India wants to meet SDG 6⁷. Since malnutrition is caused by more than one factor it requires alignment of various stakeholders using a multi-sectoral approach (IFPRI, 2016).

⁶ Sanitation includes access to flush toilet/septic tank, pit latrine (communal), pit latrine (household), and toilet in health post.

⁷ Sustainable Development Goal 6 is about ensuring availability and sustainable management of water and sanitation for all.

Table 1: Nutritional status and dietary diversity of 15-year-old children in United Andhra Pradesh

	Stunting (%)		Thinness (%)		Pulses, legumes, nuts* (%)		Milk and milk products* (%)		Meat, poultry, fish, seafood and organ meats (%)		Access to sanitation (%)	
	2009	2016	2009	2016	2009	2016	2009	2016	2016	2016	2009	2016
Gender												
Male	35.1	29.1	41.2	32.9	44.3	55.5	80.8	78.0	89.0	93.1		
Female	36.5	26.0	13.0	16.8	20.8	56.9	75.4	73.7	89.9	96.3		
Caste												
Scheduled Castes	44.0	37.0	24.1	29.3	29.4	54.1	67.0	73.0	92.3	90.1	20.1	37.6
Scheduled Tribes	43.7	32.5	20.4	24.9	37.9	56.4	67.0	66.8	91.3	95.0	27.2	30.1
Backward Classes	35.2	27.2	30.9	28.0	33.4	57.6	83.7	76.9	86.7	96.1	32.0	48.3
Other Castes	24.2	16.8	23.1	16.5	29.0	54.5	82.8	83.4	91.9	95.0	60.0	78.7
Maternal Education												
None	40.5	32.5	28.2	30.3	35.8	57.5	71.8	73.0	87.3	94.3	21.5	33.3
1 to 5 years	35.2	24.6	29.6	21.6	24.1	56.3	83.9	78.9	94.4	97.6	33.3	43.7
6 to 10 years	23.6	23.2	21.7	21.0	29.3	54.3	87.3	77.8	90.4	93.8	69.4	77.0
More than 10 years	5.9	15.6	23.5	14.3	11.8	51.6	100.0	84.4	94.1	96.9	70.6	96.9
Wealth Index												
Bottom tercile	43.1	36.3	29.2	27.5	38.2	58.8	72.4	69.6	91.7	95.2	8.9	22.9
Middle tercile	39.3	27.6	27.1	27.4	27.1	59.2	74.9	76.6	87.5	94.7	20.8	40.6
Top tercile	25.0	19.2	23.6	21.5	31.2	50.3	86.7	82.0	89.4	93.8	76.6	86.6
Location												
Urban	23.3	16.1	19.8	17.4	28.8	46.3	90.6	81.4	86.8	92.0	91.5	94.8
Rural	39.6	31.3	28.7	28.0	33.2	59.3	74.2	74.3	90.3	95.4	17.2	30.9
Region												
New Andhra Pradesh	35.2	25.4	24.2	22.8	22.7	59.0	76.8	75.8	87.5	97.9	31.4	48.3
Telangana	36.9	31.9	31.1	30.2	49.5	50.9	80.3	76.4	93.1	88.6	36.4	51.8
Full sample	35.8	27.7	26.6	25.4	32.2	56.2	78.0	76.0	89.5	94.6	34.6	49.8
Sample size	902	1880	905	1880	905	1875	905	1875	905	1875	904	1879

REFERENCES AND FURTHER READING

World Bank Group (2017) 'World Development Indicators 2017', Washington DC
<https://openknowledge.worldbank.org/handle/10986/26447>

IFPRI (2016) 'Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030'. Washington DC
<https://doi.org/10.2499/9780896295841>

Ministry of Finance (2016) 'Making Investments in Maternal Nutrition and Sanitation and Changing Social Norms to Enhance their Effectiveness can help to Exploit India's Demographic Dividend', Press Information Bureau, Government of India
<http://pib.nic.in/newsite/PrintRelease.aspx?relid=136856>

UNDP (2016) 'Human Development Report 2016', New York
http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf

International Institute for Population Sciences (undated) 'National Family Health Survey-4 2015-16', Mumbai
<http://rchiips.org/NFHS/pdf/NFHS4/India.pdf>

Food and Agriculture Organization (2002) 'The State of Food Insecurity in the World 2001' Rome www.fao.org/3/a-y1500e.pdf

Cumming, O. and Cairncross, S. (2016). 'Can water, sanitation and hygiene help eliminate stunting? Current evidence and policy implications', *Maternal & Child Nutrition*, 12 (Suppl S1), 91–105.
<http://doi.org/10.1111/mcn.12258>

ACKNOWLEDGEMENTS AND CREDITS

This fact sheet gives a preliminary overview of some of the key data emerging from the fifth round of the Young Lives household and child survey. We have produced separate fact sheets for the new states of Andhra Pradesh and Telangana, as well as this fact sheet reporting on our original sample in the undivided state (as it was at the time of our survey). This fact sheet was written by Professor S. Galab, P. Prudhvikar Reddy, Renu Singh and Protap Mukherjee. We would like to thank Prudhvikar Reddy who coordinated the survey fieldwork, our fieldwork teams (particularly the fieldwork supervisors) for their efforts in minimising attrition, K.T. Shyamsunder our Data Manager, and Grace Chang, Patricia Espinoza, and Marta Favara for support with data analysis. In particular, we thank the Young Lives children and their families for their willingness to be part of our sample and answer our many questions.

Young Lives is core-funded by UK aid from the Department for International Development (DFID). The views expressed are those of the author(s). They are not necessarily those of, or endorsed by, Young Lives, the University of Oxford, DFID or other funders.

Photo credit: © Young Lives / Sarika Gulati. The images throughout our publications are of children living in circumstances and communities similar to the children within our study sample.



Young Lives is core-funded by UK aid from the UK Department for International Development

Young Lives is an international study of childhood poverty, following the lives of 12,000 children in four countries (Ethiopia, India, Peru and Vietnam). Young Lives India is a collaboration between CESS (Hyderabad), SPMVV (Tirupati), Save the Children and University of Oxford (UK)