

## **Conference Session: What affects child health: Perspectives from India**

**Title: Title: Does maternal willingness to get pregnant determine childhood stunting? Evidence from Young Lives India. (211363)**

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### **Abstract:**

#### **Introduction**

India has a long tradition of constructive family welfare promotion. One of the first countries to launch a national program to reduce birth rates, India instituted the National Family Welfare Programme (NFWP) in 1952 as part of its first Five Year Plan (1951-56). SINCE THEN, the NFWP has grown significantly in terms of financial investment, geographic reach, quality of services, and the range of contraceptive methods offered. As a result of these concerted efforts, fertility levels in India are gradually falling. Nevertheless, contraceptive choice is limited, and the unmet need for family planning continues to remain high.<sup>1</sup>

The unmet need for family planning among all ages (15–45 years) married women in India is 12.9%, with an unmet need for spacing and limiting being 5.6 and 7.2%, respectively (NFHS 2015-16). A high level of unmet family planning needs is seen among 15–19 years and 20–24 years (27.1 and 22.1%, respectively).<sup>2</sup> No significant decline in the unmet need for family planning has been observed over the past decades in the country. The consistency in these numbers since the NFHS-3 in 2005-2006 suggests that despite increasing efforts to create awareness on the subject, there is an existing gap between a woman's desired fertility and her ability to access family planning methods and services.<sup>3</sup>

These statistics are important because pregnancy intention is an important determinant of children's life outcomes.<sup>4</sup> Pregnancy intention may influence child's health outcomes owing to change in parental behaviour, increased risk of depression, parent less likely to adhere to antenatal care, which would eventually increase the risk of preterm birth, low birth babies, etc., reflecting negatively on the overall growth of the child. <sup>(5-8)</sup>

According to the United Nations Children's Fund, the statistical estimates that are even more alarming is that worldwide, about 165 million children were stunted in 2012 and India alone accounts for 38% of the global burden of stunting. In terms of incidence, India accounts for more than 60 million stunted children worldwide.<sup>9</sup> Such a high prevalence and incidence of stunting in children is a matter of great concern because stunting gets passed from one generation to the other and stunted children are predisposed to being at high risk of having a weaker immune system due to which they are at a much-increased risk of developing illnesses, compromised cognitive and motor skills which determine their later life outcomes like their educational attainment and wage outcomes. <sup>(10-11)</sup>

Surprisingly, existing literature on the association between pregnancy intention and childhood stunting has been inconsistent, especially in developing countries. Mother-child interactions during early life shape foundational neural circuits; neglect and maltreatment associated with the child being unwanted or unintended can undermine the child's physical and cognitive development resulting in compromised later life outcomes. <sup>(12-14)</sup>

This research aims to examine the effect of pregnancy intention on early childhood stunting in India in this backdrop.

## **Methods**

Young Lives (YL) is an international longitudinal study investigating the changing nature of childhood poverty that collects information on child welfare outcomes, including nutritional status, growth, physical

health, cognitive development, social and emotional well-being, and educational development. We use data from the first, second, third and fourth waves of the Young Lives Study (YLS), conducted in the Indian state of Andhra Pradesh in 2002, 2006–07, 2009-2010 and 2013-14. Approximately 12,000 children are followed in four countries: Ethiopia, India (Andhra Pradesh), Peru, and Vietnam. Each country has two cohorts: a younger cohort and an older cohort. The younger cohort consists of about 2,000 children born in 2001–02, and the older cohort consists of about 1,000 children born in 1994–95, both to be followed over 15 years.<sup>15</sup> We limit our study results to four waves of the young cohort of India.

### **Key outcome variable of concern**

The outcome variable of interest is the height-for-age z-score (HAZ).

### **Key independent variable of concern**

The independent variable is birth intentness on the mother's part, i.e. if the mother was willing to be pregnant with the child and the response was binary as intended and not intended. This information was captured during the first wave (2002) of the Young lives survey when the enrolled child was about two years of age. The question directed towards the YL respondent mother was: ‘At the time you became pregnant with the indexed child; did you want to become pregnant?’ All the ones who said yes were considered as intended, and the ones who said no were considered as unintended.<sup>16</sup>

### **Some other variables**

We have included the control variables predominantly based on the theoretical and empirical literature on maternal and child health to account for the various effects of a life-cycle position. Mother’s access to ANC, maternal height, child’s caste/social group, access to mid-day meals, etc., were controlled for in the model.

### **Results**

Out of the 2011 children surveyed in the first round, information on mothers' birth intendedness was available for only 1970 children (94%). Out of this, 8% of the mother’s mentioned that their pregnancies were unintended. The data revealed that out of the 1970 children, only 29.6% of the children whose mother’s intended to be pregnant were stunted in the first wave as against 45% of stunted children whose mother’s pregnancy was unintended then. Out of 1904 children surveyed in the second wave, 35% of

children were stunted whose mother's intended to be pregnant, as against 39% of the stunted children belonged to mother's who did not intend to be pregnant then. In the third wave, out of the 1884 children surveyed, 27% of children were stunted whose mother's intended to be pregnant, against 30% of the stunted children belonged to mother's who did not intend to be pregnant then. In the fourth wave out of the 1871 children surveyed, 29.5% of the children were stunted in mother's intending to be pregnant as against 28.2% when the mothers did not intend the pregnancy.

**Table 1: Mother's intent to have a child and its association with stunting in children**

Variables	HAZ child aged 2 (1)	HAZ child aged 8 (2)	HAZ child aged 12 (3)
Intended Birth ®			
Unintended Birth	-0.27** (-0.54 - -0.01)	-0.08 (-0.23 - 0.07)	-0.02 (-0.20 - 0.16)
Maternal access to antenatal care: Yes ®			
No	-0.00 (-0.23 - 0.23)	-0.14** (-0.27 - -0.01)	-0.04 (-0.20 - 0.11)
Sex Female ®			
Male	0.23*** (0.08 - 0.38)	0.07* (-0.01 - 0.15)	-0.03 (-0.13 - 0.07)
Place of residence: Urban ®			
Rural	0.07 (-0.19 - 0.33)	-0.16** (-0.30 - -0.01)	-0.35*** (-0.53 - -0.17)
Birth Type :Full term ®			
Pre-term	-0.27** (-0.53 - -0.00)	-0.04 (-0.18 - 0.11)	-0.02 (-0.20 - 0.16)
Mother height:>150 cm ®			
<150 cm	0.00 (-0.15 - 0.15)	-0.02 (-0.11 - 0.06)	0.07 (-0.03 - 0.18)
Maternal age :>18 years ®			
<18 years	-0.32 (-0.88 - 0.23)	-0.1 (-0.41 - 0.22)	-0.3 (-0.67 - 0.08)
Anthropometric measurement at age 2:Normal®			
Stunted (<2sd HAZ)		-0.80*** (-0.89 - -0.70)	0.02 (-0.09 - 0.13)
Maternal education: Primary or higher levels complete ®			

Primary incomplete	-0.1 (-0.28 - 0.08)	-0.20*** (-0.30 - -0.10)	0.08 (-0.04 - 0.20)
Household wealth status: Poorest ®			
Poor	0.05 (-0.18 - 0.28)	0.03 (-0.10 - 0.16)	0.02 (-0.14 - 0.18)
Average	0.41*** (0.18 - 0.65)	0.14** (0.01 - 0.27)	0.01 (-0.16 - 0.17)
Rich	0.40*** (0.14 - 0.65)	0.17** (0.03 - 0.32)	-0.12 (-0.29 - 0.06)
Richest	0.60*** (0.26 - 0.94)	0.35*** (0.16 - 0.53)	-0.08 (-0.31 - 0.15)
Child suffering from long term illness: No ®			
Yes	-0.19 (-0.55 - 0.18)	-0.21* (-0.41 - 0.00)	0.16 (-0.09 - 0.40)
Caste/social group: Open caste ®			
Scheduled Tribe	-0.24** (-0.45 - -0.04)	-0.06 (-0.18 - 0.05)	-0.25*** (-0.39 - -0.11)
Scheduled Caste	-0.38*** (-0.67 - -0.09)	-0.1 (-0.26 - 0.06)	-0.41*** (-0.61 - -0.22)
Other Backward Class	-0.21 (-0.46 - 0.04)	-0.12 (-0.26 - 0.02)	-0.21** (-0.38 - -0.04)
Access to Midday meal: Yes ®			
No		-0.10** (-0.19 - -0.01)	-0.01 (-0.11 - 0.10)
Constant	-1.44*** (-1.86 - -1.02)	-0.82*** (-1.07 - -0.57)	-0.97*** (-1.27 - -0.66)
Observations	1,789	1,734	1,800
R-squared	0.05	0.24	0.03

ci in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Discussion and Conclusion

The study's main evidence suggests that the children who were reported as unintended at birth were statistically more likely to be associated with lower HAZ when compared to their intended counterparts. Even after adjusting for well-known confounders causing sub-optimal physical growth, the results hold significance, which was available from the Young Lives data. The findings have implications for bettering the unmet needs of women in the reproductive age group to target the reduction in childhood stunting and sub-optimal HAZ among children in India. Since the probability of having a sub-optimal HAZ increases with the lack of maternal access to antenatal care, belonging to backward classes, and lower maternal education, it means that women who have no access to antenatal care are ill-educated or illiterate and belong to these vulnerable caste group need to be policy-targeted the most compared to women who have some access to antenatal care, who do not belong to vulnerable social groups and are educated.

We would also like to note the limitations of our research study. Owing to the retrospective nature of the data, the reporting of birth intention is subject to recall bias and even social desirability bias. Owing to social desirability bias, the association between birth intendedness and HAZ is likely to be underestimated, wherein our estimates can be lower bound, and the problem can be much bigger. We also do not distinguish between unintended births and mistimed births as the mother's question did not capture the differentiation between the two.

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