Growing Overweight and Obesity Issues in India

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Abstract

India is rapidly undergoing a nutrition transition, where high magnitudes of undernutrition among adults and children coexist with high magnitudes of overweight and obesity. This paper examines patterns in overweight and obesity rates for adults and school going children in India. Results indicate that adult women vis-à-vis men are more vulnerable and adults residing in urban areas are more likely to be overweight or obese. Among children, prevalence of overweight/obesity is higher among boys as compared to girls.

1.1 Introduction

Overweight and obesity has become a global nutritional concern affecting both children and adults. Countries where the major nutritional disorder previously was/is malnutrition are more susceptible of being overweight/obese. Urbanization is occurring rapidly in the Indian subcontinent. Lifestyle changes involving major deviations in diet pattern, increased physical inactivity due to improved transportation, increased availability of energy-saving devices and high level of mental stress are associated with modernization which contribute to increased prevalence of overweight and obesity among people. Due to the rapid pace of economic development in India, epidemiological changes are occurring at much shorter time. As a result, cardiovascular diseases (CVD) (such as coronary heart diseases, stroke etc.) has emerged as one of the leading causes of death all over India, with coronary heart disease (CHD) affecting Indians at least 5-6 years earlier than their western counterparts (Must et al., 1999).

Obesity in India is not restricted among adults, it is widespread among children especially adolescents. Excessive weight in childhood is significantly correlated with obesity in adulthood. Whitaker et al., 1997 finds that approximately 79% of children aged 10–14 with a BMI at or above the 85th percentile were found to be substantially overweight (BMI over 27) or obese in their twenties. There are very few studies on the prevalence of obesity among children on India, but studies reporting childhood obesity are emerging.

In India, there are limited studies looking at the growth of overweight and obesity among adults and children. Therefore, the objective of this paper is to look at the prevalence of overweight/obesity among adults (18-60 years old) and school going (5-17 years old) children. Additionally, this paper examines the gender and location (urban v/s rural) differences in the prevalence of overnutrition. Therefore, a greater understanding of overweight and obesity trends, could serve as a stimulus to policy formulation crucial for tackling the problem of overweight and obesity and thus, improving health standards of the population.

1.2 Data for analysis

The analysis of this paper is conducted using nationally representative data from the second wave of the India Human Development Survey (IHDS) conducted in 2011-12 (IHDS2). The survey collected information on health, education, employment, economic status, marriage, fertility, gender relations, and social capital. The survey collected anthropometric data for household members present at the time of survey. Therefore, this study analyses the pattern of overnutrition among adults (18-60 years old) and children in the age group of 5-17.

1.3 Variable description

The study uses Body Mass Index (BMI) as an indicator of weight. BMI, defined as the ratio of weight (in kilograms) to height (in meters) squared is commonly accepted as a key indicator of weight. Word Health Organization (WHO) defines cut-off using BMI to categorize individuals into different weight categories: underweight (BMI < 18.5), normal weight (BMI $\in [18.5, 25)$), overweight (BMI $\in [25, 30)$), obese (BMI $\in [30, 40)$) and morbidly obese (BMI ≥ 40). However, the WHO recognized that these cut-offs might not be appropriate for Asians as they are at a higher risk of type 2 diabetes and cardiovascular disease at lower BMI levels as compared to their European counterparts (see Yajnik, 2002; Zhou, 2002). They therefore identify 23 kg/m^2 and 27.5 kg/m^2 as additional trigger points (corresponding to overweight and obesity, respectively) for public health action. We also use these lower Asian thresholds to identify adults who are overweight or obese i.e. adults with BMI greater than equal to 23 kg/m^2.

For children we make use of BMI for age growth references to classify children as being overweight or obese. Z-scores were calculated for each child and following WHO thresholds, overweight or obese children are those with z-scores above 1.0 standard deviations. We also use the Indian Academy of Pediatrics' (IAP) revised growth charts for Body Mass Index (BMI) for 5-18-year-olds for Indian children to classify children (aged 5-15) into the weight categories (Khadilkar et al.,2015). The IAP based references were utilized to obtain BMI for age z-scores for each child. The child was identified as overweight if the z-score was greater than equal to 0.55 and 0.67 for boys and girls, respectively.

1.4 Patterns of Overweight among adults

Using standard WHO cut-off, Figure 1 below shows that women in the age group of 18-60 are more likely to be overweight or obese as compared to men. About 35% of urban women as compared to 29% urban men are overweight or obese. Similarly, 16% or rural women and 14% of rural men have BMI higher than or equal to 25. The figure below also highlights higher prevalence of overnutrition among urban adults as compared to

their rural counterparts. The figure also highlights that issue of overweight/obesity has percolated among rural population.

Figure 1: Percent of Adults who are Overweight/Obese (using BMI>=25) by gender, by region of residence

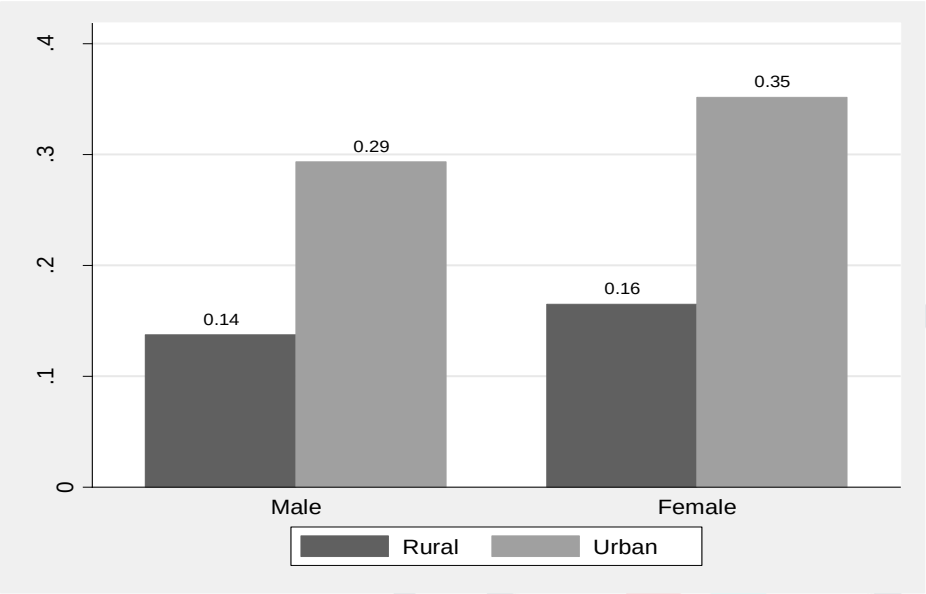
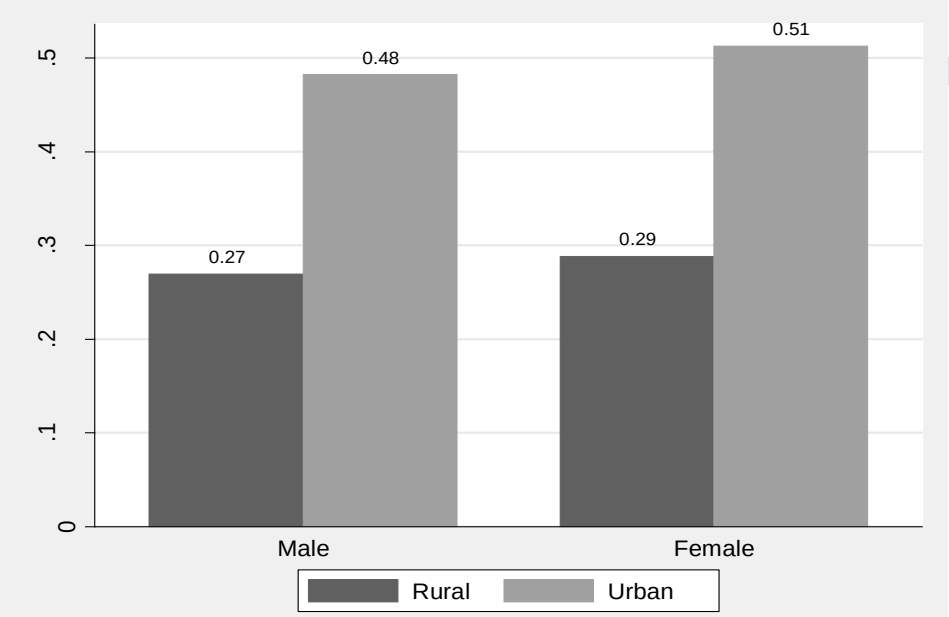


Figure 2: Percent of Adults who are Overweight/Obese (using BMI>=23) by gender, by region of residence



When Asian specific cut-offs are used to define individuals, who are either overweight or obese, the proportions swell (see figure 2 below). Almost 50% of urban male and female have BMI higher than or equal to 23, and about one third of rural male and female adults are overweight or obese.

1.5 Patterns of Overweight among children

Now, looking at the patterns of overweight or obesity among children shows that boys relative to girls are more vulnerable of being overweight or obese. Figure 3 below, following BMI for age measure growth reference guidelines in WHO (2007) for children, shows that about 15% of boys and 13% of girls residing in urban areas are overweight or obese, while for rural areas, the proportions are 9% and 7% for boys and girls respectively.

Figure 3: Percent of children (5-17 years old) who are Overweight/Obese (using WHO growth references) by gender, by region of residence

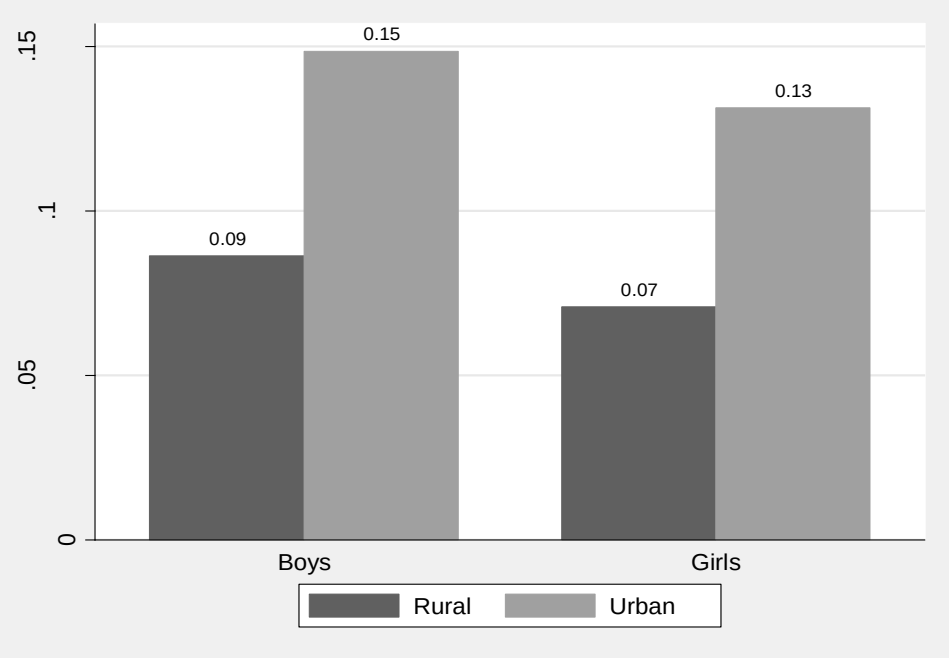
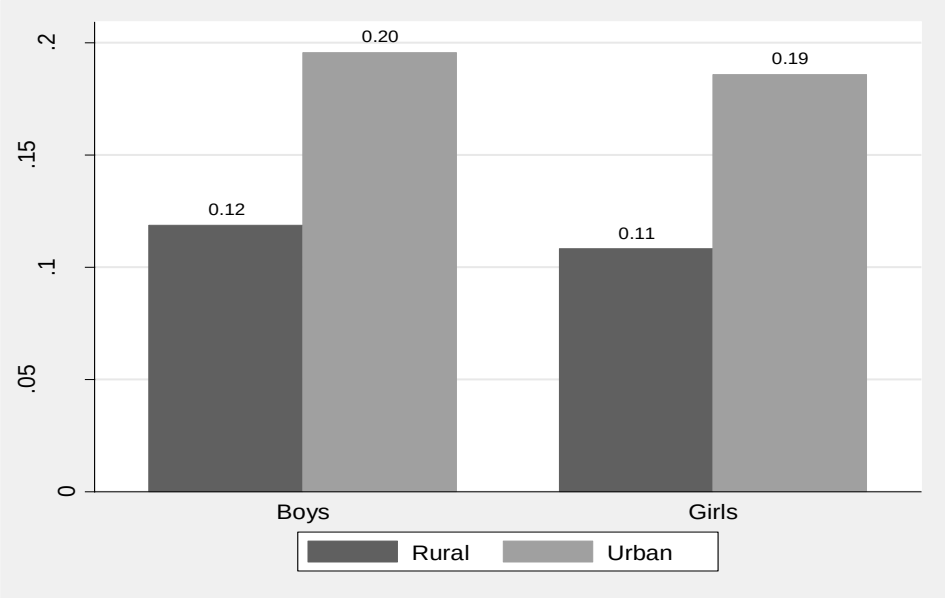


Figure 4: Percent of children (5-17 years old) who are Overweight/Obese (using IAP growth references) by gender, by region of residence



When we use IAP growth references, we find that these percentages increase for both boys and girls. In urban areas, about 20% of boys and 19% of girls are overweight or obese while in rural areas the proportion are 12% and 11% for boys and girls respectively.

1.6 Conclusion

The patterns of overweight or obese are concerning because it has been linked to non-communicable diseases (NCDs) such as diabetes, heart disease, hypertension and various types of cancer. The incidence of overnutrition is not just confined to adults but is also being found among school going children. Adolescents having excess weight is of major concern because overnutrition during childhood is associated with overnutrition in adulthood. Our study indicates that about half and one third of urban and rural population are either overweight or obese respectively. It suggests that excessive weight problem is not just an urban phenomenon, it has percolated among rural population as well. The rates are alarming and require immediate government attention. The phenomenon has not received as much attention in the literature as undernutrition has thus require more research.

References

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