

# Physical Activity, Food intake and Time use patterns among adolescents: Stylised facts between caste groups in Telangana, India

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## Introduction

Adolescence is a critical window of opportunity; the dietary habits and physical activity adopted during adolescence influence both present and future health and nutritional outcomes. With 253 million adolescents, half are malnourished, ensuring adolescent health is crucial for India's development and human capital investment. In Indian society, caste plays a critical role in influencing household, institutional, and societal factors, affecting adolescent's health and nutrition. Yet, the role of caste in determining nutrition dimensions that shape adolescent's lives has not received attention in the literature. This study fills the gap by exploring the role of caste on adolescent nutrition health through its association with socio-economic endowments, opportunities, and consequent influence on physical activity, energy expenditure, time-use, and food intake.

## Methods

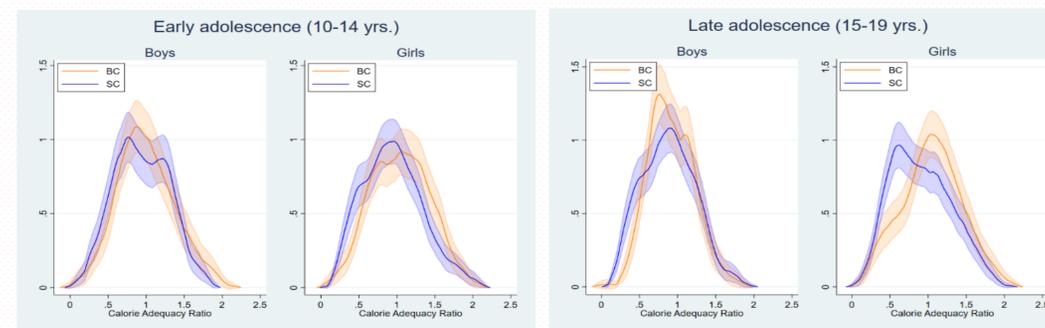
**Study setting:** Khammam and Mahbubnagar district of Telangana state, India.

**Data:** The study is based on 400 adolescents (11-19 years old) from 347 households. Adolescents were invited to wear an accelerometer for five consecutive days to capture energy expenditure data. This data complemented with 24hrs recall dietary intake and time use data collected during the same time frame. The final data set included 83040 half-hour data points over 1730 participant/day. Household questionnaire was also administered at the beginning of the survey.

**Data Analysis:** Descriptive Analysis, Kernel Density Estimation, Kolmogorov-Smirnov test and built wealth index based on the assets ownership and dwelling characteristics.

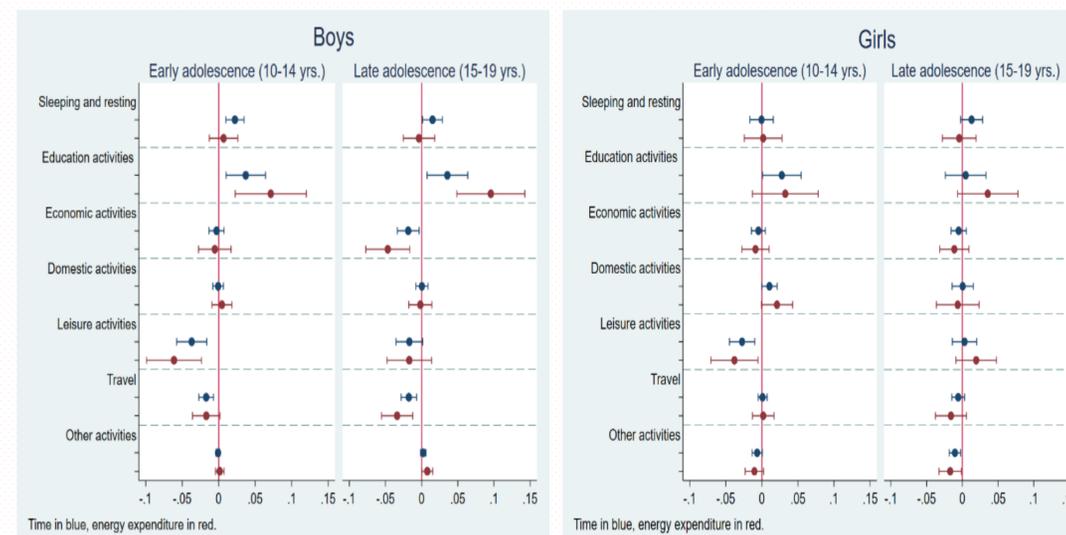
## Insights from the study

We find higher energy intake for SC adolescents than BCs. Concerning to energy expenditure, BCs far exceeds that of SCs across gender and age groups. These differences in energy intake and energy expenditure, i.e., Caloric Adequacy Ratio (CAR) distributions among adolescents across SC - BC showed in Graph 1 & 2. CARs are significantly different across castes for late adolescent boys and girls.



**Graph 1 & 2:** Caloric Adequacy Ratio (energy intake/energy expenditure) among early and late adolescents, by sex and caste (backward caste (BC) in orange and schedule caste (SC) in blue).

Graph 3 & 4 SC adolescent boys spend a significantly higher proportion of their time and energy (5% higher than BC boys) on educational activities. Whereas, BCs spend on economic, leisure, and travel activities. Reflecting the effect of wealth on the allocation of time and energy on different activities among adolescents of different caste groups.



**Graph 3 & 4:** Difference (SC - BC) in the proportion of time (in blue) and energy expenditure (in red) spent on different activities, by sex and age

## Policy relevance

Caste plays an influential role in the access to educational and economic opportunities of various social groups. Therefore, the adolescents' health and nutrition enhancing interventions should consider differences in physical activity, time-use and food intake that are strongly associated with caste differences. This can give us a better understanding of the role of caste in defining pathways to nutrition.

## Conclusions

- Adolescent energy expenditure is interlinked with their food intake and physical activity, which, in turn, can have a larger effect on calorie adequacy and nutritional outcomes.
- Caste plays a profound role in occupation, asset endowments, access to resources, household and parental characteristics, societal and institutional factors.
- The differences in Energy expenditure, food Intake and physical activities of adolescents throw light on the role of caste in defining pathways to health and nutrition.

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