

Prevalence Of Overweight Among Urban Indian Children – Role Of Ethnicity And Environment

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BACKGROUND

Developing countries are often challenged with the dual nutritional burden of under nutrition and overweight. Prevalence of overweight/obesity in India is higher in urban areas and higher socio-economic groups and higher socio-economic groups and recent studies have reported an increase in urban children (16% in 2002 to 24% in 2007)¹. Prevalence of overweight/obesity high among Punjabi women in India^{3,4}

OBJECTIVE

- To measure the prevalence of overweight / obesity in preschool and primary school children in India
- To assess influence of ethnicity and socio-economic status

METHODOLOGY

Study Site: Delhi, India

Cross sectional study design 657 pre-school and primary school children aged 2 – 6 years (358 M and 298 F)

Multistage stratified random sampling 12 pre-school and primary school from five zones in Delhi

Study sample Mixed ethnic groups/ caste groups and socio-economic status

Data collection School based base camps and home visits

- Height, Body weight, 7 skinfold thicknesses and 7 body circumferences were measured (single observer)
- Information on child-related, maternal, paternal, and socio-economic factors collected from parents

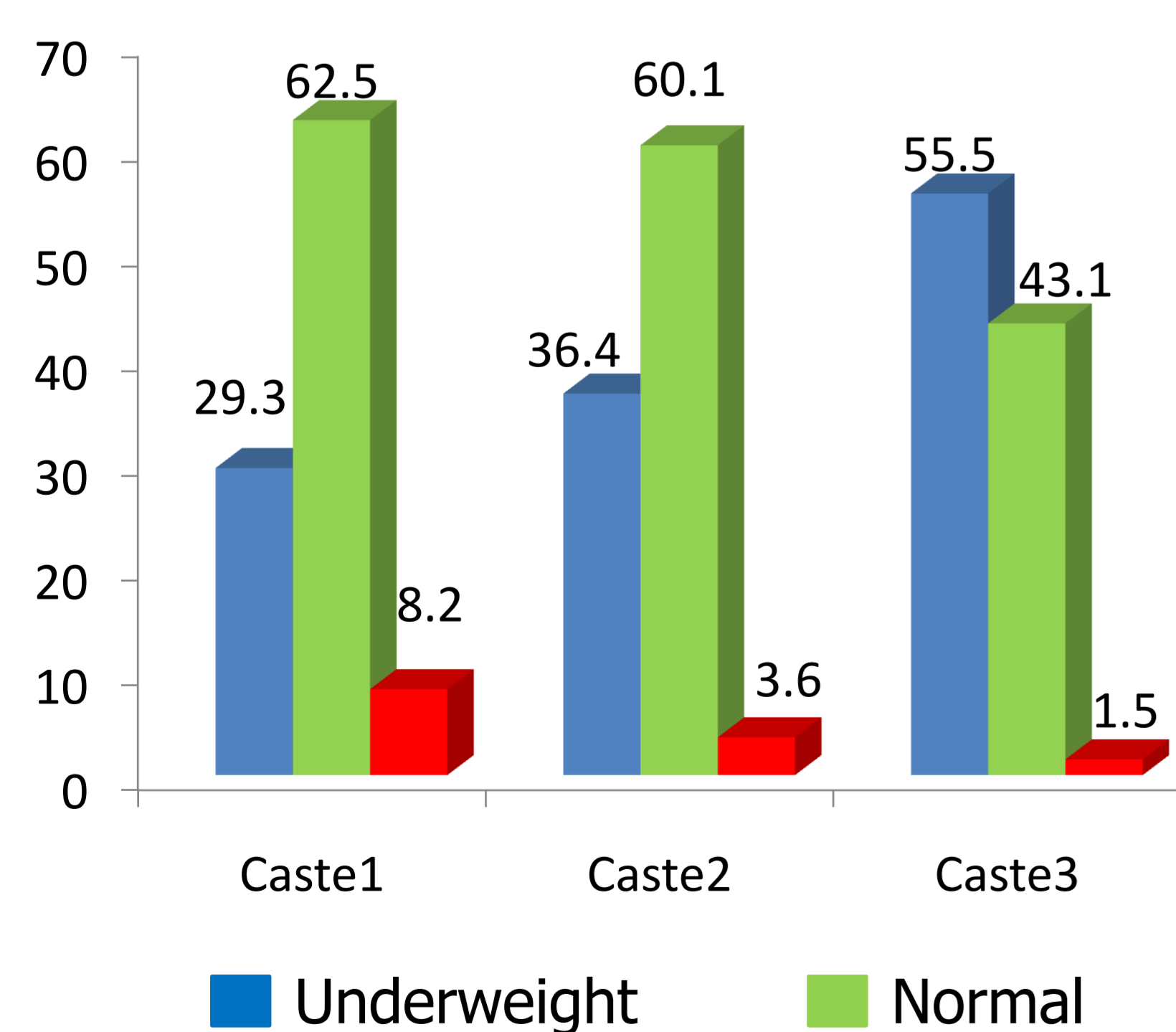
Analysis Under nutrition, overweight and obesity were defined as per IOTF (Cole 2000)² and WHO (2006 and 2007) cut offs

- Children divided into subgroups by caste, family income, parents' education and occupation
 - Caste groups (I – Punjabi, Jats, Sikhs, Yadav, Rajput ; II – Bania, Bhumiyaar, Kayastha; III - others)
 - Low Income group (>10000 Rs / month) ; Middle income group (10000 – 25000 Rs / month); High income group (> 25000 Rs / month)

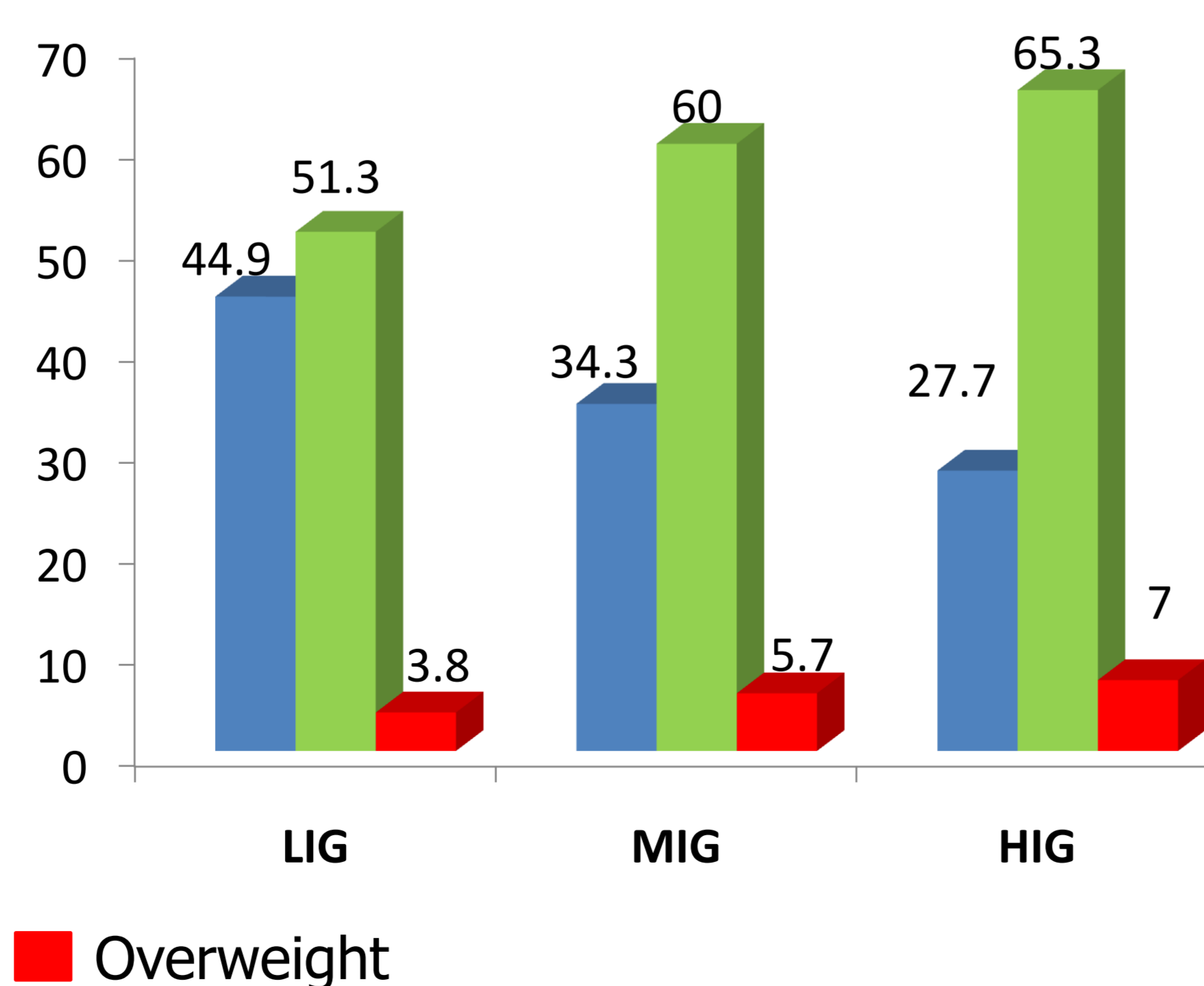
RESULTS

- 5.8 % of children were overweight including obese and 33.7% were underweight (IOTF)
- Prevalence differ using two international standards (IOTF vs. WHO)
- Caste and family income associated with nutritional status with more overweight/obese children in caste group I (p<0.001) and high income groups (p<0.01)
- Association of caste with nutrition status was independent of income and age (OR - 2.15, CI – 1.14 to 4.05)
- No sig. association between nutritional status of children and parents' education, occupation
- No sig. difference in mean body circumferences, skinfold thicknesses (except thigh SFT), body fat % and fat mass index between caste groups

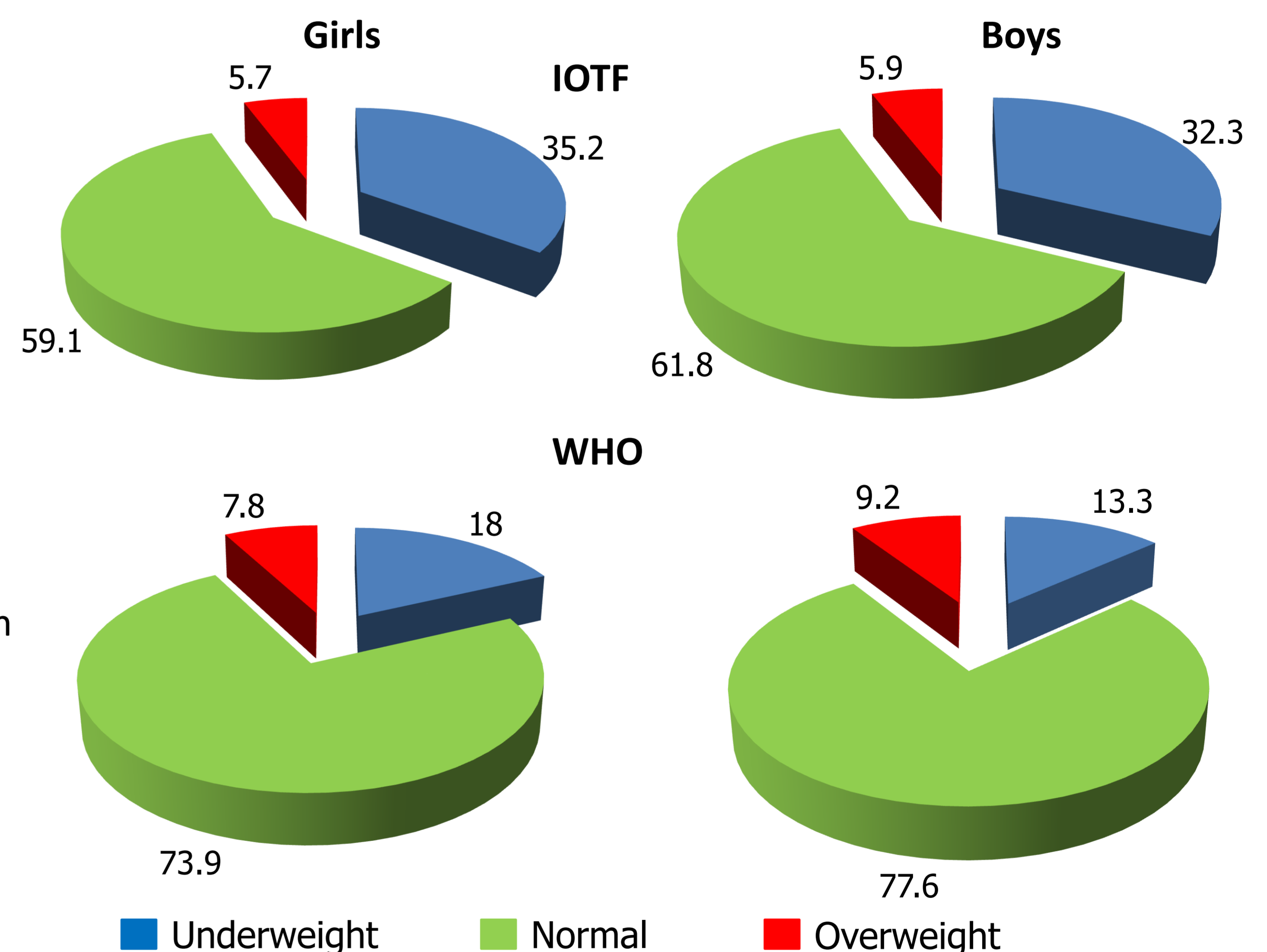
Nutritional status across caste groups



Nutritional status across family monthly income groups



Prevalence of overweight/ obesity



CONCLUSION

Overweight/ obesity coexists at early ages. Children from caste group I and /or high income families are at relatively higher risk

Similar body composition in this age across different caste groups indicate greater role of extrinsic environment than biological variation

Nutritional status (BMI) of children is influenced by dietary habit, activity level and lifestyle however individual behaviours are often influenced by cultural traits and social status

The role of the 'obesogenic' environment needs to be further explored by comparing dietary, habitual activity pattern, energy intake and socio cultural aspects of behaviour between different caste and socio-economic groups

References

- ¹ Bhardwaj et al (Asia Pac J Clin Nutr 2008;17 (SI: 172 – 175)
- ² Cole et al (BMJ 2000;3207244:1240 – 1243)
- ³ Satwanti et al (Am J PhyAnth1980; 53: 611 -616)
- ⁴ TandonK (2006, PhD thesis , Department of Anthropology, University of Delhi)

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