

\*AHMAD NADEEM ASLAMI, #MOHAMMED A ANSARI, #N  
KHALIQUE AND \$UMESH KAPIL

From Departments of \*Community Medicine,  
Narayan Medical College and Hospital,  
Jamuhar, Sasaram, Bihar;

#Community Medicine, Jawaharlal Nehru Medical College,  
Aligarh Muslim University, Aligarh, Uttar Pradesh;  
and \$Gastroenterology and Human Nutrition Unit,  
AIIMS, New Delhi, India.  
\*ahmadnadeemaslami@gmail.com

## REFERENCES

1. Hetzel BS. Iodine deficiency disorders (IDD) and their eradication. *Lancet*. 1983;2:1126-9.
2. Tiwari BK, Ray I, Malhotra RL. Policy Guidelines on National Iodine Deficiency Disorders Control Programme. Nutrition and IDD Cell Directorate of Health Services, Ministry of Health and Family Welfare, Government of India New Delhi: 2006. p. 1-22.
3. WHO/UNICEF/NICCIDD, Assessment of Iodine Deficiency Disorders and Monitoring their Elimination. 3<sup>rd</sup> ed. Geneva: WHO;2007. Available from: [http://www.unicef.org/ukraine/2\\_Guide\\_for\\_IDD\\_managers\\_eng.pdf](http://www.unicef.org/ukraine/2_Guide_for_IDD_managers_eng.pdf). Accessed April 26, 2015.
4. Singh PN, Ahmad J. Goiter in rural area of Aligarh district. *Indian J Physiol Pharmacol*. 2002;46:102-6.
5. Sandell EB, Kolthoff IM. Micro determination of iodine by a catalytic method. *Microchimica Acta*. 1937;1:9-25.
6. Toteja GS, Singh P, Dillon BS, Saxena BN. Iodine deficiency disorders in 15 districts of India. *Indian J Pediatr*. 2004;71:25-8.
7. NFHS-3.(National Family Health Survey ) 2005-06. International Institute for Population Sciences (IIPS) and Macro International, 2007. Volume I. Ministry of Health and Family Welfare, Government of India. Mumbai:IIPS. Available from: <http://dhsprogram.com/pubs/pdf/frind3/00frontmatter00.pdf>. Accessed April 26, 2015.
8. Chandra AK, Singh LH, Tripathy S, Debnath A, Khanam J. Iodine nutritional status of children in North East India. *Indian J Pediatr*. 2006;73:795-8.
9. Kapil U, Singh JV, Tandon M, Pathak P, Singh C, Yadav R. Assessment of iodine deficiency in Meerut District, Uttar Pradesh. *Asia Pac J Clin Nutr*. 2000;9:99-101.
10. Kapil U. Successful efforts toward elimination iodine deficiency disorders in India. *Indian J Community Med*. 2010;35:455-68.

## Prevalence of Obesity and Overweight Among School Children Aged 8-18 Years in Rajkot, Gujarat

A total of 1496 school children aged 8-18 years (79.1% boys) participated in this study. Prevalence of obesity and overweight was estimated by using three different growth standards. Revised IAP 2015 growth standards detected more obese and overweight children than WHO 2007 and IOTF standards.

**Keywords:** *Epidemiology, Manutrition, Thinness.*

**Published online: June 01, 2016. PII:S097475591600008**

High prevalence of childhood and adolescent obesity and overweight is being reported in developing countries, including India [1-5]. These problems have shown rapid increase, especially in cities and among affluent youth [6,7]. Obesity in children and adolescents leads to health consequences among them, and increases risk of obesity in adulthood [2]. A rapid epidemiological and nutritional transition along with demographic transition in India leads to double threat of over- and under-nutrition [3]. Different studies conducted during last decade in India reported prevalence of obesity in range of 2.9% to 14.3% [5-9], and of overweight in range of 1.5% to 24.0% [2-6]. These

studies were conducted at different times in India by using different standards with different cut-off points to assess the prevalence of obesity and overweight. The present study was conducted to estimate the prevalence of obesity and overweight by using the Indian Academy of Pediatrics (IAP) 2015 standards [8], WHO 2007 standards [9] and International Obesity Task Force (IOTF) standards [10], among school children and adolescents aged 8-18 years from Rajkot city.

Four out of five selected schools agreed to participate in the study, and anthropometric data was collected from 3<sup>rd</sup> to 12<sup>th</sup> standard children aged 8-18 years between January to April 2015. The children studying in these schools belonged to affluent families. The data were collected from 1496 school children and adolescents. An ethical clearance was taken from the institutional ethical committee to conduct the study.

A total of 1496 students (1183 boys) participated in the study. Prevalence of obesity was 14.0% by IAP 2015 standards, 11.1% by WHO standards and 5.1% by IOTF standards (**Table I**). Obesity prevalence for boys was 16.2% by IAP standards, 12.8% by WHO standards and 5.8% with IOTF standards. Overweight prevalence for boys by IAP 2015 standards was 19.6%. Prevalence of obesity among girls was found low for all three standards. The prevalence rates of obesity and overweight as per IAP 2015 standards were higher than WHO 2007 and IOTF

**TABLE I** PREVALENCE OF OBESITY AND OVERWEIGHT AMONG SCHOOLCHILDREN AGED 8-18 YEARS AS PER THREE DIFFERENT GROWTH STANDARDS\* (N=1496)

Growth status	IAP, 2015 (%)			WHO, 2007 (%)			IOTF, 2000 (%)		
	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
Obesity	14.0	16.2	5.8	11.1	12.8	4.5	5.1	5.8	2.6
Overweight	19.1	19.6	16.9	15.3	16.9	9.3	15.8	17.2	10.2

\*IAP – Indian Association of Pediatrics, WHO – World Health Organization, IOTF – International Obesity Task Force.

standards. A study from New Delhi also reported similar observations among school-aged youth [7]. The prevalence of obesity and overweight in present study was higher than some other studies conducted in different parts of India [1-7]. As the school children and adolescents selected in this study belonged to affluent families, their lifestyle and dietary habits makes them more prone to overweight and obesity. Limitations of this study include convenience sampling, no *a priori* sample size calculation, and a disproportionate boys-to-girls ratio.

**\*RAJESH K CHUDASAMA, TKM ESHWAR, SUBHASINI T ESHWAR AND DHARA THAKKAR**

*From Department of Community Medicine,  
Government Medical College;  
and #Milestone Hospital;  
Rajkot, Gujarat, India.*

*\*dranakonda@yahoo.com*

#### REFERENCES

1. Mehta M, Bhasin SK, Agarwal K, Dwivedi S. Obesity amongst affluent adolescent girls. *Indian J Pediatr.* 2007;74:619-22.
2. Jain S, Pant B, Chopra H, Tiwari R. Obesity among adolescents of affluent public schools in Meerut. *Indian J Public Health.* 2010;54:158-60.
3. Kumaravel V, Shriram V, Anitharani M, Mahadevan S, Balamurgan AN, Sathiyasekaran B. Are the current Indian growth charts really representative? Analysis of anthropometric assessment of school children in a South Indian district. *Indian J Endocr Metab.* 2014;18:56-62.
4. Cherian AT, Cherian SS, Subbiah S. Prevalence of obesity and overweight in urban school children in Kerala, India. *Indian Pediatr.* 2012;49:475-7.
5. Jagadeshan S, Harish R, Miranda P, Unnikrishanan R, Anjana RM, Mohan V. Prevalence of overweight and obesity among school children and adolescents in Chennai. *Indian Pediatr.* 2014;51:544-9.
6. Goyal RK, Shah VN, Saboo BD, Pathak SR, Shah NN, Gohel MC, *et al.* Prevalence of overweight and obesity in Indian adolescent school going children: its relationship with socioeconomic status and associated lifestyle factors. *J Assoc Physicians India.* 2010;58:151-8.
7. Stiglar MH, Arora M, Dhavan P, Tripathy V, Shrivastav R, Reddy KS, *et al.* Measuring obesity among school-aged youth in India: A comparison of three growth references. *Indian Pediatr.* 2011;48:105-10.
8. Khadilkar V, Yadav S, Agrawal KK, Tamboli S, Banerjee M, Cherian A, *et al.* Revised IAP growth charts for height, weight and body mass index for 5 to 18 year old Indian children. *Indian Pediatr.* 2015;52:47-55.
9. De Onis M, Onyango AW, Borghi E, Siyam A, Nishida C, Siekmann J. Development of a WHO growth reference for school-aged children and adolescents. *Bull World Health Organ.* 2007;85:660-7.
10. Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: International survey. *BMJ.* 2000;320:1-6.