**Original article:**

**Waist circumference and Waist height ratio percentiles for assessing childhood obesity: Cross-Sectional Survey in rural Indian child population.**

**1Abhishek Kawatra\*, 2Nadja Trygg , 3Gaurav Parhar , 4Alpana Mohta**

**1**Department of Community Medicine**,** S.P. Medical College (Rajasthan Govt), Bikaner, Rajasthan, India

**2** (MPH) KI, Stockholm-Sweden, Ex. DPH trainee at India.

\*Corresponding author: E mail drkawatrapsm@gmail.com

**Abstract:**

**Introduction:** This research work proposed the age-gender specific percentile charts for waist circumference (WC) and Waist height ratio (WHtR) with determination of its validity in comparison to international criteria of 0.5 as cut off value. In addition the prevalence of obesity among the rural child population was estimated.

**Methodology:** A cross sectional school based study was carried out at Loni, Ahmednanagar-Maharashtra, during May 2008 to December 2010. Two stage sampling method was applied for selection of schools. The eligible population accounted at 2642 from the total study population after meeting the inclusion criteria. Age-gender specific waist circumference percentile charts were tabulated and categorization of obesity was done as per the International Diabetic Federation criteria of 90th perecentile. WHtR percentile charts were formulated and ninety fifth percentile was taken as the cut off limit to comment on obesity.

**Observations and Results:** The mean WHtR (≥95th percentile) cut off, for male and female children of rural area in Maharashtra is proposed at 0.43 and 0.44 respectively. The sensitivity and specificity of WHtR was 1.00 (95% CI 0.92-1.00) and 0.82 (95% CI 0.79-0.84) with statistical significant association (χ2=351.06, p<0.0001) in comparison to international criteria of 0.5. The prevalence of obesity with the criteria of WC>90th percentile, WHtR >0.5 and WHtR>95th percentile was estimated at 12.87%, 3.4%, and 20.74% respectively.

**Conclusion:** child hood obesity is best screened with use of WHtR of lower cut off limit in comparison to international criteria, especially for rural children in India.

**Key words**: Child obesity, height, Waist circumference