

Abstract Objective Identifying the spatial patterns of childhood overweight/obesity (OW/OB) can help to guide resource allocation for preventive intervention in China.

This study aims to estimate rates of childhood OW/OB across counties within Shandong Province, using geographic techniques to identify sex-specific spatial patterns of childhood OW/OB as well as the presence of spatial clusters. Design Cross-sectional study. Setting Shandong Province in China. Participants and methods Data on 6216076 children and adolescents aged 7–18 years from the Primary and Secondary Schoolchildren Physical Examination Database for Shandong Province were used in this study. Spatial patterns of sex-specific prevalence of childhood OW/OB were mapped. Global autocorrelation statistic (Moran's I) and the Local Indicator of Spatial Association (LISA) were applied to assess the degree of spatial autocorrelation. Results The overall prevalence of childhood OW/OB in Shandong province were 15.05% and 9.23%, respectively. Maps of the sex-specific prevalence of OW/OB demonstrate a marked geographical variation of childhood OW/OB in different regions. Prevalence of childhood OW/OB had a significant positive spatial autocorrelation among both boys and girls. LISA analysis identified significant clusters (or 'hot spots') of childhood OW/OB in the eastern coastal region, central region and southwestern region. Conclusions The prevalence of childhood OW/OB is highly spatially clustered. Geographically focused appropriate intervention should be introduced in current childhood OW/OB prevention and control strategy.