

Trends in weights, heights, BMI and comparison of their differences in urban and rural areas for Iranian children and adolescents 2–18-year-old between 1990–1991 and 1999

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Abstract

Background Secular trends in height and weight are interesting because in middle- and low-income countries they are a marker for changes in population health. The present study aims to adolescents aged 2–18 years old between 1990–1991 and 1999 and compare the magnitude of urban–rural differences during this period for the first time in an Asian country.

Methods Data from two national health surveys in 1990–1991 and 1999, of 22 349 and 25 196 weight and height measures of Iranian children and adolescents were used to study the trend and compare its difference in urban and rural children. Logarithmic transformation of weight, height and BMI was modelled as a polynomial in age for urban and rural boys and girls in each survey separately. The trend in urban and rural growth indexes (weight, height and BMI) and also the comparisons of urban–rural differences between two national surveys were tested in logarithmic scale using a weighted form of Z statistic for comparison of two means adjusted for age groups.

Results Urban and rural boys and girls became taller and heavier ($P \leq 0.02$) with no change of BMI ($P > 0.05$) during the period. There was not any significant difference between the magnitudes of urban–rural difference between two surveys ($P \geq 0.61$).

Conclusion Although generally positive weight and height trend was observed among urban and rural residents, the magnitude of their differences was not changed.

Keywords

growth indexes, Iran, trend, urban–rural difference

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Introduction

In recent decades, many studies in America, Europe, Australia, Africa and Asia have shown positive secular trends in growth indexes of height, weight and body mass index (BMI) in

children and adolescents (Loesch *et al.* 2000; Cardoso & Caninas 2009; Gohlke & Woelfle 2009; Hawley *et al.* 2009; Li *et al.* 2009; Pena Reyes *et al.* 2009; Roelants *et al.* 2009). As the rate of increase depends on which index of body size is measured, e.g. height or weight or BMI and also different time and location of measurement (Cole 2003) the secular trend is interesting, indeed as it changes over the time it becomes a marker for population health (Tanner 1992).

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