The role of socioeconomic circumstances in differences in height of pre-school children within and between the Czech Republic and Southern Brazil

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Summary

Children's height is an important indicator of nutritional status and health of populations. Little is known about the role of individual socioeconomic factors and whether socioeconomic differences within countries can help explaining differences in children's height between countries. This paper examines the effect of socioeconomic factors on children's height in two population with different social environments. Two separate cross-sectional studies of children 36-59 months old from Southern Brazil and the Czech Republic collected data on height and socioeconomic and demographic variables. Height was converted into height-for-age Z-scores (HAZ) based on one growth standard, and the effect of socioeconomic and demographic factors on children's heights was studied by multiple regression. First, these effects were estimated separately for each country, and secondly, it was assessed whether some of the difference in height between the two countries could be explained by these factors. Czech children were 0.61 HAZ (approximately 2.6 cm) taller than Brazilian children. In Brazil, income, dwelling conditions, birth order, birth weight and maternal age were independently and significantly associated with height (multiple R-squared 0.27). In the Czech Republic, maternal education, birth order, birth weight and maternal age predicted height in a multivariate analysis (multiple R-squared 0.11). Maternal education alone explained 30% of the difference in children's height between Brazil and the Czech Republic; further adjustment for education of the father, birth weight, number of siblings and birth order slightly increased the proportion of explained difference to 41%.
Our results suggest that although socioeconomic and demographic factors predicted children's growth in both countries, the role of individual factors differed and the associations were stronger in South Brazil. The finding that these factors explained a large part of the between-population difference further illustrates the importance of social environment for children's growth.

Key words: height of children, socioeconomic factors, Brazil, Czech Republic

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