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Original article

Childhood Excess Weight in Spain From 2006 to 2012. Determinants and Parental Misperception

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ABSTRACT

Introduction and objectives: Due to the high prevalence of childhood obesity in Spain, we analyzed changes in its prevalence from 2006 to 2007 and from 2011 to 2012, as well as diet, sleep, and sedentary habits in 5- to 14-year-olds and parental misperceptions about their children's excess weight.
Methods: The sample was from the Spanish National Health Surveys for 2006 to 2007 (n = 5590) and for 2011 to 2012 (n = 3601). Data were collected by trained personnel through telephone interviews with parents/guardians. Weight and height were self-reported and the International Obesity Task Force cutpoints were used to define overweight and obesity.
Results: The prevalence of childhood excess weight was 30.1% from 2006 to 2007 and 29.7% from 2011 to 2012, while that of childhood obesity was 9.6% and 9%, respectively. Parental misperception of childhood excess weight increased from 60.8% to 71.4% ($P < .001$). Daily consumption of vegetables increased by 7.8%, while that of soft drinks and snacks decreased. This decrease was greatest in children from families with a low socioeconomic status, who also decreased their consumption of sweets and fast food. Adherence to sleep recommendations decreased by 5%, but adherence to recommended sedentary time did not change.
Conclusions: High childhood overweight and obesity rates remained stable in Spain from 2006 to 2007 and from 2011 to 2012, but there was an increase in parental misperception of childhood excess weight. Despite reduced consumption of soft drinks and snacks, there was low adherence to dietary recommendations, hours of sleep, and sedentary habits.

Exceso de peso infantil en España 2006-2012. Determinantes y error de percepción parental

Palabras clave:
Obesidad infantil
Sobrepeso infantil
Percepción parental errónea
Nutrición
Dieta
Horas de sueño
Actividad sedentaria
España

RESUMEN

Introducción y objetivos: Dada la gran prevalencia de obesidad infantil en España, se analiza su evolución entre 2006-2007 y 2011-2012, junto con dieta, hábitos de sueño y sedentarismo en la población de 5-14 años y la percepción parental del exceso de peso infantil.
Métodos: La muestra procede de las Encuestas Nacionales de Salud de 2006-2007 (n = 5.590) y 2011-2012 (n = 3.601). Las encuestas se realizaron mediante entrevista telefónica a los padres/tutores por personal entrenado. La información sobre peso y talla es la declarada por los encuestados, y se aplicaron los puntos de corte de sobrepeso/obesidad de la *International Obesity Task Force.*
Resultados: La prevalencia de exceso de peso fue del 30,1% en 2006-2007 y del 29,7% en 2011-2012, y la de obesidad, del 9,6 y el 9% respectivamente. La percepción errónea del exceso de peso pasó del 60,8 al 71,4% ($p < 0,001$). La ingesta diaria de verdura aumentó un 7,8% y la de refrescos y aperitivos disminuyó. Esta caída fue mayor en menores de clase social baja, que también redujeron el consumo de dulces y comida rápida. Mientras el cumplimiento de las recomendaciones sobre horas de sueño disminuyó un 5%, el de las relativas al tiempo máximo de actividad sedentaria no varió.
Conclusiones: Las altas cifras de obesidad y sobrepeso infantil permanecieron estables en España entre 2006-2007 y 2011-2012. El error perceptivo del exceso de peso aumentó entre los padres. Aunque disminuyó el consumo de refrescos y aperitivos, se observó un bajo cumplimiento de las recomendaciones dietéticas y las relativas a horas de sueño y ocio sedentario.

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Abbreviation

ENSE: *Encuesta Nacional de Salud de España* (Spanish National Health Survey)

INTRODUCTION

Childhood overweight and obesity increased worldwide at the end of the 20th century,[1] with the prevalence of childhood obesity in Spain jumping from 4.9% in 1984 to 13.9% in 2000.[2] This trend was paralleled by an increase in the proportion of parents unable to recognize excess weight status in their children,[3] reflecting the social normalization of obesity.[4]

From about 2000, childhood obesity prevalence began to stabilize in many countries.[5,6] In Spain, the rate of increase slowed between 2001 and 2006 except among adolescents from a less privileged socioeconomic background.[7] These developments were accompanied by increasing parental misperception of childhood weight status.[3] Recent data for Spain are inconclusive. Compared with data from 2000,[2] the results of a 2011 study indicated an overall stabilization except for a continuing increase in obesity among 6- to 9-year-olds girls.[8] In contrast, a 2012 study detected a reduced prevalence among children aged between 8 and 13 years.[9] To our knowledge, no study since 2006 has analyzed changes in parental misperception of childhood excess weight.

Factors associated with obesity include consumption of sugar-sweetened soft drinks, a high-energy diet lacking in fruit and vegetables,[10,11] insufficient hours of sleep,[12] and an excessively sedentary lifestyle.[13,14] In Spain, a 1998 survey found that more than 40% of children and adolescents consumed below the recommended amount of fruit and vegetables,[15] while other studies found that sugar intake among children accounted for 21% of total caloric intake (double the recommended amount)[16] and that the consumption of sugar-sweetened soft drinks increased between 2001 and 2004.[17] The proportion of 5- to 15-year-olds who slept less than 8 h/d rose from 2.9% in 2001 to 4% in 2003,[18] and the proportion watching television for more than 2 h/d increased by 4% between 1997 and 2003.[19,20]

In the present study, we analyzed data from the Spanish National Health Surveys (*Encuesta Nacional de Salud de España* [ENSE]) for changes in childhood obesity in Spain between 2006 to 2007[21] and 2011 to 2012[22] and their relationship with diet, hours of sleep, sedentary activity, and parental misperception of childhood excess weight.

METHODS

Data

We analyzed completed ENSE questionnaires from the most recent surveys of children and adolescents, carried out in 2011 to 2012[23] and 2006 to 2007.[24] These surveys have been conducted at varying intervals since 1987 by the Spanish National Institute of Statistics, in partnership with the Ministry of Health, Social Services, and Equality. Noninstitutionalized minors were included in the surveys by stratified multistage sampling. The first-stage sampling units were census tracts, second-stage units were family dwellings, and the third-stage units were individuals. Information was collected between July 2006 and June 2007 and between July 2011 and June 2012. The surveys were conducted by telephone interview; parents or guardians were informed about the survey and the voluntary and anonymous nature of their participation and, after giving verbal consent, answered questions about children and young adolescents in their care. All questions and response options used to measure study variables were identical in the 2 surveys.

The 2011-to-2012 ENSE survey included 5495 0- to 14-year-olds, whereas the 2006-to-2007 survey included 9122 0- to 15-year-olds. The present analysis excluded 0- to 4-year-olds (n = 1894 in the 2011-to-2112 survey and n = 2869 in the 2006-to-2007 survey) and 15-year-olds (n = 663 in the 2006-to-2007 survey). The final sample thus included children and adolescents between the ages of 5 and 14 years: 3601 from the 2011-to-2012 survey and 5590 from the 2006-to-2007 survey. Due to incomplete weight and height data, body mass index was analyzed in subsamples of 2938 individuals from the 2011-to-2012 survey and 4341 from the 2006-to-2007 survey.

Variables

Overweight and Obesity

Overweight and obesity status was assigned according to body mass index calculated from self-reported weight and height measurements provided during the interview. Overweight and obesity together constituted excess weight and were defined according to International Obesity Task Force cutpoints.[25]

Misperception of Excess Weight and Obesity

Parental misperception of childhood excess weight was evaluated with the following question: "In relation to his/her height, which of the following options best describes your child's weight: 1) substantially above normal, 2) slightly above normal, 3) normal, 4) below normal?" Misperception was defined as answers 3 or 4 in relation to a child with excess weight.

Daily Soft Drink and Food Consumption

Daily consumption of soft drinks and a range of foods (fruit, vegetables, sweets, fast foods, and snacks) was obtained with the question "How often does your child consume the following foods? 1) Every day, 2) Three or more times a week, 3) Once or twice a week, 4) Less than once a week, 5) Never or almost never."

Sleep Duration

Hours of sleep were obtained with the following question: "Can you tell me approximately how many hours your child normally sleeps per day, including naps." Reported sleep duration was evaluated by comparison with National Sleep Foundation and Centers for Disease Control and Prevention recommendations: a minimum 10 h/d for 5- to 9-year-olds and 9 h/d for 10- to 14-year-olds.[26,27]

Sedentary Leisure Activity

Sedentary leisure activities include television viewing, playing video games, and computer use in free time. Time dedicated to these activities was obtained from the following questions: "Does your son/daughter watch television every day or almost every day?", "Approximately how much time per day does your son/daughter spend watching television?", "Does your son/daughter play video games, play on the computer, or access the internet every day or almost every day?" and "Approximately how much time per day does your son/daughter spend playing

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