



Family stressors and child obesity

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ARTICLE INFO

Article history:

Available online 6 June 2009

Keywords:

Child Development Supplement

Child obesity

Child overweight

Family stressors

Obesity

Ordered probit models

Overweight

Panel Study of Income Dynamics

Stress

ABSTRACT

Child obesity is a public health priority with numerous and complex causes. This study focuses on factors within the family, namely stressful experiences, which may be associated with child obesity. We examine data from the Child Development Supplement of the Panel Study of Income Dynamics for children in two age groups: 5–11 and 12–17 years old. Results from an ordered probit regression model of child weight categorizations (healthy weight, overweight, obese) indicate positive associations between a range of family stressors (lack of cognitive stimulation and emotional support in the household among younger children, and mental and physical health problems and financial strain in the household among older children) and child overweight and obesity. We discuss how public policies that reduce family stressors may, in turn, help reduce child obesity.

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1. Introduction

Evidence for the epidemic of child obesity in the United States is clearly shown by current prevalence rates (17.1% obese and 16.5% overweight; Ogden et al., 2006) and the three-fold increase in the prevalence of child obesity over the last three decades (Anderson and Butcher, 2006; Kumanyika and Grier, 2006; Wang and Zhang, 2006). Like other adverse health outcomes among children (Murasko, 2007), child obesity has negative physical, psychological, and social consequences for children that extend into adulthood (Gunnell et al., 1998; Mahoney et al., 1996; Nieto et al., 1992; Power et al., 1997; Schwimmer et al., 2003; Serdula et al., 1993; Smoak et al., 1987; Williams et al., 1992) and may ultimately lead to a reduced life expectancy (Fontaine et al., 2003). Beyond negative health outcomes, there is some evidence of increased economic costs related to childhood obesity (Marder and Chang, 2006; Skinner et al., 2008). Given the relatively high prevalence rate and the multitude of adverse consequences, child obesity is clearly one of the most important health issues among youth today (Hedley et al., 2004; Koplan et al., 2005).

It is well-recognized that obesity is a complex, multifactorial condition that includes both genetic and environmental factors (e.g., Krebs et al., 2007; Maes et al., 1997). One environmental factor that has received relatively limited attention is children's exposure to undue stress, and more specifically, family stress. Children can face a myriad of stressors that are associated with poor health and well-being including economic strain and family conflict (e.g., Jaffee et al., 2005; Parke et al., 2004; Wadsworth and Compas, 2002). In addition, various indicators of stress have been associated with obesity in

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adults (Bjorntorp, 2001; Raikkonen et al., 1996; Rosmond and Bjorntorp, 1999). However, only recently have researchers begun to investigate whether similar associations exist between stress and obesity among children (e.g., Gundersen et al., 2008; Lohman et al., forthcoming).

This study examines a wide range of family-level stressors affecting children using data from the Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID). This research advances our understanding of child obesity in important ways by identifying elements of family stress to consider in the assessment, prevention and treatment of child obesity. The paper continues with a discussion of the literature related to child obesity and family stress. The methods section describes the data to be examined from the CDS, the study sample, the measurement of key variables, and the empirical models. The results and a discussion of our findings complete the text.

We find that family stressors are positively related to overweight and obesity in children with varying impacts by age group. Among younger children, living in households lacking cognitive stimulation and emotional support is positively associated with being overweight and obese. Whereas for older children, both residing in households with members who are experiencing more mental and physical health problems and residing in households with greater financial strain are positively related to being overweight and obese. In this context, a potential added benefit from helping families cope with these stressors may be a reduction in child weight problems.

2. Family stress and obesity among children

2.1. Child obesity

Rates of overweight and obesity have increased rapidly for all children since the 1970s (Anderson and Butcher, 2006; Kumanyika and Grier, 2006; Wang and Zhang, 2006). Not only are rates higher, but those who are overweight are heavier than in the past (Anderson and Butcher, 2006). There are numerous consequences of child overweight and obesity including negative psychological, social, economic and physical health effects which carry into adulthood. For example, child obesity is associated with the clustering of risk factors for cardiovascular disease (e.g., high blood pressure, cholesterol, poor blood sugar control) during childhood (Smoak et al., 1987; Williams et al., 1992). Child obesity also increases the risk of adult obesity (Power et al., 1997; Serdula et al., 1993), coronary calcification (Mahoney et al., 1996), and cardiovascular disease mortality (Gunnell et al., 1998; Nieto et al., 1992). It is thought that these adverse health conditions experienced at an early age and by more individuals will reduce life expectancy in contemporary generations (Fontaine et al., 2003). The increase in obesity among children and its subsequent consequences led the Institute of Medicine to recommend making the prevention of child obesity a national priority (Koplan et al., 2005).

Environmental factors provide the conditions for one's predisposition for obesity to come to fruition (Anderson et al., 2003). Much of the social science literature examining the causes of child obesity has focused on the effects of the two cornerstone environmental factors which regulate energy balance – caloric intake and physical activity (e.g., Anderson et al., 2003; Cutler et al., 2003; Dietz and Robinson, 2008; Loureiro and Nayga, 2005). Other evidence suggests that the environmental factor of stress may impact obesity directly or indirectly. Indirectly, stress may lead to poor eating habits (Jenkins et al., 2005) and lower physical activity levels (Roemmich et al., 2003), and ultimately obesity. Additionally, research suggests a direct physiological link between stress and obesity among adults (Bjorntorp, 2001; Raikkonen et al., 1996; Rosmond and Bjorntorp, 1999) and children (Gundersen et al., 2008; Lohman et al., forthcoming).

2.2. Stress process and family stressors

Theoretical work on the “stress process” defines *stress* as a negative physiological response and *stressors* as the external factors that cause this negative response (e.g., Aneshensel, 1992; Boss, 1988; Chrousos and Gold, 1992; Pearlin et al., 1981, 2005). This study uses a family stress framework to examine the relationship between stressors in the family and overweight in children. Family stress is defined as “pressure or tension in the family system” (Boss, 1988, p. 12) and stressors and “stressor events” are conditions and occurrences that provoke change in the family system (p. 36). Family stress and stressors can arise from individuals, households, and contextual factors external to the family (Hornung, 1980; Robert, 1999).

Stress is a difficult concept to measure. Therefore, scholars have employed a range of both subjective and objective assessments of stress in their research. Subjective assessments include directly asking individuals how much stress they perceive from a given stressor, whereas objective assessments focus on observable stressors within an individual's environment. Stressors stem from a variety of sources and can operate in a cumulative fashion called “stress pile-up” (MacFadyen et al., 1996; McGuigan, 1999; White and Klein, 2002). This study considers the six types of stressors most commonly examined in the literature and particularly relevant to the home environments of children: family disruption and conflict, mental and physical health problems, housing issues, health care struggles, financial strain, and lack of cognitive stimulation and emotional support.

2.2.1. Family disruption and conflict

Family disruption such as parental divorce, cohabitation, and stepfamily relationships are major stressors to children (Amato, 2000; Coleman et al., 2000; Sobal et al., 2003), as is parental conflict (Amato, 2000) and lack of parental involvement

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