

Background and goals: Obesity has become a nation-wide concern due to its wide prevalence and rapid rate of increase in recent years. Research suggests that not only is the proportion of overweight children rising, but those who are overweight are heavier than 30 years ago (Jolliffe, 2004). This raises serious concerns, particularly for teenagers and children, because obesity places them at higher risk for diabetes, hypertension, heart disease, stroke, gout, arthritis, and some forms of cancer (Horowitz and Mondy, 1995).

The wide and increasing prevalence of obesity among children implies that obesity prevention policies have failed families in protecting children's well-being and health. An editorial in the *American Journal of Public Health* published in 1999, places blame on the welfare system for not providing enough attention to families living in poverty who are known to carry a disproportionately heavier burden of taking care of children with health problems (Chavkin, 1999). It also points out a larger underlying political atmosphere where the policy makers take little interest in supporting families when women are increasingly participating in labor force, therefore, it was well perceived that additional measures were necessary to maintain quality of the environment where children grow up.

While social observers blame shortage of time among working mothers for unhealthy diet and frequent dining out, there is little evidence as to the extent to which working mothers are responsible for these behaviors. Furthermore, the impact of maternal employment on child weight is expected to differ in various populations. Past studies identified various risk factors, including race, household income, family type, etc. African American females are more likely to be obese than whites, controlling for SES (Harrell and Gore, 1998). For adolescents, household socioeconomic status (SES) and obesity are negatively correlated (Harrell and Gore, 1998; Goodman, 1999), but the effect of SES may depend on race: in 9- to 10-year-old girls, a negative association between SES and obesity holds for whites, but not blacks (Kimm et al., 1996). Differences by SES and race are larger for females (Gordon-Larsen et al., 2003). There are considerable interactions among SES, race, and gender with respect to their impact on risks of being obese. In this study, we use low household income as the predictor that may place children at additional risks of becoming overweight. This is because the association between restrained food intake commonly observed in food insecure households and overweight is well documented (Johnson and Birch, 1994; Dietz, 1995; Polivy, 1996; Stang et al., 2004).

The two goals of this study are to examine: 1) whether maternal employment during infancy and early childhood predicts children being overweight in adolescence, and 2) whether the effect of maternal employment on the chance of becoming overweight in adolescence is higher in low-income than high-income families.

Research Methods: The primary goal of this study is to evaluate the impact of maternal employment during infancy and early childhood on the child's becoming overweight in adolescence. In addition to the main effect of maternal employment, the interactive effect of maternal employment and household income will be examined to assess whether the impact of maternal employment on children's risk of becoming overweight depends on household income.

Method of Analysis: Hours mother worked in the first three years of life along with other control variables are used to predict overweight status of children at age 15. Overweight status is measured based on body mass index [BMI: weight (kilograms) divided by squared height (meters)]. This analysis will be conducted with weighted logistic regression models. Autocorrelations among children from the same household will be corrected by the Glimmix procedure in the SAS software.

Data: The National Longitudinal Surveys conducted by U.S. Department of Labor, Bureau of Labor Statistics, collected information on a national probability sample of civilian young men and women ages 14 to 21 (as of December 31, 1978), oversampling blacks, Hispanics, and economically disadvantaged non-black/non-Hispanic groups (U.S. Department of Labor, 2003). This sample of youth (“the National Longitudinal Survey of Youth 79” or NLSY79) was interviewed annually from 1979 to 1994 and biennially since 1994. Mother’s employment status and other maternal or household characteristics predictive of adolescent weight status come from this data set. Beginning in 1986, a questionnaire has been administered to children of these women (“Children of the NLSY79”), and then children who were 15 years or older (“Young adults”) were added to the sample in 1994. Body height and weight of adolescents come from the latter dataset.

Measures :

Sample. The sample includes civilian women, married or unmarried, and their children. More than one child per woman (siblings) are allowed to be in the sample. The cohorts in the analysis are children who were born in 1979, 1981, 1983, 1985 or 1987.

Independent variable (Number of hours mother spent working during the first three years of life). The number of hours the mother worked in the first three years of life is used as the independent variable. Hours spent at any type of job are used for calculation, as long as the mother reports to have worked for a pay, which may include more than one job. We will calculate the average weekly work hours for the first three years.

Control variables.

Some control variables are taken from mother’s data file. Among them are:

- Mother’s race (this is used to indicate child’s race)
- Mother’s age at birth of child
- Mother’s BMI when child is 15 years old
- Highest grade completed by mother by year 2002
- Mother’s marital status
- Urban vs. rural residence
- Region of current residence
- Family income
- Family poverty status

Other control variables come from the children's file, measured every year, for three years. For continuous variables, the means are used for analysis. For categorical variables, the most frequently occurring values are used.

- Child's sex
- Birth year (i.e. child's cohort)
- Family size
- Grandmother or grandfather (i.e. mother's parents) living in the same household
- Whether child lives in the same household as mother

Dependent variable (Weight status based on Body Mass Index). BMI at age 15 will be calculated based on reported body height and weight, which then will be categorized into two weight statuses: 1) underweight or normal, and 2) overweight. Overweight children are defined as those with BMIs above 95th percentile of the values for children of the same sex and age.

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