

Study finds link between a mother's stress and her child becoming overweight

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A mother's stress may contribute to her young children being overweight in low income households with sufficient food, according to a new Iowa State University study published in the September issue of *Pediatrics*, the professional journal of the American Academy of Pediatrics. The study analyzed data collected from 841 children in 425 households in the 1999-2002 National Health and Nutrition Examination Survey.

Iowa State faculty members Steve Garasky, a professor of human development and family studies; Brenda Lohman, an assistant professor of human development and family studies; and Susan Stewart, an associate professor of sociology, all collaborated on the study. Lead researcher Craig Gundersen, a member of the agricultural and consumer economics faculty at the University of Illinois; and Joey Eisenmann, a member of the kinesiology and pediatrics faculty at Michigan State University, were also previous ISU faculty members on the research team.

The researchers used mothers' responses to interview questions to determine their mental, physical, financial and family structure levels of stress -- producing a cumulative stress index. The child's weight status was determined by their Body Mass Index (BMI), age and sex. Subjects were also broken into two age groups: three to 10 and 11 to 17 years of age. Household food insecurity status -- whether or not there is enough food to sustain healthy, active lifestyles for all household members -- was also measured from the mothers' interview responses.

In households with no maternal stress, low-income children in food secure households had a 33.0 percent probability of being overweight, while those in food insecure households had a 34.8 percent probability. As maternal stress levels increased, the probability of becoming overweight increased in children from food secure households, but decreased among those in food insecure households. When the maternal stress was found to be at twice the average level of the study sample, children in food-secure households had a 43.7 percent greater probability of being overweight or obese when compared with children in food insecure households.

"We were not able to observe what people are eating in these data. That's definitely part of future work," Garasky said. "But at this point we have to conclude that in stressful environments, children in households with adequate food -- maybe it is 'comfort food,' or maybe it's just larger quantities of more traditional food -- are possibly acting on the desire to eat more, and maybe even eat differently, than those from food insecure households."

For children over the age of 10, the relationship between household stress, food security and weight was found to be statistically insignificant -- meaning it was young children who were most affected.

"If you see the developmental differences in a 6-year-old vs. a 16-year-old, the 6-year-old relies more on the food choices in the households, while the 16-year-old spends more time away from home and has a network of friends or lunch plans at schools where they have more food options," Lohman said. "It could also be that the adolescents are also able to cope with their mother's stress and handle it better through their support mechanisms -- siblings, friends, or teachers -- and the younger kids don't have those same networks, so they might internalize the mother's stressors more."

The researchers have future plans to measure the stress levels of fathers in determining overall household stress. Garasky says they started with mothers because single-parent families make up a high percentage of low-income households, and the vast majority of those single parents are mothers.

"And then it's the premise that mom is traditionally the primary caregiver," he said. "So if you want to link one person to circumstances of a child, it's more natural to link to mom."

"Unfortunately we did not have access to information about fathers' stressors and behaviors in this data set," Lohman said. "Yet in most modern households, fathers may be doing as much or more of the cooking than in the past. So I agree that future work must address stress levels of fathers too."

Garasky says the study's results prove that the home environment may be contributing to the growing epidemic of childhood obesity.

"There's a lot more going on than just asking kids to eat less or exercise more," he said.

"Recognizing the complexity of the issue allows us to recognize that we have more options to help children," he said. "If we can reduce mom's stress -- whether it be mental health or financial issues -- the direct effect on mom is helping her, and that's good. But we can also hope to see indirect effects on other household members and children. For example, their reduced probability of becoming obese is another benefit to helping mom."

Source: Iowa State University

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