China's Obesity Problem Linked to Single-Child Policy

By Ruth Kava — November 28, 2017

In 1980 China activated their one-child only policy, in an attempt to slow the growth of the population. In 2016, that policy was rescinded — but some of its effects will be felt for years to come. For example, families whose first child was a girl, rather than the preferred male, sometimes resorted to termination in order to ‘try again’. This was particularly true in urban areas where the policy was most strictly enforced, and resulted in a skewed male-female ratio. It’s been estimated that overall, the policy resulted in around 100 million single child families.

Not only has the population of China increased, so has the prevalence of childhood overweight and obesity — it was around 2 percent in 1981-85, but reached 21 percent in 2006-10. Dr. M. Li from the State University of New York at Buffalo and colleagues investigated whether the increased obesity prevalence might be linked to China’s one-child policy.

Their study, published in Public Health, is the largest to date that examines this question. They used nationally representative data from the China Education Panel Survey, Junior Cohorts 2013-14. The individuals involved were nearly 19,500 students from 112 middle schools in 28 different Chinese regions, who were, on average, 13 years old. The students completed questionnaires about their height, weight, and lifestyles.

The researchers compared only-sons to sons with one or more siblings and only-daughters to daughters with siblings. They further divided the respondents into those living in rural versus urban areas.

What they found was that only-sons had significantly greater BMI and were at greater risk (23 percent) of overweight and obesity than sibling-sons. Overall, the only-sons reported less time spent in watching TV and using the internet than sibling-sons. Further, the weight trend was
accentuated in only-sons from urban areas — they were 36 percent more likely to be overweight and 43 percent more likely to be obese than were urban sibling-sons.

Analysis of girls’ data indicated that only-daughters had a higher risk of obesity (43 percent) than sibling-daughters, but this difference wasn’t statistically significant — even when urban and rural girls were examined separately.

These data indicate single child status, particularly for boys from urban environments, may be a risk factor for overweight and obesity. It’s interesting that the urban only-sons reported spending less time watching TV than their sibling-sons counterpart, as screen time is typically seen as a risk factor for overweight/obesity. The authors commented

“Lower participation in after-school sports and household chores among urban only-sons might be due to higher parental expectations/pressure for scholastic achievements; and might at least partially explain why only-sons have higher overweight/obesity risks than sibling-sons.”

Also, “There is a higher chance of being overfed for only-sons living in urban China, given that the concentrated family caring/resources occur in the context of high availability of energy-rich foods and absence of energy-intensive work.” For sons, they explain, plumpness is seen as a positive attribute, and thus may in part explain over-feeding when food is available. On the other hand, the cultural perception for girls is that “thin is in” and thus even in urban environments girls may not be over-fed as are boys.

This study had some strong points in that it was nationally representative, using data from multiple regions of China, and used a large sample of adolescents. However, the data were self-reported which may have biased the results. Further, it was cross-sectional in nature, looking only at one time point for each individual. We don’t know, for example, if the overweight/obese children (especially the only-boys) continued to gain weight as they age.

One cannot ascertain causality from this type of study, so it’s not possible to say with certainty that China’s one-child policy was responsible for the results seen in this study. However, as the authors conclude:

[Their study indicates that obesity risk is higher among only children, especially only-sons in urban China. Future childhood obesity interventions should pay special attention targeting this segment of youth population in China.]