

Where Do Overweight Children Live?

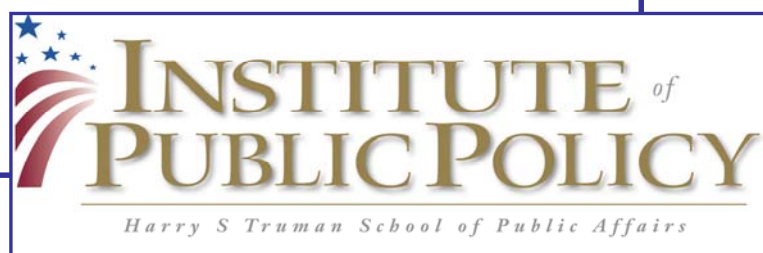
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Jane M. Mosley & Ann Ulmer¹

Introduction

Overweight status and obesity have increased dramatically among both adults and children in the past two decades (CDC 2003). While these increases have been well-documented, much less is known about how these outcomes vary by place, particularly for children. In this brief, we describe adolescent outcomes at the state level. This brief represents a first step in a larger project that eventually assesses the links between state policies and child health outcomes.

Defining Obesity

Obesity is defined by the Centers for Disease Control and Prevention as “an excessively high amount of body fat or adipose tissue in relation to lean body mass” and is generally measured by Body Mass Index (BMI), which expresses the ratio of weight-to-height. It is calculated by dividing a person’s body weight in kilograms by the square of his or her height in meters (wt/ht²). The BMI is more highly correlated with body fat than any other indicator of height and weight. In adults, a person with a BMI of ≥ 25 is considered overweight and ≥ 30 is considered obese. For adolescents, “risk of overweight” is defined as the 85th to 94th percentile of BMI by age and gender; obesity, or “overweight” is considered to be greater than or equal to 95th percentile of BMI. We focus exclusively on overweight children in this brief.

Trends

The obesity trends in the United States are alarming. According to the CDC, one in three adults and one in five children were obese in 1991. At that time, only four states had adult obesity prevalence rates of greater than 15 percent. By 2000, 49 states recorded obesity rates for adults exceeding 15 percent. In fact, in five states the obesity levels were close to, or exceeding, one-quarter of the adult population. Nationwide, the prevalence of obesity among adults nearly doubled from 1990-2000.

Data from the 2003 Youth Risk Behavior Surveillance System (YRBSS) show that nationally 13.5 percent of adolescents were overweight. Moreover, not only are more children becoming overweight, but those who are overweight are becoming increasingly heavy (Joliffe 2004). There are significant disparities, however, by race/ethnicity. Black and Hispanic

children were more likely to be overweight than white children, with the increase among minorities being particularly striking in recent years. The 2003 data indicate 17.6 percent of African-Americans were overweight, as were 16.8 percent of Hispanics, compared to only 12.2 percent of whites. There is also considerable geographic variation in obesity rates. In this brief, we describe prevalence of overweight children at the state level. We also assess differences by race and ethnicity.

Data

We rely on state level surveys of the Youth Risk Behavioral Surveillance Survey (YRBSS). The YRBSS is conducted by the Centers for Disease Control and Prevention (CDC) every two years for a nationally representative sample of high school students in public and private high schools in the United States.

While nationally representative of students in grades 9-12, YRBSS data is not representative at the state level. Therefore, many states conduct their own surveys to gather statewide data. Approximately 31 states conducted representative surveys in 2003. Of those, 30 states (the exception being Nevada) collected individual height and weight information, which allows us to construct Body Mass Indices (BMI) for individual children. Thus, we only present results using data from those 30 states.²

Findings

We first examined overweight status for all children (95% of BMI and above). Table 1 shows these results.

Table 1. Overweight Status among Children by Race/Ethnicity Status

All Children	White Children	Black Children	Hispanic Children
12.1%	11.1%	16.5%	12.1%

Source: YRBSS data from 30 states. Not all states have valid data for Black / Hispanic distinctions.



Consistent with national results, both Black and Hispanic children were more likely to be overweight than white children, in particular, or all children, in general. However, there was considerable variation, both among all children, and among specific race and ethnic categories at the state level. Thus, we next present results for each category at the state level.

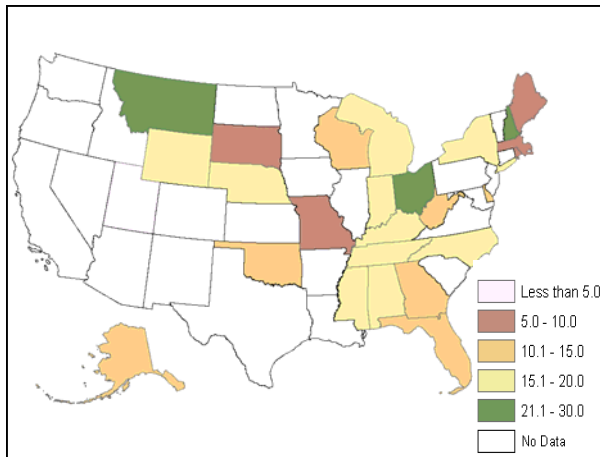
All Children

Overall, overweight rates across the 30 states ranged from 6.9% to 15.7% with an average of 11.3%. States with the highest rates of overweight children tended to be clustered in the South; Mississippi had the highest rate, followed closely by Tennessee, Kentucky, West Virginia and Alabama.

Black Children

Black children tend to be more at risk of overweight status than other children. Additionally, the state variation was also much greater. We only have valid data on 26 states³, but rates ranged from only 2.8% in Utah to an astonishing 28.7% in New Hampshire. Figure 2 shows a map of all states, with the darker states having higher rates of obesity. Most of the states faring the worst were clustered in the South, particularly, Alabama, Mississippi, Tennessee, and North Carolina. Rates were also high in Ohio and Wyoming, although like New Hampshire, these states have a very small black population.

Figure 2: Percentage of Overweight Black Youth by State, 2003

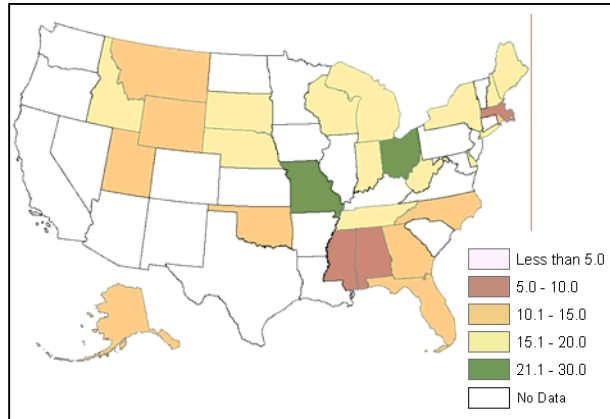


Hispanic Children

In many respects, the overweight status of Hispanic children looked very similar to those of Black children. State rates were higher than those for white children, although there was less variation among states. Rates ranged from 5.5% in Mississippi to 34.4% in Kentucky. Figure 3 shows that states with high rates of overweight status were either clustered in the South (Kentucky, Missouri, and Tennessee), or states with

very low numbers of Hispanic children (Ohio, South Dakota, and Maine).

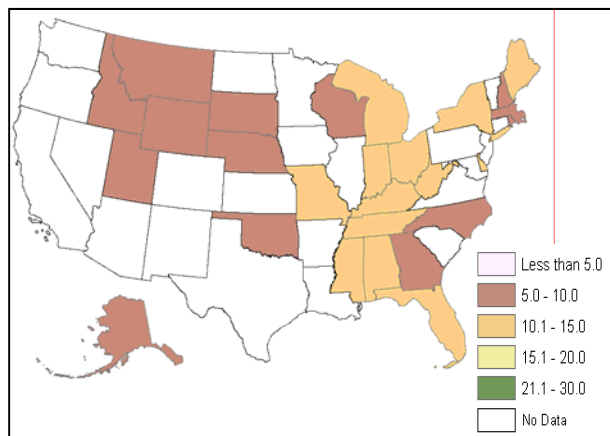
Figure 3: Percentage of Overweight Hispanic Youth by State, 2003.



White Children

For many states, the rates for all children are driven by the rates for white children. Nevertheless, we also assess state variation for this subgroup. As was the case with Black and Hispanic children, high rates are clustered in the South (Kentucky, West Virginia, Tennessee, Mississippi, and Missouri). High rates are again seen in Maine. Rates of adolescent obesity tended to be quite low in states in the Rocky Mountains and Upper Midwest.

Figure 4: Percentage of overweight White Youth by State, 2003.



Conclusion

Data from the YRBSS reveals some consistent geographic patterns. Regardless of the race or ethnicity status of children, the highest rates of overweight status children are in the South. In particular, Kentucky, Tennessee, and West Virginia fare poorly for most subgroups. What factors can explain these pat-



terns? Specifically, are there policies that contribute to, or could ameliorate some of these outcomes? The next brief in these series focuses on the role of school based policies and its relationship with adolescent obesity.

References

Centers for Disease Control and Prevention (CDC). (2003). Youth Risk Behavioral Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

Joliffe, D. (2004). Extent of overweight among US children and adolescents from 1971 to 2000. *International Journal of Obesity*, 28, 4-9.

Endnotes

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²The thirty states included in the analysis are: Alaska, Alabama, Delaware, Florida, Georgia, Idaho, Indiana, Kentucky, Massachusetts, Maine, Michigan, Missouri, Mississippi, Montana, North Carolina, New Hampshire, Nebraska, New York, Oklahoma, Rhode Island, South Dakota, Tennessee, Utah, Wisconsin, West Virginia, and Wyoming.

³The minority population in some states are not adequately large enough to generate valid estimates.

Author Biographies

Jane Mosley

Dr. Jane Mosley is developing a number of children's policy research projects with partners in the University of Missouri and Missouri state agencies. In previous research she examined the role of private food assistance in Kansas City and she has conducted research on those who leave public assistance.

Ann Ulmer

Ann Ulmer earned a master's in agricultural economics from Oklahoma State University. Her master's thesis focused on the economic impact of firms assisted by the Oklahoma Food and Agricultural Research and Technology Center. Ann's research areas at the Institute include obesity, the economics of recycling, and traffic safety policy.

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