

Prevalence and Trends of Severe Obesity among Mississippi Public School Students, 2005-2013

Lei Zhang, PhD, MBA*

Melissa Kirkup, LMSW

Jerome Kolbo, PhD

Evelyn Walker, MD, MPH

Therese Hanna, MHS

***Mississippi State Department of Health**

November 16, 2015

Table 1. Prevalence of Severe Obesity, Class 2 and 3 Obesity, CAYPOS, Mississippi , 2005, 2007, 2009, 2011, and 2013

	Severe obesity*	Class 2 obesity**	Class 3 obesity***
<u>Year</u>	<u>(%, 95% CI)</u>	<u>(%, 95% CI)</u>	<u>(%, 95% CI)</u>
2005	10.9 (9.4-12.8)	6.3 (5.5-7.2)	4.6 (3.7-5.8)
2007	9.4 (8.3-10.7)	6.4 (5.6-7.2)	3.0 (2.3-4.0)
2009	9.6 (8.3-11.0)	6.0 (5.1-7.1)	3.5 (3.0-4.2)
2011	8.8 (7.6-10.0)	5.9 (5.1-6.7)	2.9 (2.3-3.7)
2013	9.8 (8.7-11.1)	6.5 (5.8-7.3)	3.3 (2.6-4.2)

* A BMI is at or greater than 120% of the 95th percentile for age and sex.

** A BMI is at or greater than 120% but less than 140% of the 95th percentile for age and sex.

*** A BMI is at or greater than 140% of the 95th percentile for age and sex.

CI: 95% confidence interval.

Table 2. Prevalence and Trends of Severe Obesity, CAYPOS, Mississippi, 2005, 2007, 2009, 2011, and 2013

<u>Year</u>	<u>Severe obesity (%, 95% CI)</u>	<u>P-value for linear trend</u>	<u>P-value for quadratic trend</u>
2005	10.9 (9.4-12.8)		
2007	9.4 (8.3-10.7)		
2009	9.6 (8.3-11.0)	0.1048	0.0852
2011	8.8 (7.6-10.0)		
2013	9.8 (8.7-11.1)		

Table 3. Prevalence and Trends of Severe Obesity by Gender, CAYPOS, Mississippi , 2005, 2007, 2009, 2011, and 2013

<u>Gender</u>	<u>Severe obesity (%, 95% CI)</u>	<u>P-value for linear trend</u>	<u>P-value for quadratic trend</u>
Male			
2005	11.4 (9.6-13.4)		
2007	10.2 (8.7-11.8)		
2009	10.0 (8.5-11.8)	0.0397	0.5028
2011	9.4 (7.9-11.3)		
2013	9.3 (8.2-10.6)		
Female			
2005	10.5 (8.4-13.1)		
2007	8.7 (7.2-10.5)		
2009	9.1 (7.6-11.0)	0.6334	0.0610
2011	8.0 (6.8-9.4)		

Table 4. Prevalence and Trends of Severe Obesity by Race, CAYPOS, Mississippi , 2005, 2007, 2009, 2011, and 2013

<u>Race</u>	<u>Severe obesity (%, 95% CI)</u>	<u>P-value for linear trend</u>	<u>P-value for quadratic trend</u>
White			
2005	8.4 (7.1-9.9)		
2007	7.1 (5.7-8.9)		
2009	7.0 (5.4-9.0)	0.0030	0.1921
2011	5.8 (4.7-7.2)		
2013	6.7 (5.4-8.1)		
Black			
2005	13.3 (10.8-16.2)		
2007	11.5 (9.6-13.7)		
2009	12.1 (10.4-14.0)	0.6986	0.2845
2011	11.9 (10.1-14.0)		
2013	12.6 (10.7-14.8)		

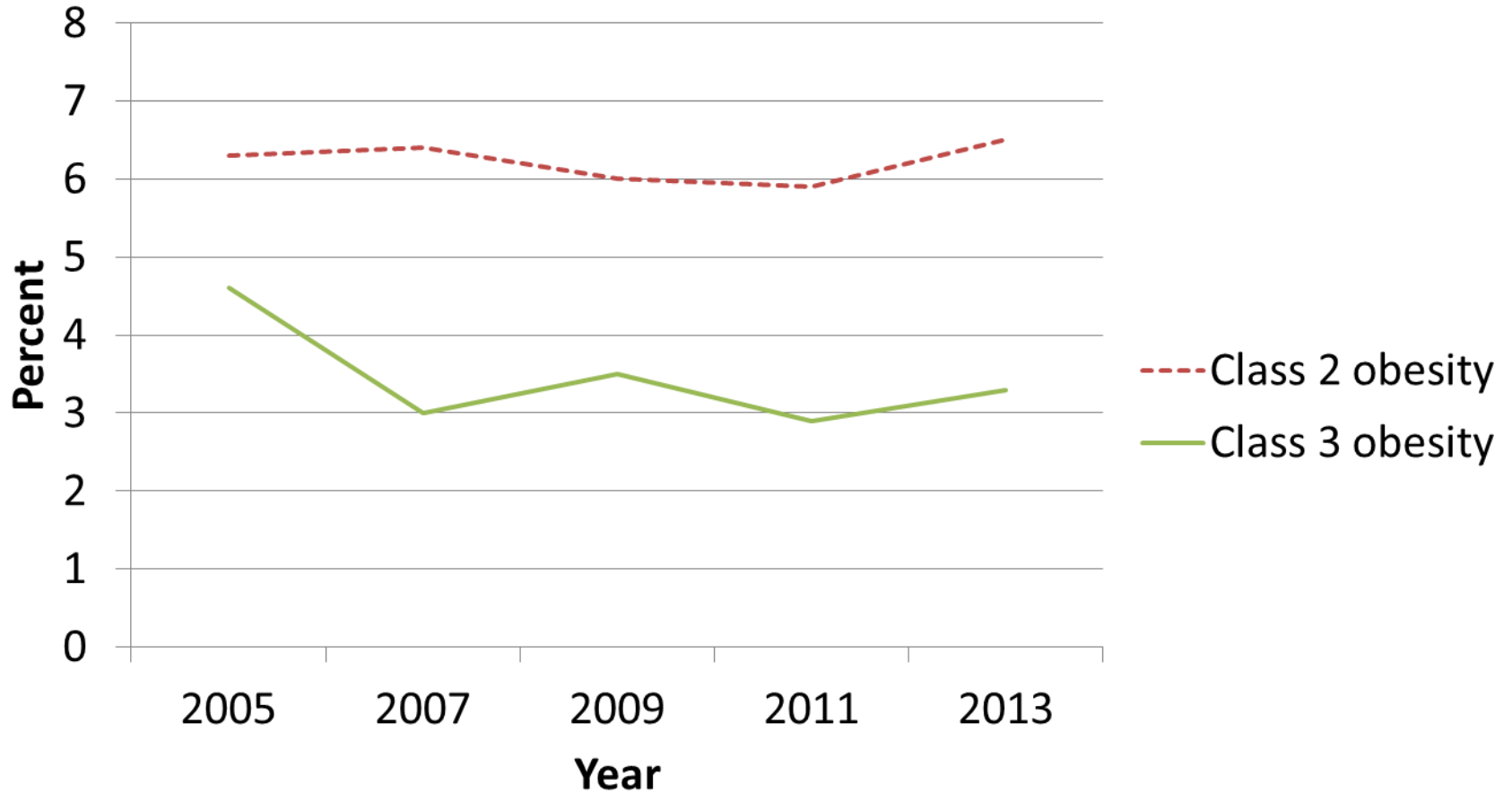
Table 5. Prevalence and Trends of Severe Obesity by Grade Level, CAYPOS, Mississippi , 2005, 2007, 2009, 2011, and 2013

<u>School Level</u>	<u>Severe obesity (%, 95% CI)</u>	<u>P-value for linear trend</u>	<u>P-value for quadratic trend</u>
Elementary			
2005	10.5 (8.3-13.3)		
2007	9.8 (8.1-11.9)		
2009	10.0 (8.2-12.0)	0.0175	0.5926
2011	7.0 (5.6-8.7)		
2013	8.4 (6.6-10.6)		
Middle school			
2005	12.5 (10.2-15.2)		
2007	9.4 (7.2-12.3)		
2009	10.0 (7.1-13.9)	0.8493	0.3768
2011	12.4 (9.5-15.9)		
2013	11.1 (8.9-13.7)		
High school			
2005	10.5 (8.5-12.9)		
2007	8.7 (7.2-10.4)		
2009	8.7 (6.7-11.2)	0.7142	0.0807
2011	9.2 (7.8-10.8)		
2013	11.2 (9.3-13.4)		

Table 6. Class 2 and Class 3 Obesity Prevalence and Trends, CAYPOS, Mississippi, 2005-2013

<u>Category</u>	<u>% (95% CI)</u>	<u>P-value for Linear Trend</u>	<u>P-value for Quadratic Trend</u>
Class 2 obesity			
2005	6.3 (5.5-7.2)		
2007	6.4 (5.6-7.2)		
2009	6.0 (5.1-7.1)	0.8705	0.3961
2011	5.9 (5.1-6.7)		
2013	6.5 (5.8-7.3)		
Class 3 obesity			
2005	4.6 (3.7-5.8)		
2007	3.0 (2.3-4.0)		
2009	3.5 (3.0-4.2)	0.0183	0.0483
2011	2.9 (2.3-3.7)		
2013	3.3 (2.6-4.2)		

Figure 1. Prevalence of Class 2 and Class 3 Obesity, CAYPOS, Mississippi, 2005-2013



Conclusions

- Significant decreases in severe obesity (combination of classes 2 and 3 obesity) were found among K-12 male students, K-12 white students, and elementary school students.
- The prevalence of class 3 obesity has significantly decreased from 4.6% in 2005 to 3.3% in 2013.
- The decline observed in class 3 obesity prevalence indicated an encouraging trend towards less severe categories of obesity.