Health Insurance Influence on Obesity Rates: A Cross-sectional Study of Mississippi's 82 Counties

Presented by:
Sam Mozee, Jr., PH.D
Jin Zhang , M.D, MS, MPH

Introduction

- Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health. CDC consider BMI(body max index) >=30 as obese.
- Obesity is one of most common and serious public health problems.
- Obesity is one of highest risk factors to cause type2 diabetes, high level of cholesterol, gallbladder diseases, gout, hypertension, sleep apnea, heart disease, joint pain and certain types of cancers.
- Mississippi's adult obesity rate is 35.5% (2014). A report from Trust for America's Health and the Robert Wood Johnson Foundation, Mississippi's obesity rates could reach 66.7% by 2030.

Obesity's Growing Impact

- As the prevalence of overweight and obesity has increased in the United States, so have related health care costs both direct and indirect. The total economic costs related to obesity is $117 billion, direct costs are $61 billion and indirect costs are $56 billion a year!

- As related to the workplace, estimates of obese workers' cost to U.S. employers have ranged between more than $11.7 billion per year to $73.1 billion per year when compared to normal weight workers (Finkelstein, DiBonaventura, Burgess, & Hale, 2010) (Yang & Nichols, 2011).

Health Insurance and Obesity

- Health insurance is generally viewed as being essential for helping individuals achieve and maintain a favorable health status. Individuals with health insurance are more likely to utilize more health services and receive more preventative care (Fong & Franks, 2008)
- After 5 years of the Patient Protection and Affordable Care Act (PPACA&"Obamacare") :

30 million young adults can no longer be denied coverage for a pre-existing condition

105 million Americans no longer have a lifetime limit on their health coverage

137 million American are guaranteed preventive care coverage

More than 16 million American gained health cover

Healthier American

Slimmer American ?????

Health Insurance and Obesity

- Insurance reduces the monetary cost that individuals pay for health care; however, this reduction also can lead to what is termed "moral hazard" whereby people engage in risky behavior due to that risk shared and/or absorbed by others (Kelly & Markowitz, 2009/2010).

- As related to health insurance, this ''moral hazard'' can manifest itself through altered purchasing decisions, and by changes in health-related behaviors via

  "Ex ante moral hazard" : i.e., engaging in riskier behaviors upon receiving health insurance knowing that medical care is now more readily available.

  ''Ex post moral hazard'' : i.e., changing health behaviors after experiencing a medical incident and utilizing available insurance.

- Based upon research indicating that individuals with health insurance are more likely to utilize more health services and receive more preventative care (Fong & Franks, 2008), it can be surmised that for some individuals, having health insurance may help in preventing or reducing obesity, and for others it may not.

Our Study

Healthier American
Slimmer American ?????

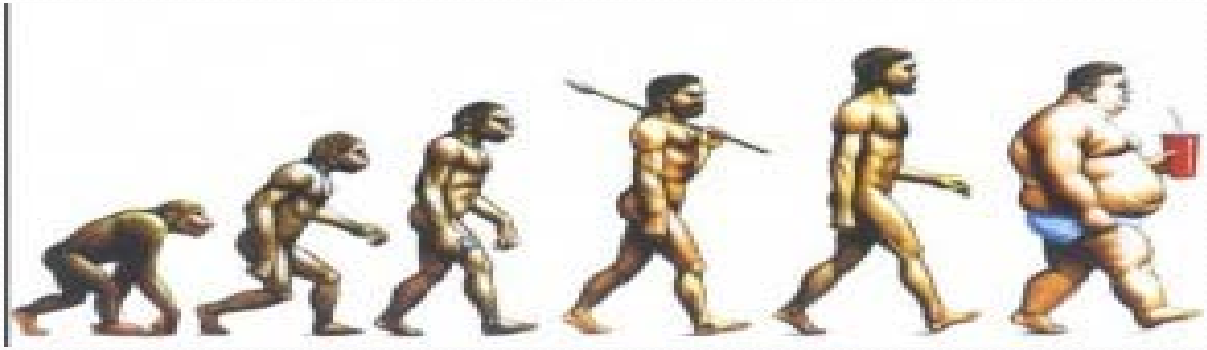
*This study focused on what impact does being uninsured have on obesity rates at the county level in Mississippi

Research Design

- Cross-sectional research design to examine the relationship between selected variables' and obesity, and to determine the strength of those variables in terms of predicting obesity rates.

- Geographic area for this study was all 82 MS counties

- Timeframe for this cross-sectional study was the year 2010. This year was selected to help enhance the availability and comparability of targeted data across data sources.



Research Questions:

- Does not having health insurance impact the level of obesity at the county level in Mississippi?
- Is there a statistically significant relationship between selected variables and obesity rates at the county level?
- What is the predictive impact of not having health insurance on obesity rates at the county level in Mississippi?

Data Description/Analysis

- Point-in-time, interval-level data was used to conduct this study's statistical analysis. This study included all eighty-two Mississippi counties (N=82).

- The data was analyzed using the Statistical Packages for the Social Sciences (SPSS) version 18 software package.

- Linear multiple regression, along with accompanying descriptive and correlation measures, were use to conduct the statistical analysis.

Table 1: Variable Correlation Results

	Obesity Pct	No_Hlth Food Access	African Amer Pop	Physically Inactive	Median HHIncome	HS Grad	Pct_ Uninsured
ObesityPct	1.000*	.496*	.764*	.498*	-.609*	-.462*	.070
No_Hlth Food Access	.496*	1.000	.660*	.366*	-.674*	-.671*	.289*
African AmerPop	.764*	.660*	1.000	.404*	-.680*	-.437*	-.035
PhysicallyInactive	.498*	.366*	.404*	1.000	-.552*	-.450*	.211*
MedianHHIncome	-.609*	-.674*	-.680*	-.552*	1.000	.701*	-.408*
HSGrad	-.462*	-.671*	-.437*	-.450*	.701*	1.000	-.508*
Pct_Uninsured	.070	.289*	-.035	.211*	-.408*	-.508*	1.000

* $p < .05$ (Sig. 1-tailed) / N = 82 Counties

Table2:Hierarchical Regression of Selected Variables on Obesity Rates

Variable	B	SE(B)	β	Change in R^2
Step 1				
(Constant)	33.06	6.39		
African American Population	11.79	1.72	.716*	
Median Household Income	-7.398E-6	.000	-.015	
High School Graduation	-9.537	6.176	-.167	
Physically Inactive	.216	.096	.187**	
No Access to Healthy Foods	-.222	.148	-.167	.643
Step 2				
(Constant)	31.48	8.98		
African American Population	12.02	1.95	.730*	
Median Household Income	-1.461E-6	.000	-.003	
High School Graduation	-9.08	6.47	-.159	
Physically Inactive	.217	.097	.187**	
No Access to Healthy Foods	-.226	.150	-.170	
Percent Uninsured	.043	.170	.023	.000

Dependent Variable: Obesity Percent

Note R^2 = .643 for Step 1; Δ R^2 = .620 ; * $p < .001$; ** $p < .05$; $F(6,75) = 22.557$, $p < .001$

Note R^2 = .643 for Step 2; Δ R^2 = .615

Table3: Variable Correlation Results:

	Obesity rate	Poor/ fair health	Uninsured
Obesity rate	1.000	.451*	.108
Poor/fair health	.451*	1.000	.313*
Uninsured	.108	.313*	1.000

*P<0.01(Sig. 2-tailed)/N=82 counties

Summary

- Obesity and health insurance are two concepts that can impact a person's overall health condition.
- The relationship between obesity and health insurance is influenced by many other confounding factors.
- As results from the research literature and this study's analyses suggest, organizations should seek a diverse mix of policy approaches to combat the growing prevalence of obesity and its effects on society.
- As specifically related to this study, the research evidence strongly supports health insurance as one policy approach for improving the overall health status of individuals. The wide range of obesity and health insurance rates among Mississippi counties also suggest a flexible approach is needed to address obesity at the county level.

Limitations

1) This study used a cross-sectional research design which focused on a "single point-in-time" (i.e., 2010), and thus makes it difficult to determine causation and long-term relationship patterns among the data.

2) The data analyzed was collected across many different sources, time periods, and collection methodologies that can impact the validity of findings (e.g., time of year collected; type of collection method such as self-reported data verses data compiled from administrative records; various estimation modeling techniques).

3) This study used the percentage of African American population at the county level as a proxy for race overall, thereby opening-up the possibility of obtaining different results if some other racial/ethnic group was used instead of African American.

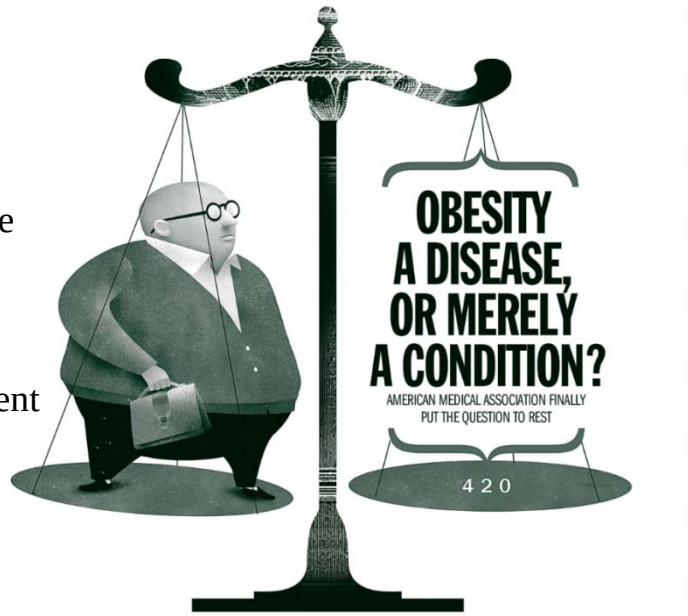
4) The phrasing of the primary research question (i.e., those not having health insurance verses those having health insurance) may also influence the statistical outcomes. Further research is recommended using more longitudinal measures and "variable mixes" to determine what impact having (or not having) health insurance has on obesity rates, as well as the overall health status of individuals at the county level.

Discussion

Obesity was usually considered as a condition or a disorder. In some cultures, obesity is considered as wealth.

Prior to the passage of PPACA:

- Many insurance policies contained provisions limiting the type and amount of claims for obesity-related treatments and conditions;
- Health insurance generally does not cover weight loss treatment and/or gastric bypass surgery which carries many risks and is recommended only for the morbidly obesed (Kelly & Markowitz, 2009/2010).
- Only 8 state Medical programs appear to cover all recommended obesity treatment modalities for adult. Only 10 states appear to reimburse for obesity-related treatments in children.



Time to change

2013 the American Medical Association (AMA) has officially recognized obesity as a **chronic disease**.

- Doctors will be free to talk to a patient about weight as an important medical issue
- To determine obesity as a disease itself, requiring a range of medical interventions, rather than a risk factor for others
- To help improve reimbursement for obesity drugs, surgery and counseling
- To spur more insurers to pay for obesity treatments
- The most important aspect of the AMA decision is that the AMA is a respected representative of American medicine. Their opinion can influence policy makers who are in a position to do more to support interventions and research to prevent and treat obesity.

For most 2015 and 2016 policies:

- 23 states now have a specific health benefit requirement to cover bariatric or gastric surgery.
- 16 states now include some coverage and reimbursement for nutritional screening, counseling and/ or therapy for obesity, sometimes including weight loss program.
- Effective Feb 1, 2016, the Mississippi Division of Medicaid, in the office of the Governor, will provide coverage for inpatient hospital bariatric surgery and related services in accordance with 42 C.F.R. § 447.201 and Miss. Code Ann. § 43-13-117, our Transmittal # 16-001.
- More effective health insurance plans and government health policies to overcoming the obstacles to fight obesity are needed.
- More further researches and monitoring are needed to determine what impact having (or not having) health insurance on obesity rates.

Take Home Message

- Obesity is a chronic disease.
- Obesity and health insurance are two complex concepts.
- The net effect of health insurance on obesity contains mixed results and is dependent upon many confounding factors such as age, race, types of insurance (e.g., public or private), work status, income level, health status, and research methodologies.
- More attention and considerations are giving to obesity, obesity related treatment, intervention, and prevention.

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Q&A???