

Research Report

Gender and Race Wage Gaps Attributable to Obesity

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Overview

Currently, two out of three Americans are overweight or obese.¹ In less than 20 years, roughly half of the population will be obese. Furthermore, obesity costs \$168.4 billion a year, a number which is projected to increase by \$48-66 billion per year.^{2,3} The societal costs of obesity are clear and staggering and the individual costs are equally chilling for most of those who are obese – particularly for Hispanic men and Caucasian and Hispanic women.

In 2010, we released a report that looked, for the first time, at the per capita costs of obesity. Using existing literature, we estimated the annual incremental costs of obesity and overweight to the individual and found that the overall, tangible, annual costs of being obese are \$4,879 for an obese woman and \$2,646 for an obese man⁴. The analysis showed that one of the most profound and easily documented effects of obesity is with respect to wages. This year, we are exploring those wage differentials more closely using the National Longitudinal Survey of Youth (NLSY79) wave years 2004 and 2008 to further quantify obesity-attributable wage gaps.^{*} The NLSY79 provides detailed information about earnings, education, employment status, employment characteristics, health, and household characteristics. The NLSY79 follows the same panel of participants over time. Given the longitudinal nature of the NLSY79, we were able to explore obesity-related wage gaps using two different years, one pre-recession and one at the height of the recession. To our knowledge, no such previous analysis has been performed, nor have any formal studies explored the 2004 to 2008 wave of the NLSY for obesity-related wage gaps.

We found:

- Both men and women who were obese experienced lower wages compared to their normal weight counterparts.
- For both genders and all racial categories except Hispanic men, the wage differential narrowed between 2004 and 2008, despite the economy worsening.
- Caucasian women who are obese experienced a wage penalty in both 2004 and 2008, while Caucasian men only experienced a differential in 2004.
- Hispanic women who were obese experienced a wage differential in both 2004 and 2008, while Hispanic men who were obese only experienced a wage differential in 2008.
- In both years, wages for African-American men who were obese were higher than their normal weight counterparts, while for African-American women, wages were similar between those who were obese and those who were normal weight.

In sum, our analysis shows that most men and women who were obese suffered lower annual wages, and that Hispanic men, along with Hispanic and Caucasian women, experienced the most acute differences.

* For the purposes of our analysis, “wage gaps” and “wage penalties” refer to the wage differential between normal weight (BMI 18.5-25) and obese (BMI>30) individuals.

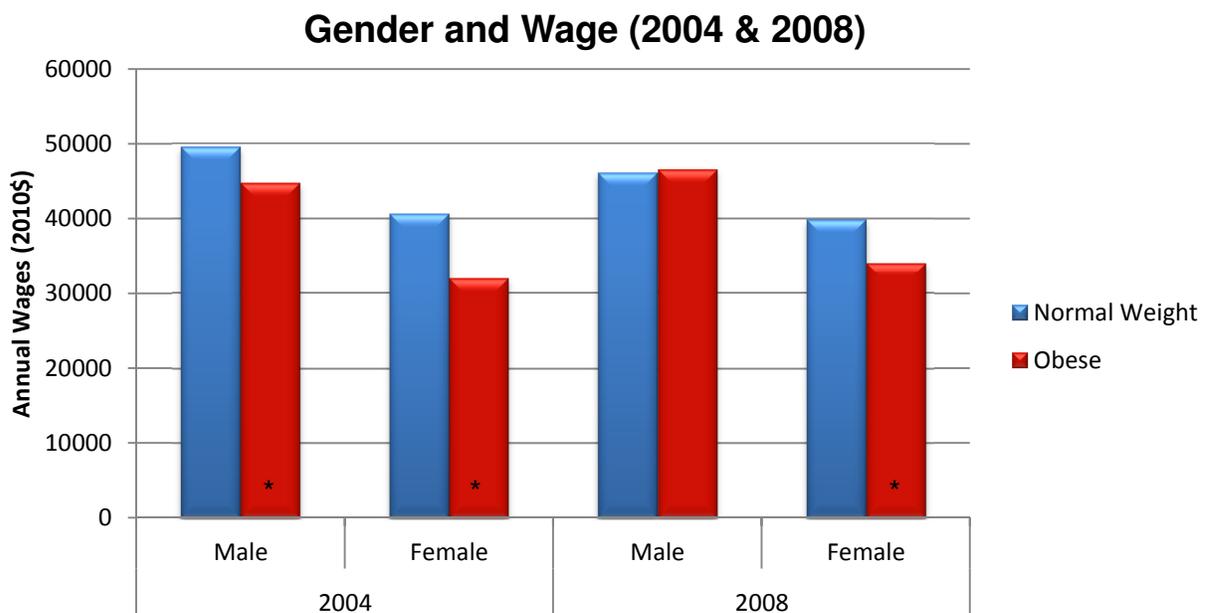
National Longitudinal Survey of Youth 1979 Analysis for Wave Years 2004 and 2008

The Bureau of Labor Statistics' National Longitudinal Survey of Youth 1979 (NLSY79) is a longitudinal survey initiated in 1979. The survey consists of a random sample of 12,686 people and is representative of U.S. men and women who were born between 1957 and 1965. During the 2008 survey, respondents were between 45 and 52 years old. Annual interviews were conducted by phone or in-person and were continued every second year from 1994 onward. Over the years, some attrition has occurred, but survey participation rates have remained above 75% for all survey years. The adults in the NLSY experience similar weight gain as adults in other nationally representative surveys, such as the CDC's Behavioral Risk Factor Surveillance System (BRFSS). The 2004 NLSY represents adults age 39 to 48 while the 2008 NLSY represents adults age 43 to 52. This suggests that the results are generalizable to adults of this age category.

We analyzed the data from the 2004 and 2008 waves of the NLSY79 to extrapolate wages based on BMI. We then annualized the hourly wage differential and adjusted the figures to 2010 dollars (2010\$) using the Consumer Price Index so as to allow temporal analysis between wave years 2004 and 2008. A full description of the methodology is available in the methodological appendix.

Overall Wage Gaps

Overall, individuals who were obese experienced lower wages than those who were normal weight.

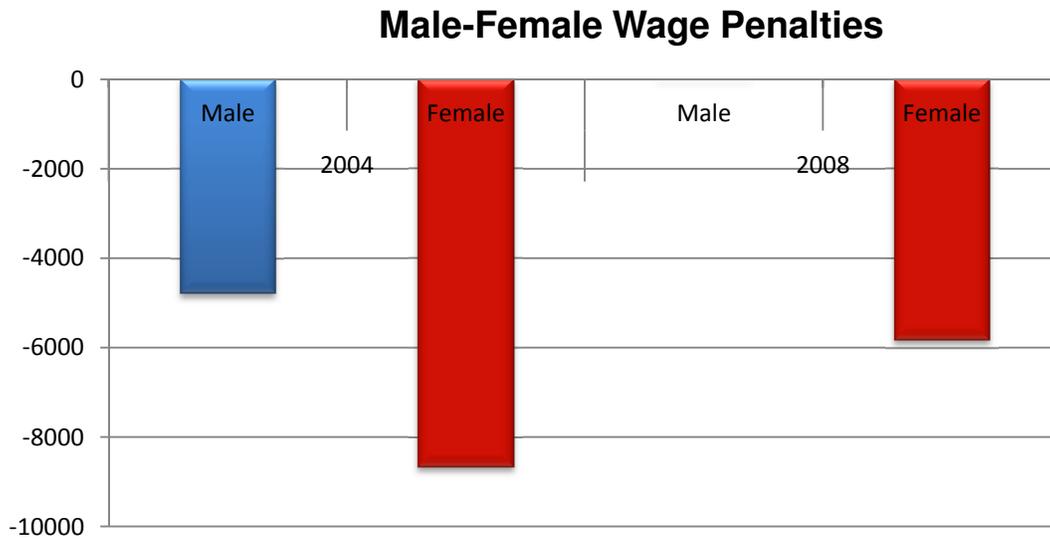


Note: * indicates statistically significant variance from normal weight ($p < .05$)

Gender Trends

We found the connection between obesity and reduced wages to be stronger and more persistent among females than males. Between 2004 and 2008, the differential disappeared for men, yet persisted for women, albeit at a lesser amount.

In 2004, wages among the obese were \$8,666 less for females and \$4,772 lower for males. In 2008, wages were \$5,826 less for obese females, a 14.6% penalty over normal weight females.

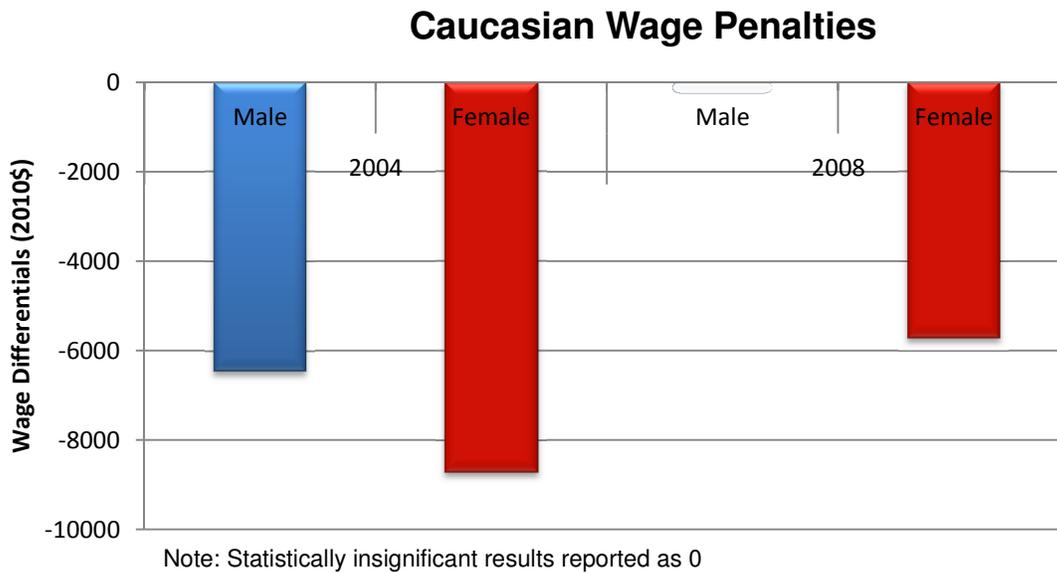


Note: Statistically insignificant results reported as 0

Racial Trends[†]

Caucasian Females

For the wave years 2004 and 2008, the trends among Caucasian wage penalties mirrored those of the overall population, with Caucasian women who were obese experiencing a larger differential against their normal weight counterparts than Caucasian men. These penalties represent 21.0% and 14.1% in 2004 and 2008 respectively. The wage differential between normal and obese Caucasian men disappeared in 2008.

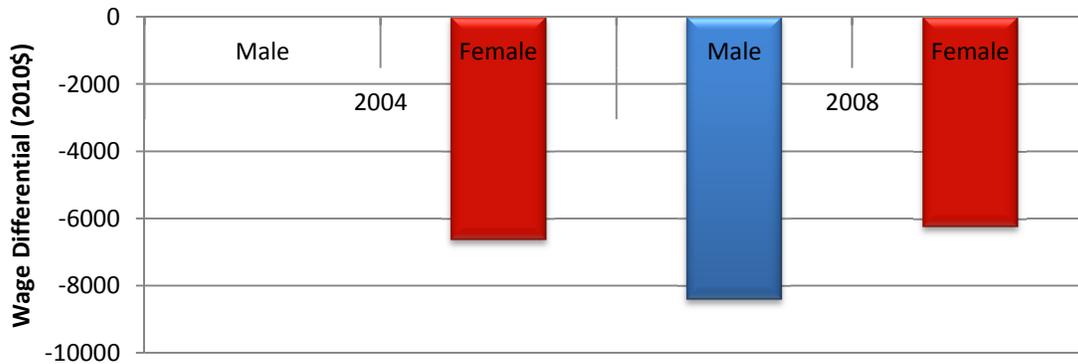


[†] The NLSY79 is representative for each of the race categories. Hispanics, African-Americans, and economically disadvantaged nonblack/non-Hispanics were oversampled in order to produce statistically efficient samples. Statistical sampling weights that adjust for oversampling were used to generate results that are representative for the general population and for results by race/ethnicity. Sample sizes by weight category are reported in the methodology appendix

Hispanics

In 2004, Hispanic women who were obese earned \$6,618 less than those who were normal weight, while Hispanic men's wage differentials were statistically insignificant. In 2008, the differential for Hispanic men who were obese was \$8,394 less than normal weight counterparts, while for women the gap narrowed slightly.

Hispanic Wage Penalties

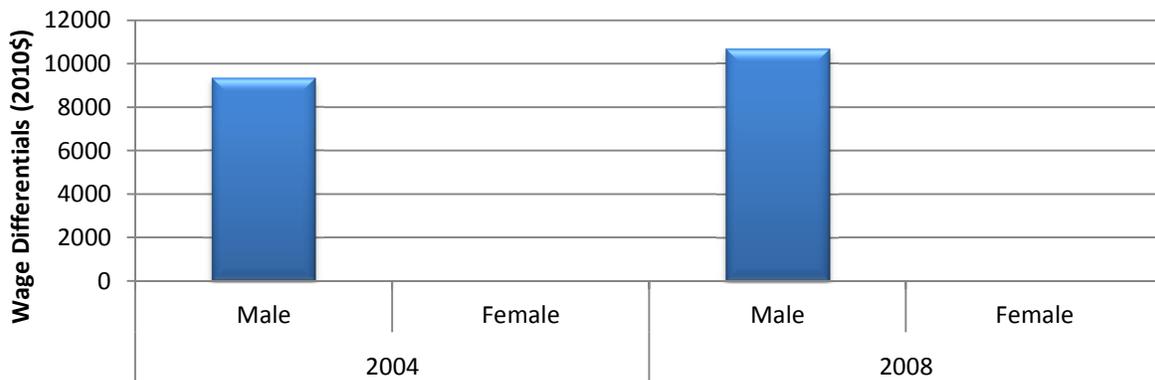


Note: Statistically insignificant results reported as 0

African-Americans

Wage differentials between normal weight and obese African-Americans follow a different pattern. Wages for obese African-American women were not statistically significant compared to their normal weight counterparts. However, among African-American men, wages were higher for those who were obese than for those who were normal weight in both years – by 34% in 2004 and 37% in 2008.

African-American Wage Penalties



Note: Statistically insignificant results reported as 0

Overview of Obesity-Related Wage Gaps

The relationship between obesity and wages was first observed in a 1990 article in *Social Science Quarterly* by Register and Williams in which they observed a 12% wage penalty for obese females and little to no wage penalty for obese males. Subsequent studies have employed different methodologies and show similar gaps; however, the literature is inconclusive on the causality of the differential in wages between those who are obese and their normal weight counterparts.

Obesity-attributable wage gaps may arise due to perceptions of reduced employee productivity, increased medical costs, and employer and customer preference. Some studies have shown that lower socio-economic status and lower levels of educational attainment have also been correlated with obesity and both may lead to lower wages and fewer job opportunities.^{5,6} Type of occupation may also affect the obesity-wage gap relationship.⁷ While early studies hypothesized that wage penalties would likely increase for obese individuals employed in jobs requiring high degrees of social interaction, most were unable to prove this linkage.^{8,9,10} More recent studies have revisited the question and were able to demonstrate that wage penalties are greater for individuals, females in particular, who are employed in jobs requiring a high degree of social interaction – indicating that obesity stigma may be at least partially responsible for observable obesity-wage gaps.^{11,12}

Obesity stigmatization may bias employers and customers against obese employees and can result in lower wages.^{13,14} Top-earning individuals may face an even higher level of stigmatization, with their wages being more strongly affected by BMI.^{15,16,17} However, while workplace discrimination against the obese is well documented, the exact degree to which it influences wages is still largely unknown.

Gender-Wage Gaps

Our findings of a 14% wage gap among obese Caucasian females reinforces existing literature acknowledging the presence of a wage gap of 1.5% to 15.0%..¹⁸ A difference in wages of 7% is equivalent to roughly two years of job tenure or three years of work experience.¹⁹

Obesity stigma can be particularly acute for women, with some studies showing that women are more susceptible to weight-based discrimination at lower weight levels.²⁰ It has been suggested that lower wages may be partially due to higher medical costs of obesity and the interaction of wages and employer-sponsored health insurance. However, even under this hypothesis, obese women face reduced wages exceeding obesity-related increases in medical expenditures, indicating that higher medical costs alone do not explain wage gaps.²¹

For male employees, the literature on the relationship between body weight and wages is mixed. The majority of studies report insignificant differences when comparing obese to normal weight employees.^{22,23,24}

Most studies have used OLS or IV regression models; however, one recent study explored obesity-wage gaps across wage quantiles and found wage penalties among

females to be significant for individuals earning above minimum wage, while wage penalties among males were significant for medium earners.²⁵ Regardless of the exact extent of the wage gap, when compared to males, obesity has a more concrete relationship with reduced wages for females.^{26,27}

Race-Wage Gaps

The literature on wage gaps is largely absent of any research on Hispanic wages. The few studies that have examined the impact of obesity on wages among Hispanics have found a negative, statistically significant wage relationship that is similar to that of Caucasian females.²⁸ Our work supports those findings.

Obesity-related wage gaps have significant implications for Hispanics as the prevalence of obesity is higher among Hispanics than Caucasians. Among women in 2007-2008, Hispanic women had an obesity prevalence 12.1% higher than among Caucasians – similarly, Hispanic men had a prevalence 4% higher than among Caucasians.²⁹

Recent literature suggests that it may only be among Caucasian females that body mass can be shown to have an effect on wages, while among minority groups, with the exception of African-American males, it may be that other factors, such as lower socio-economic status and educational attainment, are the drivers for the observed obesity-wage gaps.³⁰ However, this hypothesis requires further study to resolve.

Key Messages and Policy Implications

Based on our analysis of the 1979 NLSY and our literature review, three major points emerged:

- Most women and Hispanic men are disproportionately affected by overweight- and obesity-related wage gaps;
- Hispanics, irrespective of gender, experience significant obesity-wage gaps; and
- With the exception of Hispanic men, wage gaps appear to narrow somewhat in 2008.

Our findings and current literature point to higher stigma prevalence against women. From a policy perspective, instituting programs and appropriate reimbursement mechanisms for the management and treatment of obesity has greater potential to reduce the economic impact of obesity for women than men, as both individual and societal medical and non-medical costs are higher for obese females.³¹

Given our findings, Hispanic men and women who are obese may face additional hurdles in the workplace that may exacerbate the impact of the recession on wages.

Our analysis using pre-recession (2004) and recession (2008) years reveal a number of seemingly counterintuitive findings that call for additional examination – particularly the narrowing of wage gaps among all groups, except obese Hispanic men, in a recession while unemployment is increasing and wages are increasing at a slower rate.

Conclusion

Our findings reinforce previous research showing that part of the cost of obesity to individuals is in lost wages and that obesity disparately impacts women and Hispanics. Our findings reinforce the need to adopt novel and multifactorial approaches to addressing obesity and its related co-morbid conditions. Obesity is a multifaceted and complex chronic condition that is not easy to disentangle from socio-economic status, education, and geographic location. Looking beyond health care and societal costs to the penalties individuals and families dealing with obesity must fact is essential for understanding the full implications of the obesity epidemic.

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