

# **Racial Differences in the Influence of Female Adolescents' Body Size on Dating and Sex**

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This paper investigates the effect of body size, measured by a person's Body Mass Index (henceforth "BMI") and obesity status, on dating and sexual experiences of white and African American (henceforth "black") female adolescents. Using data from the National Longitudinal Survey of Adolescent Health (henceforth "Add Health"), we estimate the effects of BMI and obesity on the probability of having had sex, being in a romantic relationship, and other important dating and sexual experiences. We find that obese white female adolescents are less likely to be in a romantic relationship compared to their non-obese counterparts. In addition, conditional on having dating experience, obese white girls are less likely to have been intimate and to have had sex. We find no significant differences in relationship experiences and sexual behaviors between obese and non-obese black female adolescents. These findings are novel and contribute to the emerging literatures on the consequences of obesity and the racial differences in beauty norms.

Body size is a prominent aspect of appearance, and as such is subject to aesthetic judgements; judgements which may differ from those based purely on health. Individuals judge their own size and the sizes of others, and in turn are judged by others on the basis of body size. Stigmatization of overweight and obese people is widely documented and takes various forms, including social exclusion, mistreatment by doctors, and public ridicule. Studies suggest that body weight discrimination may contribute to wage penalties, job-status penalties, and marriage-market penalties (see, for example, Averett and Korenman 1996 and 1999, Cawley 2004, Baum and Ford 2004, Conley and Glauber 2005, Morris 2007, and Mukhopadhyay 2008). The consequences of obesity may differ by race as a result of cultural differences in ideal body size, obesity stigma, and related identity prescriptions. Cawley (2004) finds significant wage penalties associated with obesity among white women, but not among black women. Averett and Korenman (1996, 1999) find significant negative effects of obesity on white women's marriage prospects and spousal income, but little to no effect of obesity on black women's wages or marriage prospects. Discrimination of female body size in adolescents' relationship markets has received little attention (Cawley et al. 2006) and the present research provides the first

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estimates of race-specific effects of BMI and obesity on relationship experiences and intimate behaviors.

Using samples of white and black female adolescents from AddHealth data, we estimate models controlling for age, grade, religion, US born, first born, number of siblings, age when moved in the current location, attitudes towards sex (believes sex will make her more attractive to the opposite sex, believes friends will respect her more if she has sex), consumed alcohol in the past month, used illegal drug in the past month, mother has college degree, father has college degree, family on welfare, parent chose current location because of school district, mother approves sex with romantic partner, mother approves sex at the current age and school-level fixed effects. We find that obese white female adolescents are 20% less likely to be in a romantic relationship compared to their non-obese counterparts. In addition, conditional on having dating experience, obese white girls are 12-14% less likely to have been intimate and to have had sex. We find no statistically significant differences in relationship experiences and sexual behaviors between obese and non-obese black female adolescents.

Similar effect sizes for white female are obtained from models using lagged body size measures and an Instrumental Variables strategy, consistent with a causal influence of body size on dating and sex. The estimated effects of BMI and obesity are also robust to the inclusion of measures of physical attractiveness as reported by the interviewer, self-rated health and physical activity levels, and mental health and self-esteem. This further supports the hypothesis that body size is an important attribute in the relationship market of white female adolescents, complementing other priced characteristics like fitness and health and broad measures of physical attractiveness.

Cultural differences in ideal body size, obesity stigma, and related identity prescriptions may contribute to racial differences in the effect of body size on adolescents' dating and sexual experiences and behaviors. Black women have been found to be less likely than women in other racial/ethnic groups to perceive themselves as overweight, even after controlling for objective weight status (see Dawson 1988, Molloy and Herzberger 1998). Studies have also found that black women identify a larger ideal body size than same-age white women do, based on selection of an ideal from an array of drawings of female figures of various sizes, and these personal ideals closely match the same women's conceptions of the social norm for ideal size. Cusumano and Thompson's (1997) analysis of the body sizes of photographic images in women's magazines found that *Essence*, a magazine targeting black women, had the largest average image size ("body shape rating").

**Table 1: Influence of Body Weight on Dating and Sex (White Females)**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Being in a Romantic Relationship</b>					
Obese	-0.199*** (0.029)	-0.188*** (0.031)	-0.202*** (0.029)	-0.211*** (0.030)	-0.201*** (0.031)
BMI	-0.012*** (0.002)	-0.012*** (0.001)	-0.013*** (0.002)	-0.013*** (0.002)	-0.013*** (0.002)
<b>Holding Hands</b>					
Obese	-0.135*** (0.024)	-0.118*** (0.024)	-0.132*** (0.024)	-0.142*** (0.025)	-0.121*** (0.001)
BMI	-0.006*** (0.001)	-0.005*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)	-0.005*** (0.001)
<b>Kissing</b>					
Obese	-0.028*** (0.016)	-0.021*** (0.015)	-0.027** (0.016)	-0.029** (0.016)	-0.022** (0.015)
BMI	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)
<b>Saying I Love You</b>					
Obese	0.011 (0.012)	0.012 (0.012)	0.011 (0.012)	0.010 (0.012)	0.011 (0.012)
BMI	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
<b>Being Touched in the Genital</b>					
Obese	-0.127*** (0.032)	-0.122*** (0.032)	-0.132*** (0.031)	-0.141*** (0.031)	-0.138*** (0.032)
BMI	-0.004** (0.002)	-0.004** (0.002)	-0.005** (0.002)	-0.005** (0.002)	-0.005 (0.002)
<b>Ever had Sex</b>					
Obese	-0.120*** (0.028)	-0.122*** (0.029)	-0.126*** (0.028)	-0.134*** (0.028)	-0.137*** (0.029)
BMI	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)	-0.007*** (0.002)	-0.008*** (0.002)
<b>Used Birth Control at First Intercourse</b>					
Obese	-0.0036** (0.014)	-0.035** (0.014)	-0.035** (0.014)	-0.038** (0.014)	-0.035** (0.014)
BMI	-0.002* (0.001)	-0.002* (0.001)	-0.002* (0.001)	-0.002* (0.001)	-0.002* (0.001)
<b>Using Birth Control Currently</b>					
Obese	-0.022 (0.015)	-0.017 (0.016)	-0.021 (0.015)	-0.023 (0.015)	-0.018 (0.016)
BMI	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)
<b>Ever had Anal Sex</b>					
Obese	-0.002 (0.018)	-0.002 (0.018)	-0.003 (0.018)	-0.007 (0.017)	-0.007 (0.017)
BMI	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.001 (0.001)	-0.001 (0.001)

	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
<b>Being Forced to have Sex</b>					
Obese	0.021 (0.015)	0.021 (0.015)	0.019 (0.015)	0.019 (0.015)	0.019 (0.015)
BMI	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<b>Number of Sex Partners</b>					
Obese	0.046 (0.082)	-0.012 (0.084)	0.019 (0.082)	0.032 (0.082)	-0.042 (0.084)
BMI	0.006 (0.004)	0.002 (0.005)	0.004 (0.005)	0.006 (0.005)	0.001 (0.005)
N					

**Notes:** Each cell represents a separate regression. Standard errors are reported in parentheses. Significance is defined as follows: \*\*\*  $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$ . The covariates in Specification 1 (baseline model) includes: age, grade, religion, US born, first born, number of siblings, age when moved in the current location, believes having sex will make her more attractive to the opposite sex, believes friends will respect her more if she has sex, consumed alcohol in the past month, used illegal drug in the past month, lives with both biological parents, mother has college degree, father has college degree, family on welfare, parent chose current location because of school district, mother approves sex with romantic partner, mother approves sex at the current age and school-level fixed effects. Model 2 includes all covariates in specification 1 in addition to five measures of physical attractiveness as reported by the interviewer: adolescent is physically attractive, adolescent has an attractive personality, adolescent appeared to be well groomed, adolescent was candid, adolescent was more physically matured compared with others. Model 3 includes all covariates in specification 1 along with indicators of self-rated good health, whether the respondent exercises regularly and whether the respondent plays an active sport. Model 4 includes all covariates in specification 1 along with two indicators of mental health: CES-D score and RSE score. Model 5 includes all the variables from Specification 1 - 4.

**Table 2: Influence of Body Weight on Dating and Sex (Black Females)**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Being in a Romantic Relationship</b>					
Obese	-0.030 (0.040)	-0.012 (0.041)	-0.031 (0.040)	-0.035 (0.040)	-0.012 (0.042)
BMI	-0.003 (0.002)	-0.002 (0.003)	-0.003 (0.002)	-0.003 (0.003)	-0.002 (0.003)
<b>Holding Hands</b>					
Obese	-0.019 (0.029)	-0.006 (0.029)	-0.017 (0.029)	-0.017 (0.029)	-0.001 (0.028)
BMI	-0.004 (0.002)	-0.004 (0.002)	-0.004 (0.002)	-0.004 (0.002)	-0.003 (0.002)
<b>Kissing</b>					
Obese	-0.031 (0.024)	-0.027 (0.023)	-0.027 (0.023)	-0.035 (0.024)	-0.026 (0.023)
BMI	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<b>Saying I Love You</b>					
Obese	-0.001 (0.022)	0.003 (0.022)	-0.004 (0.022)	-0.003 (0.022)	-0.001 (0.022)
BMI	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
<b>Being Touched in the Genital</b>					
Obese	-0.053 (0.040)	-0.059 (0.041)	-0.046 (0.040)	-0.056 (0.040)	-0.054 (0.042)
BMI	-0.003 (0.002)	-0.003 (0.003)	-0.002 (0.002)	-0.003 (0.002)	-0.003 (0.003)
<b>Ever had Sex</b>					
Obese	-0.015 (0.042)	-0.008 (0.043)	-0.026 (0.042)	-0.023 (0.042)	-0.022 (0.044)
BMI	-0.001 (0.003)	-0.001 (0.003)	-0.002 (0.003)	-0.001 (0.003)	-0.001 (0.003)
<b>Use Birth Control at First Intercourse</b>					
Obese	-0.029 (0.021)	-0.014 (0.023)	-0.024 (0.021)	-0.028 (0.021)	-0.009 (0.024)
BMI	-0.002 (0.021)	-0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)
<b>Using Birth Control Currently</b>					
Obese	-0.009 (0.027)	0.003 (0.030)	-0.004 (0.028)	-0.009 (0.027)	0.005 (0.030)
BMI	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
<b>Ever had Anal Sex</b>					
Obese	-0.005 (0.025)	-0.003 (0.026)	-0.007 (0.024)	-0.011 (0.023)	-0.011 (0.024)
BMI	0.001	0.001	0.001	0.001	0.001

	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
<b>Being Forced to have Sex</b>					
Obese	-0.012 (0.007)	-0.011 (0.006)	-0.011 (0.006)	-0.012 (0.007)	-0.010 (0.005)
BMI	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
<b>Number of Sex Partners</b>					
Obese	0.169 (0.101)	0.131 (0.105)	0.162 (0.102)	0.167 (0.101)	0.132 (0.106)
BMI	0.005 (0.006)	0.002 (0.007)	0.004 (0.007)	0.005 (0.006)	0.002 (0.007)

**Notes:** Each cell represents a separate regression. Standard errors are reported in parentheses. Significance is defined as follows: \*\*\*  $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$ . The covariates in Specification 1 (baseline model) includes: age, grade, religion, US born, first born, number of siblings, age when moved in the current location, believes having sex will make her more attractive to the opposite sex, believes friends will respect her more if she has sex, consumed alcohol in the past month, used illegal drug in the past month, lives with both biological parents, mother has college degree, father has college degree, family on welfare, parent chose current location because of school district, mother approves sex with romantic partner, mother approves sex at the current age and school-level fixed effects. Model 2 includes all covariates in specification 1 in addition to five measures of physical attractiveness as reported by the interviewer: adolescent is physically attractive, adolescent has an attractive personality, adolescent appeared to be well groomed, adolescent was candid, adolescent was more physically matured compared with others. Model 3 includes all covariates in specification 1 along with indicators of self-rated good health, whether the respondent exercises regularly and whether the respondent plays an active sport. Model 4 includes all covariates in specification 1 along with two indicators of mental health: CES-D score and RSE score. Model 5 includes all the variables from Specification 1 - 4.



