

EXTENDED ABSTRACT:

Enduring Stigma? Obesity Histories and Romantic Relationship Involvement in the Transition to Adulthood

Hilary M. Dotson, M.A.  
Doctoral Candidate  
Department of Sociology  
University of South Florida  
[hdotson@mail.usf.edu](mailto:hdotson@mail.usf.edu)

and

Elizabeth Vaquera, Ph.D.  
Associate Professor  
Department of Sociology  
University of South Florida  
[evaquera@usf.edu](mailto:evaquera@usf.edu)

Submitted for consideration to the 2014 Annual Meeting of the Population Association of America

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Abstract

Using data from the *National Longitudinal Study of Adolescent Health* ( $N=8,092$ ) we examine how obesity in adolescence (Wave I) and early adulthood (Wave III) might be associated with romantic relationship involvement (i.e., married, cohabiting, dating, single) in the late-transition to adulthood period (Wave IV). Counter to expectations, findings from multivariate tests suggest that histories of obesity are not directly associated with type of romantic relationship involvement; however, common pathways to obesity, including racial/ethnic minority identification and being female, are strongly and directly predictive. Our findings counter most of the research and lay-wisdom on the direct social stigma of obesity, demonstrating that obesity is not directly associated with romantic relationship involvement. We argue that obesity is indirectly associated with type of romantic relationship involvement through other health, demographic, and social channels commonly associated with relationships and obesity. Later versions of the paper will include a detail analysis of these suggested associations.

### *Introduction*

Recent estimates suggest that the prevalence of obesity is around one third of all U.S. adults (Flegal, Carroll, Kit, & Ogden, 2012). Similarly, among young adults aged 24 to 32, obesity prevalence exceeds 36% (Gordon-Larsen, The, & Adair, 2010). A wide body of research suggests that in addition to the known health consequences of obesity (e.g., Freedman, Dietz, Srinivasan, & Berenson, 1999; Khaodhriar, McCowen, & Blackburn, 1999; Mokdad et al., 2003; Sin & Sutherland, 2008; Wilson, D'Agostino, Sullivan, Parise, & Kannel, 2002), obese young people also experience social stigma and discrimination. Some of the social consequences of obesity manifest in lower educational attainment (Crosnoe, 2007), lower wages (Han, Norton, & Powell, 2011), and lower likelihoods of employment (Härkönen, Räsänen, & Näsi, 2011), while others appear within interpersonal relationships. For example, among adolescents, obesity is associated with fewer reciprocated friendships (Cunningham, Vaquera, & Long, 2012). Indeed, an underlying thread in the social research on obesity is the idea that experiencing obesity is stigmatizing (Carr & Friedman, 2005, 2006; Puhl & Brownell, 2006). Moreover, even when one is no longer obese, having experienced obesity at all still elicits stigma (Levy & Pilver, 2012).

To date, however, few studies have considered how obesity in adolescence might affect other types of interpersonal relationships, such as romantic relationships, into early adulthood. While it is known that entering long-term cohabiting relationships or getting married can promote obesity in young adulthood (Smith & Christakis, 2008; Sobal & Hanson, 2011; The & Gordon-Larsen, 2009), less is known about how histories of obesity might influence becoming involved in romantic relationships in the first place. Evidence from the National Longitudinal Study of Adolescent Health suggests that overweight adolescents first engage in sexual intercourse when they are significantly older than lower-weight peers (Cheng & Landale, 2010), but it is not clear if delaying sexual initiation precludes or inhibits romantic relationship formation beyond the early years of the transition to adulthood. Further, prior research also indicates that obese and overweight women express having less satisfying relationships than normal weight women, and their partners consider them less attractive than partners of lower-weight women (Boyes & Latner, 2009). Obese women participating in focus groups also report avoiding romantic relationships and intimacy altogether (Williams & Merten, 2013). These studies suggest that romantic relationship formation and sustaining such relationships may be particularly onerous for individuals, especially women, experiencing obesity.

We focus our research on young people aged between 24 and 32 years as with recent demographic changes and shifts, this is the period when most people in the U.S. first become married (Kreider & Ellis, 2011; Manning, Brown, & Payne, 2013) and begin having children (Mathews & Hamilton, 2009). Understanding how obesity can influence these interpersonal relationships, which are typically expected to be long term, could serve as a conduit to better address the public health consequences of obesity. If we know the potential links between obesity and interpersonal relationships, attempts could be made to address obesity through social networks and supports.

In this paper, we seek to expand the body of research on obesity and romantic relationships by focusing on how obesity occurring in adolescence and early adulthood might influence the type of romantic relationship one is involved in (if any), between 24 and 32 years of age. We posit that individuals with histories of obesity will have a more difficult time achieving types of relationships suspected to be more enduring – specifically, marital and cohabitation relationships. In line with the research demonstrating that obesity is associated with deleterious social outcomes, presumably resultant from obesity stigma, we hypothesize that:

(H1) Individuals with any type of obesity history will be more likely to be in dating relationships or single, compared to being married.

(H2) People with histories of obesity will not differ in likelihoods of being involved in a cohabitation relationship, compared to being married.

### *Data and Measures*

We employ data from Waves I, III, and IV of the *National Longitudinal Study of Adolescent Health* (Add Health) in this study (Harris, 2009). Wave I of Add Health is a nationally representative study of 7<sup>th</sup> through 12<sup>th</sup> graders from the 1994-1995 school year. Respondents of the In-Home Wave I survey were re-interviewed one year later for Wave II, again in 2001-2002 for Wave III (most aged 18-26 years), and in 2008-2009 for Wave IV (most aged 24-32 years). Our independent measures are from the In-Home Wave I and Wave III surveys, and our dependent measure is from Wave IV. All analyses were weighted, clustered, and stratified to estimate population values, using survey procedures (Chantala & Tabor, 2010). We employed listwise deletion, leaving our final sample at  $N=8,092$ . For the sake of brevity, in this extended abstract we have consolidated our discussion to only include measures of interest.

*Independent Measures.* Our primary independent measure of interest is obesity history. We measure obesity history by identifying whether or not respondents were considered obese in adolescence (Wave I) and/or in early adulthood (Wave III). We use the 2000 CDC Growth Charts to identify obesity in adolescence, where a percentile of 95 or higher indicates obesity (Kuczmarski et al. 2002). We consider respondents obese in adulthood when body mass indices exceed 30 (Centers for Disease Control 2012). When evaluating obesity both in adolescence and early adulthood, we identified four specific obesity tracks: 1) obese in both Wave I and Wave III (8.1%, SE: 0.4), 2) obese in Wave III only (13.3%, SE: 0.6), 3) obese in Wave I only (3.4%, SE: 0.4), and no history of obesity (75.2%, SE: 0.8).

*Dependent Measure.* Our dependent variable of interest is current relationship type at Wave IV. Respondents were coded as married (44.1%, SE: 1.6), cohabiting (20.5%, SE: 0.9), dating (17.1%, SE: 0.9), or no current relationship involvement (18.3%, SE: 0.8). Add Health includes an additional relationship category, pregnancy relationship, as well. In the Add Health survey, pregnancy relationships refer to non-marital and non-cohabitation relationships where a pregnancy (but not necessarily a live birth) occurred. Due to few relationships meeting these criteria, and the fact that we are also controlling for having children, we collapsed these respondents into the same category as dating (i.e., being involved in a romantic relationship without being married or living with the partner). Respondents could be involved in multiple concurrent relationships; when this occurred we selected relationships in the following order: marriage, cohabitation, or dating. In cases where respondents were in multiple relationships of the same type, we selected the relationship that had the longest duration.

*Control Variables.* We controlled for race, gender, age, self-reported health, urbanicity of school at Wave I, transitions to adulthood at Wave III, including employment, educational attainment and school enrollment, and household context measures at Wave III, including living with one's parents, individual income, homeownership, and having biological children in the home. We removed respondents who were pregnant to avoid conflation with obesity status from our models, and Native American respondents as there were too few respondents identifying as Native American to make reasonable inferences.

See Table 1 for complete weighted sample statistics for all measures.

### *Bivariate Findings*

In Table 2, we show a cross-tabulation of obesity and relationship statuses, including a test for model significance. Some interesting patterns emerged. Individuals who were obese in Wave I only appeared disproportionately single and cohabiting, while fewer were married at Wave IV. Moreover, those who were obese in Wave I and III appeared disproportionately single, and lower probabilities of marriage or cohabitation at Wave IV. Next, we present results from multivariate tests, in order to ascertain whether some of the characteristics commonly associated with obesity (e.g., race and gender) might modify the relationship between obesity and relationship status in early adulthood.

### *Multivariate Findings*

Table 3 illustrates findings from a multinomial logistic regression model predicting type of relationship involvement at Wave IV. In this model, as marriage was the most common relationship type, being married serves as the comparison outcome measure. There were no significant differences in the likelihoods of cohabitation, dating, or being single compared to married among any of our obesity history categories, compared to having no history of obesity. Perhaps more interesting, the coefficients were quite small across all of the obesity measures. As expected, race, gender, age, self-reported health, employment status, educational attainment, school enrollment, living with one's parents, homeownership, and having children at Wave III, were all significant predictors of being involved in other types of relationships (or no relationship) at Wave IV, compared to being married. We did not find support for our first (H1) or second (H2) hypotheses. With this in mind, our findings demonstrate that obesity is not directly linked to romantic relationship involvement, but other health, demographic, and social characteristics which are known to influence obesity are directly associated with relationship involvement. We posit that the consequences of obesity on romantic relationship involvement are not directly evident, but rather, obesity is entwined with other health, demographic, and social measures and it is these measures, not obesity, that are directly influencing romantic relationships. The implications of our findings are discussed below.

### *Discussion and Conclusion*

Our findings suggest a counter-narrative to the dominant paradigm in the social research on obesity; one in which obesity stigma is not always at work in shaping deleterious outcomes among obese persons, and that in some cases, obesity may not be particularly relevant in explaining some social phenomena. At least in the case of romantic relationships and with longitudinal evidence from the Add Health data, obesity does not appear to be directly associated with difficulties attaining romantic relationships. This is considerably surprising and exciting, as the extant research finding that obesity often occurs after relationship formation (Smith & Christakis, 2008; Sobal & Hanson, 2011; The & Gordon-Larsen, 2009) and the persistent social stigma of obesity (Crosnoe, 2007; Cunningham et al., 2012; Han et al., 2011; Härkönen et al., 2011; Puhl & Brownell, 2006). With this in mind, the primary mechanisms influencing romantic relationships in early adulthood are reported health, demographic, and social factors, which often coincide with obesity in early adulthood.

This study is a starting point for disentangling associations between obesity and romantic relationship formation. Similar to previous research, we identified several measures known to predict marriage and cohabitation, such as race and gender (Brown, Van Hook, & Glick, 2008), as also predictive of type of relationship involvement in our models. However, both racial and ethnic minorities and women tend to have higher likelihoods of obesity compared to Whites and men (Flegal et al., 2012; Gordon-Larsen et al., 2010). In our study, consistently, Black respondents had higher likelihoods of cohabiting, dating, or being single compared to being married, as opposed to White respondents. Women were also significantly less likely to be cohabiting, dating, or single than men were, compared to married. However, we posit that the effects of race and gender, which are known to be quite powerful predictors of obesity, are much more salient in shaping relationship experiences than obesity *directly*. In future versions of the paper, we will examine potential indirect effects of obesity, race and gender through interactions.

We found that normative transitions to adulthood were also significant predictors of romantic relationship type. As detailed earlier, obesity is associated with lower educational attainment, wages, and lower likelihoods of employment (Crosnoe, 2007; Han et al., 2011; Härkönen et al., 2011) – each of which may decrease romantic desirability, especially for cohabiting and marital relationships. We identified two potential explanations to explain the association between self-reported health and type of romantic relationship involvement: 1) obese respondents experiencing tangible negative health consequences of obesity, and 2) obese respondents may report their health as disproportionately worse due to interpreting their own body size as indicative of poor health. Weight stigma, then, may be less salient when respondents perceive poorer health. Finally, we also propose that given the very high rates of obesity and overweight in the U.S., where only one-third of U.S. adults are considered normal or underweight (Flegal et al., 2012), obesity may be less socially detrimental than in previous years. The

social stigma of obesity may be reduced when overweight and obesity are ubiquitous, and overweight and obese individuals make up the majority of the population. With these considerations in mind, more research is needed that evaluates the indirect links between obesity, transitions to adulthood, and demographics with romantic relationship formation.

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Table 1: Weighted Sample Statistics of Full Sample, N=8,902

	Percent / Mean	SE
<i>Obesity Histories</i>		
Obese in Wave I and III	8.1	0.4
Obese in Wave III only	13.3	0.6
Obese in Wave I only	3.4	0.4
No history of obesity	75.2	0.8
<i>Relationship Type at Wave IV</i>		
Marriage	44.1	1.6
Cohabitation	20.5	0.9
Dating	17.1	0.9
No current relationship	18.3	0.8
<i>Individual Context</i>		
<i>Race</i>		
White	68.0	3.0
Black	15.0	2.3
Mexican Latino/a	6.0	1.2
Other Latino/a	4.0	0.9
Asian	3.6	0.9
Multiracial	3.5	0.3
Female	51.0	0.8
Age (18-27)	21.7	0.2
Self-Reported Health (1-5)	4.0	0.0
<i>School Urbanicity</i>		
Suburban	57.3	5.2
Urban	23.8	4.0
Rural	18.9	5.4
<i>Transitions in Wave III</i>		
Employed	71.6	1.2
Educational Attainment (6-22)	13.2	0.1
Enrolled in school	38.9	1.6
<i>Household Context in Wave III</i>		
Living with parents	39.9	1.7
Individual income (\$0-260,000)*	13644.0	518.5
Missing Income	19.0	1.2
Homeowner	13.0	1.1
Biological children in the home	16.9	1.0

\*For the purposes of determining the mean, all missing values for income were omitted.



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Table 2: Cross-tabulations of obesity and relationship statuses

	Married n=3,894 Percent	Cohabiting n=1,723 Percent	Dating n=1,648 Percent	Single n=1,637 Percent
<i>Obesity Status</i>				
Obese in Wave I and III	42.62	18.94	17.40	21.05
Obese in Wave III only	46.68	20.33	16.24	16.76
Obese in Wave I only	37.43	22.98	16.08	23.51
No history of obesity	44.10	20.59	17.25	18.06

F (7.39, 620.81) = 1.00, p = 0.44

Row percents displayed

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Table 3: Multinomial Logistic Regression Predicting Type of Relationship Involvement, Comparison Group is "Married," N=8,902

	Cohabiting	Dating Relationship	Single
	<i>b</i>	<i>b</i>	<i>b</i>
<i>Obesity History</i>			
Obese in Wave I and III	-0.19	-0.11	0.01
Obese in Wave III only	-0.05	-0.02	-0.06
Obese in Wave I only	0.07	-0.16	0.22
No history of obesity (ref.)	-	-	-
<i>Individual Context</i>			
<i>Race</i>			
Black	0.85 ***	1.35 ***	0.87 ***
Mexican Latino/a	-0.12	0.31	-0.01
Other Latino/a	0.46	0.49 **	0.15
Asian	-0.06	0.45 *	0.16
Multiracial	0.63 *	0.42	0.31
White (ref.)	-	-	-
Female	-0.20 *	-0.36 **	-0.41 ***
Age	-0.16 ***	-0.13 ***	-0.10 **
Self-Reported Health	-0.15 **	-0.16 **	-0.25 ***
<i>School Urbanicity</i>			
Urban	-0.21	-0.07	-0.06
Rural	-0.18	-0.29	-0.17
Suburban (ref.)	-	-	-
<i>Transitions in Wave III</i>			
Employed	0.00	-0.45 ***	-0.29 **
Educational Attainment	-0.10 ***	-0.03	-0.04
Enrolled in school	-0.06	0.38 ***	0.04
<i>Family Context in Wave III</i>			
Living with parents	0.13	0.44 ***	0.28 **
Individual income	0.00	0.00	0.00 *
Missing Income	0.04	0.12	0.05
Homeowner	-0.61 ***	-0.50 **	-0.84 ***
Biological children in the hom	-0.37 **	-0.50 **	-0.80 ***
<i>F</i> -score	8.17 ***		
<i>df</i>	63, 22		

Key: \* $p \leq 0.05$ , \*\* $p \leq 0.01$ , \*\*\* $p \leq 0.001$ .