Feeling a Little Fat: Stereotype Threat and Weight-Based Stigma as a Predictor of Marriage

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ABSTRACT:

Studies on the effects of excessive body weight have historically focused on weight in terms of pounds, or medically in terms of one's Body Mass Index (BMI) score. This research has shown that the social stigmatization of the overweight and obese has limited them in their ability to form romantic relationships and form lasting unions like marriage. However, currently no studies have looked at how personal perceptions of weight may impact these findings. As rates of obesity have increased, the perception of one's weight as deviant may have decreased as those with excessive weight have become the national majority. The present study tested the hypothesis that one's body weight in pounds was no longer a reliable predictor of relationship formation, relying instead on how one perceived their weight. Based on Stereotype Threat Theory, the present study hypothesized that as negative perceptions of one's weight increased, odds of marriage would decrease. Using data from the National Longitudinal Study of Adolescent Health (N=12,225), this study found that although the framework of Stereotype Threat did not find support, one's perception of their body weight served as a better predictor of marriage than did measured or reported BMI. Further, by measured BMI we saw no statistically significant differences across odds of marriage. By contrast, those who perceived their weight as slightly overweight actually reported higher odds of marriage than those of normal weight. These results may suggest that body weight as measured in pounds may no longer be as salient to the formation of long-term relationship formation as it once was.

Keywords: Body Mass Index; Perception of Body Weight; Obesity; Stereotype Threat; Stigmatization; Marriage

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INTRODUCTION

A few extra pounds. Chubby. Hefty. Larger. Chunky. Fat. In a culture obsessed with weight loss, fat is the arguably the new F word. With a multibillion dollar diet industry, and a media deluged with withered women and chiseled men, Americans are constantly bombarded with messages about what supposedly is normal, right, and attractive in a physical body. Excessive weight, and embracement of said state of being, is not included in those messages. Rather, excessive weight in the U.S. is a highly socially stigmatized state of being with research indicating that the negative effects of excessive weight can seep into all realms of an individual's life, from evaluation of their personal character, to their job worth, to their desirability as a romantic partner (see literature review). Yet, in a nation where 65% are medically considered overweight, and 35% are considered obese, we have no shortage of individuals who clash with this cultural demand for thinness (CDC: Overweight and Obesity). Further, even those at levels of what appears to be "normal" weight (i.e. height and weight proportionate or of socially acceptable levels) may worry about excessive body weight, potentially taking on both the label and social burdens that it brings with it (Bordo 1993).

What is striking about this cultural preference for thinness is that those currently at or above what is medically categorized as "overweight," currently outnumber those of normal weight in the United States, shifting those with "deviant" weight status into the social majority. In which case if the bulk of Americans are overweight, does excessive body weight remain stigmatized, or does it become normative? Can one continue to be of deviant status when the very trait that makes them deviant, also makes them common? As this paper will outline, I argue that as body weight has risen on a national level, the salience of one's physical weight (specifically on intimate partnerships) has decreased. Although the United States is still very

much a "thin-centric" nation, this paper will argue that the relative importance of weight has changed. While past research on the negative outcomes of excessive body weight has focused on the effects of measured weight in pounds, I contend that this may no longer be the strongest predictor associated with weight. Rather, I argue that to "be fat" is relative to the individual's perception of their weight, and therefore the effects of weight may be linked directly to how strongly they identify their weight as acceptable or problematic. Although thinness is still desirable, it may be less likely that individuals define themselves as having weight issues when the majority of those around them are of similar appearance. In which case, body weight then becomes only as definitive for an individual as they perceive it to be. Therefore this study seeks to understand if as weight levels have increased, the well documented negative effects of weight on an individual are more strongly correlated with their measurements in pounds, or with their conceptualization of their body weight.

As research indicates that excessive weight is negatively correlated with romantic relationship formation, this study seeks to understand if relationship formation is more strongly tied to physical weight in pounds or ones perception of their weight as either normative or problematic. Explicitly, this study will test whether personal perception and/or internalization of weight based labels and stigmas act as a stronger predictor of marriage than ones actual physical weight.

In the context of this paper, I will define the terms "overweight" and "obese" based on the guidelines set forth by the United States Health Department (discussed further in measurement section), referring to a specific body mass index (BMI) score based on height and weight. As the terms overweight and obese are often used interchangeably in the literature to describe weight deviance, I will instead use the term "excessive weight" when referring to

abstract social views of weight. This distinction is of particular importance to this study as not all those who are defined medically as overweight are socially considered overweight, while not all those medically defined as normal weight would consider themselves of socially acceptable weight levels.

CONCEPTUAL FRAMEWORK

Weighing Heavy: Pound-centric America

The messages of thinness as a normative state of being in the United States are constant, calculated, and highly concentrated in American life (Hesse-Biber 1996). Even a glance at popular U.S. T.V. finds programming brimming with weight modification messages. NBC's *The Biggest Loser* is in its 12th season, with weekly episodes of obese individuals dieting and exercising upwards of 7 hours a day pulling in approximately 10.6 million viewers for the season premiere in 2009 (Nielsen TV Ratings). Not to be outdone, ABC premiered their own weight loss show in 2011, *Extreme Makeover-Weight Loss Edition*, documenting the year long weight loss journeys of obese Americans to an audience of 7.1 million (Nielsen TV Ratings). Various other networks have followed suit such as MTV (*I Used to be Fat)*, Oxygen (*Dance Your Ass Off)*, VH1 (*Celebrity Fit Club)*, and TLC (*One Big Happy Family).* The list goes on and on.

Arguably, weight management for health related reasons is beneficial. The physical ramifications of obesity are numerous and severe, in which case sensitivity to one's weight level could medically be beneficial. The list of physical conditions associated with obesity covers most of the major body systems. A quick overview by the Center for Disease Control finds that individuals suffering from obesity and morbid obesity are more likely to experience: coronary heart disease, Type 2 Diabetes, Hypertension, joint disease, Stroke, Liver/Gallbladder Disease, Sleep Apnea, Osteoarthritis, Incontinence, and a variety of cancers of the colon and stomach.

The extra weight can cause severe joint pain that hinders walking or vigorous movement as well. Further, the CDC also reports that obese women are likely to suffer gynecological problems, including an abnormal menses and infertility (CDC: Overweight and Obesity). Additional research by the Surgeon General's Office reports high incidences of reproductive complications associated with obesity. Obesity not only makes the odds of pregnancy lower for couples and hopeful mothers, but also makes pregnancy and childbearing extremely risky for both mother and fetus. Children of obese women are more likely to have birth defects and high blood sugar, as well as a greater risk of death during the birthing process. Similarly, pregnant obese women are at a greater risk for Gestational Diabetes and death during labor (Office of the Surgeon General: The Obesity Crisis in America). When put in this context, a weight conscious nation may just be good common sense. However, can worrying about your weight as social, rather than physical condition, be limiting in its own right? Over the course of this paper, weight concerns will be discussed not in regards to their usefulness in circumventing physical ramifications, but rather with regards to their catalyst effect in producing social limitations in the context of marriage.

THEORY

Symbolic Interactionism and Stigma

For years now, Sociologists and Psychologists alike have been documenting the way humans objectify, codify, and construct meanings about the world around them. We assign meaning to actions, styles of speech, physicality's, and so forth, a process more commonly known as Symbolic Interactionism. Herbert Blumer (under the instruction of George Herbert Mead), established the general foundation of the perspective on three properties: First, that humans react towards things based on the meaning that they assign to them. Second, that this

meaning arises from social interactions that they have had with society and with those within it. Finally, that these interpretations and meanings change as the individual has new encounters with society and persons who embody these symbols (Blumer 1969). Symbolic interactionism implies a constant state of change, where we learn how to interpret and react to people, places, emotions, and so forth. Therefore, all that we do carries symbolic meaning, giving those around us a basis to understand and interpret us.

The human body is no exception to Blumer's guidelines, with expectations and interpretation of physical appearance a strong tool for how we understand someone. We both expect certain things from how someone should look, and make assessments of them based on their ability to follow or deviate from these expectations. It is this deviation that gives rise to the development of social stigma. Using Link and Phelan's (2001) discussion of stigma, we argue stigma to exist when first, society identifies human differences and labels them as such. Second, these differences are then linked to undesirable characteristics, which allows society to place the labeled individuals in separate categories which clearly define "them" as different from "us." The labeled subsequently can lose social status and experience discrimination (pg. 367). With regards to the body, those that fail to meet our expectations of what is "normal" or expected, are what DeJong calls "physically deviant." Following the guidelines of symbolic interactionism, physical deviance dictates that the possessing of specific physical traits that diverge from what is considered common or normal, serves as a discreditor to its possessor (i.e. those with amputated limbs, burn victims, excessive tattoos or piercings, excess weight, etc.) (DeJong 1980:75). Body weight that falls outside the guidelines of what is "normal" meets the criteria of physical deviance, and as research has highlighted, dramatically impacts the way a person with excessive weight is interpreted. As such, if individuals are aware of these stigmas and take them to be true,

labeling theorists would argue that individuals may move from stages of primary deviance where they are unaware or unaffected by the label, into stages of secondary deviance, in which the stigma itself becomes a key definer in who the person is and how they organize their life (Lemert 1967). They take the label as true and unchangeable, and redefine their sense of self and purpose around its meaning.

It is important to note however, that the stigmatization of any group is based largely on their status as an outsider, highlighting the "us" and "them" mentality of Labeling Theory. As mentioned at the papers start, it could be reasoned than that as levels of weight in the United States have swelled, the line between "us" and "them" may not be as prominent as it once was. An overweight or obese person may not feel as self-conscious, or arguably even be aware of their weight level since more of those around them are of similar statures. In which case, only the acknowledgement of one's weight as problematic would affect one's sense of self. As is argued by Stereotype Threat and discussed below, acknowledging that one has qualities that have the potential to be stereotyped, discriminated against, or judged on the basis of this quality, can potentially promote a self-fulfilling prophecy regardless of its legitimacy.

Stereotype Threat

As is outlined by the shift from primary deviance to secondary deviance, the prevalence of stigma and the internalization of stigma are different things. One may be aware that certain types of negative perceptions exist, but has yet to embrace the stigma as a key definer in their life. That is not to say that individuals will not attempt to modify their behavior in order to fight against the possibility that the stigma will be applied to them. This may mean altering one's self in hopes of falling outside of what is deviant (i.e. weight loss), or attempting to alter the perception of the meanings as a whole, as is the case with the uprising of the Fat Acceptance

movement and non-profits like the National Association to Advance Fat Acceptance. This movement stresses health at any size, where dieting is sternly discouraged, and advocacy and outreach on local and governmental levels for "Fat Rights," equal treatment, and the dismembering of fat stereotypes is the ultimate goal (NAAFA: General Information). However, as outlined by Link et al. (1989) and later by Steele and Aronson (1995), even being aware of the possibility of negative stereotyping because of a specific trait can have effects on one's definition of self and actions, a theory described by Link et al. as Modified Labeling Theory, or Stereotype Threat by Steele and Aronson. Unlike labeling theory, it does not require necessarily that the individual ever have experienced discrimination or disparate treatment due to a specific quality. Rather, it is simply acknowledging the possibility of group based discrimination that alters the individual's behavior, rather than the stigmatization itself producing negative outcomes. Individuals show stronger stereotype threat effects when they want to do well on the task, identify strongly with the stereotyped group, or expect discrimination due to the negative stereotype.

As was the case with mental illness, research by Link and colleagues (1989) found that mental patients who were aware and concerned with the stigmatization of mental illness often incorporated these labels into their current state of being and how they subsequently dealt with the disease even before they entered treatment or divulged their condition with friends and family. Additionally, Steele and Aronson hypothesized that negative stereotyping of Black men and women as performing less positively on standardized tests would actually cause them to perform poorly. The student's scholastic aptitude may in fact, be much higher than the test reported, but concern about underperforming would create a self-fulfilling prophecy of failure.

The authors found support for their theory for Black students, as well as for women in highly quantitative and math heavy scholastic classes (1997).

Stereotype Threat theory will serve as the basis for the primary hypothesis of interest in this paper, looking to see if an increased negative perception of one's weight will decrease the odds of marriage, while controlling for various weight and marriage related factors. I specifically argue that those who see their weight as abnormal will underperform in the marriage market. Conversely, those who perceive their weight to be of normal levels or below would have increased odds of marriage. This perception based increase or decrease in odds of marriage would, according to the basic foundations of Stereotype Threat, be significant regardless of one's physical weight as it is not the weight itself that limits the individual in their pursuit of matrimony, but rather negatively perceiving their weight at any level generates negative marital ramifications.

PRIOR RESEARCH

Weight as a Social Burden

There is a preponderance of evidence emphasizing that the overweight and obese are perceived less positively than the normal weight. Research has highlighted that the overweight and obese are perceived as having less self-control, less self-discipline, and as being more self-indulgent (DeJong 1980; Klaczynski, Goold and Mudry, 2004), as well as thought to make less positive life choices and have more unpleasant personality traits (Staffierei, 1967; Hiller, 1981) than normal weight individuals.

A large amount of research focusing specifically on adolescents has found that the stigmatization of the overweight and obese is not a fading phenomenon either. Research by Cheng and Landale (2011) using the National Longitudinal Study of Adolescent Health found

that overweight youths were more likely to feel socially marginalized, and less likely to have close friendship ties than their normal weight peers (pg. 12). They also found grades and self-esteem levels to be lower among overweight individuals than their normal weight peers.

Pearce, Boegers, and Prinstein (2002) found that obese boys and girls were more likely to experience peer victimization than normal weight teens. Their analysis looked at questionnaire responses of 416 high school students in which they found that obese boys were more likely to have experienced overt victimization (i.e. being punched, hit, kicked) than overweight and normal weight boys, while obese girls were more likely to experience relational victimization (peers refused to spend time with them, given the silent treatment, refused to sit at lunch with them) than their overweight or normal weight peers.

Studies of college age and older reports similar findings. Research by Hiller (1981) found that participants in the study associated obese individuals with less positive life choices and outcomes as compared to normal weight people. His study asked 223 college students to write one page stories about a normal weight boy and a normal weight girl, and an obese level boy and an obese level girl. His analysis found that the stories written about the obese level characters were more likely to involve negative events or outcomes than the stories about the normal weight characters. He also found that students were more likely to ascribe the obese characters unpleasant personality traits as compared to the pleasant attributes ascribed to the normal weight characters.

An older, but equally salient study by Staffieri (1967), also found consistent negative attribution of character traits to overweight individuals based on body shape. A sample of 90 boys were asked to look at the silhouettes of the three scientific body shapes (endomorph, mesomorph, and ectomorph), and assign to them 39 adjectives from a list that they thought best

represented that body shape. The results found that the endomorph (the larger massed, rounder figure) was consistently assigned negative attributes. It was the most likely to be described as "dirty," "cheats," "mean," "sloppy," "stupid," "argues," and "forgets." It was also the body shape to be least likely described as "best friend," and "has lots of friends."

Weight based stigmatization and discrimination is not something resigned only to children and adolescents. Weight based prejudice in the work place has been identified in several studies in which employers tend to rate applicants and/or employees with excessive weight as being more likely to have greater emotional problems (Bellizzi & Norvell 1991, Klassen et al 1993, Klesges et al 1990) and as having more negative personality traits (Bordieri et al 1997, Pingitore et al 1994). Respondents also identified that those with excessive weight are lazy, with poorer work habits, less competency, ability, and skill (Klesges et al 1990, Larkin & Pines 1979, Larwood 1995). Overweight individuals were also rated as less desirable coworkers (Jasper & Klassen 1990) and superiors (Decker 1987). The work by Venturini, Castelli, and Tomelleri (2006) found that certain jobs were even associated with fatter people. Their research sought to identify if body mass was associated with perceptions of suitable jobs, namely those that required greater interpersonal contact. Their analysis indicated that respondents associated fatter bodies with jobs requiring less person-to-person face time (archivists, maids, chefs, computer scientists, etc.), as compared to normal weight individuals.

Mating, Dating, and Marriage

The stigmatization of the overweight and obese as people, not surprisingly spills over into the realms of sex, dating, and marriage. Those who do not fit the mold of prescribed attractiveness (i.e. those with excessive weight), are often deemed as either non-desirable partners, or as less desirable partners then their thinner counterparts (Harris, 1990; Cawley,

Joyner, and Sobal, 2006; Chen and Brown, 2005; Paxton et al., 2005; Sobal and Bursztyn, 1998). The role that weight plays in the formation of dating and sexual relationships is notable. The relationship between weight and perceptions of physical attraction are highly linked, with greater BMI's being associated with lower ratings of physical attraction (Swami and Tovee 2005, Beck, Ward-Hall, & McLean 1976, Tovee and Cornelissen 1999, Tovee et al 1999).

Research by Chen and Brown (2005) presented some particularly shocking results regarding the effects of weight on mate selection . Their study was based on a rank drawing study originally done by Richardson et al.'s in 1961 in which he asked children to arrange pictures of other children by who they would prefer to be friends with, showing pictures of children with cleft pallets, wheelchair bound, missing a limb, obese, and a normal child, of which the photo of the obese child was consistently ranked as the least preferred friend. In the same fashion, Chen and Brown asked undergraduate students to rank order the drawings of six individuals, however not by friendship preference but by sexual partner preference, utilizing photos of a healthy person, a person missing their left arm, a person in a wheelchair, a person with mental illness having a history of suicide attempts and self-harm, a person with a history of STD's, and an obese individual. The obese person and the person in the wheelchair were consistently rated as the least preferred partner. Men on average ranked the obese partner significantly lower then women did. Respondents in the study would rather have sexual intercourse with an individual with a history of mental illness or sexually transmitted diseases than with an obese individual. Further research on sexual partner preferences by weight related conditions by Sobal and Bursztyn (1998) found that men in particular, when asked who they would prefer to date, would select partners who are anorexic or bulimic, rather than obese.

Harris (1990) reports that not only are those with excessive weight perceived as less attractive than average weight people, but they are also perceived as experiencing love differently. The results indicated that respondents believed that obese individuals had probably been in love less often than normal weight individuals, and were less likely to be perceived as currently dating someone. In addition, they were perceived as "having fewer resources to contribute to a romantic relationship and thus as experiencing such a relationship less passionately, less playfully, and more desperately than a normal weight person would" (1990:1220). Sample participants were also three times less likely to say that the obese person's ideal partner should be attractive as compared to their own, and twice as likely to say that it would not matter if the obese person's partner was unattractive, often recommending a partner who was also overweight.

One of the key shortcomings of the above literature is that it relies heavily on the perceptions of the obese and overweight as partners and romantic entities, rather than the actual experiences they have. In truth, research on the specific experiences of overweight and obese Americans has been surprisingly low despite their increasing numbers (Goode 2002). There does seem to be evidence that obese and overweight individuals feel the effects of these prejudices though. In one of the few studies that actually assess first-hand experiences of the those with excessive weight, Ball, Crawford, and Kenardys (2004) longitudinal assessment of overweight and obese women found that obese women reported lower levels of life satisfaction in their professional life, as well as in their close personal relationships and social activities. Obese women also had lower life aspirations, such as the possibility to further their education, get married or have children, as compared to normal weight women. These sentiments seem to hold some truth, as the rates of dating and marriage for obese individuals are not encouraging.

The obese and overweight are found to date less frequently than healthy weight individuals (Cawley, Joyner & Sobal, 2006) and are less likely to marry than normal weight individuals (Averett & Korenman, 1999; Mukhopadhyay, 2008; Gortmaker et al., 1993).

PREDICTIVE OUTCOMES

As this paper will argue, if individuals define their weight as excessive in any way, acknowledging a known socially stigmatized state of being, I predict to see the effects of this belief on their odds of marriage regardless of the respondent's actual weight (Steele and Aronson 1995). In accordance with Stereotype Threat and past literature on the effects of weight, individuals who perceive themselves as larger, regardless of their physical body weight, may be more likely to believe that they are less deserving and desirable for love, and subsequently dating and marriage. Thus, I predict a negative relationship between the odds of marriage and weight perception, with increases in perception predicting decreases in the odds of matrimony. If however, the foundations of Stereotype Threat do not hold true, then I expect to see no differences across odds of marriage by perception.

Finally, as a whole this paper predicts to see a discordant relationship between personal views of weight and medically defined status of weight. If as aggregate levels of weight have risen, perceptions of what constitutes "average weight" have also perhaps risen as well, predicting that the data will show an uneven distribution across those who are medically defined as having excessive weight, and those who define their weight as problematic. Specifically, I expect to see larger numbers of people who by BMI standards meet overweight or obese levels, but do not view their weight as problematic. As will be discussed below, this dissonance may not be uniform across all groups as research indicates that weight and levels of acceptability differ by race, gender, and socioeconomic status. The following sections will outline the source

and composition of the data used for analysis, as well as the methods and results of testing Stereotype Threat as it relates to weight and projections for marriage.

METHODS

Data and Sample

This study will use data from the National Longitudinal Study of Adolescent Health, specifically focusing on Waves III and IV. Add Health is a nationally representative study across the United States that administered in-home interviews to adolescents in grades 7-12 in 1994, following up with respondents (and in some cases their partners) in 1996, 2001, and Wave IV took place in 2007-2008. Wave III was selected for initial observation as all respondents are between 18 and 26 years old, which is when most individuals enter the dating and marriage market, with 81% of Wave III respondents reporting single marital status at the time of the interview. As the median age of first marriage in 2000 was around 27 for men and 25 for women, the majority of respondents would be at or beyond this range by Wave IV (U.S. Census Bureau). The present analysis includes 12,225 individuals tracked from Wave III to Wave IV who reported never having been married at their 2001-2002 interview.

Measures

The dependent variable, marriage, was originally measured in both Waves III and IV as a discrete count level variable with respondents reporting the number of partners they had been married to, with responses ranging from 0 to 9 at Wave III, and 0 to 8 at Wave IV. Marriage, rather than sexual activity or cohabitation, was selected at the key dependent variable as marriage for most in the United States serves as the ultimate indictor of connectivity to a partner, being both a social representation of commitment and binding legal arrangement. Further, although one can hide or keep secret one's dating or sexual partners, marriage on the other hand

is typically public. Past research by Cawley, Joyner, and Sobal (2006) that utilized data from two national sample sets comprised of adolescent boys and girls found that among both boys and girls, weight was negatively correlated with dating initiation, but the data showed mixed results for the effects of weight on the odds of initiating a sexual relationship. Only one of the data sets predicted that weight decreased the opportunity for initiating a sexual relationship, which the authors hypothesized may be related to the public nature of dating versus sexual relationships. Peers may know who one's dating partner is, but not necessarily their sexual partners. In this respect, one's marriage partner is an obvious public, and presumably life-long partnership. Respondents who reported zero at Wave III for number of times married (N=12,318) were then tracked into Wave IV. Marriage was then recoded as a dichotomous dummy variable in which a respondent had either experienced marriage or had not at Wave IV (0=No, 1=Yes).

The independent variable, weight, is being looked at using three different measures. Respondents in the study were asked to self-report their height and weight, asked to describe how they felt about their current weight, and at the end of the interview had their height and weight physically measured by the interviewer. All three are being included for several reasons. First, for the sake of consistency, most past research that looks at the effects of weight uses measures of height and weight as the standard tool for interpretation. This study is unique however in that I have access to both their measured body mass index (BMI) and their reported BMI. This distinction is of specific importance in this study as how much one believes they weigh and how much one actually weighs is not always consistent. As perception of weight is a key point of interest in this study, differences between reported and measured weight may lead to distinctions in subsequent BMI class assignments, and more importantly, predictions for marriage. This may become especially apparent when raw weights and heights are transformed

into BMI scores, possibly showing stark contrasts between what we medically use as appropriate weight levels and what we socially consider acceptable. Further analysis of weight will be done using reported perceptions of one's weight. Although it has been discussed how pervasive the messages of thinness are in the United States, weight may be on a continuum for some. Not every respondent who is classified as obese may view their weight as problematic, while not every respondent classified as normal may view their weight as appropriate. There may be specifically sharp differences across race, with body image and healthy weights differing across groups (as will be discussed below). Twenty four individuals from Wave III, and 5 individuals from Wave IV refused to answer questions regarding how they perceived their weight and were dropped from the sample as this is the key predictor variable. As this represented less than .24% of the total sample, the difference in overall regression outcomes is negligible.

Reported height and weight (measured initially in pounds and feet and inches) was converted to meters and kilograms and then used to calculate a body mass index score (BMI), and then sorted into the appropriate corresponding category. A BMI score of 18.5 or below is considered underweight, 18.6 to 24.9 is considered normal weight, 25 to 29.9 places one in the overweight category, and a BMI of 30 or above constitutes obese levels (Based on the standards used by the U.S. Department of Health).

Measured BMI was calculated in the same manner with respondents being weighed and measured (in pounds and feet and inches) by the interviewer, and then the measurements transformed into corresponding BMI categories. The initial AddHealth calculations used more specific categories of obese however, with a BMI of 30 to 35 considered class I obesity, 35 to 40 constituting class II obesity, and BMI greater then 40 constituting class III obesity. This more distinguishable scale of obesity was set forth by the World Health Organization and is

particularly useful for nations such as the United States where obesity levels are growing more pronounced. For the sake of consistency, these split levels were also included in reported weight BMI classification as well.

Finally, the respondent's perception of their weight was asked after the respondent reported their weight. Respondents were asked the question "How do you think about yourself in terms of weight?" and given five response categories to choose from: very underweight (1), slightly underweight (2), about the right weight (3), slightly overweight (4), and very overweight (5). Again, this survey item is particularly important in the context of stereotype threat in that those concerned with their weight may be more likely to take on stereotypes and personas associated with the label of "overweight."

Interaction Terms

It is expected that there will be gender differences in the effects of weight on marriage as the literature has reported that women feel the effects of excessive weight more sharply then men in the dating and marriage world. The need to be thin for women in particular may be viewed as a crucial tool in landing a partner with research highlighting that single women tend to have decreases in their desire for thinness and disordered eating once married or after having children (Keel et al 2007). Research by Pierce, Boegers, and Prinstein on adolescents in high school found that while obese girls had a significantly reduced chance of dating as compared to their normal weight peers, there was no statistically significant relationship between obesity and dating for obese boys (2002), though both boys and girls reported less satisfying dating lives then their normal weight peers. Research by Chen and Landale (2011) that also relied on data from the National Longitudinal Study of Adolescent Health (Waves I to III), also found pronounced gender effects by weight on intimate relationships. Overweight female girls had a reduced

likelihood of having had sexual intercourse between Wave I and Wave III as compared to their normal weight peers, but the same was not seen for adolescent boys. Perceptions of weight in general may vary across gender as research by Miller, Smith, and Trembath (2000) found women as compared to men, reported a much wider range of acceptable body types for potential partners, with the heaviest women in their study specifying no weight requests in a partner, reflecting what could be a potential fear of rejection by a partner due to their own weight status (pg. 138). Biological sex was measured initially using a two category response of male (1) or female (2). These were then recoded into two dummy variables with male serving as the referent category (1=yes, 0=no). Gender will initially be included as a control variable as there may be differences across men and women in odds of marriage in general. Interaction terms across perceived weight status by gender will then be created to test for possible differences between men and women across weight perception.

Race, like gender, is also to be tested as an interaction effect as the literature points to mixed cultural interpretations of weight, specifically between White women and Black women. Some research has indicated that lower weights may not be associated with correlates of attractiveness in the Black community **(**Abrams et al., 1993; Kumanyika, 1994). Additional research by Powell and Kahn (1995) found that although the Black sample participants had much larger figures than the White female participants, they reported experiencing far less stigmatization for their weight. Further, Black men in their sample reported having less of an issue dating an obese woman than did the White male sample participants. Also poignant to this study, perception of weight has been found to vary across ethnic lines. Research by Story et al. (1995) that utilized survey data from 36,320 adolescents in grades 7-12, found that Black females dieted less, had higher body satisfaction, and lower perceptions of being overweight

despite having greater overall BMI scores. Frequent dieting was highest among Hispanic females, while binge-eating and overeating was highest among Asian women. Similar findings were reported by Neumark-Sztainer et al. (2002) in which they found Black females to have the highest rates of obesity, but the highest rates of body satisfaction as compared to White girls. Their research also highlighted high obesity among Hispanic and Native American girls, but low reported levels of body satisfaction and high use of unhealthy weight control behaviors such as laxatives or self-induced vomiting. Race/ethnicity was measured by self-reported status in Wave III with response categories of Hispanic (1), White (2), Black (3), American Indian/Native (4), and Asian (5), with White serving as the referent category. Race is included initially as a control variable as the initial study design of AddHealth oversampled by specific racial categories (namely Blacks). Subsequent models will then test for interaction effects across weight perception and race as indicated will be present in the literature.

Controls

Socioeconomic status defined in terms of income, job employment, and education have been found to be associated with both marriage and weight perception. Research by Story et al (1995) found that females with lower SES scores were less likely to perceive themselves as being overweight, while females with higher SES scores were more likely to report dieting. However, both females and males of higher SES status reported greater satisfaction and pride in their body. By gender, research by Miller, Smith and Trembath (2000) on personal ads found that higher income for males was associated with stricter guidelines of acceptable weights for women. These men were also younger, and more educated then the rest of the sample highlighting key differences in weight preference by socioeconomic status. Income was initially measured in both Waves III and IV as a self-reported continuous variable. These values were

then sorted into eight categories ranging from < $10,000 to > $75,000 with those making less than $10,000 used as the referent category. Current work and school/training status were included for analysis as some would argue that those putting forth time and energy into other ventures may not be as available for putting energy and time into a relationship, and subsequently marriage. By the same token, increased contact with potential partners in a work and school setting may also potentially increase ones odds of finding a potential marital partner. Current work status then is a dichotomous dummy variable in which respondents indicated whether they were currently working at least 10 hours or more per week: yes (1), no (0). Current school and training status is also a dichotomous dummy variable measured by whether a respondent was currently enrolled in a school, job, or vocational training program: yes (1) , no (0). Overall education was measured using a self-reported variable of "highest completed education to date " and coded into eight response categories: GED, High School Degree, Associate Degree, Bachelor Degree, Master's Degree, Doctorate Degree, Professional Degree (MD, DDS, etc.), and No Degrees used as the referent category.

Of additional importance, and a unique feature of this study, is personal beliefs about marriage. To my knowledge, no studies looking at odds of marriage by weight have controlled for either the desire to marry or personal predictions about the possibility of marriage. Fortunately for this paper, AddHealth includes survey items on both of these. At Wave III, respondents were asked to rate their feelings toward how much they "Would like to be married now" using a five point likert scale: Strongly agree (1), agree somewhat (2), neither agree nor disagree (3), disagree somewhat (4), and strongly disagree (5). Responses for "don't know" (96) were also included as valid points for analysis. To assess personal beliefs about the likelihood of marriage, respondents responded to what were their "Believed odds of marriage in the next 10

years" using a five point response scale and then transformed into dummy variables: Almost certain (1), a good chance (2), a 50-50 chance (3), some chance but probably not (4), and almost no chance (5). Responses for "don't know" (96) were kept for this item as well as a valid point of analysis.

Control variables for age and region were also included into the analysis. Region, although not pertinent per se to marriage or weight, was included to control for oversampling in the original design of AddHealth. Region is coded by geographic location in the United States: West (1), Midwest (2), South (3), Northeast (4). Unfortunately, region was only recorded for 11,897 respondents who were in both Waves III and IV, so we have a variable sample size as a result. However, as cited by Allison (2002) in his guide on missing data, in large sample sizes such as this one, these missing data can be technically worked around with low risk using specific statistical functions and without having to drop or impute the missing values (which will be discussed below). Arguably, the inclusion of region may prove to be an important control variable in the model as proportions of obesity have not risen uniformly across the United States, namely with Southern regions reporting much higher rates. Age was included to control for increased odds of marriage as respondents get older. As most of the respondents were exiting high school at the time of Wave III and not married, their odds of marriage at Wave IV are increased as they age into the marriage market.

RESULTS

Analysis of the data was done using the statistical package S.T.A.T.A. version 10.1 (StataCorp 2007). As the outcome variable marriage is a dichotomous variable, a logistic regression model was deemed appropriate for the current analysis. As noted above, a few variables have missing data and as such this study has a variable sample size. However, when

performing a logistical regression in S.T.A.T.A., the program automatically recognizes missing responses across variables included in the regression command and automatically removes the case across all variables, even if the individual has valid responses for other variables (for a comprehensive description of dealing with missing data in S.T.A.T.A and the listwise function see Allison, 2002). In a large sample like the one being utilized in this study, using the listwise function is a legitimate and non-invasive way to deal with missing data without having to attempt various methods of variable imputation.

Descriptive statistics of the sample are discussed below, outlining key features of sample participants at Wave III. Following, there is a discussion of the logistical regression analysis of the relationship between the various measurements of weight and the odds of marriage within the framework of Stereotype Threat. The initial regressions look at the bivariate relationship between marriage and weight, using perceived weight, reported BMI, and measured BMI in separate models. The subsequent regressions then incorporate key control and interaction variables, and test for their significance in overall explanation of the model.

Descriptive Analysis

Table 1 on the next page shows the descriptive statistics of those included in the present analysis. Of the 15,196 individuals included in Wave III, 12, 318 (81%) reported they had been married zero times at the time of the interview. These 12, 318 were then tracked into Wave IV, with 12,225 of them included for final analysis. In Wave IV, marital status was once again reported by the respondent as the number of partners they had been married to, with responses ranging from 0 to 8 and 49.74% reporting having been married 1 or more times and 50.26% having never been married.

Table 1. Selected descriptive characteristics of 12,225 participants in Wave III by gender of the National Longitudinal Study of Adolescent Health (Add Health).

CHARACTERISTIC	MALE	FEMALE	OVERALL
TOTAL SAMPLE (%)	47%	53%	100%
MARITAL STATUS (%)			
Never Married (Wave III)	84.68%	77.82%	50.26%% (Wave IV)
Married >0 (Wave III)	15.32%	22.18%	49.74% (Wave IV)
WEIGHT STATUS			
Perceived (%)			
Very Under	1.27	1.23	1.25
Slightly Under	10.72	11.48	11.12
About Right	47.57	47.43	47.49
Slightly Over	33.88	33.81	33.84
Very Over	6.56	6.06	6.29
Reported BMI (%)			
Underweight	3.91	3.50	3.69
Normal	50.32	51.17	50.77
Overweight	25.44	26.36	25.93
Obese 1	10.72	10.14	10.41
Obese 2	4.92	4.50	4.70
Obese 3	4.69	4.33	4.51
Measured BMI (%)			
Underweight	5.75	5.18	5.45
Normal	45.58	44.56	45.04
Overweight	26.19	26.06	26.12
Obese 1	10.78	12.13	11.49
Obese 2	5.53	5.33	5.42
Obese 3	6.17	7.75	6.48
SOCIOECONOMIC			
Highest Completed Education (%)			
GED	7.48	8.15	7.84
High School Degree	65.04	65.04	65.04
AA	6.26	6.52	6.40
Bachelors	11.35	11.02	11.17
Masters	.45	.43	.44
Ph.D.	0	0	0
Professional Degree (MD, DDS, etc)	.14	.18	.16
No degrees	9.19	8.58	8.87
Current School, Vocational, Job Training Status			
Currently enrolled	40.19	40.88	40.56
Not enrolled	59.81	59.12	59.44
Current employment status			
Working >9 hours/week	67.88	69.00	68.47
Have never/not working	32.12	31.00	31.53
Income (%)*****			
<$10,000	43.94	43.33	43.62
$10,000-$14,999	14.96	14.30	14.61
$15,000-$19,999	11.89	12.40	12.16
$20,000-$29,999	13.83	15.38	14.65
$30,000-$39,999	5.37	5.19	5.28
$40,000-$49,999	1.73	1.63	1.68
$50,000-$74,999	.99	.97	.98
>$75,000	.44	.54	.49
Race (%)			
White	49.76	50.85	50.34
Black	23.94	22.87	23.37
Hispanic	15.48	14.99	15.22
Asian/Pacific Islander	8.06	8.23	8.15
Native American	2.76	3.07	2.92
Age (Range)***	18-24	18-24	18-24
PERSONAL BELIEFS ON MARRIAGE			
Would Like to be Married Now****			
"Strongly Agree"	9.97	9.83	9.90
"Agree Somewhat"	15.64	15.89	15.77
"Neither Agree nor Disagree"	16.23	16.16	16.20
"Disagree Somewhat"	21.94	20.76	21.31
"Strongly Disagree"	35.94	37.29	36.65
"Don't Know"	.19	.08	.17
Believed Odds of Marriage in next 10 years			
"Almost Certain"	38.05	38.98	38.54
"A Good Chance"	29.69	29.94	29.82
"A 50-50 Chance"	19.93	20.03	19.98
"Some Chance, but Probably not"	6.63	6.09	6.34
"Almost no chance"	4.74	4.07	4.38
"Don't know"	.96	.89	.92

--Note: Table presents unweighted sample statistics.
****Marital status of all respondents in Wave III. All other descriptives represent statistics of final sample tracked from Wave III to Wave IV.**
*****All respondents were 18-24 years old at Wave III except for 595 respondents who were 25-28.**
*******Income was not reported by 806 respondents.**

The sample is fairly evenly split across gender, containing approximately 47% male and 53% female. By weight, we see very little gender difference with men and women roughly reporting similar BMI levels, displaying similar measured BMI, and their sentiments about their current weight mirroring one another closely. Approximately 59.86% of the sample believes their current weight is about right or under what it should be, 33.84% believes they are slightly overweight, and only 6.29% feel they are very overweight. As discussed before, perceptions of weight may not always be in line with medical standards of how we define weight. As can be seen in Table 2, based on measured calculations of BMI, 23.39% of the sample falls into one of the three medical categorizations of obesity, yet only 6.29% of the sample perceive themselves as very overweight. Only 5.45% of the study is medically underweight, 45.04% is in normal BMI ranges, and 26.12% meet overweight BMI standards. This discrepancy between perception and actual weight may be due to inaccurate believed weight levels, however a look at reported BMI ranges shows a very similar picture. Based on reported BMI levels, 19.62% reported levels that meet obesity criteria, with 25.93% reporting BMI levels of overweight status, with the majority of respondents reporting weights of normal levels (50.77%), and only a small 3.69% reporting BMI that classifies them as underweight.

So although only 6.29% of the sample see's their weight as being very over what it should be, by medical standards we see that there is a 13.33%-17.1% gap (depending on whether using reported or measured BMI), indicating that somewhere around 1800 or more respondents view their weight dramatically different then how we medically define it. Across all six medical classifications of weight we see that the majority of respondents view their weight as "About Right" or "Slightly Over." Although there seems to be strong support empirically that weight is a salient and sensitive topic for many people, across all weight levels, the majority of the sample

does not see their weight as highly problematic, potentially highlighting shifting personal views of weight. What is interesting to note however, is that the group that perceives their weight as "very over" with the greatest frequency is those that by medical standards are considered underweight. It could reason that those who are underweight actively work to stay thin, and therefore are more critical of their weight levels than someone who does not actively manage their weight.

TABLE 2: Distribution of Measured Body Mass Index Scores across Perceived Weight by Percentage (N=12,225)

Perception of Weight	*"Very Under"*	*"Slightly Under"*	*"About Right"*	*"Slightly Over"*	*"Very Over"*
Measured BMI					
Underweight	1.05	10.96	46.10	34.23	7.66
Normal Weight	1.13	11.30	46.77	34.60	6.21
Overweight	1.60	10.05	48.04	34.04	6.26
Class I Obese	1.35	12.74	47.90	31.46	6.55
Class II Obese	1.21	10.56	50.68	31.98	5.58
Class III Obese	.76	11.99	48.11	33.21	5.93

Across socioeconomic variables, we see that the majority of the sample has received their high school diploma (65.04%) or a G.E.D. (7.84%) with very few having completed higher education, though based on their age group this is not surprising. However, 40.56% of the sample is enrolled in either school, a work training program, or vocational training and 68.47% are currently working 10 hours or more at a job. Again, presumably due to age and school status, the greatest proportion of the sample made less than $10,000 that year (43.62%), and 41.42% reported income between $10,000-$29,999. Across race, we see 50.34% of the sample is white, 23.37% is Black, 15.22% is Hispanic, 8.15% is Asian or Pacific Islander, and only 2.92% is Native American with the original AddHealth design oversampling for Black respondents.

Sentiments regarding marriage surprisingly show no real differences across gender. Of the total sample, 57.95% report that they either "strongly disagree" or "disagree" that they desire to be married now. Another 25.67% reported that they "strongly agree" or "agree" that they

would like to be married now. Regarding personal predictions of individual odds of marriage in the next ten years, 68.36% of the sample seems hopeful, reporting that they believe it is "almost certain" or "a good chance" that they will be married in the next ten years. A little over 10% believe that there was "some chance, but probably not" or "almost no chance" of their odds of marriage in the next ten years.

Regression Analysis

The initial logistic regression analysis looking at the bivariate relationship between odds of marriage and the three measurements of weight can be seen in Table 3. Across perception of weight, those who identify as very underweight at Wave III had a 1.65 greater odds of marriage at Wave IV than those who consider themselves about right at a statistically significant level ($p<.01$). Those who considered themselves to be slightly overweight at Wave III had a 1.10 greater odds of marriage than those who considered themselves about right, also at a statistically significant level ($p<.05$). We find no statistically significant relationships between odds of marriage and those who considered themselves slightly under or very over. Our model as a whole is statistically significant based on our Chi-Squared test ($p=.0054$), with a post analysis Wald test of our variables rejecting the null hypothesis that the inclusion of perceived weight does not significant improve the model ($p=.00$). In accordance with Stereotype Threat, although the significance of our model indicates that perception matters in individual odds of marriage, we do not find support for the theory. As it was expected that those who perceive their weight as higher than "normal" would have decreased odds of marriage, we in fact find the opposite. Those who perceive themselves as slightly overweight have an increased odds of marriage as compared to those of normal weight. Further, even though they are not of statistical significance, those who consider themselves as very overweight also have a greater odds of marriage. Across

this model, it seems that although perception matters, it does not seem to be operating in a manner consistent with Stereotype Threat.

Table 3: Odds of Marriage at Wave IV by Different Assessments of Weight (N=12,225)

MODEL 1.1:Perception of Weight (Chi-Squared Statistic=.0054)	**MODEL 2.1:Reported BMI (Chi-Squared Statistic=.5544)**	**MODEL 3.1:Measured BMI (Chi-Squared Statistic=.5544)**
Very Underweight	*Underweight*	*Underweight*
1.65**	1.06	.90
(.28)	(.10)	(.07)
Slightly Under	*Normal*	*Normal (Ref)*
1.05	*(Ref)*	--
(.06)	--	
About Right (Ref)--	*Overweight*	*Overweight*
	1.03	.98
	(.05)	(.04)
Slightly Over	*Obese 1*	*Obese 1*
1.10*	1.02	.91
(.04)	(.06)	(.05)
Very Over	*Obese 2*	*Obese 2*
1.13	.92	.98
(.09)	(.08)	(.08)
	Obese 3	*Obese 3*
	1.10	1.01
	(.10)	(.08)

****p <.01 *p <.05**
--Note: Standard Error in parenthesis.

If we look at odds of marriage across reported and measured BMI, we see that neither model produces statistically significant results. Based on our Chi-Squared statistic, Model 2 as a whole is not statistically significant (p=.66) with a post analysis Wald test of our reported BMI variables indicating support for the null hypothesis, with inclusion of reported BMI failing to significantly improve the model (p=.66). Similar findings can be seen by measured BMI, with no signs of statistically significant differences across levels of measured BMI as compared to those with normal levels. According to our Chi-Squared statistic, measured weight as a whole is not statistically significant to odds of marriage (p=.55), and post analysis Wald test indicates that the inclusion of measured BMI variables is not significant in improving the model (p>.05). Although the direction of the relationship between perception of weight and odds of marriage is not in line with the basis of Stereotype Threat, we do see some support for the importance of perception as a whole as Model 1.1 provides a more accurate prediction of marriage than does either reported or measured levels of weight.

To ensure that results from Models 1, 2, and 3 were not due to omitted factors, the above models were run again with control variables related to marriage and weight. As seen in Table 4 on the following page, Model 1.2, 2.2., and 3.2 are now all statistically significant based on our Chi-Squared Test of Significance (p=.0000). However across measures of weight, Model 1.2 based on perceived weight is the only one that produced any statistically significant results for the effects of weight on marriage. Those who believed that they were very underweight had a 1.74 higher odds of marriage between Wave III and Wave IV as compared to those of normal weights ($p<.001$), while controlling for all other variables. Those who perceived their weight as slightly over have a 1.11 higher odds of marriage as compared to those of normal weight, also at a statistically significant level ($p<.05$) while controlling for all other factors. Neither Model 2.2 or Model 3.2 produced statistically significant results across our variables for weight. In all three models we do see that Females, as compared to Males, have a 1.38 higher odds of marriage at a statistically significant level ($p<.001$). By race, we see that Hispanics have a lower chance of marriage as compared to White respondents ($p<.05$) between the two periods. Across all three models, none of our other variables produce statistically significant coefficients.

Table 4: Odds of Marriage at Wave IV by Different Weight Assessments with Controls (N=11,897)

MODEL1.2:Perception of Weight [Chi-Squared Statistic=.0000]	**MODEL 2.2:Reported BMI [Chi-Squared Statistic=.0000]**	**MODEL 3.2:Measured BMI [Chi-Squared Statistic=.0000]**
Very Underweight	*Underweight*	*Underweight*
1.74***	1.06	.90
(.30)	(.11)	(.08)
Slightly Under	*Normal*	*Normal (Ref)*
1.05	*(Ref)*	--
(.06)	--	
About Right (Ref)--	*Overweight*	*Overweight*
	1.02	.98
	(.05)	(.04)
Slightly Over	*Obese 1*	*Obese 1*
1.11*	1.02	.91
(.05)	(.06)	(.06)
Very Over	*Obese 2*	*Obese 2*
1.11	.92	1.00
(.09)	(.08)	(.08)
	Obese 3	*Obese 3*
	1.11	1.01
	(.10)	(.08)
CONTROL VARIABLES	**CONTROL VARIABLES**	**CONTROL VARIABLES**
Female	*Female*	*Female*
1.38***	1.38***	1.38***
(.05)	(.05)	(.05)
Age	*Age*	*Age*
1.01	1.01	1.01
(.01)	(.01)	(.01)
Hispanic	*Hispanic*	*Hispanic*
.88*	.88*	.88*
(.04)	(.04)	(.05)
Black	*Black*	*Black*
.99	.99	1.00
(.05)	(.05)	(.05)
Asian	*Asian*	*Asian*
.90	.90	.90
(.06)	(.06)	(.06)
Native	*Native*	*Native*
1.00	.99	.99
(.11)	(.11)	(.11)
GED	*GED*	*GED*
.88	*.88*	*.88*
(.08)	*(.08)*	*(.08)*
High School Diploma	*High School Diploma*	*High School Diploma*
.98	*.98*	*.98*
(.06)	*(.06)*	*(.06)*
A.A. Degree	*A.A. Degree*	*A.A. Degree*
.92	*.93*	*.92*
(.09)	*(.09)*	*(.09)*
Bachelor's Degree	*Bachelor's Degree*	*Bachelor's Degree*
.86	*.86*	*.86*
(.07)	*(.07)*	*(.07)*
Master's Degree	*Master's Degree*	*Master's Degree*
.83	*.83*	*.83*
(.24)	*(.24)*	*(.24)*
Ph.D.	*Ph.D.*	*Ph.D.*
(#N/A)	*(#N/A)*	*(#N/A)*
Professional Degree	*Professional Degree*	*Professional Degree*
1.48	*1.47*	*1.46*
(.69)	*(.68)*	*(.68)*
Reported Income $10-14,999	*Reported Income $10-14,999*	*Reported Income $10-14,999*
1.00	1.00	1.00
(.06)	(.06)	(.06)
Reported Income $15-19,999	*Reported Income $15-19,999*	*Reported Income $15-19,999*
.97	*.97*	*.97*

TABLE 4 CONTINUED…

(.06)	*(.06)*	*(.06)*
Reported Income $20-29,999	*Reported Income $20-29,999*	*Reported Income $20-29,999*
.89	*.90*	*.89*
(.05)	*(.05)*	*(.05)*
Reported Income $30-39,999	*Reported Income $30-39,999*	*Reported Income $30-39,999*
1.00	*1.00*	*1.00*
(.09)	*(.09)*	*(.09)*
Reported Income $40-49,999	*Reported Income $40-49,999*	*Reported Income $40-49,999*
.88	*.89*	*.89*
(.13)	*(.13)*	*(.13)*
Reported Income $50-74,999	*Reported Income $50-74,999*	*Reported Income $50-74,999*
1.00	*1.00*	*1.00*
(.19)	*(.19)*	*(.19)*
Reported Income >$75,000	*Reported Income >$75,000*	*Reported Income >$75,000*
1.18	*1.18*	*1.19*
(.32)	*(.32)*	*(.32)*
Currently Working	*Currently Working*	*Currently Working*
1.00	*1.00*	*.99*
(.04)	*(.04)*	*(.04)*
Currently Enrolled	*Currently Enrolled*	*Currently Enrolled*
1.02	*1.02*	*1.02*
(.04)	*(.04)*	*(.04)*
Region	*Region*	*Region*
.99	*.99*	*.99*
(.01)	*(.02)*	*(.02)*
Almost Certain will Marry in next 10 yrs.	*Almost Certain will Marry in next 10 yrs.*	*Almost Certain will Marry in next 10 yrs.*
.96	.95	.96
(.05)	(.05)	(.05)
Good Chance	*Good Chance*	*Good Chance*
.96	.96	.96
(.05)	(.05)	(.05)
Some Chance	*Some Chance*	*Some Chance*
.89	.89	.89
(.07)	(.08)	(.07)
No Chance	*No Chance*	*No Chance*
1.07	1.07	1.07
(.10)	(.10)	(.10)
Don't Know	*Don't Know*	*Don't Know*
.90	.90	.91
(.18)	(.18)	(.18)
Wants to be Married Now: Strongly Agree	*Wants to be Married Now: Strongly Agree*	*Wants to be Married Now: Strongly Agree*
1.01	1.01	1.01
(.08)	(.08)	(.08)
Wants to be Married Now: Somewhat Agree	*Wants to be Married Now: Somewhat Agree*	*Wants to be Married Now: Somewhat Agree*
1.06	1.06	1.06
(.07)	(.07)	(.07)
Wants to be Married Now: Disagree Somewhat	*Wants to be Married Now: Disagree Somewhat*	*Wants to be Married Now: Disagree Somewhat*
.99	.99	.98
(.06)	(.06)	(.06)
Wants to be Married Now: Disagree Strongly	*Wants to be Married Now: Disagree Strongly*	*Wants to be Married Now: Disagree Strongly*
.99	.99	.99
(.06)	(.06)	(.06)
Wants to be Married Now: Don't Know	*Wants to be Married Now: Don't Know*	*Wants to be Married Now: Don't Know*
1.25	1.28	1.30
(.66)	(.67)	(.68)

*****p<.001 **p <.01 *p <.05**

--Note: Standard Error in parenthesis.

#: At time of Wave III, no individuals had their Ph.D.

Although we see that all three of our models are now significant to our predicted odds of marriage based on our Chi-Squared statistic, post-analysis tests of our weight variables in all three models produce disparate results. Although a Wald Test of our perception variables from Model 1.2 indicates that their inclusion in the model is still significant in explaining odds of marriage, thereby rejecting the null model of no effects (p=.00), neither reported or measured weight produced similar results. A Wald Test of our reported weight variables on Model 2.2 found no support that their inclusion in the model was useful in our explanation of marriage (p=.72), therefore failing to reject the null. Measured weight portrayed a similar story with our Wald Test also failing to reject that measured weight significantly improves predicting the odds of marriage (p=.56). An additional model was run (not pictured) which included all three weight measurements into one model with no change in the significance of perception, or the lack of significance of reported and measured weight. Although all three models are statistically significant as a whole, it appears that Model 2.2 and Model 3.2 are so due to inclusion of gender and race variables. Since Model 1.2 indicates that perception is important in our explanation of the odds of marriage while also reporting differences by gender and race, interaction terms were created by perception and gender, and perception and race to see if the effect of perception of weight on odds of marriage differs across gender and racial identification as indicated by past literature.

Table 5 (pg. 37) shows the results for the odds of marriage based on perception of weight, with Model 1.3 looking for potential differences across gender, and Models 1.4a-d looking for potential differences across race. Model 1.3 reports no statistically significant differences by gender on the odds of marriage by perception of weight. Although women who report feeling slightly overweight or very overweight have a slightly lower odds of marriage as compared to

women who believe they are of normal weights, they still have slightly higher odds of marriage as compared to normal weight males (not statistically significant, reported p values >.05). Despite the fact that our variables for Female and Hispanic remain statistically significant, we find that both of our perception variables that were significant in Models 1.1 and 1.2, (i.e. those who perceived themselves very underweight and slightly overweight), lose their significance (p>.05). Further, a post analysis Wald Test on our gender interaction terms does not imply that their inclusion significantly improves the model (p=.58). This seems to indicate that although gender does in fact impact ones odds of marriage, there does not seem to be an interaction between gender and perception of weight on odds of marriage. It is worth noting however, that if the analysis were strictly done on a female only sample, we would see that the basic theory behind Stereotype Threat would hold true in that as perception of weight increases for women, the odds of marriage decreases (though not at a statistically significant level).

Models 1.4a-d on the following page show the results of our analysis with the inclusion of race based interaction terms across perception of weight. Although producing only one statistically significant result, Model 1.4 does display some poignant racial differences in the effects of perception on marriage. As in Models 1.1 and 1.2, all versions of Model 1.4 report that those who believe they are very underweight or slightly overweight are more likely to marry than those who believe they are of normal weight at a statistically significant level (p<.01 and p<.05). Female (p<.001) and Hispanic (p<.05) continue to be statistically significant as well. We see no changes in the significance of any of our other control variables (non-significant variables omitted from final table).

TABLE 5: Odds of Marriage at Wave IV by Perception of Weight: Interaction Between Weight and Gender/ Race (N=11,897)

MODEL 1.3: Interaction of Weight Perception and Gender [Chi-Squared Statistic=.0000]	**MODEL 1.4a: Interaction of "Very Under" and Race [Chi-Squared Statistic=.0000]**	**MODEL 1.4b: Interaction of "Slightly Under" and Race [Chi-Squared Statistic=.0000]**	**MODEL 1.4c: Interaction of "Slightly Over" and Race [Chi-Squared Statistic=.0000]**	**MODEL 1.4d: Interaction of "Very Over" and Race [Chi-Squared Statistic=.0000]**
Very Underweight	*Very Underweight*	*Very Underweight*	*Very Underweight*	*Very Underweight*
1.42	2.02**	1.74**	1.74**	1.74**
(.34)	(.50)	(.30)	(.30)	(.30)
Slightly Under	*Slightly Under*	*Slightly Under*	*Slightly Under*	*Slightly Under*
1.02	1.05	1.04	1.05	1.05
(.09)	(.06)	(.09)	(.06)	(.06)
About Right (Ref)--	*About Right (Ref)--*	*About Right (Ref)--*	*About Right (Ref)--*	*About Right (Ref)--*
Slightly Over	*Slightly Over*	*Slightly Over*	*Slightly Over*	*Slightly Over*
1.12	1.11*	1.11*	1.14*	1.11*
(.07)	(.05)	(.05)	(.06)	(.05)
Very Over	*Very Over*	*Very Over*	*Very Over*	*Very Over*
1.15	1.12	1.12	1.12	1.15
(.13)	(.09)	(.09)	(.09)	(.13)
CONTROL VARIABLES	***CONTROL VARIABLES***	***CONTROL VARIABLES***	***CONTROL VARIABLES***	***CONTROL VARIABLES***
Female	*Female*	*Female*	*Female*	*Female*
1.38***	1.38***	1.38***	1.38***	1.38***
(.07)	(.05)	(.05)	(.05)	(.05)
Hispanic	*Hispanic*	*Hispanic*	*Hispanic*	*Hispanic*
.88*	.88*	.87*	.86*	.89*
(.05)	(.05)	(.05)	(.06)	(.05)
Black	*Black*	*Black*	*Black*	*Black*
.99	.99	1.00	.99	1.00
(.05)	(.05)	(.05)	(.05)	(.05)
Asian	*Asian*	*Asian*	*Asian*	*Asian*
.90	.91	.88	.99	.90
(.06)	(.06)	(.06)	(.09)	(.06)
Native	*Native*	*Native*	*Native*	*Native*
1.00	.99	.99	1.14	.97
(.11)	(.11)	(.12)	(.15)	(.11)
INTERACTION TERMS: GENDER AND PERCEPTION	**INTERACTION TERMS: RACE AND "VERY UNDER" PERCEPTION**	**INTERACTION TERMS: RACE AND "SLIGHTLY UNDER" PERCEPTION**	**INTERACTION TERMS: RACE AND "SLIGHTLY OVER" PERCEPTION**	**INTERACTION TERMS: RACE AND "VERY OVER" PERCEPTION**
"Very Underweight" Females	"Very Underweight "Hispanic	"Slightly Underweight" Hispanic	"Slightly Overweight" Hispanic	"Very Overweight "Hispanic
1.53	.41	1.09	1.05	.83
(.53)	(.20)	(.19)	(.12)	(.18)
"Slightly Underweight" Females	"Very Underweight " Blacks	"Slightly Underweight" Blacks	"Slightly Overweight" Blacks	"Very Overweight " Blacks
1.06	1.23	.92	1.01	.92
(.13)	(.54)	(.13)	(.10)	(.18)
"Slightly Overweight" Females	"Very Underweight Asians"	"Slightly Underweight" Asians	"Slightly Overweight" Asians	"Very Overweight Asians"
.99	.49	1.20	.78	1.06
(.08)	(.32)	(.27)	(.11)	(.30)
"Very Overweight" Females	"Very Underweight Native Americans"	"Slightly Underweight" Native Americans	"Slightly Overweight" Native Americans	"Very Overweight Native Americans"
.94	1.44	1.08	.60*	1.40
(.15)	(1.71)	(.41)	(.15)	(.59)

*****p<.001 **p <.01 *p <.05**

--Note: Standard Error in parenthesis.

--Table Note: All control variables from Table 4 included in Model 1.4 analysis , but not shown.

If we first look to racial differences in the odds of marriage for those who consider themselves "very underweight" in Model 1.4a, we see that Asians and Hispanics who believe they are very underweight have markedly lower odds of marriage by Wave IV as compared to

Whites who believe they are underweight, though not at a statistically significant level. We see that being Hispanic or Asian reduces the effect of being underweight (compared to normal weight) on the odds of marriage relative to being White, holding all other variables constant. Compared to both Hispanics and Whites who consider themselves normal weight, very underweight Hispanics are less likely to marry by Wave IV. We see a similar story across Asians, with very underweight Asians being less likely to marry than both Asians and Whites who consider themselves normal weight, though not at a statistically significant level. This finding is counter to Stereotype Threat in that those who are lower weight have lower odds of marriage than those who are normal weight.

If we look next at Blacks and Native Americans who consider themselves very underweight, we find that being Black or Native American increases the effect of being very underweight on the odds of marriage as compared to being White, however not at a statistically significant level. Very underweight Blacks are also more likely to marry than Blacks who consider their weight normal, and very underweight Native Americans are more likely to marry than Native Americans who consider their weight normal. Although this does fall in line with Stereotype Threat theory, it does not support race based trends identified in the literature with regards to marriage, namely that Blacks with larger masses are more likely to marry than Whites. Overall, a post analysis Wald-Test of the interaction terms between "very underweight" perception and race does not provide evidence that their inclusion is statistically different than one ($p=.24$).

If we then move to Model 1.4b, we see that there are slight, but non-statistically significant racial differences by those who consider themselves "slightly underweight." Hispanics, Asians, and Native Americans have small increases in their odds of marriage as

compared to slightly underweight Whites, while Blacks have slightly lower odds of marriage if they believe they are slightly underweight. Compared to Whites who consider their weight about normal, Hispanics and Black who believe they are slightly under have a decreased odds while Asians and Native Americans have a slightly increased odds. Our Wald-Test again fails to reject the null hypothesis, indicating that the interaction between "slightly underweight" and race is not particularly useful in our understanding of the effects of perception of weight on marriage ($p=.80$).

Model 1.4c shows racial differences in the odds of marriage by those who consider themselves "slightly overweight." While Blacks and Hispanics, as compared to slightly overweight Whites, have slight but non-statistically significant increases in their odds of marriage if they believe they are slightly overweight, both Native Americans and Asians have large decreases in their odds of marriage. Slightly overweight Asians have lower odds of marriage as compared to both slightly over and normal weight Whites, as well as compared to normal weight Asians, though not at a statistically significant level. Similarly, Native Americans who believe they are slightly overweight have lower odds of marriage than slightly overweight Whites, and are less likely to marry than normal weight Whites, however this is found at a statistically significant alpha level ($p<.05$). They are also less likely to marry than normal weight Native Americans. Despite this finding, our test for significance on our interaction terms for slightly over and race does not indicate that their inclusion significantly improves our model (Wald Test $p=.12$).

Lastly, if we look at Model 1.4d, we see no statistically significant results, but a different story than what we saw in Model 1.4c. While in Model 1.4c, we saw that Asians and Native Americans who believed they were slightly overweight had decreases in their odds of marriage

as compared to both slightly over and normal weight Whites, Model 1.4d reports that Asians and Native Americas who believe they are "very overweight" actually have increased odds of marriage as compared to very overweight Whites, though not at statistically significant levels. Very overweight Native Americans in particular have a higher odds of marriage than both White respondents who believe they are very overweight, and those that perceive their weight as normal. Blacks and Hispanics have lower odds of marriage at Wave IV if they believe they are "very overweight" as compared to both very overweight Whites and Whites who consider their weight normal, but once again, these results were not significant at an alpha of .05 or less. Our last Wald-Test on our very overweight and race interaction term once again does not provide evidence that that the interaction terms significantly improve our explanation of marriage in relation to perception of weight (p=.79).

As a whole, I do not find any strong support for Stereotype Threat by race. Unlike gender, there was no identifiable relationship between perception of weight and odds of marriage by race. Although I did find statistical evidence that Native Americans who consider themselves slightly overweight have lower odds of marriage than Whites who feel similarly, Native Americans who identified as very overweight actually had higher rates of marriage as compared to Whites, effectively invalidating any pattern with regards to perception that we might see.

DISCUSSION

This paper attempted to look at the relationship between the odds of entering marriage in the period from early adulthood to later adulthood and one's perception of their weight. The increasing numbers of overweight and obese Americans motivated this paper to argue that any negative effects of weight would be more strongly tied to the perceived acceptability or deviance of one's weight, rather than their weight in empirically measured pounds. Using the framework

set forth by Stereotype Threat theory, this paper tested whether the acknowledgement of belonging to a potentially stigmatized and discriminated group would have more influence on odds of matrimony than measured BMI.

Despite a large body of literature documenting the negative effects of excessive body weight on marriage, this study did not find that one's physical body weight as measured by BMI served as a useful predictor in one's odds of marriage. Odds of marriage by both reported and measured BMI did not produce any statistically significant results across any level of weight, and post analysis tests of all models showed that BMI did not aid in explaining marriage differences between Wave III and Wave IV. Our variables measuring the perception of one's weight however, were found to be statistically relevant to our prediction of marriage, with those who identify themselves as very under and slightly overweight having higher odds of marriage at statistically significant levels. Although this finding is unfortunately counter to the foundations of Stereotype Threat and fails to support our primary research hypothesis, it does highlight several important points.

First, despite cultural expectations for thinness and well documented prejudice of overweight and obese Americans, these sentiments do not seem to translate directly into explicit discrimination. This study showed that the odds of marriage for those who were of higher levels of weight were not statistically different than those who were of normal levels of weight. This seems to indicate that body weight is perhaps not as important in partner evaluation as it previously once was. This may be directly related to increased aggregates of weight, as one is less likely to discriminate against those of heavier weights if they are also heavy. Indeed, research by Conley and McCabe (2011) found that those with higher BMI were less likely to

evaluate potential partner's attractiveness any differently across BMI as compared to their normal weight peers.

It could also be that body mass as a whole is no longer as salient on decisions to enter marriage. Research by Confer, Perillous, and Buss (2010) found that while body mass was important for men in their decision to enter short-term relationships, they placed more importance on a females facial attractiveness rather than body attractiveness in long-term relationships. Research by Stewart, Stinnett and Rosenfeld (2000) found similarly, with men in their study more likely to desire physical attractiveness in a short-term partner than a long-term partner. Although we did see that Females as compared to Males were more likely to marry than men, we did not see any significant differences across weight, either by perception, reported, or measured levels. We did see some slight support for our research hypothesis though, in that as a woman's perception of her weight increased, her odds of marriage decreased.

By race, we saw that although Hispanics were less likely to marry by Wave IV, there were no differences in the effects of body weight on odds of marriage. The exception to this was Native American's who perceived themselves as slightly overweight. They had 40% lower odds of marriage than did whites who perceived themselves similarly. However, the exact nature of this relationship is unclear as Native Americans who considered themselves to be very overweight had an increased odds of marriage, therefore giving little insight into the exact nature of this relationship.

Of additional interest in this study is the disparate amounts of people who identified their weight as normal or slightly over, when by medical standards around 18% of them would meet Class I-Class III obesity. This further highlights a possible change in cultural standards of weight. Excessive weight does not seem to be measured in pounds for many, but rather is

evaluated in some other way. Although beyond the scope of this paper, the relationship between one's weight and the weight of those around them may be useful in explaining this relationship.

This research is important for several reasons. First, to the knowledge of this researcher, this is the first instance in which Stereotype Threat was tested in regards to weight. As Stereotype Threat means to assess the effects of widely disseminated social stigmas on individuals as it has done previously with gender and race, weight fits fairly well into this framework as the pervasiveness of weight based stigmatization has been well documented. Although we did not find support currently, this in itself is a strong comment on weight as a whole in the United States. With all past research highlighting social stigmatization across higher levels of weight, our present study found that matrimony was actually higher for those of slightly higher weight perceptions. In which case, future research on the effects of weight would benefit from assessing overall cultural standards of weight within their samples specific context, perhaps including survey items on desired ideal body types for men and women (see Conley and McCabe's 2011 use of digitally altered photographs).

Also unique to this study is the inclusion of personal sentiment on marriage as control variables. Currently to my knowledge, this is the first instance in which predictions of marriage were controlled for by both the desire to be married and the belief that marriage was possible for the individual in the future. Although in the present analysis neither of these variables was statistically significant, desires and beliefs of marriage should be included more often in studies predicting union formation.

This study was not without its limitations however. Ideally, this study would benefit significantly from an additional wave of data. Since only half of our sample from Wave III was married by Wave IV, it could be argued that differences across weight are more important as one

ages further into the marriage market. As the majority of the sample was between the ages of 24-32 years old, it could be argued that the sample was not old enough to accurately assess odds of marriage by weight differences. However, as the majority of the sample was at or above the average age of marriage for the year of the survey, this age group arguably remains appropriate for analysis.

In addition to the age of the sample being potentially problematic, the five year gap between Wave III and Wave IV could also have produced biased results. Ones sentiments about their weight could potentially change quite dramatically over the years, as could their weight. A respondent's perception of their weight at Wave III may be different then when they met their spouse, and possibly change, or even revert back to original sentiments by Wave IV. Ideally, married respondent's perception of their weight would have been recorded at the time of their marriage in order to ensure that the construction of their weight was not dramatically different at the time of their wedding as compared to when they were single or post-vows. However, as this study was more interested in seeing if perception of weight could be a more valid tool than measured weight in predicting marriage, this time gap becomes less important in establishing correlation. However, future research seeking to identify potential causal relationships would need to account for this.

This study could have also benefited from a wider range of dependent variables. As this study's primary focus was on odds of marriage, it did not take into account potential differences in the odds of dating or cohabitation by weight. Potentially, there could be differences in the transition from dating to cohabitation, and from cohabitation to marriage that differ by weight that are not seen within our study. For example, research by Mukhopadhyay (2008) found that

obese men were less likely to be accepted into cohabiting relationships than they were marriage, once again demonstrating differences in long-term versus short-term relationships.

As a whole, the present study highlights the need for additional longitudinal assessments of acceptable weight levels in potential partners. Although the importance of thinness has been identified over and over as important in a desired spouse, what it means to be thin, normal, or overweight may look very different than how it is defined in pounds and inches. As the obesity level continues to rise, new standards of what it means to be "normal" or "average" weight may emerge, necessitating researchers continued mindfulness of the changing waist-bands of the United States.

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