Size Matters:
The Correlation of Adolescents' Height and Weight With Dating, Sex, Condom Use, and Pregnancy

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ABSTRACT

Adolescents are becoming taller and more obese. We examine the correlation between size (weight and height) and dating, sexual activity, condom use, and pregnancy using two large, nationally representative, and longitudinal data sets. We assume that the utility an adolescent derives from dating and sexual activity is a function of the weight and height of their partner. Consequently, we hypothesize that shorter and heavier adolescents will be less likely to date and have sex. We find that, in both data sets, shorter and heavier girls and boys date less. However, for other outcomes, including sexual activity, condom use, and pregnancy, our results are less consistent. We conclude that size-based "appearance capital" appears to be more influential in the public dating market than in the more private exchange relationships involving intercourse and contraception.

Key words: Adolescence, Obesity, Height, Dating, Contraception, Intercourse, Fertility

INTRODUCTION

Adolescent fertility is decreasing in the U.S., but it continues to be a significant social problem (Hayes 1987; Lichter and Jayakody 2002). Many factors have been studied as predictors of adolescent pregnancy, but relatively little systematic attention has been paid to the role of body size as represented by height and weight in relation to dating, contraception, intercourse, and pregnancy.

In the late twentieth century better nutrition, improved hygiene, and more extensive health care have led the U.S. population to be larger in size, with a secular trend for adolescents to be slightly taller and substantially heavier with each succeeding generation. Substantial height increases have occurred among younger children, and adolescent heights have increased slightly during the late twentieth century (Cole 2000; Freedman et al 2000). For body weight there have been significant increases in the late twentieth century among both children and adolescents (Troiano et al 1995).

In particular, the prevalence of obesity in the U.S. has risen dramatically in the past few decades (Flegal et al., 2002). This rise in obesity has occurred across all age groups, including children and adolescents, and the U. S. is now experiencing what some have called an "obesity epidemic" (Mokdad et a1 1999,2003; Troiano and Flegal 1998). Unprecedented levels of what were traditionally adult onset diseases, such as Type II diabetes, are appearing among obese youth. This rising incidence and prevalence of chronic disease morbidity associated with increasing adolescent obesity has led to considerable medical and public health concerns about its effects upon the current and future health of young people (Kimm and Obarzanek 2002).

Also accompanying the secular trends to be taller and heavier is a decrease in the age of onset of puberty, with menarche declining to an onset of about age 13 in girls and puberty decreasing to similar ages in boys (Cole 2000; Karpati et al 2002). These population-level trends in height, weight, and puberty make it important to understand the dynamics of relationships between height, weight, dating, intercourse, and contraception as influences on overall patterns of adolescent fertility.

Health is not typically the primary height or weight-related concern of younger people (Hayes and Ross, 1987). Appearance is the primary motivation for personal concern about weight, with shortness and fatness stigmatized and tallness and thinness positively valued (Roberts and Hermann 1986; Sobal 1999). Consideration of both biological perspectives on health and social perspectives on appearance are needed to understand the implications of stature and fatness for sexual activity and pregnancy. This analysis will examine the complex set of interrelationships between height, body weight, dating, sex, contraception, and pregnancy among U.S. adolescents using two large, nationally representative data sets.

BACKGROUND

Social scientists have long examined the importance of selection of partners among adolescents (e.g. Waller 1937). Body size, measured by height and weight, has only more recently been explicitly considered as a factor in dating and sexual activity. In this section, we summarize prior research on the relationships between body size and dating, contraception, sexual intercourse, and fertility.

Dating. Height and weight are both important personal characteristics that are influenced by genetics, health, and nutrition during childhood and adolescent growth. Both stature and fatness are associated with dating.

People who are taller than average, but not too tall (Graziano et al 1978), tend to be considered more attractive (Pierce 1996) and shorter individuals are seen as less attractive and often stigmatized in the U.S. (Jackson and Ervin 1992; Roberts and Herman 1986). Since the 1950's many studies show that taller men, more so than taller women, are preferred in dating and mating (Beigel 1954; Sheppard and Strathman 1989; Pierce 1996). Additionally, there is a social norm that males should be taller than their female partners (Pierce 1996), which restricts the number of socially-acceptable dating partners for shorter men and taller women.

Heavier individuals have a more difficult time dating. Cawley (2001) used nationally representative U.S. data to show that heavier girls, but not boys, were less likely to have initiated or recently engaged in dating. Earlier studies using smaller samples report similar results (Halpern et al., 1999; Kallen and Doughty, 1984). Pearce et al (2002) replicated the finding of less dating among obese girls but not boys, and also found that obese individuals of both genders were less satisfied with their dating status than thinner adolescents. Studies of attitudes towards dating obese youth reveal a reluctance to engage in dating behavior with heavier individuals (Sobal and Bursztyn, 1998; Sobal et al., 1995), providing evidence of the difficulties obese youth face in the dating market.

Sexual Intercourse. There has been relatively little research on height, weight, and sexual behavior among adults (Regan 1996), and even less focusing on adolescents.

The lack of data makes it unclear about how height is associated with sexual intercourse among adolescents. National data examined by Cawley (2001) found no association between body weight and initiation of sexual behavior among adolescents, a finding similar to those of studies of small samples (Halpern et al, 1999; Kallen and Doughty, 1984).

Contraception. Many contraceptive options are available to adolescents who are dating (Unauthored, 1996), but almost half do not use any form of contraception. Condom use increased during the 1990s while birth control pills and withdrawal decreased slightly (Everett et al 2000). Little research has been done on height and use of contraception, but more attention has been given to weight and contraception.

Oral contraception may have different relationships with height and body weight than barrier methods of contraception. While some studies report that oral contraception does not lead to weight gain in adolescents (Lloyd, et al 2002), others suggest that oral contraception use is associated with higher fat distribution on the lower body (Litchfield and Grunewald 1988). Many women (including adolescents) report a reluctance to use oral contraception because they fear gaining weight (Pratt and Bachrach 1987; Metson 1988). There is little information about actual patterns in the relationship between body weight and use of oral contraception among adolescents. It is not clear whether obese individuals avoid oral contraceptives because of a desire to not gain even more weight, or whether they would not be as threatened by small amounts of additional weight gain as their thinner counterparts.

Relationships between body weight and use of barrier forms of contraception have not been well examined among adolescents. African-American adolescents who

were dissatisfied with their weight were less likely to use condoms (Wingwood et al 2002). Adolescents who engage in extreme forms of weight loss behavior are less likely to use condoms (Neumark-Sztainer et al 1998).

Fertility. Little analysis exists of height, weight, and fertility among adolescents. Taller men were more likely to bear children in some examinations of fertility (Nettle 2002; Mueller and Mazur 2001; Pawlowski et al 2000), but not necessarily have more children because of positive relationships between height and SES and negative relationships between SES and total fertility (Nettle 2002).

Mechanisms. Body fat is necessary to maintain fecundity (Frisch 2002). In adults, weight is associated with higher fertility in a reciprocal relationship; fertility influences weight and weight influences fertility (e.g., Devine et al 2000). Among adolescents in the U.S., there is relatively little research on weight and actual fertility.

Several different conditions and mechanisms play a role in these relationships. Biological maturation and fecundity maintenance influence weight-fertility relationships. Higher levels of body fat are associated with earlier sexual maturation (including earlier menarche), providing different levels of experience in dating, intercourse, and fertility for girls of differing heights and weights. Taller boys and girls appear to be more mature (Wang 2002), and may be sought as partners, especially by older youth, more often than their shorter agemates. Higher body weight leads to earlier development of secondary sexual characteristics (Frisch 2002), which may lead heavier young girls to precociously attract attention of potential dating partners, especially from older boys (Millman 1980). Very low body fat stores lead to amenorrhea (Frisch 2002), and obesity is also associated with menstrual problems (Friedman and Kim 1985; Lake et al 1997). Thus extremely

low and high levels of body fat may advance and also limit the initiation and duration of time that women may be fecund.

Social stigmatization of individuals with extreme heights or weights plays a role in romantic relationships and sexual behavior. Short people are often stigmatized, particularly men (Roberts and Herman 1986), and obese people are strongly stigmatized, particularly women (Sobal 1999). Short and obese individuals have a more difficult time forming and maintaining romantic relationships than their thinner counterparts (e.g. Jackson and Ervin 1992; Halpern et al 1999). Presumably, exclusion from intimate relationships because of extreme levels of height or body weight limits fertility.

Summary. A variety of studies, most of which are based on small and unrepresentative samples, suggest relationships between size (both weight and height) and fertility-related outcomes, such as sexual activity. Specifically, studies suggest that stigmatization puts shorter boys, and, to a lesser extent, shorter girls, at a disadvantage in dating markets. They also suggest that heavier girls, and, to a lesser extent, heavier boys, participate less in dating markets. While previous studies suggest that weight is not related with adolescent intercourse, it is not known how height is associated with likelihood of sexual intercourse. Furthermore, it is not clear whether shorter or heavier adolescents are more or less likely to use contraception, and whether this varies by type of contraception. Finally, little is known about the effects of body size on outcomes such as pregnancy. Clearly, there is a need for studies using large, nationally representative, longitudinal data sets to test for and measure these relationships.

CONCEPTUAL FRAMEWORK

Relationships between height, weight, dating, sexual intercourse, contraceptive use, and pregnancy can be portrayed using a path model (Figure 1). Dating, sex, and contraceptive behaviors may be conceptualized as involving a series of rational choices made by individuals bargaining for relationships in a marketplace (Becker 1991; England and Farkas 1986). A set of theories that have been collectively called rational action theory (Goldthorpe 1998) assume that individuals make rational choices in specific situations to enhance outcomes they desire. Some rational action theories focus on choices in markets representing aggregates of individuals (e.g. Becker 1991), while others emphasize interpersonal bargaining in relationships between individuals (e.g. Molm 2001). While rational action analyses offer useful insights, they also have limitations, such as indeterminancy in specifying what is rational and what is not for individuals over the short and long term (Coleman and Fararo 1992).

Utility and Different Types of Capital. The concept of "capital" originated in economics, but has been expanded to include any durable stock that may be raised through investments or depleted, such as human capital (skills), political capital, social capital, and cultural capital. We assume that adolescents derive utility from two types of capital: appearance capital and reputation capital.

Appearance capital measures the attractiveness of an individual, and includes overall "beauty capital" (Bosman et al 1997; Pfann et al 2000) that is partly determined by a person's face, body, clothing, etc. Height and body weight are our proxies for

appearance capital. Many adolescents are very concerned with their own height and weight as well as those of their romantic partners (Halpern et al 1999; Kallen and Doughty 1984; Pierce 1996). People prefer to be attractive even aside from the benefits it provides with respect to attracting partners.

Reputation capital represents the esteem with that one is regarded by same-sex peers. Dating a person of high appearance capital raises reputation capital for both men and women. Conversely, dating someone of low appearance capital lowers one's reputation capital. For this reason, one may find it preferable to remain unmatched than to date someone who is unattractive and suffer a loss of reputation capital. We assume that sex and dating are to some extent substitutes; if a person has no dating possibilities, they are more likely to seek sex.

We assume that, because dating is more publicly observed than sex, reputation capital is less affected by the appearance of one's sex partner than by the appearance of one's dating partner. In addition, we hypothesize that a boy's reputation capital rises with his number of sex partners, but that a girl's reputation capital falls with the number of sex partners (Kirkman et al. 1998). Participating in sexual intercourse has long been observed to increase reputation capital for men but decrease reputation capital for women in what has been termed a "double standard" (Anderson 1989; Coleman 1961,1966; Eyre et al 1998; Hillier et al 1998; Holland and Eisenhart 1990; Holland et al 1996), although the different standard for women than men may be declining (Whyte 1990).

We assume that the utility derived from sex is also affected by whether a condom is used. For girls, condom use is indirectly utility-increasing (indirectly, because it lowers the probability of pregnancy) while for boys condom use is utility decreasing

(because it reduces sexual pleasure) (Holland et al 1996; Martin 1996).

In sum, we assume that adolescents derive utility from the following variables:

Utility = U(sex(appearance of partner, condom use), dating(appearance of date), appearance capital, reputation capital)

Our assumptions may be specific to U.S. adolescents in middle school or high school, where the closed school environment establishes communication networks that often provide good information about the dating activity of classmates and peers. Such adolescents may have some information on the sexual activity of their peers, but likely less than they have about dating, which is publicly observed. In less cohesive environments like universities or broader society, dating and sexual activity are less well known, more easily concealable, and social norms may be more permissive, and as a result women may not face such harsh tradeoffs between sexual activity and reputation capital.

Utility Maximization and Body Weight. Given that the utility derived from dating and sex is partly determined by the attractiveness of the partner, attractive people are in high demand on the dating market and can be selective in choosing their dating partners. A high degree of assortative matching is expected to result; that is, people will tend to pair for dates with others of roughly similar attractiveness (Berscheid et al 1971; Schafer and Keith 1990). However, people with low appearance capital may prefer to remain single than date another person with low appearance capital, and such people may choose to remain chaste rather than have sex with someone else of low appearance

capital. If this were not true, attractiveness would be independent of the frequency of dating and sex -- all adolescents would pair by attractiveness and all would have similar amounts of dates and sexual intercourse.

Adolescents are more likely to attain their ideal (i.e. utility-maximizing) arrangement the higher their appearance capital. For boys, the ideal is dating and having unprotected (no condom) sex with many attractive girls. For girls, the ideal is dating and possibly having protected sex with one attractive boy. In each case, the arrangement is associated with high utility from dating and sex while also raising or maintaining reputation capital. The male and female ideals are not perfectly compatible, so actual arrangements by people of high appearance capital will vary and depend upon bargaining and/or exchanges between the boy and girl. Some attractive boys may accede to the attractive girls' ideal, and vice versa.

Adolescents with low appearance capital are unlikely to attain their ideal arrangement. Consider a girl with zero appearance capital. No boy will date her, but she may offer sex as a way to achieve some kind of intimacy with a boy. Specifically, shorter and heavier girls who are considered unattractive may accept a loss of reputation capital in exchange for having sex. Boys are willing to have sex with short and heavy girls with low appearance capital because taller and thinner girls with high appearance capital ration their sexual activity to preserve their reputation capital. Because having sex lowers reputation capital for girls, a market niche exists for girls who are unattractive (i.e. have extreme heights and weights) to have sex with boys. Although this will result in a loss of reputation capital for them, such girls may find it worthwhile because of the utility they derive from sex. Girls of unattractive sizes also have an additional option to agree to

unprotected sex. Because girls prefer to use a condom, while boys prefer not to use a condom, taller and thinner attractive girls have leverage to require condom use, leaving a niche for size-unattractive girls willing to offer boys the premium in utility associated with unprotected sex.[1] Although this will expose such girls to a higher risk of pregnancy and sexually-transmitted diseases, they may agree to not use a condom in order to partner with a more attractive boy than they could partner with if they insisted on condom use.

A strong prediction of our theoretical framework is that boys with low appearance capital have nothing to offer girls. Such boys are less appealing dates (given their low appearance capital) and the sex such boys can offer is less rewarding to girls than that with attractive boys. Boys with high appearance capital are happy to have sex with many partners because it raises their reputation capital; this crowds unattractive boys totally out of the adolescent market for sex.

Based on this conceptual framework, we propose the following hypotheses about the effects of body weight dating, sex, condom use, and fertility among adolescents in the U.S. Shorter and heavier adolescents will be less likely than their taller and thinner counterparts to date and to have intercourse. For females, however, body size will have a stronger correlation with dating than with sex. Among girls, those who are shorter and heavier will be less likely to use a condom, while among boys, those who are shorter and heavier will be more likely to use a condom. Among those who engage in sexual intercourse, shorter and heavier females will be more likely than taller and thinner females to become pregnant.

[1] Use of a condom is the result of bargaining between the boy and the girl, so the probability that a condom is used depends on the characteristics of both parties. In our data we do not have information on the

METHODS

The goal of this analysis is to estimate the correlation of size (height and weight) with adolescent dating and sex. Dating is the outcome of interest in the example below, but the same logic applies to adolescent sexual activity.

Assume that an individual i will have dated if their appearance capital A exceeds a critical threshold A^*. Appearance capital is a function of body weight W, height H, other characteristics X, and factors we do not observe which are captured by a residual u. Specifically:

$$A_i = W_i\beta + H_i\alpha + X_i\gamma + u_i$$

Overall appearance capital A is not observed but we do know if a person has dated; denote $D_i = 1$ if individual i has dated, and $D_i = 0$ otherwise. Formally, dating relates to appearance capital in the following way:

$$D_i = 0 \text{ if } A_i \leq A^*$$
$$D_i = 1 \text{ if } A_i > A^*$$

Normalizing A^* at $A = 0$, the probability that one has dated is equal to:

$$\Pr[D_i = 1 | X_i, W_i, H_i] = \Pr[A_i > 0]$$
$$\Pr[D_i = 1 | X_i, W_i, H_i] = \Pr[W_i\beta + H_i\alpha + X_i\gamma + u_i > 0]$$
$$\Pr[D_i = 1 | X_i, W_i, H_i] = \Pr[u_i > -W_i\beta - H_i\alpha - X_i\gamma]$$

If one assumes that u follows the logistic distribution, the probability of having dated as a function of weight W, height H, and characteristics X can be estimated using a logit regression.

An advantage of studying the relationship between height and dating and sex is the fact that height is exogenous – no one can choose their height – therefore there are no

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characteristics of the person with whom the respondent had intercourse.

concerns about selection bias or reverse causality. In contrast, a challenge in studying the relationship between weight and dating and sexual activity is the possibility of reverse causality. That is, a lack of romantic involvement could lead to depression and weight gain, or previous sexual activity could result in pregnancy and therefore weight gain. We address these issues two ways. First, we study *initiation* of dating and *initiation* of sex. Since all sample members have the same history of abstinence, we have controlled for effects of dating or sex on weight. Second, we use lagged measures of weight, specifically, that recorded one interview prior to the first report of dating and sex. This also minimizes the problem of reverse causality; when weight was measured, all were abstaining. A disadvantage of this method is that we do not control for the adolescent's weight at the exact time they initiated dating or sex. However, given that interviews are annual, it is unlikely that dramatic changes in weight occurred since weight was recorded. Thus, we are estimating the probability that adolescents who have never dated have their first date as a function of their weight prior to having ever dated. This strategy lessens the potential confounding influences of reverse causality.

We utilize a discrete time duration method, which is an appropriate statistical technique for examining the structural determinants of the decision to make a transition from one state to another (Allison, 1984). In the current period, individuals who are not at risk of making a transition (those who have already dated) are removed from the sample, and a binary dependent variable is created that equals one if a transition is made from "never-dated" in the previous wave to "has dated" in the current wave. Respondents are removed from the sample after the first transition. Typically, in discrete time duration models, respondents who transition in the initial period (i.e. have already

dated at baseline) do not have to be deleted from the data. Allowing these observations to enter the risk pool is equivalent to estimating the probability of initiating dating between some earlier period and survey baseline. However, we are using lagged measures of weight and no measure of weight is available prior to baseline, so we are unable to study outcomes at baseline.

DATA

National Longitudinal Survey of Adolescent Health (Add Health). Add Health is a longitudinal school-based study of U.S. youth (Bearman, Jones, and Udry 1998). Several prior analyses have been conducted on body weight using Add Health data (e.g. Goodman et al 2000; Gordon-Larsen et al 2003).

Sample. Using rosters from over 100 schools, Add Health selected a nationally representative (core) sample of 12,105 adolescents in grades seven to twelve to participate in an initial in-home interview. Additionally, Add Health selected over-samples of four racial groups: 1,038 black adolescents from well-educated families, 334 Chinese adolescents, 450 Cuban adolescents, and 437 Puerto Rican adolescents. Add Health also selected a number of siblings due to the sampling design. Our analyses take into account sampling design effects using weighted multilevel logit models estimated in SAS (see Guo and Zhao 2000 for the GLIMMIX macro used for the logit models).

Design. The first Add Health in-home interview was conducted between April and December of 1995. The response rate for the in-home sample was 79%. About one year later, Add Health re-interviewed respondents who were not in the 12th grade at the

time of the first interview. The second in-home interview was almost identical to the first. The response rate for this interview was 88%.

Measures. A key strength of Add Health is that it collects extensive information on body weight, romantic relationships, sexual behavior, contraception, and pregnancy. We limit our analyses of Add Health respondents to those who have a sample weight and at least one valid outcome measure for the second wave and who report their height and weight in the first wave. The first and second in-home interviews collected information on pregnancy only for females. To obtain this information, interviewers handed respondents the laptop to conduct a computer-assisted self-interview (ACASI). ACASI enables respondents to enter responses to questions which appear on screen and which are heard on tape with earphones, allowing respondents greater privacy.

National Longitudinal Survey of Youth, 1997 Cohort (NLSY97). The second data set used in this analysis is the NLSY97, which is a longitudinal cohort study of young people sampled from the community (Horrigan 2001). NLSY97 data have been used in previous research on height and weight (Cawley 2001; Gibson 2001). The NLSY97 was sponsored by the U.S. Department of Labor and is designed to track the transition of youth from school to work, both for the population as a whole and for blacks and Hispanics. The questions asked by the survey are intended to collect information on the respondents' investments in education and labor market experiences. However, the National Institute of Child Health and Human Development provided funding for various questions in the self-administered portion of the youth questionnaire; these questions covered dating, sexual activity, contraceptive behavior, and fertility history.

Sample. The NLSY97 used a nationally representative sample of 8,984 youths who were 12 to 16 years old as of December 31, 1996 (i.e. individuals born in 1980-1984). The NLSY97 consists of two sub-samples: a cross-sectional sample of 6,748 respondents that is nationally representative of its age group, and a supplemental sample of 2,236 respondents, which is designed to oversample Hispanics and blacks. The 8,984 respondents were living in 6,819 unique households; 1,862 households included more than one respondent. Our sample consists of respondents who had at least one valid outcome measure in one interview, and valid weight and height measures in the previous interview.

Design. Round 1 of the NLSY97 survey took place in 1997. Both the eligible youth and one of the youth's parents were interviewed at baseline. Follow-up interviews were conducted annually, with data currently publicly available for 1997, 1998, 1999, 2000, and 2001. The response rate for the full sample was 92%. Retention rates were 93% for wave 2, 91% for wave 3, and 90% percent for wave 4.

Measures. NLSY97 collected information about height and body weight, dating, sexual behavior, contraception, and pregnancy that were similar to measures in Add Health, permitting parallel analysis of the two data sets. Like Add Health, NLSY97 used ACASI to collect information on fertility-related behavior in face-to-face interviews, which lasted about 72 minutes with each youth. Respondents of all ages were asked about their dating history. In waves one and two, only respondents aged 14 and older were asked about intercourse and pregnancy; in subsequent rounds all respondents were eligible to answer these questions.

Analysis. In both data sets, outliers in height and weight were excluded from

analysis. Specifically, we omitted observations with reported weight under 50 pounds (there were 30 such observations in the NLSY97 and 0 observations in Add Health) or over 400 pounds (0 observations in both the NLSY97 and 1 observation in Add Health). We also deleted those with reported height under 36 inches (4 observations in the NLSY97 and 0 observations in Add Health) or over 87 inches (1 observation in the NLSY97 and 0 observations in Add Health).

In both data sets, we studied five sets of measures of body weight. Respondents must have had valid values for each of these five measures to be included in the sample; this guarantees that for each outcome, the five regressions using different measures of weight are estimated using exactly the same set of respondents. Each set of weight variables includes height in inches so that the importance of weight was measured independent of height.

The first set of measures included Body Mass Index (BMI), which is calculated as weight in kilograms divided by height in meters squared to provide a continuous measure of the spectrum of fatness and thinness adjusted for lean body tissue such as bones and organs. BMI is widely used to represent levels of stored body fat in adults and adolescents (Dietz and Bellizzi, 1999). Height in inches is also included.

The second set of measures of body weight includes BMI and BMI squared (height in inches and height in inches squared are also included). We include the quadratics to capture any nonlinearities in the relationship between weight, height, and the outcomes of interest. Specifically, these quadratics will be useful if adolescents are penalized on the dating market for being either too heavy or too light, or either too tall or too short.

The third measure is weight in pounds and height in inches.

The fourth set of measures of body weight includes indicator variables for clinical weight category classifications: underweight, overweight, and obese (healthy weight is the excluded reference group). Height in inches is also included. We use the adult BMI cutoffs for these classifications (WHO 1995), which is considered appropriate by nutritionists and physicians (Dietz and Bellizzi, 1999; Dietz and Robinson, 1998). Underweight is defined as a BMI of less than 18.5, healthy weight is a BMI of greater than or equal to 18.5 but less than 25, overweight is a BMI of 25 up to 30, and obese is defined as a BMI of 30 or higher (WHO 1995).

The fifth set of weight measures includes indicator variables for the respondent's own perception of their body weight. Respondents could report that they perceived themselves to be: very underweight, somewhat underweight, about right, somewhat overweight, very overweight. About right is the excluded reference measure. Height in inches is also included.

The same set of control variables was used in all regressions. These regressors were chosen to control for relevant factors related to weight, dating, and sexual activity, such as age, physical maturation, household environment, and socioeconomic status. The set of regressors includes: age in months, highest grade completed, number of children under age 18 living in the respondent's household, family income, and indicator variables for: lived with both biological parents at age 14, has experienced puberty or physical maturation, Hispanic, black, ever repeated a grade, urban residence, mother graduated high school, mother graduated college, region of residence, whether someone else was present during the interview, interviewer assessed respondent as candid, whether

respondent is employed, and self-reported health status.

In both the Add Health and the NLSY97 all of the data were self-reported. Some biases exist in self-reporting weight and height but those self-reports are adequate for population research (Bowman and DeLucia 1992) and appear to have little impact on coefficient estimates (Cawley, 2004) with reporting bias impacts minimized if demographic characteristics are controlled in multivariate analysis (Nieto-Garcia et al 1990) . Biases involved in self-reporting dating are not well understood (Jones et al 1988). Despite being sensitive topics, self-reported contraception and intercourse behavior has been shown to be relatively accurate (e.g. Jaccard et al 1995,2002).

RESULTS

Descriptive Statistics. Means and summary statistics of the Add Health and NLSY97 variables are presented in Table 1. Add Health respondents were slightly younger, and consequently in a lower grade in school than the NLSY97 adolescents, but otherwise the characteristics of the two samples were comparable.

INSERT TABLE 1 HERE

In results not shown, we additionally evaluated some of the assumptions made earlier using data from Add Health. Specifically, we compared males and females in terms of their agreement that sex would increase their popularity among peers and that birth control interferes with sexual pleasure. Males indicated much more agreement to these items than females, and these differences were highly significant. We also examined differences in height and body mass index by interviewer-rated attractiveness. For both males and females, height is essentially uncorrelated with interview-rated

attractiveness, which is contrary to our assumption. In contrast, median BMI is higher for those rated unattractive than for those rated attractive; this correlation is stronger for females than for males.

We hypothesize that shorter and heavier boys and girls will be more likely to initiate dating between interviews than their taller and thinner counterparts. Table 2 presents the results of logistic regression models concerning the transition from never having dated to having dated. Because many of our hypotheses differ for boys and girls, all of our models, including the ones in this table, are stratified by gender.

INSERT TABLE 2 HERE

Dating. Results for both the BMI and weight in pounds regressions (contained in the first two horizontal panels in Table 2) using the NLSY97 data indicate that taller boys and girls were more likely to date. With each additional inch in height, the odds of dating increase by about 5% for males (i.e., 1.047 = exp[.046]), and by roughly 4% for females (i.e., 1.036 = exp[.035]). Results in the third panel, based on a model that adds a squared term for height, fail to reveal a curvilinear relationship between height and dating. Height may not be related to appearance capital. Rather, it may be correlated with unobserved differences in physical maturity.

The results for weight in the third and fourth panels, taken together, suggest that weight has a nonlinear effect on the likelihood of dating between interviews; however, the patterns differ in subtle ways by the sample and the sex of respondent. Since the clinical specifications of weight in the fourth panel are more intuitive, we focus on the results for them. The results for the NLSY97 demonstrate that both underweight and obese boys are significantly less likely to initiate dating between interviews than health

weight boys. Obese boys have about half the odds (i.e., .499 = exp[-.695]) of dating as healthy weight boys, while underweight boys fall between these groups (i.e., odds = .705). Among the girls, the ordering is slightly different. Obese girls are least likely to date, followed by overweight, then underweight girls. Obese girls have about two-fifths the odds of dating as healthy girls; overweight girls have about three-fifths the odds, while underweight girls have about four-fifths the odds as healthy girls. All of these differences are statistically significant. Interestingly, in this sample both underweight boys and girls are less likely to date than their healthy weight counterparts; apparently it isn't true that one can never be too rich or too thin.

The dating penalty for being underweight found among NLSY97 respondents is not found among Add Health respondents. Only the overweight and obese boys in Add Health are significantly less likely than the healthy weight boys to initiate dating between interviews; they have about two-thirds and one-half the odds of dating as healthy weight boys, respectively. Among girls in Add Health, there is a monotonic relationship between weight category and dating. Underweight girls are the most likely to date, followed healthy weight girls, overweight girls, and finally, obese girls. However, only the obese and overweight girls differ significantly from the overweight girls. Precisely, the odds that underweight girls initiate dating are about 70% greater than for healthy girls, while for obese girls it is roughly 63% lower.

In sum, the results for both the NLSY97 and the Add Health suggest that obese boys and girls are significantly less likely than healthy weight boys and girls to initiate dating between interviews. Differences between other groups are less consistent and fail to follow any pattern in terms of survey or sex. While the clinical definitions obscure

variation within categories, we assume that the distribution of weight within these categories does not differ by survey.

Sexual intercourse. With respect to sexual activity, we hypothesize that shorter and heavier boys and girls are less likely than their taller and thinner counterparts to initiate sexual intercourse between interviews. We also hypothesize that for females, height and weight will have weaker effects on sexual activity than on dating. Table 3 shows the results of logistic regression models predicting the transition from never having had sex to having had sex.

INSERT TABLE 3 HERE

Recall from the previous table that height only had significant effects on dating for the NLSY sample members. In contrast, the results in these models suggest that height only influences the sexual activity of Add Health females. In the third panel horizontal panel of Table 3, which shows results for linear and quadratic height terms, we see that the relationship between height and sexual activity is u-shaped, as indicated by the negative and significant squared term. The height at which the derivative of b_1(height) + b_2(height^2) equals zero is equal to $-b_1 / 2b_2$; at this height, the probability of initiating intercourse is maximized. Add Health females are most likely to initiate sex if they are 65.5 inches tall (i.e., -1.31 / [2*-.01]). However, in all other regression models and samples, there is no statistically significant relationship between height and initiation of sexual activity.

In all NLSY97 specifications, we are unable to reject the null hypothesis that weight is uncorrelated with the probability of first intercourse. However, weight appears to have a nonlinear effect among Add Health boys and girls. Considering the clinical

weight categories, Add Health males and females are least likely to initiate sex between interviews if they are obese, and most likely to have sex if they are healthy weight. Underweight boys are less likely to initiate sex, but underweight girls are no less likely to initiate sex. In the Add Health, the correlation between obesity and first sex is greater than the correlation between obesity and first date.

Contraception. We hypothesize girls will be less likely to use a condom the shorter and heavier they are; however, boys will be less likely to use a condom the taller and thinner they are. The results for models of birth control use and condom use appear in Table 4A and Table 4B, respectively. The samples used to estimate these models are restricted to boys and girls who initiate sexual intercourse between interviews.

INSERT TABLES 4A AND 4B HERE

We focus on condom use (Table 4B) since our hypotheses pertain specifically to this outcome. Few of the specifications of height and weight are significant. Among NLSY97 sample members, males who perceive themselves as very overweight are significantly less likely to use a condom than males who view their weight as about right. In sharp contrast, NLSY97 females who see themselves are underweight are significantly less likely to report condom use than their counterparts who view themselves as about the right weight. These effects are the opposite of what we expected. Among Add Health sample members, taller males are less significantly likely to use a condom than shorter males, a finding that is consistent with our expectations. For Add Health females, height has a significant nonlinear effect; females are least likely to report the use of a condom if they are 63.7 inches, or about average in height.

It is important to keep in mind, however, that these models were estimated using

very small samples; samples were limited to respondents who initiated intercourse since the last interview. As a result of the small sample sizes, very few coefficients on control variables are significant (results not shown.) In order to detect the effects of body weight on condom use, it may be more useful to examine patterns across several sexual encounters.

Pregnancy. We hypothesize that, among girls who engage in sexual intercourse, those who are shorter and heavier will be more likely to become pregnant, as a consequence of their less frequent condom use. Table 5 lists the results of regressions concerning the probability of pregnancy between waves for females; Add Health and the NLSY97 does not collect information on the timing of fatherhood. In no case is the coefficient on height significant at the 5 percent level. In some models, weight is correlated with pregnancy for girls in the NLSY97. In the model with linear and quadratic weight terms, the likelihood of pregnancy increases with weight. However, the model with clinical weight categories suggests that obese females are less likely than healthy-weight females to become pregnant.

INSERT TABLE 5 HERE

DISCUSSION

This paper uses rational action theories to develop hypotheses concerning the correlation of adolescent body size with dating, sex, condom use, and pregnancy. We assume that the utility that an adolescent derives from dating and sexual activity is a function of the weight and height of their partner. We hypothesize that shorter and heavier boys and girls are less likely than their taller and thinner counterparts to date or

have sex. We also hypothesize that shorter and heavier girls may attract boys by offering sex or even unprotected sex, but that shorter and heavier boys have nothing to offer girls.

We find mixed support for these hypotheses in two national samples. Shorter and heavier boys and girls in both samples are less likely to initiate dating. Only heavier boys and girls from Add Health were less likely to initiate sex. Height appeared to have little correlation with sexual activity in either sample. The correlation of body size with condom use and pregnancy were even weaker and more inconsistent.

These findings suggest that interactions between boys and girls occur at two levels, with appearance represented by size (height and weight) more influential at the first than the second. The first level operates as partners match with each other in the dating marketplace, with individuals of extreme size often not matching. The utilitarian exchange of appearance capital in a public dating market appears to operate at this level (Becker 1991). The second level occurs as couples negotiate and bargain directly with each other about intercourse and contraception. An exchange perspective appears to apply to these private negotiations on an interpersonal level (Sprecher 1998), more so for condom use than sexual intercourse.

A key distinction may be that dating partners are well observed but sex partners are not. For this reason, adolescents may limit themselves to attractive dating partners who will enhance their reputation capital. Since sexual activity is less well known by peers, adolescents can be less discriminating with regard to sex partners with little loss of reputation capital.

This analysis confirms the usefulness of conducting parallel analyses in complementary data sets. While many of the results were similar, variations did exist

across data sets. Some of this variation may be attributable to the following differences between the data sets: 1) Add Health is a school-based survey while NLSY97 is a population sample that includes children who were truant, ill, or did not attend school for other reasons. 2) The Add Health sample is slightly younger than NLSY97, offering the possibility of an age effect from a less mature sample. 3) The Add Health sample was collected a year or two earlier than the NLSY97, offering the possibility of a history effect in the operation of secular trends in obesity and dating/sexual behaviors. Other limitations may exist in this analysis. The data was self-reported and subject to potential biases on that basis (Stone et al 2000). We acknowledge that our findings with respect to weight may be due to omitted variable bias. For example, rate of time discount may explain our results. Adolescents who are forward-looking may be more likely to achieve energy balance and healthy weight, and may be more likely to abstain from sex. Since we do not observe rate of time discount, its omission may bias the coefficient on weight, creating the illusion that weight has an impact on dating and sexual activity.

Overall, our findings suggest that height and weight play a role in the initiation of romantic involvement and sexual activity among adolescents. The findings also support the utility of applying rational action perspectives such as exchange theory to adolescent behavior, even those that involve strong emotions such as sexual activity and condom use.

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Table 1
Summary Statistics: Means and (Standard Deviations)

	NLSY 1997		Add Health	
Variable	**Males N=5,384**	**Females N=5,652**	**Males N=4,391**	**Females N=6,153**
Body Mass Index	22.58 (4.76)	22.17 (4.75)	22.19 (4.56)	21.93 (4.37)
Body Mass Index Squared	532.72 (247.32)	514.07 (256.07)	512.98 (235.59)	499.95 (224.23)
Weight in Pounds	146.34 (38.08)	128.47 (30.01)	146.76 (37.60)	129.04 (28.51)
Height in Inches	67.22 (4.33)	63.77 (3.13)	67.66 (4.21)	64.00 (2.92)
Indicator: Underweight	.15 (.36)	.17 (.38)	0.18 (0.38)	0.19 (0.40)
Indicator: Overweight	.16 (.37)	.13 (.33)	0.12 (0.33)	0.12 (0.32)
Indicator: Obese	.08 (.27)	.07 (.25)	0.07 (0.25)	0.06 (0.24)
Indicator: Perceive Self as Very Underweight	.03 (.17)	.02 (.14)	0.03 (0.16)	0.02 (0.13)
Indicator: Perceive Self as Somewhat Underweight	.15 (.36)	.10 (.30)	0.19 (0.40)	0.10 (0.30)
Indicator: Perceive Self as Somewhat Overweight	.20 (.40)	.28 (.48)	0.21 (0.41	0.34 (0.47)
Indicator: Perceive Self as Very Overweight	.03 (.18)	.06 (.24)	0.02 (0.15)	0.049 (0.22)
Indicator: First Dated Since Last Interview	.48 (.50)	.48 (.50)	0.37 (0.48)	0.40 (0.49)
Indicator: First Had Sex Since Last Interview	.29 (.45)	.25 (.43)	0.21 (0.41)	0.20 (0.40)
Indicator: Used Birth Control During 1st Intercourse	.75 (.43)	.81 (.39)	0.71 (0.46)	0.71 (0.45)
Indicator: Used Condom During 1st Intercourse	.70 (.46)	.77 (.42)	0.67 (0.47)	0.68 (0.47)
Indicator: First Pregnancy Since Last Interview	N.A.	.02 (.14)	N.A.	0.12 (0.32)
Indicator: Lived With Both Biological Parents at Age 14	.74 (.44)	.75 (.43)	0.60 (0.49)	0.54 (0.50)
Experienced Puberty or Physical Maturation	.95 (.21)	.98 (.13)	3.09 (1.09)	3.25 (1.07)
Age in Months	201.47 (19.10)	202.33 (19.02)	187.25 (18.44)	188.51 (18.53)
Indicator: Hispanic	.20 (.40)	.21 (.41)	0.16 (0.36)	0.16 (0.37)
Indicator: Black	.24 (.43)	.29 (.46)	0.16 (0.367)	0.21 (0.40)
Highest Grade Completed	9.60 (2.32)	9.78 (1.64)	9.09 (1.43)	9.29 (1.46)
Indicator: Repeated a Grade	.19 (.39)	.13 (.34)	0.21 (0.41)	0.16 (0.36)
Indicator: Urban Residence	.73	.75	0.83	0.83

	(.45)	(.43)	(0.37)	(0.38)
Indicator: Mother Graduated H.S.	.55 (.50)	.52 (.50)	0.46 (0.50)	0.50 (0.50)
Indicator: Mother Graduated College	.10 (.30)	.09 (.28)	0.30 (0.46)	0.27 (0.44)
Number in Household Under Age 18	1.90 (1.31)	1.93 (1.37)	1.29 (1.18)	1.32 (1.22)
Family Income in $1000s	58.54 (66.63	45.02 (52.93	50.14 (60.41)	47.46 (53.53)
Indicator: North Central Region	.23 (.42)	.22 (.41)	0.25 (0.43)	0.25 (0.44)
Indicator: Southern Region	.36 (.48)	.39 (.49)	0.34 (0.47)	0.37 (0.48)
Indicator: Western Region	.23 (.42)	.24 (.43)	0.25 (0.43)	0.24 (0.43)
Indicator: Someone Else Present During Interview	.23 (.42)	.22 (.41)	0.27 (0.44)	0.28 (0.45)
Interviewer Assessed R as Candid	.79 (.41)	.83 (.37)	3.28 (0.83)	3.37 (0.80)
Indicator: R is Employed	.33 (.47)	.32 (.47)	0.53 (0.50)	0.54 (0.50)
Indicator: Self-Reported Health Excellent	.46 (.50)	.35 (.48)	0.41 (0.50)	0.40 (0.49)
Indicator: Self-Reported Health Very Good	.32 (.46)	.35 (.48)	0.32 (0.47)	0.26 (0.44)

Notes:

1) Summary statistics calculated for sample with valid values for all weight measures and at least one valid measure for the dating, sex, birth control, and condom use outcome variables.
2) Variables that differ between the NLSY97 and the Add Health:
    a. Measure of puberty is a binary variable in the NLSY97 and a five-point scale in Add Health.
    b. Measure of interviewer-assessed respondent candidness is a binary variable in the NLSY97 and a four-point scale in the Add Health.

Table 2
Outcome: Dated for First Time Since the Last Interview
Listed are Logit Coefficients and (z statistics)

	NLSY 1997		Add Health	
Variable	**Males N=2,775**	**Females N=3,417**	**Males N=2,403**	**Females N=2,356**
Body Mass Index	-.013 (.0118)	-.037 ** (.100)	-0.041 ** (0.100)	-0.046 ** (0.011)
Height in Inches	.046 ** (.015)	.035 * .015	0.018 0.013	-0.011 0.016
Weight in Pounds	-.002 .002	-.007 ** .002	-0.007** 0.001	-0.008 ** 0.002
Height in Inches	.055 ** .017	.063 ** .016	0.046 ** 0.015	0.020 0.017
Weight in Pounds	.010 (.008)	.007 (.008)	.015* (.007)	.021* (.009)
Weight in Pounds Squared	-.000 (.000)	-.000# (.000)	-.000** (.000)	.000 (.000)
Height in Inches	.251 (.223)	.011 (.216)	-.020 (.207)	.095 (.256)
Height in Inches Squared	.002 (.002)	.000 (.002)	.000 (.002)	-.001 (.002)
Indicator: Underweight	-.350 * .143	-.246 * .119	-0.147 0.116	0.530** 0.115
Indicator: Overweight	-.080 .153	-.501 ** .137	-0.481 ** 0.143	-0.146 0.137
Indicator: Obese	-.695 ** .209	-.903** .183	-0.741 ** 0.175	-0.460 * 0.182
Height in Inches	.045 ** .015	.040** .015	0.018 0.013	-0.013 0.016
Indicator: Perceive Self as Very Underweight	-.428 .288	.048 .266	-0.208 0.285	0.0355 0.339
Indicator: Perceive Self as Somewhat Underweight	-.0317 .154	-.168 .150	0.09788 0.1186	0.215 0.154
Indicator: Perceive Self as Somewhat Overweight	-.205 .141	-.272 * .107	-0.5143 ** 0.1202	-0.214 * 0.107
Indicator: Perceive Self as Very Overweight	-1.114 ** .299	-.845 ** .185	-0.961 ** 0.294	-0.135 0.205
Height in Inches	.047 ** .015	.048 ** .015	0.024 # 0.013	-0.005 0.016

Notes:

1) In each regression, other control variables include: age in months, highest grade completed, number of children under age 18 living in the respondent's household, family income, and indicator variables for: lived with both biological parents at age 14, has experienced puberty or physical maturation, Hispanic, black, ever repeated a grade, urban residence, mother graduated high school, mother graduated college, region of residence, whether someone else was present during the interview, interviewer assessed respondent as candid, whether respondent is employed, and self-reported health status.
2) Symbols indicate that coefficient is significant at: # = 10% level, * = 5% level, ** = 1% level

Table 3
Outcome: Had Sex for First Time Since the Last Interview
Listed are Logit Coefficients and (z statistics)

	NLSY 1997		Add Health	
Variable	**Males N=1,658**	**Females N=1,473**	**Males N=3,971**	**Females N=4,368**
Body Mass Index	.034 .029	-.005 .016	-0.015 0.100	-0.060** 0.010
Height in Inches	098 # .057	.036 .023	0.100 0.013	-0.007 0.015
Weight in Pounds	.006 .005	-.001 .003	-0.003 * 0.001	-0.010 ** 0.002
Height in Inches	.072 .050	.039 .025	0.022 0.014	0.034 * 0.016
Weight in Pounds	-.006 (.021)	.002 (.012)	.031** (.008)	.000 (.010)
Weight in Pounds Squared	.000 (.000)	-.000 (.000)	-.000** (.000)	-.000 (.000)
Height in Inches	.371 (.663)	.748 (.616)	.374 (.246)	1.310** (.445)
Height in Inches Squared	-.002 (.005)	-.006 (.005)	-.003 (.002)	-.010** (.003)
Indicator: Underweight	-.021 .271	-.068 .168	-0.467 ** 0.122	-0.120 0.108
Indicator: Overweight	.053 .305	.031 .217	-0.274 * 0.130	-0.509 *** 0.132
Indicator: Obese	.418 .485	-.427 .327	-0.807 ** 0.179	-1.131 *** 0.204
Height in Inches	.100 # .056	.036 .023	0.012 0.013	-0.003 0.015
Indicator: Perceive Self as Very Underweight	-.102 .608	.001 .438	-0.592 # 0.315	0.111 0.314
Indicator: Perceive Self as Somewhat Underweight	-.163 .367	-.242 .229	-0.258* 0.115	-0.011 0.141
Indicator: Perceive Self as Somewhat Overweight	-.317 .376	.067 .153	-0.479 ** 0.115	-0.355** 0.0935
Indicator: Perceive Self as Very Overweight	-.663 .834	-.142 .312	-1.570 ** 0.385	-0.732 * 0.200
Height in Inches	.108 .076	.035 .0235	0.013 0.013	0.004 0.015

Notes:

1) In each regression, other control variables include: age in months, highest grade completed, number of children under age 18 living in the respondent's household, family income, and indicator variables for: lived with both biological parents at age 14, has experienced puberty or physical maturation, Hispanic, black, ever repeated a grade, urban residence, mother graduated high school, mother graduated college, region of residence, whether someone else was present during the interview, interviewer assessed respondent as candid, whether respondent is employed, and self-reported health status.
2) Symbols indicate that coefficient is significant at: # = 10% level, * = 5% level, ** = 1% level

Table 4A
Outcome: Used Birth Control During 1st Intercourse
Listed are Logit Coefficients and (z statistics)

	NLSY 1997		Add Health	
Variable	**Males N=474**	**Females N=361**	**Males N=446**	**Females N=479**
Body Mass Index	-.012	-.002	0.017	-0.053*
	.027	.033	0.029	0.026
Height in Inches	-.001	-.064	-0.071	-0.012
	.034	.056	0.044	0.039
Weight in Pounds	-.002	-.001	0.002	-0.008 #
	.004	.006	0.004	0.005
Height in Inches	.009	-.061	-0.081 #	0.016
	.039	.060	0.048	0.046
Weight in Pounds	-.009	.009	-.044	.067*
	(.026)	(.021)	(.030)	(.030)
Weight in Pounds Squared	.000	-.000	.000	-.000*
	(.000)	(.000)	(.000)	(.000)
Height in Inches	-.298	-.768	-.146	-4.118**
	(.835)	1.743	(1.079)	(1.469)
Height in Inches Squared	.002	.005	.001	.033**
	(.006)	.014	(.008)	(.011)
Indicator: Underweight	.032	-.013	0.355	-0.725 **
	.336	.377	0.393	0.262
Indicator: Overweight	-.231	-.073	-0.169	-0.463
	.328	.481	0.376	0.295
Indicator: Obese	.294	-.748	0.446	-1.030 #
	.539	.648	0.563	0.591
Height in Inches	-.001	-.067	-0.070	-0.001
	.034	.056	0.044	0.039
Indicator: Perceive Self as Very Underweight	-.382	-1.149	0.268	-2.253*
	.565	.820	1.690	0.957
Indicator: Perceive Self as Somewhat Underweight	.367	.349	-0.023	0.084
	.432	.548	0.332	0.350
Indicator: Perceive Self as Somewhat Overweight	-.227	-.255	0.015	0.289
	.309	.336	0.315	0.235
Indicator: Perceive Self as Very Overweight	-1.306 #	.367	5.702	-0.803 #
	.711	.813	4.392	0.449
Height in Inches	-.001	-.065	-0.066	-0.003
	.034	.057	0.042	

Notes:

1) In each regression, other control variables include: age in months, highest grade completed, number of children under age 18 living in the respondent's household, family income, and indicator variables for: lived with both biological parents at age 14, has experienced puberty or physical maturation, Hispanic, black, ever repeated a grade, urban residence, mother graduated high school, mother graduated college, region of residence, whether someone else was present during the interview, interviewer assessed respondent as candid, whether respondent is employed, and self-reported health status.
2) Symbols indicate that coefficient is significant at: # = 10% level, * = 5% level, ** = 1% level

Table 4B
Outcome: Used Condom During 1st Intercourse
Listed are Logit Coefficients and (z statistics)

	NLSY 1997		Add Health	
Variable	**Males N=474**	**Females N=361**	**Males N=446**	**Females N=479**
Body Mass Index	-.033	.000	0.032	-0.044
	.025	.032	0.030	0.028
Height in Inches	-.020	-.069	-0.077 #	0.005
	.031	.055	0.044	0.043
Weight in Pounds	-.006	-.000	0.005	-0.007
	.004	.005	0.004	0.005
Height in Inches	.004	-.068	-0.097 *	0.034
	.037	.059	0.048	0.047
Weight in Pounds	-.002	.009	-.045	.050#
	(.023)	(.021)	(.031)	(.026)
Weight in Pounds Squared	-.000	-.000	.000	-.000*
	(.000)	(.000)	(.000)	(.000)
Height in Inches	-.107	.378	-.463	-4.967**
	(.743)	(1.445)	(1.053)	(1.455)
Height in Inches Squared	.001	-.004	.003	.039**
	(.006)	(.011)	(.008)	(.011)
Indicator: Underweight	.189	-.003	0.452	-0.338
	.327	.373	0.390	0.287
Indicator: Overweight	. -.098	-.119	0.044	-0.332
	.312	.458	0.368	0.324
Indicator: Obese	-.123	-.647	0.699	-1.018
	.459	.641	0.583	0.621
Height in Inches	-.020	-.073	-0.077 #	0.010
	.0316	.055	0.043	0.043
Indicator: Perceive Self as Very Underweight	-.326	-1.942 *	0.140	-0.296
	.545	.843	1.625	0.796
Indicator: Perceive Self as Somewhat Underweight	.120	.359	-0.103	0.410
	.388	.554	0.349	0.382
Indicator: Perceive Self as Somewhat Overweight	-.190	-.346	0.489	0.138
	.297	.329	0.337	0.246
Indicator: Perceive Self as Very Overweight	-1.638*	.309	4.863	-0.776
	.707	.815905	4.528	0.474
Height in Inches	-.023	-.076	-0.071	0.017
	.032	.056	0.044	0.044

Notes:

1) In each regression, other control variables include: age in months, highest grade completed, number of children under age 18 living in the respondent's household, family income, and indicator variables for: lived with both biological parents at age 14, has experienced puberty or physical maturation, Hispanic, black, ever repeated a grade, urban residence, mother graduated high school, mother graduated college, region of residence, whether someone else was present during the interview, interviewer assessed respondent as candid, whether respondent is employed, and self-reported health status.
2) Symbols indicate that coefficient is significant at: # = 10% level, * = 5% level, ** = 1% level

Table 5
Outcome: Pregnant Since the Last Interview
Listed are Logit Coefficients and (z statistics)

Variable	NLSY97 Females N=11,197	Add Health Females N=2,587
Body Mass Index	-.007 .009	-0.020 0.016
Height in Inches	.008 .014	-0.040 # 0.024
Weight in Pounds	-.001 .001	-0.004 0.003
Height in Inches	.013 .015	-0.024 0.025
Weight in Pounds	.019* (.009)	.027 (.018)
Weight in Pounds Squared	-.000* (.000)	-.000# (.000)
Height in Inches	.533 (.387)	-.537 (.714)
Height in Inches Squared	-.004 (.003)	.004 (.006)
Indicator: Underweight	-.027 .144	-0.118 0.1838
Indicator: Overweight	.168 .111	-0.035 0.185
Indicator: Obese	-.344 * .167	-0.200 0.273
Height in Inches	.008 .014	-0.036 0.024
Indicator: Perceive Self as Very Underweight	-.014 .316	0.508 0.405
Indicator: Perceive Self as Somewhat Underweight	-.056 .158	0.433 * 0.202
Indicator: Perceive Self as Somewhat Overweight	.035 .094	0.095 0.143
Indicator: Perceive Self as Very Overweight	-.208 .191	0.105 0.278
Height in Inches	.009 .014	-0.036 0.024

Notes:

1) In each regression, other control variables include: age in months, highest grade completed, number of children under age 18 living in the respondent's household, family income, and indicator variables for: lived with both biological parents at age 14, has experienced puberty or physical maturation, Hispanic, black, ever repeated a grade, urban residence, mother graduated high school, mother graduated college, region of residence, whether someone else was present during the interview, interviewer assessed respondent as candid, whether respondent is employed, and self-reported health status.
2) Symbols indicate that coefficient is significant at: # = 10% level, * = 5% level, ** = 1% level

Figure 1
Relationship Between Height, Weight,
Dating, Contraception, Intercourse and Pregnancy