

MARRIAGE AND MENTAL HEALTH AMONG YOUNG ADULTS*

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ABSTRACT

Marriage is widely thought to confer mental health benefits, but little is known about how this relationship may vary across the life course. Early marriage—which is non-normative—could have no, or even negative, mental health consequences for young adults. Using data from Waves 1 and 3 of the National Longitudinal Study of Adolescent Health, I find that married young adults exhibit similar levels of psychological distress as young adults who are in any kind of romantic relationship. Married and engaged young adults report lower rates of drunkenness than others. Married young adults—especially those who first married at age 22–26—report higher life satisfaction than those in other types of relationships or no relationship at all, as well as those who married at younger ages. Explanations for these findings are tested, and their implications are discussed.

Social scientists have amassed a considerable amount of evidence showing that married individuals enjoy better mental health than never-married and previously-married individuals (Gove, Hughes and Style 1983; Ross 1995; Horwitz, White, and Howell-White 1996; Brown 2000; Simon 2002; Lamb, Lee, and DeMaris 2003; Marcussen 2005). Marriage is typically thought to increase psychological, social, and economic resources (Williams and Umberson 2004; Liu, Elliot, and Umberson 2010), and to help individuals avoid the stress of relationship dissolution (Williams and Umberson 2004; Simon and Barrett 2010; Liu et al. 2010).

As one recent study notes, however, studies of marriage and mental health tend to focus on the average effects of marriage on mental health, and few investigations have sought to identify potential moderators of this relationship (Frech and Williams 2007). In other words, though marriage on average may confer mental health benefits, this positive association may not hold across different contexts or groups of people. For some, marriage may be unrelated to mental health or even harmful to it. Marital timing may be one important contingency of the marriage and mental health relationship. Particularly, marriage at an early, non-normative age may not be as salutary as marriage at a more culturally-appropriate age (Williams and Umberson 2004).

Moreover, other recent evidence suggests it is important for research on marriage and mental health to specify the relationship circumstances of unmarried adults with the recognition that they are a heterogeneous group with different levels of social support, resources, and relationship stability (Bierman, Fazio, and Milkie 2006). Not only is it important to make these relationship distinctions, but so too, according to Bierman and colleagues (2006), is it important to map the domains of mental health that marriage affects (and in what ways). Marriage may

have different effects on internalizing problems, externalizing problems, and subjective well-being.

This study addresses these issues by focusing exclusively on a cohort of young adults and assessing differences in mental health outcomes between ever-married individuals and those in other types of relationships, as well as differences in these outcomes by age at first marriage. In so doing, I compare the mental health of ever-married young adults to fine-grained categories of never-married young adults: singles, unengaged daters, engaged daters, unengaged cohabitators, and engaged cohabitators. I also consider a variety of mental health outcomes, including internalizing problems, externalizing problems, and subjective well-being. Finally, I am able to test several mechanisms explaining the mental health differences among married young adults and those in different types of relationship circumstances. Before turning to the present study, which uses data from the National Longitudinal Study of Adolescent Health (Add Health) to address these issues, I first discuss in more detail a life course perspective on the marriage-mental health relationship, the need to pay attention to different relationship types and domains of mental health, and the potential factors that may explain the marriage-mental health relationship for young adults.

AGE AT MARRIAGE AND MENTAL HEALTH: A LIFE COURSE PERSPECTIVE

Mental health—at least in terms of psychological distress—follows a U-shaped curve across the life course, with distress starting at elevated levels in adolescence, dipping to its lowest level in middle adulthood, and then rising again in later life (Mirowsky and Ross 1992; Clarke and Wheaton 2005). Settling into marital and employment roles, and the concomitant resources associated with those transitions, are cited for the lower levels of psychological distress

witnessed in mid-life. Thus, on one hand, it could be that even in the late teenage years and early 20s declining mental health problems can be attributed to the mental health benefits of marriage.

On the other hand, according to the life course perspective, the effect of roles and transitions is contingent on their timing (Elder 1985; Williams and Umberson 2004). In some cases, “the timing of an event may be more consequential than its occurrence” (Elder 1995:114). This may be especially true for marriage, where most agree there is a culturally-appropriate time to marry (Settersten and Hagestad 1996; Arnett 2004).

In particular, it has become increasingly non-normative to marry at early ages. The US median age at first marriage now stands at 28 years for men and 26 for women (United States Census Bureau 2009). Just 4% of 18–19-year-old women, 23% of 20–24-year-old women, 2% of 18–19-year-old men, and 13% of 20–24-year-old men have ever married (US Census Bureau 2011). The probability of marriage increases quickly, however, through the 20s and 30s such that 86% of women and 81% of men will marry by age 40 (Goodwin, McGill, and Chandra 2009). Thus, those who transition to marriage at an early age—especially those who marry in their teens, but also those who marry in their early 20s—may be less likely to enjoy positive mental health benefits from marriage. Early marriages are notorious for their relatively low survival rates (Lehrer 2008), which suggests early marriages may be distinct from later marriages in terms of marital quality and may not confer the same mental health benefits. Moreover, the benefits of marriage’s social approval (Marks 1996) may not extend to those who marry young and receive less societal support.

Indeed, it is possible that early marriage confers no mental health benefit, or even contributes to *more* mental health problems than other relationship arrangements—or not being in a relationship at all. One study of New Jersey young adults found that marriage was not

associated with depression among men or women, and curtailed alcohol problems only among women (Horwitz and White 1991). Another more recent study of young adults found mixed effects of marriage on mental health that varied across outcomes and by race and gender: Early marriage was protective against binge drinking only for Whites, and it was associated with higher depression among Black men (Harris, Lee, and DeLeone 2010). Still, as that study notes, “The relationships between marriage and cohabitation with health during the transition to adulthood are not well understood despite substantial research on marriage and health, and increasing attention to health during the transition to adulthood” (Harris et al. 2010:1107).

THE HETEROGENEITY OF YOUNG ADULT RELATIONSHIPS

Recent research on marriage and mental health differentiates among married adults and those who are living in cohabiting relationships (e.g., Brown 2000; Kim and McKenry 2002; Lamb et al. 2003; Marcussen 2005), as well as those in non-cohabiting romantic relationships (Ross 1995; Fleming, White, and Catalano 2010; Simon and Barrett 2010). Ross (1995) argues that the salutary mental health benefits of marriage are the result of the underlying social attachment and concomitant supports, and marriage holds no monopoly on social attachment: Relationships of different types fall along a continuum of social attachment, from singles to non-cohabiting romantic relationships to cohabiting relationships to marriage. The mental health advantages accrue as individuals move from less attachment to more attachment, and thus marriage has the most benefits. Relatedly, Simon and Barrett (2010) find that young adults who are in a romantic relationship have better mental health than those not in a relationship, in part because relationships provide social integration and heightened feelings of self-worth, and in part because those in a relationship are less likely to have experienced a recent breakup. Making these relationship distinctions is especially important during the transition to adulthood, when marriage

is not yet the norm and the pathways to adulthood have diversified (Mouw 2005). Among 18–25-year-olds, just 20% are married, 25% are not in a relationship, 20% are cohabiting, and 35% are dating (Scott et al. 2011). Among those who are dating and cohabiting, many are engaged to be married, which signals a commitment to marry among the partners and likely increased attachment vis-à-vis their unengaged counterparts. Thus, especially among young adults, we might conceive of a continuum of social attachment ranging from single to unengaged dating to unengaged cohabiting to engaged dating to engaged cohabiting to marriage (though the ordering of unengaged cohabiting and engaged dating is not entirely clear). Engagement has been mostly absent from the literature over the past half century, but the relational support and commitment that accompanies it may have positive mental health benefits. Some recent evidence, for example, suggests engaged young adults curb their substance abuse (Bachman et al. 1997; Bachman et al. 2002). In general, then, a more nuanced and fine-grained measure of relationship status is appropriate for determining the mental health effects of marriage, especially among young adults who are just beginning to transition into adult roles.

DOMAINS OF MENTAL HEALTH

Studies of mental health typically focus on mental health *problems* (George 2007). The typical approach in the marriage and mental health literature has been to examine internalizing problems, usually measured by the Center for Epidemiologic Studies Depression scale, and externalizing problems, measured by substance use and abuse (especially alcohol). These measures have proven valuable especially to scholars who are interested in gender differences in the effect of marriage on mental health, as women tend to internalize and men tend to externalize their mental health problems. But good mental health is about more than avoiding problems; it is also about overall well-being (Bierman, Fazio, and Milkie 2006). Indeed, research suggests that

psychological well-being is comprised of both positive affect and the absence of distress (Ryff and Keyes 1995; Williams 2003). Focusing attention on one or the other of these components may fail to capture the full effect of marriage on mental health.

EXPLAINING THE MARRIAGE AND MENTAL HEALTH ASSOCIATION

The causal relationship between marriage and mental health is usually explained by marital resources—economic, social, and psychological—and by relational stability, or the absence of stress from breakups. Selection into marriage by those with fewer mental health problems may also be part of the explanation. These explanations are more or less relevant for the mental health of married young adults. There are several potential explanations for why marriage may improve or impede the mental health of young adults in particular.

Selection into Marriage by Prior Mental Health

Some scholars argue that at least part of the association between marriage and mental health is the result of selection (Mastekaasa 1992; Horwitz et al. 1996; Stutzer and Frey 2006). In other words, married people do not have better mental health because they are married; rather, people with better mental health are the ones who get married. Although many other longitudinal studies find no evidence of selection into marriage by prior mental health (Kim and McHenry 2002; Simon 2002; Lamb et al. 2003), selection remains a plausible explanation for this relationship. Depressed or unhappy individuals may not be particularly motivated to find a partner, and even if they are they are probably not the most appealing marital match for others seeking a marriage partner. The selection argument, however, is different for earlier marriers than for “on-time” marriers. Early marriage may be selective of individuals with *poorer* mental health. Forthofer et al. (1996) found that psychiatric disorders were positively associated with marriage before age 19, though the effects were weak and not often statistically significant. Still, they argue there

may be some credence to the argument that distressed individuals marry early to escape difficult circumstances. Similarly, Gotlib, Lewinsohn, and Seeley (1998) found that a history of major depressive disorder predicted early marriage among women (but not men). Thus, if early marriage is negatively associated with mental health, selection may explain that relationship. But if early marriage has a positive effect on mental health, selection is likely not a good explanation and may actually suppress some of the beneficial effect of marriage on mental health.

Socioeconomic Resources

Marriage is typically thought to increase economic resources (Waite 2009). Married couples are able to benefit from specialization within their family, economies of scale, and the added insurance an able-bodied partner provides against unexpected events (Waite 2009). In turn, these economic resources reduce depression by alleviating stress from economic hardship and by providing the opportunity to seek treatment when mental health problems do arise (Ross, Mirowsky, and Goldstein 1990; Liu et al. 2010). Again, however, this line of argumentation is different for young adults. According to Uecker and Stokes (2008), young adults who marry early are more likely to be socioeconomically disadvantaged: They have parents who are less educated and less wealthy, and they themselves have lower educational aspirations and high-school grade point averages. Marriage may also curb both educational attainment and earnings (Marini 1985; Teachman, Polonko, and Scanzoni 1986; Loughran and Zissimopoulos 2008). Therefore, whether due to selection or causation, heightened socioeconomic resources are unlikely to underlie any positive effect of marriage on mental health among early marriers, but they may help explain a negative effect of marriage on mental health among young adults who have married.

Parenthood

Children typically diminish the mental health of their parents, and these deleterious effects are stronger for those who are not married (McLanahan and Adams 1989; Nomaguchi and Milkie 2003; Evenson and Simon 2005). The negative effect of children is usually explained by a “role strain” argument—that is, parents with children may find it difficult to balance work and family roles (McLanahan and Adams 1989)—or by citing the increased economic and logistical stress created by parenthood (Nomaguchi and Milkie 2003). While children may have negative effects on psychological outcomes like depression and life satisfaction, they may also reduce certain outcomes like binge drinking (Bachmann et al. 2002). Given that fertility remains higher among married women despite the dramatic rise in nonmarital childbearing (Martin et al. 2010), parenthood may explain a negative effect of marriage on young adults’ mental health or suppress a positive effect on mental health.

Relationship Stability

Marriage is often accompanied by a sense of relationship permanence, and despite the relatively high rate of divorce in the United States, marriages are much more likely to last than other relationships like cohabitations (Brines and Joyner 1999). According to the stress or crisis model, relationship dissolution may harm mental health. For example, Brown (2000) attributes the heightened depression of cohabitators (*vis-à-vis* married individuals) to their relationship instability. Once instability is accounted for in her models, there is no statistically significant difference between marrieds and cohabitators with respect to depression. Moreover, single young adults who have experienced a recent breakup have more psychological distress than those who are in a romantic relationship (Simon and Barrett 2010). Of course, early marriages are notoriously unstable. Their short-term survival, however, is somewhat high: 78 percent of women’s teenage marriages last at least three years, as do 86 percent of those begun in the early

20s (men's three-year marital survival rates are 64 percent for teenage marriers and 84 percent for marriages commenced in their early 20s) (Goodwin, Mosher, and Chandra 2010).

Relationship stability may help explain a positive effect of marriage on young adults' mental health, but it would likely suppress a negative effect.

Religious Service Attendance

Marriage also tends to bring young adults back to religious communities (Wilson and Sherkat 1994; Stolzenberg, Blair-Loy, and Waite 1995) after the brief hiatus from organized religion that often accompanies young adulthood (Uecker, Regnerus, and Vaaler 2007). Religion, in turn, tends to have mental health benefits. Those who are more religious tend to be less depressed, more satisfied with their lives, and less likely to abuse alcohol (Ellison, Gay, and Glass 1989; Ellison 1994; Kendler, Gardner, and Prescott 1997). Any positive effects of marriage on mental health may be because marriage draws young adults back to religious communities where they receive social support and moral validation for their marital relationship, and positive emotional benefits from spiritual and religious beliefs and practices.

Psychological Benefits

Marriage may provide a number of psychological benefits. Marriage may provide enhanced feelings of meaning and purpose, improved sense of self, and heightened sense of mastery (Marks 1996; Bierman et al. 2006). However, in young adulthood many of these psychological benefits may not be restricted to marriage, as other types of relationships are more normative at this time. Young adults receive a valued social identity, self-worth, and social integration not just from marriage but from nonmarital romantic relationships as well (Simon and Barrett 2010). Moreover, many of marriage's benefits may stem from social approval of the relationship (Marks 1996), which may not apply in many contexts where early marriage is viewed as unwise. Thus, it

is not clear whether married young adults reap these benefits in the same way as other married adults.

RESEARCH QUESTIONS

Based on this literature and these theoretical perspectives, I ask four research questions: (1) What is the effect of marriage on mental health—vis-à-vis other relationship circumstances—in young adulthood? (2) Does the effect of marriage on mental health in young adulthood differ by domain of mental health? (3) What mechanisms explain the effect of marriage on mental health in young adulthood? and (4) Does the effect of marriage on mental health in young adulthood vary by age at first marriage?

DATA

The data for this study come from Waves 1 and 3 of Add Health. Add Health was funded by the National Institute of Child Health and Human Development (NICHD) and 23 other federal agencies. It is a school-based panel study of health-related behaviors and their causes, with emphasis placed on social context and social networks. Wave 1 was conducted in 1994 and 1995 and consisted of in-depth interviews with 20,745 American youth in grades 7–12. The 132 schools included in the study were chosen from a sampling frame of U.S. high schools and were nationally representative with respect to size, urbanicity, ethnicity, type (e.g., public, private, religious), and region. Because the study is school-based, it does not represent those who had dropped out of school at Wave 1. Wave 3 was conducted in 2001 and 2002, when respondents were 18–28 years old, and consisted of interviews with 15,197 of the Wave 1 respondents. For this study, I restrict the sample to those who were unmarried at Wave 1, participated in the detailed relationship inventory, and have a valid sample weight (N = 11,743). Missing values on

the independent variables in the study were imputed using indicator/dummy variable adjustment (Cohen et al. 2003). Mean values for these variables were imputed and a dummy variable flag was included to identify these respondents in the models. Sample attrition does not appear to substantively affect estimates (Chantala, Kalsbeek, and Andraca n.d.). More information about Add Health is online at www.cpc.unc.edu/addhealth.

MEASURES

Dependent Variables

For this study I analyze three dependent variables designed to tap three aspects of young adults' mental health: (1) their psychological distress, (2) their alcohol abuse, and (3) their life satisfaction.

The measure of psychological distress is an abbreviated form of the Center for Epidemiologic Studies Depression scale (CES-D). The CES-D scale is a scale of 20 questions used to tap psychological distress over the prior week and measures agreement with statements such as, "You felt sad," "You were depressed," and "You felt that people disliked you." Wave 3 of Add Health included nine items from the original 20-item instrument. The summed index has a potential range of 0–27, with higher scores indicating higher psychological distress, though in the sample the range is only 0–26. The alpha coefficient of reliability is .80.

The second measure of mental health is the frequency of drunkenness over the past year. Young adults were asked, "During the past 12 months, on how many days have you been drunk or very high on alcohol?" A response of "none" was coded 0; a response of "every day or almost every day" was coded 6.

My final measure of mental health is life satisfaction. All respondents were asked, "How satisfied are you with your life as a whole?" Respondents could respond anywhere from "very

dissatisfied” to “very satisfied.” This measure is dichotomized such that a response of “very satisfied” is coded 1 and all other responses coded 0. Treating this variable as an ordinal variable and analyzing it with ordered logit regression techniques produced similar results to those presented here but violated the parallel regression assumption.

Key Independent Variable

The key independent variable for this study is the relationship status of the respondent at Wave 3. I divide respondents into six relationship categories: single, unengaged daters, engaged daters, unengaged cohabitators, engaged cohabitators, and ever-married. This means divorced young adults are included with married young adults, rendering this a stricter, more conservative test of the effects of marriage. This is optimal for two reasons. First, measuring marriage in this way does not allow for the possibility that married individuals have better mental health because those with poor mental health select out of marriage through divorce. Second, because early marriage is associated with higher divorce rates, this yields a fuller assessment of the impact that marriage has on the mental health of young adults. Models separating out divorced young adults produced results substantively similar to those presented here, but divorced young adults fared worse than married young adults on two of the three outcomes (the difference in the third—psychological distress—was not statistically significant but was substantively large).

To test for age-at-marriage differences, I also differentiate the ever-married respondents by their age at first marriage. I create three categories for age at first marriage: married as a teenager, married at ages 20 or 21, and married at ages 22–26. Because never-married respondents are missing information for their age at marriage, a multiplicative interaction term cannot be created. I construct these three categories in order to retain adequate cell sizes and because they mark the normative timing of important educational transitions that typically

precede marriage (Mouw 2005). Teenage marriers married before or just after the completion of high school, those marrying at age 20 or 21 likely married before the completion of a four-year college degree or after the completion of an associate's degree, and marrying at 22 or above allows time for a traditional student to complete a four-year college degree. Age at first marriage is determined by comparing the month and year of their first marriage to that of their birth. Those who married in their birth month are considered to have already had their birthday.

Explanatory Variables

I test how several variables may explain the association between marriage and mental health. To begin, I include Wave 1 mental health measures (although there is no comparable Wave 1 life satisfaction measure). The Wave 1 CES-D measure is the full 20-item index and has an alpha of .87. The Wave 1 measure for frequency of drunkenness is nearly identical to the Wave 3 measure and is coded the same way.

Socioeconomic factors may also explain the relationship between marriage and mental health. I include a series of dummy variables to measure respondents' educational attainment at Wave 3. Young adults were classified as still in high school, never went to college, went to college but dropped out without earning a degree, two-year college student, earned an Associate's degree, four-year college student, and earned a Bachelor's degree or higher. To measure the respondents' personal earnings, I created an eight-category earnings variable. The lowest category (coded 1) is for those earning less than \$10,000/year; the highest category (coded 8) is for those earning \$75,000/year or more at Wave 3.

Parenthood is a binary variable. Respondents who identified at least one "son" or "daughter" on their household roster at Wave 3 are considered to have a co-resident child and are coded 1 for the dummy indicator. These children include biological, adopted, and step children.

To test how marriage may affect mental health through relationship stability, I incorporate a Wave 3 measure of the respondents' number of sexual partners over the last year. This question refers specifically to vaginal sex and is coded as three binary variables: zero partners, one partner, and two or more partners.

I also consider the mediating role of religious service attendance. The measure of religious service attendance ranges from never (coded 0) to more than once a week (coded 6) and refers to their attendance pattern over the past 12 months at the time of the Wave 3 survey.

Finally, I include a four-item index tapping respondents' self-image at Wave 3. The items in the index measure respondents' agreement (from 1=strongly disagree to 5=strongly agree) that they (1) have many good qualities, (2) have a lot to be proud of, (3) like themselves just the way they are, and (4) are doing things just about right. The summed index ranges from 4–20 and has an alpha of .86.

Control Variables

I control for a number of demographic and personal characteristics that may influence one's mental health and their standing in the marriage market. I control for a continuous measure of age in years, gender, living in the South, urbanicity, race, BMI classification, the interviewer reports of the respondents' physical attractiveness and the attractiveness of their personality, and their employment status. All controls are measured at Wave 3 except for gender, region, urbanicity, and race, which are Wave 1 measures. Descriptive statistics for all variables are listed in Table 1.

Table 1 about here

ANALYTIC APPROACH

To begin, I present bivariate statistics, including means and percentages, showing the associations between the relationship status variables and the mental health outcomes (Table 2).

Table 2 also presents bivariate statistics for mental health outcomes by age at first marriage.

Tables 3–5 are series of multivariate regression models predicting each of the three mental health outcomes (one table per outcome). These tables all follow the same modeling strategy. Model 1 includes the relationship status variables and control variables. Model 2 adds the Wave 1 CES-D variable (and, for Table 4, the Wave 1 alcohol abuse measure), Model 3 adds socioeconomic measures, Model 4 adds the parenthood measure, Model 5 adds number of recent sex partners, Model 6 adds religious service attendance, and Model 7 adds the self-image index. This iterative approach allows me to assess the impact of each set of mediators on the relationship status effects.

Table 6 examines the influence of age at first marriage. The models include the same independent variables as those in Tables 3–5, but these models split the ever-marrieds by their age at first marriage to explore how marriages that are closer to on-time—such as marriages among those in their mid-20s—may differ from those that are much earlier—such as teenage marriages. In order to accommodate the multiple design weights that accompany Add Health data, I generate all analyses using *svy* estimators in Stata 10.

Table 2 about here

RESULTS

Bivariate Results

Table 2 reports the bivariate associations between the relationship variables and the three mental health outcomes. Ever-married young adults do not report significantly lower psychological distress than any of the other groups. One group—engaged daters—reports lower CES-D scores

than ever-marrieds. Young adults who married closer to “on-time” (at ages 22–26), however, do have lower psychological distress than singles, unengaged cohabitators, and engaged cohabitators, and engaged daters do not have better mental health than this group. These married young adults also exhibit fewer symptoms of psychological distress than those who married as teenagers. Ever-married young adults do get drunk less often, however, than most never-married young adults, with the exception of those who are engaged (be they cohabiting or not). There are no significant differences among those who married at different ages. Marriage, and even the anticipation of marriage, curtails drunkenness among young adults. Finally, ever-married young adults report higher life satisfaction than every other group. Moreover, those who married at ages 22–26 are more likely to be very satisfied with their lives than those who married as teenagers or at ages 20–21.

Multivariate Results

Table 3 about here

Table 3 reports coefficients from OLS regression models predicting psychological distress in young adulthood. The lower psychological distress among engaged daters seen in Table 2 is true across all seven models in Table 3, though it is explained somewhat by selection (engaged daters had lower Wave 1 CES-D scores than ever-marrieds), socioeconomic differences (engaged daters are more highly educated than ever-marrieds), and self-image (engaged daters have a more positive self-image than ever-marrieds). Interestingly, engaged cohabitators do not exhibit the same low levels of psychological distress, even after accounting for several potential mediating factors. Model 2 of Table 3 also reveals an important suppression effect; once prior psychological distress is considered, single young adults have higher psychological distress than ever-married young adults. This suggests (and ancillary analyses confirm) that respondents with

higher levels of psychological distress are more likely to select into marriage than to be single. The deleterious effects of being single are explained in large part by relationship stability (Model 5): Single young adults are more likely than ever-marrieds to have two or more sex partners in the last year (results not shown), which is in turn related to higher psychological distress. Differences in religiosity between the married and single also explain some of this relationship; including religious service attendance in Model 6 eliminates the statistically significant relationship between the two groups. Adding self-image in Model 7 further reduces the coefficient for singles from .33 to .19, though neither of these coefficients is statistically different from the ever-marrieds.

Table 4 about here

Table 4 reports incidence rate ratios from negative binomial regression models predicting young adults' frequency of drunkenness. According to Model 1, singles and unengaged daters get drunk at more than twice the rate of ever-marrieds, and unengaged cohabitators get drunk at about 1.80 times the rate, net of controls. Very little of this difference stems from prior (Wave 1) differences in drinking behavior or psychological distress (see Model 2). Each of the explanatory variables in Models 3–6—socioeconomic status, parenthood, relationship stability, and religious service attendance—reduces the disparity between ever-marrieds and these groups somewhat, but adding self-image does very little in Model 7, and the effects remain positive and statistically significant in the final models. Engaged daters and engaged cohabitators resemble ever-marrieds in their drinking behavior, a finding that is consistent across all models in Table 4.

Table 5 about here

Table 5 displays odds ratios from logit regression models predicting respondent reports of being very satisfied with their life. There is a clear association between marriage and higher life

satisfaction (compared to all other groups) in these models. Model 2 suggests this has little to do with selection based on prior psychological distress. In Model 3, the difference between engaged cohabitators and the ever-married is no longer statistically significant once socioeconomic status is considered. Otherwise, the marital life satisfaction advantage is robust to a number of potential mediating variables. While the odds ratios diminish slightly from Models 4 to 5 and 5 to 6—when relationship stability and religious service attendance are added—they remain strong and significant the $p < .001$ level. Accounting for self-image in Model 7 only widens the life-satisfaction gap between ever-marrieds and other respondents.

Table 6 about here

Table 6 breaks up the ever-marrieds into age-at-first-marriage categories. These models include all the independent and control variables from the parallel models in Tables 3–5. Panel A reports the findings for CES-D score. These findings suggest that no group fares significantly better in terms of psychological distress than those who married for the first time at ages 22–26. Two groups, however, report more psychological distress than those who married at ages 22–26: singles and teenage marriers. The teenage marriage effect appears to be a function of selection into teenage marriage by those with higher pre-existing levels of psychological distress; once Wave 1 CES-D is considered, the difference between teenage marriers and 22–26-year-old marriers is reduced greatly and is no longer statistically significant. The positive effect of being single on psychological distress is, as in Table 2, mostly a function of relationship instability among this group. The coefficient is no longer significant in Model 5 of Table 6. It may also be explained somewhat by lower self-image among singles. It is also noteworthy that the positive association between both types of cohabitators and higher psychological distress, which was statistically significant in the bivariate analysis, is not statistically significant net of control

variables. It is sizable, however, but even that appears to be a function of selection as the effect size is greatly reduced in Model 2.

Panel B reports the results for frequency of drunkenness. Unengaged adults have higher rates of drunkenness than do 22–26-year-old marriers—findings that mirror those of Table 4 where the comparison group was ever-marrieds. Interestingly, those who married at age 20 or 21 get drunk less frequently than those who marry later (at ages 22–26). This appears to be due in part to the higher educational attainment of the latter group, as the difference is no longer significant in Model 3. Each of the explanatory variables in Models 2–6 slightly reduces the effects of singleness, unengaged dating, and unengaged cohabiting, but differences remain in the final model between these groups and those who marry at age 22–26.

Lastly, Panel C reports the results for life satisfaction. All groups in Model 1 are less likely to report being very satisfied with their lives than are those who married for the first time at ages 22–26, including those who married as teenagers and those who married at ages 20 or 21. These differences withstand the addition of Wave 1 CES-D score in Model 2, suggesting selection is not the key story here. Socioeconomic status (in Model 3) reduces the effect of marrying at ages 20–21 to nonsignificance and partially explains other effects, like the engaged cohabitor and teenage marrier effect. Accounting for relationship stability, religiosity, and self-image attenuates the relationships only very slightly and somewhat suppresses the effect of marrying at ages 20 or 21; in the final model, all groups report significantly lower life satisfaction than ever-marrieds.

DISCUSSION AND CONCLUSION

Taking a life course perspective, I have investigated the relationship between marriage and mental health in young adulthood. I examined three aspects of mental health—psychological

distress, alcohol abuse, and life satisfaction—and six different relationship arrangements—being single, dating and unengaged, dating and engaged, cohabiting and unengaged, cohabiting and engaged, and ever-married. I also explored several potential empirical explanations for the marriage-mental health connection among young adults, and how this connection may vary by age at marriage.

Several key conclusions can be reached from these analyses. In terms of psychological distress, marriage's benefits are limited but not absent. Married young adults have lower psychological distress than single young adults, but they do not have a clear advantage over young adults in any other type of romantic relationship. In fact, young adults who are engaged and not cohabiting have lower levels of distress than do married young adults. This may be the result of their more normative and socially approved transition to adulthood, and may also reflect the excitement of an impending wedding and new marriage. Why engaged cohabitators do not exhibit similarly low levels of psychological distress is not clear. It may be that living together in a “marriage-like” relationship somewhat dampens the excitement and anticipation of an impending wedding.

Marriage has a clearer benefit when it comes to alcohol abuse. Married young adults get drunk less frequently than single ones and those who are not engaged. Engaged young adults—both cohabiting and not—look similar to married young adults in this regard. Engaged young adults may be curbing their drinking habits as they prepare for their transition to marriage. Marriage and engagement likely carry with them a heightened sense of responsibility and obligation and a less active social calendar which leads to less drunkenness (Umberson and Williams 1999; Bachman et al. 2002). Alcohol abuse among young adults may not be entirely about externalizing mental health problems, however. Given the strong positive association

between educational attainment and drunkenness and the strong negative association between educational attainment and psychological distress, it is likely that this variable is capturing, at least in part, a “partying” lifestyle characteristic of college students.

Married young adults are much more satisfied with their lives than are other young adults, with the single exception of engaged cohabitators who are not statistically different from married young adults in this regard once social class differences are accounted for. The marriage premium for life satisfaction is strong and robust to a number of potentially explanatory factors, including selection, socioeconomic status, parenthood, relationship stability, religious participation, and psychological gains. Married young adults are likely benefiting from the emotional and social support that accompanies marriage (with its heightened social attachment) and that has not been gauged adequately by this study’s measures. Marriage may also provide a degree of certainty, finality, and sense of satisfaction deriving from “accomplishing” one of the tasks involved in the transition to adulthood, the task some consider the capstone to adulthood (Cherlin 2004). Those who have not married may still experience anxiety about locating and securing a lifelong (ideally, at least) partner.

This study has tested a number of potential mechanisms that may explain the relationship between marriage in young adulthood and mental health. I have found no evidence that differences in married young adults’ mental health are attributable to selection into marriage by those with better mental health. Instead, teenage marriage is selective of those with relatively high psychological distress, suggesting that—if anything—marriage’s mental health benefits in young adulthood are *masked* by differences in pre-existing psychological distress. Selection plays virtually no role in explaining differences between married young adults and others in terms of alcohol abuse and life satisfaction. Economic resources also do little to explain

marriage's mental health effects during this stage of the life course. Marriage at these ages is likely both selective of those with less education and earnings potential (Booth et al. 2008; Uecker and Stokes 2008) and an obstacle to educational attainment and higher earnings (Marini 1985; Teachman et al. 1986; Loughran and Zissimopoulos 2008). In either case, differential socioeconomic resources do not explain much of the differences between married young adults and other young adults' mental health; if anything, like selection by prior mental health, the fewer resources available to married young adults suppress the effect of marriage (vis-à-vis singles) on psychological distress and explain some of the engaged dating advantage over marriage. Socioeconomic resources do little in the way of explaining differential levels of either alcohol abuse or life satisfaction.

Perhaps the best mediators of those tested are relationship stability—measured here by the number of sex partners in the last year—and self-image. Having multiple sex partners explains almost 30% of married young adults' psychological distress advantage over single young adults. Exiting relationships can lead to psychological distress among young adults (Simon and Barrett 2010), and marriage—though not indissoluble—buffers many young adults from that distress. More positive self-image explains about 25% of engaged daters' lower psychological distress (compared to married young adults). Still, these factors are less helpful in explaining differences in alcohol abuse (where parenthood may be a key factor) and life satisfaction. Religious service attendance explains very little of the differences in mental health on all three outcomes. In the end, marriage's effects are often robust to these selection factors and mediating variables.

Somewhat surprisingly, there appears to be little gain to waiting until one's mid-20s to marry for two of the three mental health outcomes under examination. Although teenage marriers

have more psychological distress than those who married at ages 22–26, this difference is the result of selection and not causation. Only in terms of life satisfaction do more “on-time” (though still early) marriers outpace teenage marriers and those who marry at age 20 or 21. Waiting until later to marry may do little good in terms of avoiding mental health problems but much good in terms of improving overall well-being. This latter finding suggests social approval for marriage—which is likely higher for those marrying at ages 22–26 than for those marrying earlier—may be a key mechanism explaining marriage’s effect on overall well-being. This finding also highlights the importance of considering multiple domains of mental health in studies such as this one.

While this study has mapped the effects of marriage and mental health in young adulthood and the moderating effect of age at first marriage on those effects, future studies may wish to explore the social contexts in which these effects hold true. Individuals’ immediate social context, including both structural (e.g., neighborhood disadvantage) and cultural (e.g., age norms) factors, may buffer or exacerbate the effect of marriage on mental health (Burton 1996; Clarke and Wheaton 2005). The conclusion that social approval explains some of the age-at-marriage effect on life satisfaction could be further tested to see whether this effect is more or less present in contexts where early marriage is more or less affirmed.

Because many studies of marriage and mental health focus on gender differences, I did conduct ancillary analyses to test for gender interactions. None were significant for psychological distress. Three were significant for alcohol abuse: the effect of being single and of being an unengaged cohabitor (*vis-à-vis* ever-married) is positive for men, but even more positive for women. The effect of engaged dating was negative for men but not significant for women. For life satisfaction, unengaged cohabiting men reported lower satisfaction than ever-

married men, but the effect was even more negative for unengaged women. The same pattern is true for unengaged daters, but only in the final model. These results corroborate the findings of several other studies that suggest perhaps “the future of marriage has arrived” in terms of converging effects of marriage on mental health (e.g., Williams 2003).

Finally, and importantly, this study cannot speak to the long-term effect of an early marital transition, only relatively short-term effects. Given longer exposure to the difficulties associated with early marriage, those who marry early may exhibit higher levels of mental health problems as they age. Furthermore, using a sample with a restricted age range such as this makes it difficult to reject the hypothesis that early marriage confers mental health benefits because these individuals are still in a “honeymoon” phase of their relationship (VanLaningham, Johnson, and Amato 2001; Kim and McHenry 2002). Other studies with a wider age range in the sample are necessary to address this issue.

Conclusion

Researchers have only recently begun to move beyond the average effects of marriage on mental health and examine the contexts associated with better or worse mental health among those who are married. This study has furthered research efforts by focusing on marriage (*vis-à-vis* other types of relationships) in young adulthood, when marriage is non-normative and considered “early.” In general, marriage in young adulthood is not detrimental to mental health. Being in any sort of relationship is good for psychological distress, being married or engaged to be married curbs alcohol abuse, and married young adults—especially those who marry at ages 22–26—are more satisfied with their lives. These findings suggest that marriage’s mental health benefits are apparent, at least in many ways, among young adults who have married at a relatively early age.

REFERENCES

- Arnett, Jeffrey Jensen. 2004. *Emerging Adulthood: The Winding Road from the Late Teens Through the Twenties*. New York, NY: Oxford.
- Bachman, Jerald G., Katherine N. Wadsworth, Patrick M. O'Malley, Lloyd D. Johnston, and John Schulenberg. 1997. *Smoking, Drinking, and Drug Use in Young Adulthood: The Impacts of New Freedoms and New Responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Bachman, Jerald G., Patrick M. O'Malley, John E. Schulenberg, Lloyd D. Johnston, Alison L. Bryant, and Alicia C. Merline. 2002. *The Decline of Substance Use in Young Adulthood: Changes in Social Activities, Roles, and Beliefs*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Bierman, Alex, Elena M. Fazio, and Melissa A. Milkie. 2006. "A Multifaceted Approach to the Mental Health Advantage of the Married: Assessing How Explanations Vary by Outcome Measure and Unmarried Group." *Journal of Family Issues* 27:554–582.
- Booth, Alan, Elisa Rustenbach, and Susan McHale. 2008. "Early Family Transitions and Depressive Symptom Changes from Adolescence to Early Adulthood." *Journal of Marriage and Family* 70:3–14.
- Brown, Susan L. 2000. "The Effect of Union Type on Psychological Well-Being: Depression among Cohabitators Versus Marrieds." *Journal of Health and Social Behavior* 41:241–255.
- Brines, Julie, and Kara Joyner. 1999. "The Ties That Bind: Principles of Cohesion in Cohabitation and Marriage." *American Sociological Review* 64:333–355.
- Chantala, Kim, William D. Kalsbeek, and Eugenio Andraca. N.d. "Non-Response in Wave III of the Add Health Study." Accessed online February 28, 2011 from <http://www.cpc.unc.edu/projects/addhealth/data/guides/W3nonres.pdf>.
- Cherlin, Andrew J. 2004. "The Deinstitutionalization of American Marriage." *Journal of Marriage and Family* 66:848–861.
- Clarke, Philippa, and Blair Wheaton. 2005. "Mapping Social Context on Mental Health Trajectories through Adulthood." Pp. 269–301 in *The Structure of the Life Course: Standardized? Individualized? Differentiated?*, edited by Ross Macmillan. New York: Elsevier.
- Cohen, Jacob, Patricia Cohen, Stephen G. West, and Leona S. Aiken. 2003. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Elder, Glen H., Jr. 1985. *Life Course Dynamics: Trajectories and Transitions 1968–1980*. New York: Cornell University Press.
- Elder, Glen H., Jr. 1995. “The Life Course Paradigm: Social Change and Individual Development.” Pp. 101–139 in *Examining Lives in Context: Perspectives on the Ecology of Human Development*, edited by Phyllis Moen, Glen H. Elder, Jr., and Kurt Lüscher. Washington, DC: American Psychological Association.
- Ellison, Christopher G. 1994. “Religion, the Life Stress Paradigm, and the Study of Depression.” Pp. 78–121 in *Religion in Aging and Health: Theoretical Foundations and Methodological Frontiers*, edited by Jeffrey S. Levin. Thousand Oaks, CA: Sage.
- Ellison, Christopher G., David A. Gay, and Thomas A. Glass. 1989. “Does Religious Commitment Contribute to Individual Life Satisfaction?” *Social Forces* 68:100–123.
- Evenson, Ranae J., and Robin W. Simon. 2005. “Clarifying the Relationship Between Parenthood and Depression.” *Journal of Health and Social Behavior* 46:341–358.
- Fleming, Charles B., Helene R. White, and Richard F. Catalano. 2010. “Romantic Relationships and Substance Use in Early Adulthood: An Examination of the Influences of Relationship Type, Partner Substance Use, and Relationship Quality.” *Journal of Health and Social Behavior* 51:153–167.
- Forthofer, Melinda S., Ronald C. Kessler, Amber L. Story, Ian H. Gotlib. 1996. “The Effects of Psychiatric Disorders on the Probability and Timing of First Marriage.” *Journal of Health and Social Behavior* 37:121–132.
- Frech, Adrienne, and Kristi Williams. 2007. “Depression and the Psychological Benefits of Entering Marriage.” *Journal of Health and Social Behavior* 48:149–163.
- George, Linda K. 2007. “Life Course Perspectives on Social Factors and Mental Illness.” Pp. 191–218 in *Mental Health, Social Mirror*, edited by William R. Avison, Jane D. McLeod, and Bernice A. Pescosolido. New York: Springer.
- Goodwin, Paula, Brittany McGill, and Anjani Chandra. 2009. *Who Marries and When? Age at First Marriage in the United States, 2002*. NCHS Data Brief, No. 19. Hyattsville, MD: National Center for Health Statistics.
- Goodwin, Paula Y., William D. Mosher, and Anjani Chandra. 2010. “Marriage and Cohabitation in the United States: A Statistical Portrait Based on Cycle 6 (2002) of the National Survey of Family Growth.” *Vital Health Statistics* 23(28).
- Gotlib, Ian H., Peter M. Lewinsohn, and John R. Seeley. 1998. “Consequences of Depression During Adolescence: Marital Status and Marital Functioning in Early Adulthood.” *Journal of Abnormal Psychology* 107:686–690.

- Gove, Walter R., Carolyn Briggs Style, and Michael Hughes. 1990. "The Effect of Marriage on the Well-Being of Adults." *Journal of Family Issues* 11:4–35.
- Harris, Kathleen Mullan, Hedwig Lee, and Felicia Yang DeLeone. 2010. "Marriage and Health in the Transition to Adulthood: Evidence for African Americans in the Add Health Study." *Journal of Family Issues* 31:1106–1143.
- Horwitz, Allan V., and Helene Raskin White. 1991. "Becoming Married, Depression, and Alcohol Problems among Young Adults." *Journal of Health and Social Behavior* 32:221–237.
- Horwitz, Allan V., Helene Raskin White, and Sandra Howell-White. 1996. "Becoming Married and Mental Health: A Longitudinal Study of a Cohort of Young Adults." *Journal of Marriage and the Family* 58:895–907.
- Kendler, Kenneth S., Charles O. Gardner, and Carol A. Prescott. 1997. "Religion, Psychopathology, and Substance Use and Abuse: A Multistate, Genetic-Epidemiologic Study." *American Journal of Psychiatry* 154:322–329.
- Kim, Hyoun K., and Patrick C. McKenry. 2002. "The Relationship Between Marriage and Psychological Well-Being: A Longitudinal Analysis." *Journal of Family Issues* 23:885–911.
- Lamb, Kathleen A., Gary R. Lee, and Alfred DeMaris. 2003. "Union Formation and Depression: Selection and Relationship Effects." *Journal of Marriage and Family* 65:953–962.
- Lehrer, Evelyn L. 2008. "Age at Marriage and Marital Instability: Revisiting the Becker-Landes-Michael Hypothesis." *Journal of Population Economics* 21:463–484.
- Liu, Hui, Sinikka Elliott, and Debra J. Umberson. 2010. "Marriage in Young Adulthood." Pp. 169–180 in *Young Adult Mental Health*, edited by Jon E. Grant and Marc N. Potenza. New York: Oxford University Press.
- Loughran, David S., and Julie Zissimopoulos. 2008. "Why Wait? The Effect of Marriage and Childbearing on the Wages of Men and Women." WR-482-1, RAND.
- Marcussen, Kristen. 2005. "Explaining Differences in Mental Health Between Married and Cohabiting Individuals." *Social Psychology Quarterly* 68:239–257.
- Marini, Margaret Mooney. 1985. "Determinants of the Timing of Adult Role Entry." *Social Science Research* 14:309–350.
- Marks, Nadine F. 1996. "Flying Solo at Midlife: Gender, Marital Status, and Psychological Well-Being." *Journal of Marriage and the Family* 57:387–398.
- Martin, Joyce A., Brady E. Hamilton, Paul D. Sutton, Stephanie J. Ventura, T. J. Mathews, Sharon Kirmeyer, and Michelle J. K. Osterman. 2010. *Births: Final Data for 2007*. National

- Vital Statistics Reports 58:24. Washington, D.C.: U.S. Department of Health and Human Services.
- Mastekaasa, Arne. 1992. "Marriage and Psychological Well-Being: Some Evidence on Selection into Marriage." *Journal of Marriage and Family* 54:901–911.
- McLanahan, Sarah, and Julia Adams. 1989. "The Effects of Children on Adult's Psychological Well-Being: 1957–1976." *Social Forces* 68:124–146.
- Mirowsky, John, and Catherine E. Ross. 1992. "Age and Depression." *Journal of Health and Social Behavior* 33:187–205.
- Mouw, Ted. 2005. "Sequences of Early Adult Transitions." Pp. 256–291 in *On the Frontier of Adulthood: Theory, Research, and Public Policy*, edited by Richard A. Settersten, Jr., Frank F. Furstenberg, Jr., and Ruben G. Rumbaut. Chicago: University of Chicago.
- Nomaguchi, Kei M., and Melissa A. Milkie. 2003. "Costs and Rewards of Children: The Effects of Becoming a Parent on Adults' Lives." *Journal of Marriage and the Family* 65:356–374.
- Ross, Catherine E. 1995. "Reconceptualizing Marital Status as a Continuum of Social Attachment." *Journal of Marriage and the Family* 57:129–140.
- Ross, Catherine E., John Mirowsky, and Katherine Goldsteen. 1990. "The Impact of the Family on Mental Health: The Decade in Review." *Journal of Marriage and Family* 52:1059–1078.
- Ryff, Carol D., and Corey Lee M. Keyes. 1995. "The Structure of Psychological Well-Being Revisited." *Journal of Personality and Social Psychology* 69:719–727.
- Scott, Mindy E., Nicole R. Steward-Streng, Jennifer Manlove, Erin Schelar, and Carol Cui. 2011. *Characteristics of Young Adult Sexual Relationships: Diverse, Sometimes Violent, Often Loving*. Child Trends Research Brief #2011-01: Washington, DC.
- Settersten, Richard A., Jr., and Gunhild O. Hägestad. 1996. "What's the Latest? Cultural Age Deadlines for Family Transitions." *The Gerontologist* 36:178–188.
- Simon, Robin W. 2002. "Revisiting the Relationships among Gender, Marital Status, and Mental Health." *The American Journal of Sociology* 107:1065–1096.
- Simon, Robin W., and Anne E. Barrett. 2010. "Nonmarital Romantic Relationships and Mental Health in Early Adulthood: Does the Association Differ for Women and Men?" *Journal of Health and Social Behavior* 51:168–182.
- Stolzenberg, Ross M., Mary Blair-Loy, and Linda J. Waite. 1995. "Religious Participation in Early Adulthood: Age and Family Life Cycle Effects on Church Membership." *American Sociological Review* 60:84–103.

- Stutzer, Alois, and Bruno S. Frey. 2006. "Does Marriage Make People Happy, or Do Happy People Get Married?" *The Journal of Socio-Economics* 35:326–347.
- Teachman, Jay D., Karen A. Polonko, and John Scanzoni. 1986. "Family Demography: Recent Trends and Developments in the Field." Pp. 3–36 in *Handbook of Marriage and the Family*, edited by Marvin D. Sussman and Suzanne K. Steinmetz. New York: Plenum Press.
- Uecker, Jeremy E., Mark D. Regnerus, and Margaret L. Vaaler. 2007. "Losing My Religion: The Social Sources of Religious Decline in Early Adulthood." *Social Forces* 85:1667–1692.
- Uecker, Jeremy E., and Charles E. Stokes. 2008. "Early Marriage in the United States." *Journal of Marriage and Family* 70:835–846.
- Umberson, Debra, and Kristi Williams. 1999. "Family Status and Mental Health." Pp. 225–253 in *Handbook of the Sociology of Mental Health*, edited by Carol S. Aneshensel and Jo C. Phelan. New York: Kluwer Academic/Plenum Publishers.
- United States Census Bureau. 2009. "Estimated Median Age at First Marriage, by Sex: 1890 to the Present." Accessed online March 24, 2010 from <http://www.census.gov/population/socdemo/hh-fam/ms2.xls>.
- United States Census Bureau. 2011. "Marital Status of the Population by Sex and Age: 2009." Accessed online February 20, 2011 from <http://www.census.gov/compendia/statab/2011/tables/11s0057.pdf>.
- VanLaningham, Jody, David R. Johnson, and Paul Amato. 2001. "Marital Happiness, Marital Duration, and the U-Shaped Curve: Evidence from a Five-Wave Panel Study." *Social Forces* 78:1313–1341.
- Waite, Linda J. 2009. "Marital History and Well-Being in Later Life." Pp. 685–698 in *International Handbook of Population Aging*, edited by Peter Uhlenberg. New York: Springer.
- Williams, Kristi, and Debra Umberson. 2004. "Marital Status, Marital Transitions, and Health: A Gendered Life Course Perspective." *Journal of Health and Social Behavior* 45:81–98.
- Williams, Kristi. 2003. "Has the Future of Marriage Arrived? A Contemporary Examination of Gender, Marriage, and Psychological Well-Being." *Journal of Health and Social Behavior* 44:470–487.
- Wilson, John, and Darren E. Sherkat. 1994. "Returning to the Fold." *Journal for the Scientific Study of Religion* 33:148–161.

Table 1. Descriptive Statistics for Study Variables

	Mean	SD	Range
<i>Dependent Variables</i>			
CES-D score	4.46	4.05	0–26
Frequency of drunkenness	1.27	1.47	0–6
Very satisfied with life	.37	—	0, 1
<i>Key Independent Variables</i>			
Single	.26	—	0, 1
Unengaged dater	.31	—	0, 1
Engaged dater	.05	—	0, 1
Unengaged cohabitor	.11	—	0, 1
Engaged cohabitor	.06	—	0, 1
Ever-married	.20	—	0, 1
First married as a teenager	.07	—	0, 1
First married at ages 20 or 21	.07	—	0, 1
First married at ages 22-26	.06	—	0, 1
<i>Explanatory Variables</i>			
CES-D score, Wave 1	10.97	7.56	0–54
Frequency of drunkenness, Wave 1	.67	1.25	0–6
Still in high school	.01	—	0, 1
Never went to college	.41	—	0, 1
Went to college, dropped out	.12	—	0, 1
Two-year college student	.10	—	0, 1
Earned Associate's degree	.04	—	0, 1
Four-year college student	.21	—	0, 1
Earned Bachelor's degree or higher	.11	—	0, 1
Personal earnings	2.40	1.55	1–8
Zero sex partners in last year	.15	—	0, 1
One sex partner in last year	.54	—	0, 1
Two or more sex partners in last year	.30	—	0, 1
Religious service attendance	1.95	1.89	0–6
Self-image	16.87	2.27	4–20
<i>Control Variables</i>			
Age	21.83	1.85	18–28
Female, Wave 1	.50	—	0, 1
Lives in the South, Wave 1	.38	—	0, 1
Lives in urban area, Wave 1	.27	—	0, 1
Lives in rural area, Wave 1	.16	—	0, 1
Lives in suburban area, Wave 1	.57	—	0, 1
White, Wave 1	.69	—	0, 1
Black, Wave 1	.15	—	0, 1
Hispanic, Wave 1	.10	—	0, 1
Asian, Wave 1	.04	—	0, 1
Co-resident child(ren)	.22	—	0, 1
Underweight	.03	—	0, 1
Normal weight	.51	—	0, 1
Overweight	.25	—	0, 1
Obese	.21	—	0, 1
Interviewer report attractive physically	3.50	.81	1–5
Interviewer report attractive personality	3.65	.84	1–5
Unemployed	.29	—	0, 1
Employed parttime	.21	—	0, 1
Employed fulltime	.50	—	0, 1

Notes: Indicator variables for missing values not displayed. Variables are Wave 3 unless otherwise noted.

Table 2. Bivariate Associations between Relationship Status and Mental Health

	Mean CES-D score	% getting drunk once a week or more over last year	% very satisfied with life
Single	4.7 ^c	18.4 ^{cf}	31.3 ^{cf}
Unengaged daters	4.3	14.1 ^{cf}	35.6 ^{cf}
Engaged daters	3.9 ^a	3.1	37.5 ^{bf}
Unengaged cohabitators	4.6 ^e	10.7 ^{cf}	32.6 ^{cf}
Engaged cohabitators	4.5 ^d	3.2	40.2 ^{af}
Ever married	4.4	3.4	47.9
First married as a teenager	5.0 ^c	4.0	41.1 ^f
First married at 20–21	4.3	3.5	48.2 ^d
First married at 22–26	3.9	2.6	55.2

^a Significantly different from ever married at $p < .05$ ^b Significantly different from ever married at $p < .01$

^c Significantly different from ever married at $p < .001$ ^d Significantly different from first married at 22–26 at $p < .05$

^e Significantly different from first married at 22–26 at $p < .01$ ^f Significantly different from first married at 22–26 at $p < .001$

Notes: Differences between ever married and first married at 22–26 not tested for statistical significance. Percentages are row percentages.

Table 3. Coefficients from Ordinary Least Squares Regression Models Predicting CES-D Score

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Relationship Status</i>							
Single	.26	.39*	.55**	.51**	.37*	.33	.19
Unengaged daters	-.22	-.00	.19	.16	.02	-.02	-.07
Engaged daters	-.65**	-.60*	-.47*	-.51*	-.53*	-.54*	-.41*
Unengaged cohabitators	.09	.09	.11	.09	.02	-.04	-.05
Engaged cohabitators	.08	.01	-.01	-.03	-.03	-.08	-.06
<i>Explanatory Variables</i>							
CES-D, Wave 1		.17***	.16***	.16***	.16***	.16***	.13***
Still in high school			1.16	1.16	1.17	1.17	1.13
Went to college, dropped out			-.70***	-.71***	-.72***	-.70***	-.70***
Two-year college student			-.24	-.25	-.23	-.21	-.10
Earned Associate's degree			-.95***	-.97***	-.95***	-.91***	-.81***
Four-year college student			-.83***	-.85***	-.81***	-.77***	-.58***
Earned Bachelor's degree or higher			-.92***	-.95***	-.93***	-.87***	-.66***
Personal earnings			-.05	-.05	-.05	-.05	-.02
Co-resident child(ren)				-.10	-.08	-.08	.01
Zero sex partners in last year					.14	.17	.08
Two or more sex partners in last year					.53***	.52***	.38**
Religious service attendance						-.06*	-.01
Self-image							-.59***
<i>Control Variables</i>							
Age	-.07*	-.14***	-.08**	-.08*	-.08*	-.08*	-.08*
Female	.92***	.57***	.64***	.66***	.69***	.71***	.47***
South	-.15	-.13	-.14	-.14	-.15	-.12	-.06
Urban	-.05	.03	.02	.01	.01	.07	.11
Rural	-.05	-.11	-.16	-.16	-.16	-.15	-.13
Black	.80***	.52**	.41**	.42**	.39**	.43**	.75***
Hispanic	.98***	.59**	.50*	.51**	.53**	.54**	.60**
Asian	.55*	.26	.35	.36	.43	.44*	.36
Underweight	.56*	.37	.35	.36	.38	.36	.26
Overweight	-.06	-.07	-.07	-.07	-.06	-.05	-.07
Obese	.18	.12	.05	.05	.07	.08	-.00
Attractive physically (interviewer)	-.24**	-.15*	-.12	-.12	-.12	-.12	-.09
Attractive personality (interviewer)	-.26**	-.18*	-.14	-.14	-.13	-.13	-.03
Employed fulltime	-.53***	-.49***	-.48**	-.48**	-.46**	-.46**	-.35**
Employed parttime	-.41**	-.33**	-.21	-.22	-.19	-.20	-.08
Constant	7.41***	6.56***	5.59***	5.61***	5.37***	5.52***	15.11***
R-squared	.04	.14	.15	.15	.15	.15	.25

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

Note: Reference groups are ever-married, never went to college, one sex partner in last year, suburban, White, and normal weight.

N = 11,636

Table 4. Incidence Rate Ratios from Negative Binomial Regression Models Predicting Frequency of Drunkenness

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Relationship Status</i>							
Single	2.16***	2.11***	2.01***	1.78***	1.69***	1.62***	1.60***
Unengaged daters	2.10***	2.06***	1.92***	1.70***	1.53***	1.48***	1.47***
Engaged daters	1.08	1.06	1.04	.92	.91	.91	.91
Unengaged cohabitators	1.80***	1.72***	1.69***	1.56***	1.49***	1.40***	1.40***
Engaged cohabitators	1.13	1.09	1.09	1.04	1.04	.99	.99
<i>Explanatory Variables</i>							
CES-D, Wave 1		.99*	1.00	1.00	1.00	1.00	.99*
Frequency of drunkenness, Wave 1		1.16***	1.16***	1.17***	1.15***	1.14***	1.14***
Still in high school			.84	.83	.87	.88	.88
Went to college, dropped out			1.19***	1.15**	1.15**	1.18**	1.18**
Two-year college student			1.18**	1.14**	1.16**	1.20***	1.22***
Earned Associate's degree			1.02	.98	1.00	1.05	1.05
Four-year college student			1.28***	1.22***	1.28***	1.35***	1.37***
Earned Bachelor's degree or higher			1.30***	1.21***	1.26***	1.34***	1.36***
Personal earnings			1.03*	1.02*	1.02	1.01	1.02
Co-resident child(ren)				.73***	.74***	.74***	.74***
Zero sex partners in last year					.85**	.87**	.87**
Two or more sex partners in last year					1.45***	1.44***	1.43***
Religious service attendance						.93***	.94***
Self-image							.96***
<i>Control Variables</i>							
Age	.99	.96***	.95***	.95***	.96***	.96***	.96***
Female	.68***	.70***	.69***	.72***	.73***	.74***	.72***
South	.87*	.87**	.88**	.88**	.87**	.90*	.91*
Urban	.89	.90	.91	.91	.90	.90*	.91
Rural	.93	.94	.96	.96	.95	.96	.96
Black	.43***	.46***	.48***	.50***	.47***	.49***	.50***
Hispanic	.72***	.73***	.75***	.76***	.76***	.78***	.78***
Asian	.62***	.66***	.64***	.65***	.69***	.71***	.70***
Underweight	.92	.76	.91	.92	.96	.93	.93
Overweight	.96	.96	.96	.97	.97	.97	.98
Obese	.88**	.89**	.91**	.91*	.94	.95	.95
Attractive physically (interviewer)	1.03	1.03	1.02	1.02	1.01	1.01	1.01
Attractive personality (interviewer)	1.01	1.01	.99	.99	1.00	1.00	1.01
Employed fulltime	.96	.96	.96	.94	.96	.96	.97
Employed parttime	.97	.97	.94	.93	.95	.95	.96
-2 log likelihood	32350.4	32035.0	31887.4	31790.2	31361.3	31206.5	31201.9

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

Note: Reference groups are ever-married, never went to college, one sex partner in last year, suburban, White, and normal weight.

N = 11,453

Table 5. Odds Ratios from Logit Regression Models Predicting Very Satisfied with Life

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Relationship Status</i>							
Single	.48***	.46***	.40***	.40***	.43***	.46***	.45***
Unengaged daters	.58***	.54***	.46***	.45***	.50***	.52***	.49***
Engaged daters	.64**	.63**	.57***	.56***	.57***	.58***	.49***
Unengaged cohabitators	.54***	.53***	.52***	.51***	.53***	.59***	.55***
Engaged cohabitators	.73*	.74*	.75	.75	.75	.81	.77
<i>Explanatory Variables</i>							
CES-D, Wave 1		.96***	.96***	.96***	.96***	.96***	.98***
Still in high school			.80	.81	.79	.79	.75
Went to college, dropped out			1.01	1.01	1.01	.98	.98
Two-year college student			1.20*	1.20*	1.18*	1.13	1.09
Earned Associate's degree			1.17	1.17	1.15	1.08	1.04
Four-year college student			1.92***	1.92***	1.87***	1.75***	1.72***
Earned Bachelor's degree or higher			1.74***	1.74***	1.70***	1.57***	1.46**
Personal earnings			1.00	1.00	1.00	1.00	.98
Co-resident child(ren)				.99	.97	.97	.91
Zero sex partners in last year					.94	.90	.95
Two or more sex partners in last year					.70***	.71***	.74***
Religious service attendance						1.09***	1.08***
Self-image							1.54***
<i>Control Variables</i>							
Age	.99	1.01	1.00	1.00	1.00	1.00	1.00
Female	.82**	.88*	.84**	.85**	.82**	.81**	.93
South	1.15*	1.15*	1.17*	1.17*	1.18*	1.13	1.09
Urban	.95	.94	.94	.94	.94	.94	.85*
Rural	.98	.99	1.03	1.03	1.03	1.02	1.02
Black	.86	.92	.97	.97	1.00	.93	.72**
Hispanic	.97	1.07	1.13	1.13	1.12	1.10	1.07
Asian	.82	.88	.84	.84	.80	.78*	.81
Underweight	.65**	.68*	.67*	.67*	.65**	.67*	.69*
Overweight	1.01	1.02	1.02	1.02	1.01	1.01	1.02
Obese	.86*	.87	.92	.92	.91	.90	.93
Attractive physically (interviewer)	1.11**	1.09*	1.07	1.08	1.08	1.08	1.06
Attractive personality (interviewer)	1.11*	1.09*	1.06	1.06	1.06	1.05	.98
Employed fulltime	.96	.95	1.04	1.04	1.02	1.03	.98
Employed parttime	1.04	1.03	.95	.95	.94	.94	.87
-2 log likelihood	15073.6	14832.5	14670.6	14666.2	14609.0	14545.5	14340.2

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

Note: Reference groups are ever-married, never went to college, one sex partner in last year, suburban, White, and normal weight.

N = 11,688

Table 6. Coefficients, Incidence Rate Ratios, and Odds Ratios from OLS, Negative Binomial, and Logit Regression Models Predicting Mental Health, by Age at First Marriage and Other Types of Relationships

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Panel A. CES-D score</i>							
Single	.58**	.52**	.55**	.53**	.37	.34	.20
Unengaged daters	.11	.12	.20	.17	.01	-.02	-.05
Engaged daters	-.32	-.47	-.47	-.49	-.53	-.54	-.40
Unengaged cohabitators	.41	.22	.11	.10	.01	-.04	-.04
Engaged cohabitators	.41	.13	-.01	-.01	-.03	-.08	-.05
First married as a teenager	.65*	.26	.03	.04	.01	.01	-.02
First married at ages 20 or 21	.27	.09	-.02	.00	-.01	.00	.05
<i>Panel B. Frequency of drunkenness</i>							
Single	2.01***	1.93***	1.90***	1.76***	1.65***	1.58***	1.57***
Unengaged daters	1.95***	1.88***	1.82***	1.68***	1.50***	1.45***	1.44***
Engaged daters	1.00	.97	.98	.91	.89	.89	.89
Unengaged cohabitators	1.67***	1.58***	1.60***	1.54***	1.45***	1.37***	1.37***
Engaged cohabitators	1.05	.99	1.03	1.03	1.02	.97	.97
First married as a teenager	.99	.95	1.02	1.08	1.06	1.05	1.05
First married at ages 20 or 21	.80*	.80*	.83	.88	.87	.88	.89
<i>Panel C. Very satisfied with life</i>							
Single	.35***	.35***	.33***	.33***	.36***	.37***	.35***
Unengaged daters	.41***	.40***	.37***	.37***	.41***	.43***	.38***
Engaged daters	.46***	.47***	.46***	.46***	.47***	.47***	.38***
Unengaged cohabitators	.39***	.40***	.42***	.42***	.44***	.48***	.43***
Engaged cohabitators	.53***	.56***	.61**	.61**	.61**	.66*	.60**
First married as a teenager	.54***	.59**	.67*	.67*	.68*	.67*	.62**
First married at ages 20 or 21	.73*	.76*	.82	.82	.83	.81	.77*

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

Note: Reference groups is first married at ages 22–26. Models contain, but do not display, the same independent variables as those found in the same models of Tables 3-5 and have the same N. Results for CES-D score are coefficients; results for drunkenness are incidence rate ratios; results for life satisfaction are odds ratios.