Happy, Healthy and Wedded? How the Transition to Marriage Affects Mental and Physical Health

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Abstract

Decades of research have documented the apparent health benefits of marriage, but the dynamics of how health may change across the transition to marriage are not fully understood. In two studies, we compared being unmarried or married on several indices of mental and physical health. In Study 1, we used a national sample of 1078 individuals in different-sex relationships who completed surveys by mail. Compared to those who were cohabiting or dating, married individuals generally reported better mental and physical health than those in less committed relationships, and most differences remained when controlling for putative selection factors. Study 2 used longitudinal data from the participants in the Study 1 sample who later married (*N* = 168) to study changes within individuals over the transition to marriage on the same indicators. Six waves of mailed surveys spanning 20 months were employed. Findings of Study 2 indicated that although some indicators of mental and physical health were improving up until the point of marriage, these indicators then stabilized or began to decline, with women experiencing these declines more than men. Findings are more consistent with selection effects (i.e., better-adjusted individuals are more likely to get married) than social causation effects (i.e., marriage causes improvements in mental and physical health) and suggest that if marriage does have a causal effect on wellbeing in the short-term, it may actually manifest in the lead-up to the wedding. Implications of these findings are discussed.

Keywords

marriage; mental health; physical health; relationship transitions; romantic relationships

A robust literature links being married to better physical and mental health outcomes (e.g., Musick & Bumpass, 2012; Stutzer & Frey, 2006). Studies consistently show long-term rather than short-term benefits to wellbeing of getting married (Naess et al., 2015; Clark & Georgellis, 2013), leaving somewhat unclear when exactly these favorable differences begin to emerge. It is unclear whether these differences by marital status accrue due to the experience of marriage itself or are more representative of differences among individuals that existed prior to marriage and predicted their transition. Indeed, the months preceding

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and following entry into marriage are a formative developmental transition, featuring changes in individual and shared identity, behaviors, and values (Rodgers & White, 1993).

These studies sought to better characterize how marriage may affect individual wellbeing. We first examined cross-sectional differences between those who are married and unmarried (Study 1) and examined if they exist net of a robust set of control variables to attempt to control for selection factors. Then, we contrasted those findings with longitudinal changes in life satisfaction, psychological distress, alcohol use and general health status change across the transition from being unwed to marriage (Study 2). The second study addresses the question if becoming married affects individual wellbeing in the months preceding and following the marriage transition, as well as which individual and dyadic characteristics impact this pathway.

Selection and Causation

To explain why group differences between the unmarried and married are routinely observed, scholars often distinguish between effects of social causation (i.e., being married engenders changes in health) and selection (i.e., certain characteristics predispose individuals to better health, and also to getting married). It appears that marriage both *selects for* happier and healthier people (Horwitz et al., 1996) and directly and indirectly *causes* better health (DeMaris, 2018; Simon, 2002). These mechanisms are not mutually exclusive. Favoring a selection interpretation, prior life satisfaction and depression status have predicted subsequent marriage (Horwitz et al., 1996) and happier couples are more likely to get married (Stutzer & Frey, 2006). There is also evidence for causation (DeMaris, 2018), as some studies find people are less depressed and drink less alcohol after marrying (Horwitz et al., 1996; Kim & McHenry, 2002).

Role incompatibility theory (Yamaguchi & Kandel, 1985) describes a mechanism by which selection and causation effects operate in the transition to marriage. Role incompatibility theory posits that incongruence between an individual's behaviors and the demands of a particular social role will be resolved by the individual either changing their behavior, a process called role socialization, or forgoing that role, which is called role selection (Thornton & Nardi, 1975; Yamaguchi & Kandel, 1985). For example, becoming married often comes with the behavioral expectation that heavy drinking will be reduced (Lee et al., 2015), and emerging adults who anticipate marrying soon and value marriage highly drink less overall and binge drink less often (Carroll et al., 2007; Willoughby & Hall, 2015). Role incompatibility discourages entering certain roles, so while newlyweds may choose to reduce their problem drinking (Curran, et al., 1998), unmarried adults with problem drinking may select out of getting married (Waldron et al., 2008). Nock (1998) argued that marriage re-orients the behavior of men in particular, both selecting for certain men but also prompting changes in their behavior in the direction of responsibility and commitment. As cohabitation became more common, marriage would become increasingly reserved for the most committed, highest quality, relationships (Nock, 2009).

Health and Wellbeing

Married individuals have a readily available source of social support and companionship, so it is unsurprising that their overall health, across the life course, is generally superior to that of unmarried individuals (Hornish & Leonard, 2008). While at least one study found that the benefits to physical health for married individuals could be fully attributed to selection effects (Horn et al., 2013), other studies have not observed any selection effects (Jhang, 2018; Joung et al., 1998). While some researchers have not observed gender differences in these health benefits (e.g., Lindstrom, 2009) others have found that men benefit more from marriage because women promote their spouses' health more than vice versa (Ray et al., 2009; Umberson, 1992; Umberson et al., 2006). We hypothesized that married individuals would report better health than unmarried individuals (Study 1) and that both men and women would demonstrate physical health benefits as they transitioned to marriage (Study 2).

Marital status is also closely tied to life satisfaction (Kamp Dush et al., 2008). Although the relationship is likely bidirectional, premarital life satisfaction can be predictive of marital adjustment even six years into marriage (Stanley et al., 2012). Newlyweds report high levels of marital happiness and life satisfaction, which can persist but usually decrease in the early years of marriage (Stutzer & Frey, 2006). That married people report greater life satisfaction than non-married people can be explained in part by selection effects – people high in life happiness are more likely to marry (Lucas et al., 2003), while lower life satisfaction predicts divorce (Stutzer & Frey, 2006). Nevertheless, other studies have found differences favoring marriage even controlling for selection, with marrieds also experiencing less of a dip in happiness in midlife (Grover & Helliwell, 2017; Yap et al., 2012). We hypothesized that married individuals would report greater life satisfaction than unmarried individuals (Study 1) and that getting married will cause increases in life satisfaction (Study 2).

Marriage is protective against psychological distress (Strohschein et al., 2005), as depressed individuals entering marriage improve in mental well-being, sometimes showing more gains in mental well-being than non-depressed individuals (Frech & Williams, 2007; Lamb et al., 2003; for an exception, see Kim & McHenry, 2002). Men appear to derive greater mental health benefits from marriage (Brown et al., 2005), while married women report more psychological distress relative to married men (Kurdek, 2005). Although there does not appear to be a selection effect of depression for marriage (Lamb et al., 2003), individuals diagnosed with generalized anxiety disorder are more likely to marry than individuals without anxiety (Yoon & Zinbarg, 2007). In this study, it was expected that married individuals would report less psychological distress than unmarried individuals (Study 1), while individuals who marry during the study would show reductions in their psychological distress (Study 2).

Finally, people appear to decrease their alcohol consumption after entering into marriage (Simon, 2002), and perhaps even upon engagement (Uecker, 2012). Partners' drinking levels are interdependent, with each partner's expectations and habits influencing the other's behavior over time (Homish & Leonard, 2007). Marriages which are discrepant in alcohol use across partners appear at particular risk of lower marital quality (Hornish et al., 2009).

Consistent with role socialization theory, we anticipated that being married and getting married would lead to reductions in drinking frequency and intensity.

Present Studies

The purpose of this paper was to examine group differences between married and unmarried individuals, as well as within-person changes in physical and mental health in the transition to marriage. First, we tested whether married and unmarried individuals differ significantly on measures of overall health, alcohol consumption, psychological distress, and life satisfaction (between-subjects analyses; Study 1). We then tested for within-subject effects using mean levels and trajectories for the same variables over six waves of assessments, spanning 20 months, which included a transition to marriage (Study 2).

For Study 1, we first analyzed the data without covariates, and then re-ran analyses controlling for variables that prior research suggests are related to the likelihood of entering marriage, including personal income, number of hours employed per week, Black, Latino/a, other race/ethnicity, age, and gender (Tach & Halpern-Meekin, 2009; Teachman, 2003; Woods & Emery, 2002). We describe analyses with and without the control variables to highlight the impact of these control variables. Study 2 uses an interrupted time series design, which both controls for unmeasured selection factors within individuals who do get married (Johnson, 2005) and describes the trajectory of each outcome variable before and after the event of interest – in this case, getting married. This method also captures whether mean levels of an outcome variable shift before and after marriage; combined with the trajectory of post-marriage levels, these data provide a strong foundation from which to infer sustained levels of change (Shadish et al., 2002). Gender, income, education, and age at marriage were tested as moderators of the trajectories in Study 2.

Study 1: Cross-sectional Sample

Method

Participants—Participants ($N = 1,078$) in Study 1 were individuals who took part in the sixth wave of a longitudinal project on romantic relationship development (see Rhoades et al., 2010). This project was approved by the University of Denver Institutional Review Board and data were collected between 2007 and 2012. All participants were unmarried at the start of the study but in a romantic relationship with a member of the opposite sex. By the sixth wave, 25.0% of the participants were married. The sample was 62% female and 38% male. Participants ranged in age from 19 to 53 ($M = 27.61$ $SD = 5.24$), had a median of 14 years of education, and made $15,000 to $19,999 annually, on average. In this sample, 16.7% had children with prior partners, 17.8% had children with the current partner, and 17.0% had partners with children from prior relationships. In terms of ethnicity, this sample was 8.3% Hispanic or Latino and 91.7% not Hispanic or Latino. In term of race, the sample was 80.4% White, 11.3% Black or African American, 2.6% Asian, 0.8% American Indian/ Alaska Native, and .3% Native Hawaiian or other Pacific Islander; 3.5% reported being of more than one race and 1.0% did not report a race. When compared to U.S. Census (2000) figures, this sample is similar in terms of race and income to similarly-aged unmarried individuals who speak English.

Procedure—The sample for this project was recruited by a calling center using a targeted-listing sampling strategy. A survey firm called 325,273 phone numbers of individuals in the contiguous United States. This contact information came from many different sources, such as the magazine subscriptions, public records, telephone white pages, and warranty card information. In order to correct for the increasing problem of people either not having or not answering land-lines phones, survey experts advised the research team that these methods could produce a more representative sample than random digit dialing. Any person in the household who answered the phone and met criteria could participate, not just the individuals on the sampling list (one per household). Inclusion criteria were being between the ages of 18 and 34 and for the individuals to be in an unmarried relationship with a member of the opposite sex that had lasted two months or longer.) Of this list of telephone numbers, 73,508 (23%) were disconnected, 186,647 were never answered live (57%), and 65,118 (20%) were answered. Of those who answered, 3,570 (5%) were ineligible due to not speaking English, 22,375 (34%) refused to answer any screening questions, 37,468 (56%) answered screening questions but were ineligible due to age or relationship status, and 2,658 (5%) were eligible. Of those who were eligible, 2,327 (88%) completed the phone survey and provided their contact information for the longitudinal study. Of those who provided their contact information, 2,213 (95%) provided complete and usable mailing addresses and were mailed forms (within two weeks of the phone screening). Of those who were mailed forms, 1,447 individuals returned them (65% response rate); however, 153 of these respondents indicated on their forms that they did not meet requirements for participation, either because of age, language, or relationship status, leaving a final sample of 1294. Of these 1294 respondents, 1,078 completed measures during the sixth wave, from which the cross-sectional data for Study 1 is drawn. The sixth wave was utilized for Study 1, as this was the last set of surveys for which all study variables were collected, and to increase the number of individuals in the sample who had become married since no one was married at the first wave.

Measures

Life satisfaction.: To measure global life satisfaction, the 5-item Satisfaction with Life Scale (Diener et al., 1985) was used. Items such as "In most ways my life is close to my ideal" are rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). This scale has demonstrated validity and reliability in prior research (Pavot & Diener, 2009). This measure was scored by averaging the items, with higher scores indicating higher life satisfaction ($M = 4.76$, $SD = 1.38$, *Range* = 1 to 7, $\alpha = .90$).

Psychological distress.: Twelve items were chosen from the Mood and Anxiety Symptom Questionnaire (Clark & Watson, 1991) to assess general psychological distress. These 12 items were selected based on factor analyses indicating that they capture general psychological distress rather than disorder-specific symptoms (see Keogh & Reidy, 2000). Example items are: "during the last week, I felt dissatisfied with everything" and "during the last week, I felt tense or 'high strung.'" Each item was rated on a 1 (*not at all*) to 5 (*extremely*) scale. This measure was scored by averaging the items. Higher scores indicate more distress ($M = 2.13$, $SD = 0.96$, $\alpha = .94$).

Alcohol use.: To assess for frequency of drinking, participants were asked, "How often do you have a drink containing alcohol?" Answer options were (0) "Never", (1) "Monthly or less", (2) "Two to four times a month", (3) "Two to three times a week", and (4) "Four or more times a week." Quantity of alcohol consumed each drinking day was captured by asking participants "How many drinks containing alcohol do you have on a typical day when you are drinking?" Answer options were (1) "1 or 2", (2) "3 or 4", (3) "5 or 6", (4) "7 to 9", and (5) "10 or more." To estimate rates of alcohol consumption, these items were multiplied together (i.e., multiplying frequency by number of drinks), generating the measure of alcohol used in analyses (Range = 0–15; $M = 2.63$, $SD = 2.52$). At this time point, 16.1% of participants indicated that their average drinking day included at least 5 drinks, which meets the criteria for binge drinking.

General health.: Overall health was measured with a single item: "In general, would you say your is poor/fair/good/very good/excellent?" (Range = 1–5; $M = 3.84$, $SD = .77$). This item has been widely used in isolation and appears effectively predictive of both mortality and healthcare utilization (e.g, Bopp et al., 2012).

Marital and cohabiting status.: Participants were asked, "As of today, what is the status of your relationship?" Response options were "Dating, living together or not", "Engaged", and "Married." All participants also responded to the prompt, "Are you and your partner living together," which was coding dichotomously as "No" and "Yes." These two items were used to classify participants as "Dating, Not Cohabiting", "Dating, Cohabiting", and "Married" for contrast analyses.

Control variables.: Covariates included self-reported age, gender, personal income, number of hours employed per week, identifying as Black, identifying as Latino/a, and identifying as a race or ethnicity other than white.

Results

We tested for differences in the control variables between married and unmarried individuals prior to running the main analyses. T-tests revealed that married individuals had higher incomes, worked more hours, and were older than unmarried individuals (all t-values greater than or equal to 6.93, $ps < .001$). Chi-square analyses showed significant differences in likelihood of being married by race and ethnicity, but not by gender. Specifically, likelihood of being married was higher if participants identified as white and lower if they identified as American Indian, Asian, Pacific Islander, African American, or "other" (all $ps < .01$). Participants who were married reported greater life satisfaction ($p < .001$, Cohen's $d = 1.04$), less psychological distress ($p = .001$, $d = 0.47$), and less alcohol use ($p = .001$, $d = 0.18$) than unmarried participants, but not better general health ($p = .23$, $d = 0.10$).

Next, we divided the sample into groups by relationship status (i.e., dating but not cohabiting, dating while cohabiting, and married) and ran contrasts comparing the groups. We did this primarily to get to the comparison between individuals who married or not, but where all were comparable based on living with their partner[1]. Effect sizes for both sets of comparisons are included in Table 1. When people in dating relationships who were and

were not cohabiting were compared, the only significant difference was that non-cohabiters reported slightly better general health ($p < .001$, $d = 0.31$). In the second comparison, however, where all individuals are living with their partners, married individuals reported greater life satisfaction ($p < .001$, $d = 0.51$), less psychological distress ($p = .003$, $d = 0.27$), better general health ($p = .003$, $d = 0.29$), and less alcohol use ($p < .001$, $d = 0.28$) than cohabiters. In the third comparison, married individuals reported greater life satisfaction ($p < .001$, $d = 0.45$), less psychological distress ($p = .003$, $d = 0.25$), and less alcohol use ($p < .001$, $d = 0.29$) than dating non-cohabiters, but did not differ significantly in their general health ($p = .98$, $d = 0.00$).

We then ran the contrasts again while controlling for personal income, having a bachelor's degree, number of hours employed per week, Black, Latino/a, other race/ethnicity, age, and gender. The results changed very little when controls were included. Specifically, there was only one instance in which a previously significant difference became non-significant: the difference between marrieds and those cohabiting on psychological distress.

Study 1 Discussion

The results of Study 1 aligned with findings from the literature that married individuals report cross-sectionally better mental and physical health than unmarried individuals, including cohabitors (Marcussen, 2005; Stutzer & Frey, 2006). Past research indicated that married individuals report better overall health, less psychological distress, less alcohol use, and greater life satisfaction, and the current cross-sectional analyses support these observations. When covariates were included in ANCOVA models, most significant differences remained. These findings could be consistent with either a selection explanation (marriage selects for healthier individuals) or a social causation explanation (marriage improves health). However, given the cross-sectional nature of these data, we cannot adjudicate between such explanations. Thus, the Study 2 examines if the transition to marriage is associated with increases in health and wellbeing within individuals.

Study 2: Longitudinal Findings

Method

Participants—Of all participants in the larger Relationship Development Study sample, 168 individuals who married between waves 1 through 6 (T1-T6) and are included in Study 2. Waves of data were collected at intervals of approximately four months. In this sub-sample, 67.1% were women and 32.9% were men. In terms of ethnicity, 7.4% identified as Hispanic or Latino. In terms of race, 83.6% identified as white, 1.9% identified as Asian, 1.5% identified as American Indian/Alaska Native, 0.4% identified as Native Hawaiian or Pacific Islander, and 9.3% identified as Black or African American.

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[1]Comparisons at T1 between individuals who by T6 were married versus those who remained unmarried at T6 revealed significantly higher life satisfaction and lower psychological distress among those who would later marry ($p < .01$), but no differences between the groups in alcohol consumption and general health.

Across all waves of data collected before marriage, the median annual income of participants was 20,000 to 29,999 (*Range* = < 4,999 to > 100,000). On average, participants married at 27.82 years of age (*Mdn* = 26.82, *SD* = 4.34, *Range* = 19.84 to 36.23).

Procedures—Although waves one through six were included in analyses, only individuals who married at the second through fifth time points were included in the sample so that only individuals who had transitioned into marriage before wave six were included. This assured that all those included had the opportunity to provide at least one time before marriage (100% provided data before marriage) and at least one time after marriage (100% provided data after marriage). Five individuals divorced by T6 and only their time points during marriage were included in analyses. The median number of time points before marriage was three (*M* = 2.49, *SD* = 1.03) and the median number after marriage was three (*M* = 3.02, *SD* = 1.12).

In terms of missing data, 126 (75.4%) participants provided data at all six waves (T1 – T6), 20 provided data at five waves (11.0%), 12 (7.2%) provided data at four waves, seven (4.2%) provided data at three waves, and two (1.2%) provided data at only two waves (*Mdn* = 6, *M* = 5.56, *SD* = 0.89). Thus, the rate of missing data was 7.3% for this study.

Data Analytic Plan and Results—To test Study 2 hypotheses, an interrupted time-series design was performed using the longitudinal multilevel modeling software Hierarchical Linear Modeling 7.0. We used models that allowed for changes in the slope and mean levels of each outcome variable across time. The Level 1 equation for these models looked thus:

$$Y = \pi_0 + \pi_1(\text{Slope}_{\text{before}}) + \pi_2(\Delta\text{Slope}) + \pi_3(\text{Level Change}) + e$$

Time was measured in months from the wedding date. Time was centered around the day of marriage, meaning that Level Change can be interpreted as a sudden shift in the outcome variable immediately after the transition. That is, it represents the estimated mean difference in a variable from just before getting married to just after. In these models, the after-transition slope coefficient (Slope) represents the change in slope compared to the slope before marriage. Thus, the true after-transition slope value is equal to the coefficient for the slope before marriage plus the coefficient for after marriage ($\pi_1 + \pi_2$). In these models, π_0, π_1, and π_3 were random effects.

Income, having a bachelor's degree, age at marriage, and gender were then entered as moderators into separate models. Having a bachelor's degree and gender were entered as dichotomous variables, while age at marriage and income were treated as continuous variables.

Hypothesis Tests—Results of unmoderated and moderated models are reported below by outcome variable, and moderation analyses are also shown in Figure 1.

<u>**General Health.:**</u> Our first hypothesis was that individuals who transition to marriage would report increases in general health. This hypothesis was not supported. There was no significant change in the level of general health at the transition to marriage but there was a

significant change in slope. Health had been improving before marriage (b = 0.02, p = .007, d = 0.31) but began decreasing after marriage (b = −0.02, p = .04, d = 0.31). These effects were not moderated by gender, income, education level, or age at marriage.

Life Satisfaction.: Individuals who transition to marriage were expected to report increases in life satisfaction. This hypothesis was not supported. Life satisfaction was increasing before marriage, albeit at a non-significant level (b = 0.02, p = .09, d = 0.20) but began significantly decreasing after marriage (b = −0.03, p = .02, d = 0.30). However, a significant level change indicated an increase in life satisfaction at the time of marriage (b = 0.19, p = .04, d = 0.16). These main effects were significantly moderated by gender, but not income, education level, or age at marriage. Women were experiencing gains in life satisfaction leading up to marriage (b = 0.036, p = .049, d = 0.36), but declines in life satisfaction after marriage, although this test was not significant (b = −0.046, p = .051, d = 0.46). Women reported a sharp decrease in life satisfaction at the transition into marriage (b = −0.433, p = .03, d = 0.36), while men reported a sharp increase (b = 0.478, p = .003, d = 0.40).

Psychological Distress.: Our hypothesis that individuals who transition to marriage would report less psychological distress over time was also not supported: psychological distress was decreasing, non-significantly, leading up to marriage (b = −0.01, p = .055, d = 0.15), and there were no significant changes in level at the transition to marriage nor a change in slope from before to after marriage. Income, age at marriage, and education levels did not moderate the changes in psychological distress across the transition to marriage, but gender did moderate the slopes: women, but not men, experienced decreases in psychological distress before marriage (b = −0.042, p = .003, d = 0.65), and increases in psychological distress after getting married (b = 0.037, p = .03, d = 0.57).

Alcohol Use.: Our fourth hypothesis was that individuals who transition to marriage will report consuming less alcohol over time. This hypothesis was not supported. Alcohol use had been decreasing before marriage (b = −0.039, p = .008, d = 0.23) but began increasing following marriage (b = 0.039, p = .03, d = 0.23). There was no significant change in level at the transition to marriage (b = 0.075, p = .57, d = 0.04). Gender, income, education level, and age at marriage did not moderate these effects.

Study 2 Discussion

The results of Study 2 generally did not support our expectation that positive changes in mental and physical health would occur across the transition to marriage. In the months preceding marriage, participants indicated decreasing alcohol use and improving general health; however, these slopes leveled off after the transition itself. Women experienced increases in life satisfaction prior to marriage but similarly sized (but non-significant) declines after marriage. Men reported an increase in life satisfaction right at the point of marriage while women reported a decrease at that point of transition. Similarly, women, but not men, experienced decreases in psychological distress before marriage and an increase following. Although these findings demonstrating changes associated with the transition to marriage, the improvements were generally occurring in the buildup to marriage more than at and after the transition point into marriage. After that point of transition, mostly declines

were noted. These findings do not support a social causation model as typically described—that marriage causes positive effects in such a time frame—but could be consistent with a view that the effects of the transition actually begin well before the timing of it. That is, perhaps positive changes occur more as a consequence of having found a partner and deciding to marry than from the fact of the transition into marriage, per se. Alternatively, such differences may merely be owing to selection.

General Discussion

The results of both studies were most consistent with the selection hypothesis regarding the association between marriage and health. Study 1's cross-sectional results showed that married individuals reported less drinking and psychological distress, more life satisfaction, and better overall health, relative to those who were unmarried but in a relationship, and that some of these differences existed at first assessment in the larger study, when all participants were as-yet unmarried. Study 2 showed that overall health and life satisfaction were improving in the months leading up to marriage, but leveled off or worsened following the marriage date, suggesting that if marriage has an immediate causal effect on wellbeing, it may occur prior to the wedding itself. Of course, these findings are all from data of those in early stages of life and do not speak to the possible long-term positive or negative effects of marriage and relationship stability.

As observed in Study 1, the married individuals in our sample reported greater cross-sectional wellbeing than the unmarried; it is thus also possible that these individuals were always in better health and wellbeing than the unmarried individuals. That would favor an interpretation around selection. The other possibilities are a variation of the role socialization theory. Specifically, the absence of observed improvements in mental and physical health immediately following marriage implies that the process of role socialization could occur in the lead-up to marriage rather than at the point of marriage. That is, what we may be observing in changes leading up to marriage are, essentially, changes attendant to the process of finding a mate and making a long-term commitment to marriage. Research has highlighted slides in self-care immediately following marriage (e.g., Sobal et al., 2003); the current study suggests that the social causation effects seen in research that tracked marriage effects could be, at least earlier on, better understood as the effects of passing through a period of heightened clarity about mutual commitment to the relationship (Stanley et al., 2010).

If the latter suggestion is correct, the pattern of findings might be construed as an effect of becoming engaged. However, the sample size in this study prohibits directly assessing for such a pattern as many people (in this sample and in society) no longer get formally engaged prior to marrying. Of course, those who move toward marriage (and eventually do marry) may start out better off on such indicators to begin with (selection), but may also benefit from the period of time of gaining clarity about commitment with a person who will become their spouse. As noted by Cherlin (2004), people may also experience the lead-up to marriage as a period of satisfaction with the imminent attainment of the status of being married.

It is also possible that effects others have reported as possibly caused by marriage are partly based on taking advantage of selection in samples of those married for longer periods of time. For samples early in marriage, many will divorce and not be assessed as being married, or in that marriage that ended, later in life. For samples earlier in marriage such as these, divorce has not yet thinned the ranks of less-well-adjusted marrieds, which also would obscure what may well be longer term, ongoing benefits in mental and physical health following marriage among the couples in relationships that last.

The current study adds nuance to the ample research on differences in life satisfaction and happiness by marital status. Although in Study 2 we observed that life satisfaction was decreasing slightly following marriage, we found in Study 1 that life satisfaction was still higher among married than unmarried individuals. Previous research has found higher levels of happiness among those who later get married (e.g., Grover & Helliwell, 2017; Lucas et al., 2003), with gains in life satisfaction persisting for several years following marriage (Clark & Georgellis, 2013; Lucas et al., 2003) or continuing indefinitely (Grover & Helliwell, 2017). Our findings suggest that individuals who marry start marriage at higher levels of life satisfaction than unmarried individuals (comparing the mean at marriage represented by the intercept in Table 2 to the mean levels for those who are unmarried in Table 1), and then may gradually revert to a set point that, in the aggregate, is still higher than that of those who are unmarried.

Moderation analyses showed that women, and not men, were experiencing improvements in life satisfaction before marriage. Women report more of a drive to get married than men (Blakemore et al., 2005) and are typically more involved in planning a wedding (Sniezek, 2005). Women's were experiencing statistically significant gains in life satisfaction before marriage, showed significant declines at the point of marriage, and then showed declines over time after marriage that, while not statistically significant, were close to medium in effect size. This decrease in life satisfaction may reflect a return to more typical levels following increases leading up to marriage and excitement about the transition. By contrast, the slope of life satisfaction for men was not significant prior to marriage, but they reported a significant increase in life satisfaction from the timepoint prior to getting married to the one following it. One possible explanation for these differences in men and women could be based on roles and expectations. It has been observed that men's housework decreases immediately following marriage, while women's increases (Gupta, 1999). This gender difference in life satisfaction in the period surrounding the wedding day thus may be concordant with findings that certain expectations of household labor and responsibilities shift far more for women than for men following marriage (Krivickas & Sanchez, 2008). Men and women may have different expectations of how each other's behavior will change following the wedding day, and the extent to which their partner does or does not change their behavior may have immediate impacts on their life satisfaction.

Similar to the analyses of life satisfaction, we observed no main effect, but instead found moderation effects, for changes in psychological distress in the overall sample across the marriage transition. First, women reported decreases in psychological distress leading up to marriage but increases following marriage. It is possible that nearing the point of having secured a life partner reduces stress for women in a way it does not for men. Following the

wedding, women may find themselves dealing with a new set of role expectations as a wife (Nock, 1998) and experience distress at these new and often increased demands (McHale & Crouter, 1992).

These interpretations seem reinforced by the observation that men in this study reported increases in levels of life satisfaction at the point of marriage itself, while women reported decreases. That men showed this increase, while not demonstrating changes in life satisfaction leading up to or following marriage, suggests that men and women may have qualitatively different experiences of the period immediately surrounding the marriage date itself. For example, for men, simply becoming married may offer advantages in wellbeing, while, for women, characteristics or the quality of the relationship may moderate this effect (Nock, 1998). Although the literature remains equivocal about whether men and women have "his" and "her" marriages (Kurdek, 2005), our results suggest that men and women's experiences of the *transition* to marriage may be substantially different.

Participants' self-assessed general health was increasing up to the time of marriage. Role socialization theory would suggest that the months preceding marriage – the time point at which the new role officially takes effect – could be an especially acute time in which to change specific habits and behaviors to better align with one's conceptualization of proper spousal behavior. While one could reasonably infer that additional benefits to general health might occur as the couple continues to live together (Salvatore et al., 2019), sharing resources and growing more similar in their habits, the current study did not demonstrate this post-marriage effect, suggesting such benefits may require more time to manifest – or may have already taken place during the engagement period. Indeed, the protective effect of marriage in terms of drinking may exist primarily at the extreme end of the behavior, with marriage possibly reducing the likelihood of disordered drinking (Kendler et al., 2016).

Prior research suggested that gender differences would be seen in these effects on general health and alcohol use, as men sometimes appear to benefit more from getting married (Ray et al., 2009; Umberson, 1992; Umberson et al., 2006). However, no effects were found for these two variables in the longitudinal sample of Study 2. Some research suggests that the gap in marriage health benefits has been decreasing over time (Liu & Umberson, 2008), reflecting shifts in gender roles. It is possible that men and women are increasingly similar in their influences on each other's health behaviors. Alternatively, getting married may more consistently impact areas of wellbeing other than physical health and specific health behaviors.

Limitations

A limitation of our study is that Study 2's sample size precluded tests of relationship characteristics that may further explain or moderate the findings. For example, we could not control for having cohabited before marriage or having a baby before marriage, variables known to affect marital quality (Lavner et al., 2019). Individuals who cohabit with their eventual spouse before marriage report lower levels of marital adjustment (Kamp Dush et al., 2003; Stanley et al., 2004), and we could reasonably surmise that this would be reflected in their mental and physical health. Similarly, couples who had a child together before marrying are more likely to divorce and to have low initial and subsequent marital

quality trajectories (Birditt et al., 2012). For couples with children born before their current marriage, the sudden decrease in marital quality reported by married couples following the transition to parenthood (Doss et al., 2009) may have already occurred, and the marriage may therefore start from a different baseline compared with couples who have not yet had a child. Additionally, the lack of a shared or analogous relationship transition for the married and unmarried individuals prohibited comparing the trajectories of the two groups in Study 2. The lack of a reference group in Study 2 means we cannot conclusively state that the changes observed in the individuals who married were not also occurring for unmarried individuals.

Recent research with computer modeling of mate-choosing behaviors found evidence of cross-cultural (i.e. across 45 countries) assortative mating, wherein individuals seek out partners of comparable desirability (Conroy-Beam et al., 2019). This argues in favor of a fairly universal selection bias, with physically and mentally healthier individuals pursuing similarly healthy mates. Our cross-sectional findings fit this pattern, but this does not rule out the presence of causation effects before and after marriage. It may be that causation effects exist after marriage, but the timeframe for Study 2 was too short for analyses to detect them.

Conclusions and Future Directions

These findings have implications for clinicians and researchers working with engaged and newlywed couples. Our study suggests that the average couple, in the months before marriage, would experience generally improving mental and physical health, followed by a plateau or decline in these gains afterward. Tracking a couple's expectations for marriage and their ability to acclimate to those expectations in the lead-up to marriage would therefore be critical. Health changes prior to marriage might be a marker of whether or not these adjustments are taking place, and plateauing or experiencing decreases in overall wellbeing may be normative rather than a sign of impending marital difficulties.

In conclusion, the two studies presented here provide evidence consistent with the selection view of health and wellbeing differences between married and unmarried individuals. No sustained improvements in mental and physical wellbeing were demonstrated across the marriage transition, and the gains that were observed were concentrated in the months leading up to marriage, suggesting time-delimited social causation effects, at least when the period from approximately one year before to one year after marriage is measured. As moderation analyses suggested few differences in patterns based on socioeconomic factors, patterns of change before, at, and after the transition to marriage otherwise appeared consistent across such factors. We hope that future research will provide insight into why benefits to the relationship might accrue prior to the wedding itself, whether these benefits indeed constitute an 'engagement effect' or similarly construed effects of the transition to marriage beginning well beforehand, perhaps at the point one has found their mate, and if such a pattern reflects higher-quality relationships being more likely to transition to marriage in the first place or an effect that exists more broadly.

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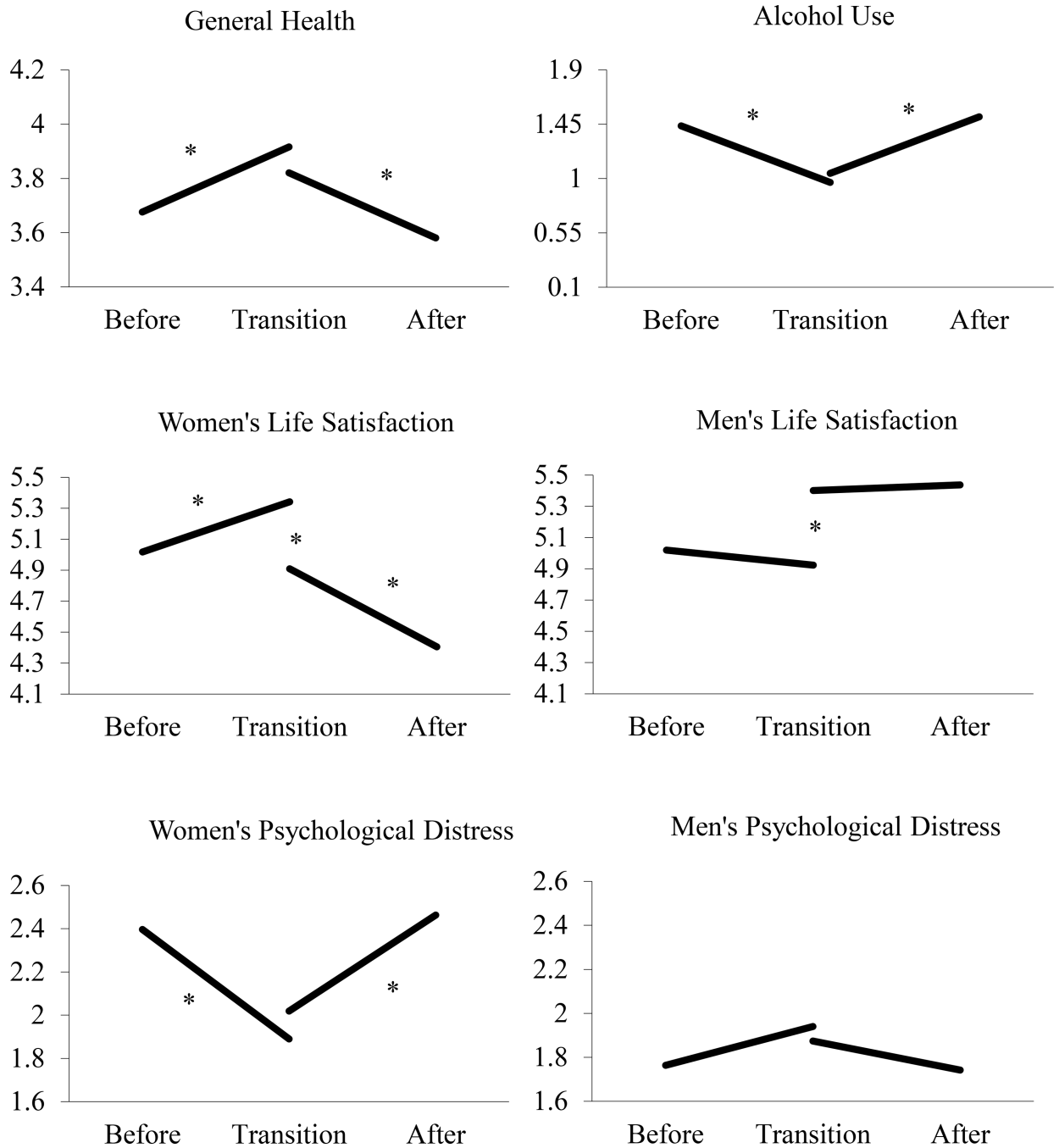
Figure 1.
Changes from before to after marriage on four variables. *Notes.* The X axes represent 1 year before the transition to 1 year following the transition. The Y-axis represents 1 standard deviation. Asterisks indicate when mean levels or trajectories before/after marriage were significantly different from zero ($p < .05$, one-tailed).

Table 1

Differences in Wellbeing by Relationship Status

	Dating, Not Cohabiting M (SD)	ES[1]/with controls	Dating, Cohabiting M (SD)	ES[2]/with controls	Married M (SD)	ES[3]/with controls
Life Satisfaction	4.59[a] (1.39)	0.01/0.14	4.58[a] (1.46)	0.51/0.43	5.25[b] (1.18)	0.45/0.47
Psychological Distress	2.23[a] (1.02)	0.02/0.10	2.21[a] (0.99)	0.27/0.19	1.96[b] (0.86)	0.25/0.23
General Health	3.82[b] (0.91)	0.31/0.25	3.54[a] (0.91)	0.29/0.20	3.78[b] (0.77)	0.00/0.05
Alcohol Use	1.69[a] (2.33)	0.01/0.02	1.67[a] (2.57)	0.28/0.33	1.06[b] (1.72)	0.29/0.29

Superscripts indicate significant differences among groups (i.e., values with different superscripts are significantly different from each other), all $ps < .05$. ES[1] = effect size for the difference between Dating and Cohabiting. ES[2] = effect size for the difference between Cohabiting and Married. ES[3] = effect size for the difference between Dating and Married. Control variables included in the calculation of ESs with controls included personal income, number of hours employed per week, Black, Latino/a, other race/ethnicity, age, and gender.

Table 2

Coefficients for Multilevel Models Examining the Effect of the Transition to Marriage

	Intercept (π_0)	Slope$_{before}$ (π_1)	Slope$_{after}$ (π_2)	Level Change (π_3)
Life satisfaction	5.20 *** (0.10)	0.01 (0.01)	−0.03 * (0.01)	0.19 * (0.09)
Psych. distress	1.91 *** (0.07)	−0.01 ^{a} (0.01)	0.01 (0.01)	0.06 (0.07)
Alcohol use	0.97 *** (0.06)	−0.04 ** (0.01)	0.04 * (0.01)	0.08 (0.13)
General health	3.92 *** (0.06)	0.02 ** (0.01)	−0.02 * (0.01)	−0.10 (0.06)

Note. The primary numbers in the table are the unstandardized coefficients for the fixed effects.

Standard errors are in parentheses. Slope (time) was measured in months.

[a] $p < .06$

* $p < .05$

** $p < .01$

*** $p < .001$