

For Better or Worse? Marriage, Happiness, Health, and Longevity

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ABSTRACT

Research has established that married individuals are healthier and live longer than those who have never married, divorced, separated, or been widowed. But not all marriages are equal, and unhappy marriages provide fewer benefits than happy marriages. This study uses the General Social Survey–National Death Index (GSS-NDI) to determine the relationships among marital status, marital happiness, general happiness, and health and longevity in the United States. Compared to individuals who are very happily married, those who are “not too happy” in marriage are over twice as likely to report worse health and almost 40% more likely to die over the follow-up period, net of socioeconomic, geographic, and religiosity factors. The results also indicate that marital happiness is related to general happiness, which is associated with better health and longevity. Happy marriages contribute to healthier and longer lives, but unhappy marriages may aggravate, rather than buffer, health risks.

INTRODUCTION

Research has consistently demonstrated that married individuals have better health and lower mortality than those who are single, separated, divorced, or widowed (Dupre, Beck, & Meadows, 2009; Rogers, 1995). The positive health association includes better mental health (Horwitz et al., 1996; Kessler & Essex, 1982; Wadsworth, 2015) and a range of physical health factors, such as fewer health conditions and shorter times for recovery from illness (Umberson et al., 2006; Waite, 1995). Yet there is heterogeneity in marital quality, and we have much to understand about the health consequences of these differences.

We examine one indicator of marital quality—happiness in marriage—and its relationships to health and longevity. Although marriages generally promote health and reduce the risk of death, examining whether and how much individuals benefit from very happy versus less happy marriages will help explicate why and under what conditions marriage protects people. We merge two literatures to shed light on the health processes of marriage: a demographic perspective that emphasizes disparities across marital status and a psychological approach that considers marital quality and its effects on health. We also take into account the potential influence of general happiness on marital happiness and health patterns. This is the first study, to our knowledge, to use a nationally representative sample and consider the influence of marital status, marital happiness, and general happiness on health and mortality.

MARITAL STATUS AND HEALTH

The positive links between marriage and health may operate via protective effects of marriages (marriage protection) or they may result from healthier individuals' being more likely to marry (marriage selection). Studies have found evidence of both of these processes, suggesting that

healthier individuals select into and also benefit from marriage (Fu & Goldman, 1996; Goldman, 1993; Waldron et al., 1996). The protective effects work through the promotion of healthy behaviors, increased material well-being, and greater levels of social support and connections (Carr & Spring, 2010; Green et al., 2012; Holt-Lunstad, Smith, & Layton, 2011; Lillard & Waite, 1995; Ross, 1995; Ross et al., 1990; Umberson et al., 2010; Waite, 1995). Central to research on the health benefits of marriage is the “buffering hypothesis,” which asserts that individuals with strong social support can better cope with stress, mitigating its health consequences (Rook, 1984). Social support is associated with improved cardiovascular, neuroendocrine, and immune functioning (Robles & Kiecolt-Glaser, 2003; Uchino, 2006).

MARITAL HAPPINESS AND HEALTH

If the physical and psychological benefits of marriage operate largely through social support, then those benefits may not apply equally to people who are unhappily married. Some evidence suggests that the effects of marriage differ depending on marital functioning (Kiecolt-Glaser & Newton, 2001). For example, Ross (1995) found that the protective effect of marriage on psychological health varies: unhappy relationships were associated with the highest levels of depression. Positive marital quality has health benefits, as Wickrama and associates (1997) found that improvements in marital quality were associated with decreasing physical illness.

Although happy marriages may improve physiological responses to stress and reduce negative health behaviors, marriages of poor quality may not only lack these benefits but also add to everyday stress. Problematic social interactions, termed “social strain” by Rook (1990), evoke negative psychological and physiological responses. Negative spousal behavior such as being demanding or critical, for instance, is associated with poorer health (Bookwala, 2005). Hostile interactions between spouses have direct physiological effects, as standardized wounds in

an experiment healed more slowly after arguments between spouses than after friendly encounters, and healing was particularly slow in couples described as high-hostile (Kiecolt-Glaser et al., 2005). These findings suggest that problematic marriages may exhibit a process in opposition to “buffering,” which we term “aggravating.” Good marriages may buffer stress, but bad marriages may aggravate it.

In sum, research in demography has shown that being married is good for health and longevity. At the same time, psychological research has documented that positive and negative marital characteristics have different health consequences (Robles et al., 2013). But because many of the studies examining marital quality used small, nonrepresentative samples and examined limited health outcomes, the broader consequences of marital quality for health and longevity are unknown. Further, many of the studies of marital quality examine only married couples, foreclosing comparisons to people in other marital statuses. It is important to consider the role of marital quality in relation to the role of marital statuses, because the health advantages of marriage compared to being single or separated may (or may not) be evident even among couples with strained marriages.

THE ROLE OF GENERAL HAPPINESS

There may be reporting differences or general psychological traits that shape both marital happiness and health. One way to take these considerations into account is through measuring general happiness. Research has established relationships between marital happiness and general happiness, between general happiness and marital status, and between general happiness and health. Nonetheless, we do not know how marital status, marital happiness, and general happiness are together associated with health and longevity.

Marriage is one of the strongest predictors of overall happiness (Glenn & Weaver, 1981; Haring-Hidore et al., 1985; Proulx, Helms, & Buehler, 2007; Veenhoven, 1994; Wadsworth, 2015). This relationship appears strong and pervasive. For instance, it was identified in all of 17 developed countries in an international study (Stack & Eshleman, 1998). Although the association may be due partly to selection of certain individuals into marriage, at least some of it appears due to either direct or indirect benefits of marriage (Wadsworth, 2015; Waite, 1995).

Further, among married couples, happiness in marriage is associated with general happiness (also referred to as positive well-being). Carr and colleagues (2014) demonstrated that marital satisfaction was strongly associated with life satisfaction. Using longitudinal data, Dush and colleagues found that adults who were happiest in marriage showed the smallest subsequent drops in life happiness. Although those who exit from unhappy marriages may be a select group of individuals, the improvements in psychological well-being among them (Waite, Luo, & Lewin, 2009) further suggest that marital happiness may shape general happiness.

Happiness refers to individuals' cognitive and affective evaluation of their lives as a whole. Happiness is a complex construct, commonly thought of as comprising three dimensions: positive affect (experiencing pleasant moods and emotions), the relative absence of negative affect, and life satisfaction (Diener, 2000). Positive affect predicted the onset of frailty in a longitudinal study of elderly Mexican Americans (Ostir, Ottenbacher, & Markides, 2004) and the incidence of cardiovascular disease among Canadian adults (Davidson, Mostofsky, & Whang, 2010). Happiness was also associated with lower mortality among US adults (Lawrence, Rogers, & Wadsworth, 2015), Dutch elderly (Koopmans et al., 2010), Alameda County residents (Xu & Roberts, 2010), and British respondents (Steptoe & Wardle, 2011). Further, happiness has been found to be associated with self-rated health (Liu et al., 2016; Pettit et al., 2001; Zajacova &

Dowd; 2014) and other health dimensions (Pressman & Cohen, 2005). In a recent review, Diener and Chan (2011) summarized dozens of studies using both observational and experimental designs that examined the effect of happiness on health outcomes in different population subgroups. The authors concluded that the influence of happiness on “health and all-cause mortality” was “clear and compelling” and that substantively the effects were large (Diener & Chan, 2011).

Still, we do not know how marital status, marital happiness, and general happiness together shape health and longevity. General happiness may mediate the effects of marital status and marital happiness on health and longevity. If happiness in marriage leads to happiness in life, then perhaps the health benefits of happiness in marriage are explained by this general happiness. In contrast, we could find that marital and general happiness have separate, independent effects, or that they have synergistic effects so that a person who is happy in both of these ways has even greater health benefits. Because research has indicated that marital status, marital happiness, and general happiness are associated, and each of these has been shown to have important health effects, we expect that considering general happiness will attenuate the effects of marital status and marital happiness, but that general and marital happiness will also have unique effects.

THE PRESENT STUDY

This study aims to determine the relationship between marital happiness and self-rated health (SRH) and the effects of marital happiness on subsequent mortality risk among a nationally representative population. Given previous research establishing the relationship between marital quality and poor health, we anticipate that individuals who are unhappy in their marriage will display poorer health and shorter longevity than those who are very happy in their marriage. However, we do not have studies to draw upon to compare those who are unhappy in marriage to

individuals who are divorced, separated, widowed, or never married. We therefore make these comparisons as well.

METHOD

Data

We use the General Social Survey (GSS), a nationally representative cross-sectional sample of noninstitutionalized English-speaking adults (aged 18 and over) in the United States. This survey began collecting information on individuals' behaviors and attitudes in 1972, and continues to do so every other year. The GSS samples households and randomly selects one household member to be interviewed. Surveys from years 1978 to 2002 are linked to mortality information through 2008 from the National Death Index (NDI) in the General Social Survey-National Death Index (GSS-NDI) dataset (NORC, 2011; Muennig et al., 2011a; Muennig et al., 2011b). We use surveys from years 1988 to 2002, a 15-year time span with the 10 most recent waves of data. We also estimated models with all available years, and findings were comparable to those shown here.

The GSS-NDI sample for years 1988–2002 includes 21,045 individuals. Of this sample, 21 individuals are missing information on age and are omitted from our analyses. In 2002, only a random subsample received the question on marital happiness, resulting in an additional 614 individuals who did not receive the question and therefore are excluded from the analyses, leaving a sample of 20,410. We retain this full sample for the analyses of mortality. To reduce respondent burden, SRH is collected from a random subsample of respondents in all years except 1998 (when all respondents received the question). This leaves a sample of 15,442 individuals for the SRH analyses.

Measures

Our outcome measures include SRH and mortality. SRH captures a broad range of mental and physical health conditions, and research shows that this measure has strong predictive ability for subsequent mortality and morbidity (Idler & Benyamini, 1997; Jylhä, 2011). The GSS asks respondents “Would you say your own health, in general, is excellent, good, fair, or poor?” The responses are coded 1 through 4, with lower scores indicating better health. We use this four-point scale because the more commonly used five-point scale was not administered until 2002.

Though informative and useful, SRH is not without limitation. Importantly, it is collected concurrently with the independent variables, so it is not possible to make credible claims about the direction of effects. Also, recent research has found that its validity differs across race/ethnicity and socioeconomic status (Dowd & Zajacova, 2010; Zajacova & Dowd, 2011). We therefore also examine mortality as an outcome. Mortality is measured and reported with little error, and it cannot raise issues of reverse causality. Furthermore, as the last event in a person’s life, death represents a central and defining moment. We do not expect mortality to be as sensitive as SRH to marital happiness because there could be many important events occurring between the time when marital happiness was reported and when the respondent died. Together, SRH and mortality can create a picture of the health effects of marital happiness. The NDI used a matching algorithm to identify mortality information for the respondents, explained in detail by Muennig and colleagues (2011a). Of the individuals in our sample, 4,266 died during the follow-up.

Our key independent variable combines marital status and marital happiness. Marital status includes four categories: married, never married, divorced/separated, and widowed. Those who are married are then asked the following question: “Taking things all together, how would you describe your marriage? Would you say that your marriage is very happy, pretty happy, or

not too happy?” Because individuals who are not married do not report marital happiness, we create one variable with six mutually exclusive categories: very happy marriage (referent), pretty happy marriage, not too happy marriage, never married, divorced or separated, and widowed.

Our other main independent variable of interest is general or overall happiness. General happiness compares responses to the question, “Taking all things together, how would you say things are these days—would you say that you're very happy, pretty happy, or not too happy these days?” We compare those reporting they are very happy (referent) to those who are pretty or not too happy.

Covariates include age, sex, race, socioeconomic status, geographic location, and religiosity. All multivariate models control for sex and race. Mortality models incorporate age into the duration variable, and SRH models include age as a covariate.

Educational attainment, income-to-needs ratio, and employment capture socioeconomic status. The number of years of education is recoded to four categories: less than high school, high school, more than high school, and college degree or higher (referent). Income-to-needs ratio is the ratio of the household's income to the poverty threshold given by the U.S. Census for that year and household size. Income-to-needs categories then represent whether the ratio is below 100%, 100–200%, 200–300%, or above 300% (referent). Employment status is defined by eight different categories, with the reference group of full-time workers compared to part-time workers, those temporarily not working, unemployed individuals, retirees, students, those keeping house, and individuals reporting other employment status.

Nine different U.S. Census divisions compose the categorical geographic location variable: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific. The division with the smallest

percentage of deaths, the Mountain division, is used as the referent. We also incorporate religiosity because measures of religiosity are associated with higher likelihood of marriage and higher marital quality (Mahoney, 2010), as well as lower risk of death (Hummer et al., 1999). We use attendance as the most relevant measure of religiosity (Musick, House, & Williams, 2004), categorizing attendance as never attending religious services, attending services less than once a week, attending services once a week, or attending services more than once a week (referent).

Analytic Approach

We analyze the relationship between marital happiness and SRH using ordered logit models. We start with a base model that includes the mutually exclusive marital status/happiness categories, sex, race, and age. Then we add other covariates to determine their effect on health status and the influence of marital status/happiness net of these other factors. We use F tests to compare coefficients for pretty happily and not happily married statuses to never married, divorced or separated, and widowed statuses.

We then estimate comparable analyses for mortality, using Cox proportional hazards models. These models use age at interview as the time variable, and the duration is calculated as the time from the interview to death or 2008 (the end of the follow-up period). That is, the respondents vary in the amount of time between their report of happiness and their death or the end of the follow-up period, and we control for this amount of time implicitly in the Cox proportional hazards modeling approach by including it as the duration. We handle failure ties using the Efron method (Hertz-Picciotto & Rockhill, 1997). Tests of proportionality indicate that our main independent variable of interest (marital status and marital happiness) does not violate proportionality.

We then consider general happiness. We first examine the associations between general happiness and marital status/happiness through descriptive statistics and a multinomial logistic regression model predicting general happiness. Next, we include general happiness in the SRH and mortality models, both with and without the marital status/happiness variable. We also interact general happiness with marital status/happiness to determine whether these characteristics moderate one another.

We use multiple imputation to retain the full sets of available respondents (20,410 for mortality analysis and 15,442 for SRH). Separate imputation models and analyses were applied for each of the two samples. The imputation used all independent and dependent variables. No values were imputed for gender, race, age, work status, or geographic division for either mortality or SRH analyses. For the mortality analyses, 0.3% of values were imputed for the marital status and happiness categorical variable, 0.3% for education, 10.5% for income-to-needs ratio, 1.8% for religious attendance, and 4.1% for general happiness. For the SRH analyses, 0.4% of health status values were imputed, 0.3% for marital status and happiness, 0.3% for education, 10.3% for income-to-needs ratio, 1.8% for religious attendance, and 3.7% for general happiness. We use a fully conditional specification (FCS) approach with chained equations using the *mi impute chained* command (Statacorp, 2015), creating ten datasets for both imputation models.

RESULTS

Table 1 presents the descriptive statistics for the sample, and for each of the marital status and happiness categories. Nearly half of the respondents are married, less than a quarter are never married, and just over a quarter are divorced, separated, or widowed. At 30.1% of the sample, the largest group is those who are married and very happy in their marriage. In contrast, a very small number of individuals (1.3% of the sample) are not happy in their marriage.

Table 1 about here

The distributions of the covariates for individuals within each of the marital status and happiness categories suggest some important patterns. Predictably, those who are never married are younger than average and those who are widowed are older. Those who are very happy in their marriage are more commonly white and have higher SES, whereas those who are not happily married are disproportionately black and report keeping house as their employment status. Women and men are fairly evenly distributed among those who are married and very happy, but women make up nearly two-thirds of those who are not happy in their marriage. Respondents with more frequent religious attendance are disproportionately more likely to be happily than to be unhappily married.

Figure 1 illustrates the distribution of SRH categories across marital status/happiness. Those who are in a very happy marriage have the largest proportion (39.0%) of individuals reporting excellent health and the smallest proportion (3.3%) reporting poor health. In contrast, those who are in pretty happy and not too happy marriages have the smallest percentages of individuals reporting excellent health, at 24.1% and 18.6% respectively. Those who are widowed have the highest rate of poor health (8.3%), although age is a likely confounder for this association.

Figure 1 about here

Turning to the multivariate models, Table 2 presents results from ordered logistic regression models of the four-point scale of SRH (higher is worse health). The base model demonstrates that compared to those in very happy marriages, people in all of the other marital status/happiness categories have higher odds of reporting worse health, net of sex, race, and age. Those who are unhappy in their marriage have 2.3 times higher odds ($p < .001$) of reporting worse

health than those in the referent group. Controlling for SES (Model 2) attenuates the odds of reporting worse health for each of the groups, particularly for the widowed group. Geographic location does little to change the effects (Model 3), but religious attendance further attenuates the differences (Model 4). Still, the differences remain strong even with all of these controls. Additional analyses available on request show that those not happily married have significantly higher odds of worse health than those never married, divorced/separated, or widowed (and marginally significantly higher than those pretty happily married). The pretty happily married have statistically significantly higher odds of worse health than the never married and widowed, but not divorced individuals.

Table 2 about here

Table 3 presents Cox proportional hazard models of the effect of marital happiness on mortality risk. Model 1 shows the hazard ratios for the marital status and happiness categories, net of sex, race, and age (incorporated as duration). Compared to those reporting very happy marriages, those in pretty happy marriages have similar mortality risk, but each of the other groups, especially those in unhappy marriages, demonstrates higher risk. Models 2–4 add controls for SES, location, and religious attendance, respectively. These variables do little to change the results for the marital status and happiness groups. Compared to those in very happy marriages, those in not too happy marriages are 38% more likely to die over the study period, net of the covariates. Additional comparisons (not shown but available on request) show that this increased risk is statistically significant compared to the risks for those who are never married, divorced/separated, or widowed (and marginally significant compared to the risk for the pretty happily married). As regards mortality, not being married—whether widowed, divorced, or single—is preferable to being unhappily married. Adding SRH to these models (not shown)

eliminates the differences in mortality risk across the marital status/happiness categories, with the exception of the pretty happily married, who have a marginally significantly lower mortality risk (HR=.87) than do very happily married individuals. SRH is a robust predictor of mortality risk and may capture the pathways through which marital status/happiness shapes longevity.

Table 3 about here

Thus far, the results demonstrate that adults who report being very happy in marriage have the best health and lowest mortality, whereas those who report being in unhappy marriages have the worst health and highest mortality risk, higher even than those who are divorced or widowed. But these results do not yet consider the role of general happiness as potentially underlying marital happiness or its reporting. Figure 2 depicts the distribution of general happiness across marital status/happiness categories. The higher percentage of generally very happy individuals among those in a very happy marriage compared to the other groups is striking. Additionally, only a small number of individuals (3.0%) who are in a very happy marriage are generally unhappy. Most individuals in a pretty happy marriage also report being pretty happy generally (79.4%). And not too happy marriages have the highest percentage (46.5%) of generally unhappy individuals. These initial findings suggest a strong relationship between marital happiness and general happiness. Those who never married, divorced or separated, or were widowed demonstrate somewhat similar happiness levels. Multinomial logistic regression models predicting overall happiness (not shown) support these patterns, as those who are never married, widowed, pretty happily married, divorced/separated, or not happily married have higher odds of being unhappy in general than do very happily married respondents, net of sociodemographic factors, SES, location, and religious attendance.

Figure 2 about here

To understand how these patterns contribute to differences in health and mortality, we now investigate whether general happiness mediates or moderates the effects of marital status and marriage happiness. Table 4 displays effects of marital status and happiness and overall happiness on health and mortality separately, combined, and interacted. Each of these models includes the full set of controls (age, gender, race/ethnicity, SES, geographic location, and religion). Model 1 for SRH and mortality duplicates the findings reported in the final models in Tables 2 and 3. Model 2 does not consider marital status and happiness, but rather examines general happiness. Compared to those who are very happy, those who are pretty happy or unhappy are significantly more likely to report worse health and have increased mortality risk. Model 3 includes both general and marital happiness jointly. For both outcomes, general happiness is robust to the inclusion of marital happiness—the odds ratios remain completely unchanged for SRH and only minimally changed for mortality. For SRH, net of general happiness, the link between worse SRH and not happy marriages becomes nonsignificant. This suggests that the relationship between marital happiness and health is either mediated or confounded by general happiness—marital happiness is related to general happiness, which is associated with better health. For mortality, the marital happiness findings are more robust to the inclusion of general happiness—general happiness does not appear to serve the same role in affecting mortality as it does in SRH. In Model 4, we add interactions between general happiness and marital status/happiness to test for possible moderation effects. For both outcomes, there is one statistically significant interaction term (and one marginally significant) between marital status and happiness and overall happiness, which we interpret as weak or no evidence of moderation.

Table 4 about here

We performed a number of robustness checks to determine whether the results were sensitive to our modeling approach and specifications. First, we examined whether the results changed when we included the full range of interview years (1978–2002). The results for this longer range showed similar patterns. Second, we tested for differences in the effects of marital status and happiness on health and mortality across gender, race, and age. Research has found that marital happiness differs across gender and race, but it is unclear whether the effects of marital status/happiness on health and mortality also differ across these categories. In line with previous research (Umberson et al., 2006), little to no evidence emerged for sex differences. No interaction terms were significant for SRH, and only the divorced/separated*male interaction term was marginally significant for mortality. Interaction terms between race/ethnicity and marital status/happiness produced significant effects only for black widowed individuals, but the effects contrasted across health and mortality. Tests of proportionality demonstrated that mortality risk is similar across marital status/happiness categories across age. For SRH, those who had never married had increasing odds of worse health as age increased, and those who were widowed demonstrated marginally significant and decreasing odds with greater age. Overall, these mixed results suggest that differences across gender, race, and age are not central to the effects of marital status/happiness on health and mortality.

Third, we determined whether SRH results were robust to the regression approach by comparing results from models using logistic and ordinary least squares (OLS) regressions to predict SRH. Although the effect sizes cannot be compared directly, the patterns and conclusions were similar across the regression approaches. Fourth, we examined different causes of death in Cox hazards models to determine whether there was evidence of mechanisms; no clear pattern emerged. We speculate that the small numbers of deaths in the pretty happily married and not too

happily married categories prevent precise estimates for these groups. Fifth, we examined trends in the marital status/happiness variable to identify whether changes in the distribution over time may obscure findings. The distribution of this variable is provided in Supplemental Figure 1. In accordance with other research, the proportion married has declined over time, while the proportions never married and divorced/separated have increased. However, among married individuals, the relative proportions of those who are very, pretty, or not happy in their marriage have remained similar over time.

DISCUSSION

Research has consistently documented better health and longer lifespan for married adults compared to those not married. But little attention has been paid in these studies to marital quality, despite research in psychology which has showed that this dimension of marriage has a large impact on the benefits of marriage for health. This study identifies the joint effects of marital status and marital happiness on health and mortality risk. The results indicate that there is important heterogeneity among married individuals with respect to marital quality, and that the differences can have important consequences.

Although the number of individuals in unhappy marriages is relatively small, they are at risk. In support of the aggravating hypothesis, the results suggest that unhappy marriages are most detrimental; individuals who report that they are not happy in their marriage exhibit worse health and higher mortality than those in all other groups, including those never married, divorced or separated, and widowed. Unfortunately, the observational data prevent us from drawing causal inferences—for instance, whether the consequences of unhappy marriages would be ameliorated or worsened through divorce, separation, or staying single. Other research has found that leaving unhappy marriages improves psychological well-being, especially for women

(Waite, Luo, & Lewin, 2009), but future research should examine in detail the health consequences of changing marital statuses and their associations with marital and general happiness.

Studies on the benefits of marital status have appealed to the buffering hypothesis to focus on qualities that exist in happy marriages, such as social support. Only a small proportion of married individuals report being unhappy in marriage, and previous studies may have missed this group. Research overlooking this heterogeneity may understate the benefits of a good marriage.

Building on these findings, this study suggests that some marriages may place individuals at greater health risk. Individuals in unhappy marriages may be more likely to have stress-inducing interactions, experience domestic violence, and engage in unhealthy behaviors, such as drug use, alcohol abuse, and smoking. The mechanisms of marriage's protective effects may instead aggravate stress and unhealthy behaviors and decrease general happiness for those in unhappy marriages. Individuals who are unhappy in their marriages may take measures to improve their relationship, may stew in an unhappy marriage, or may divorce or separate. Further research might focus on individuals reporting unhappy marriages and why they are in these relationships. In particular, dyadic data on the characteristics of their spouses may be informative.

Adults who are very happy in marriage report the highest rates of being generally very happy. Most likely, marriage both selects happy people and also provides support and resources that contribute to further happiness. Additionally, individuals who are unhappy in marriage may divorce, which may be one reason that divorced individuals are least likely to be very happy. When we accounted for general happiness, the effects of marital happiness were attenuated,

although our analysis does not allow us to determine the nature of the relationship between marital and general happiness. Marital happiness could influence health and mortality through general happiness, or general happiness could be a confounder. These results linking general and marital happiness suggest that marital happiness is a broad indicator of well-being, and not just a signifier of the quality of interactions with one's spouse. Overall, being in a happy marriage is clearly linked to health and longevity, in part because of its association with general happiness.

To our knowledge, our study is the first representative longitudinal study to examine marital status and marital quality jointly, and also to control for an important potential confounder, general happiness. We use two of the most widely used health outcomes: SRH and mortality. An additional advantage is that the longitudinal follow-up of mortality data allows us to identify a temporal relationship and avoid reverse causation in interpreting associations.

Many health and mortality studies include a simple categorical measure of marital status to control for this important trait. The results of our study suggest that such inclusion may represent the majority of individuals who are very happy in their marriage, but cannot capture the heterogeneity of marital quality. As the trends in marital status shift over time, the social meanings of marital status may also shift, and research should continue to examine the different types of effects within each of these groups. Future research may also consider the health role of marital status/happiness among sexual minorities. Not only will such inclusion be necessary to represent the U.S. population as marriages become more diverse (Fincham & Beach, 2010), but differences in types of marriage and selection into marriage may also shed light on the mechanisms and processes through which social relationships benefit or harm health and longevity.

These findings should be considered in light of the study's limitations. First, we can capture marital status, marital happiness, and general happiness only for one point in time. There may be important effects of changes or stability in marital status or quality that we cannot capture. We also cannot identify the direction of causality between marital and general happiness. Second, we control for a variety of factors, but there may be additional confounders that shape marital status, marital happiness, and health. For example, personality and health behaviors may influence whether individuals marry, how happily married they are, and their health.

Marriage can protect health, but may also offer risks. Marriage contributes to better health and longer lives, but only for those who are pretty happy or very happy in marriage. Some policies focus on the quantity of marriages and social relationships, but improving the quality of interactions could be an additional way to improve life expectancies. As a central social institution, marriage should make couples' lives better, not worse. For individuals who suffer in an unhappy marriage, divorce or separation may be a reasonable option. Still, happy marriages are quite common and contribute to healthier and longer lives.

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Table 1. *Percentage Distribution by Marital Status and Happiness Categories, U.S. Adults 18 and Over (1988–2002)*

	All	Never married	Divorced/ separated	Widowed	Married		
					Very happy	Pretty happy	Not too happy
Population		22.9 %	18.5 %	10.4 %	30.1 %	16.8 %	1.3 %
Sociodemographic factors							
Age							
18–44	54.4 %	85.6 %	51.1 %	5.2 %	51.3 %	51.6 %	53.1 %
45–64	27.7	10.2	38.6	20.9	32.6	34.3	35.6
65+	18.0	4.2	10.3	73.9	16.2	14.1	11.4
Male	43.7	50.5	37.8	18.4	49.9	45.8	37.6
Race							
White	81.6	72.3	78.0	82.7	89.0	84.5	75.6
Black	13.4	20.4	17.5	15.0	6.3	10.6	17.3
Other race	5.0	7.2	4.5	2.3	4.6	4.9	7.1
Socioeconomic Status							
Education							
Less than HS	19.4	16.4	19.2	39.8	15.3	18.4	22.1
High school	30.4	25.6	31.2	32.5	30.9	34.0	25.5
Some college	26.3	30.8	29.2	17.0	25.0	24.9	29.2
College degree	23.9	27.2	20.5	10.7	28.7	22.7	23.3
Employment							
Full time	52.6	55.7	62.2	14.1	56.2	55.3	53.6
Part time	10.7	14.9	8.7	6.9	9.8	11.2	10.7
Temp not working	2.0	1.8	2.2	0.9	2.5	1.8	2.9
Unemployed	2.7	5.1	3.4	1.1	1.3	1.9	4.0
Retired	14.1	4.1	10.0	49.9	13.4	11.4	9.6
In school	3.1	10.1	1.8	0.3	0.9	1.0	0.4
Keeping house	12.9	6.6	8.4	23.8	14.7	16.2	17.0
Other	1.9	1.7	3.2	3.0	1.3	1.2	1.8
Income-to-needs ratio							
<100%	15.5	23.5	21.5	27.8	5.7	7.7	14.2
100–200%	29.8	26.2	24.4	32.2	30.4	37.4	34.8
200–300%	32.8	25.0	26.1	20.4	43.2	39.6	37.3
300%+	22.0	25.3	28.0	19.7	20.7	15.2	13.8
Location							
New England	5.1	5.4	4.3	6.3	5.1	4.9	5.2
Middle Atlantic	14.4	16.8	12.7	14.1	13.0	15.3	16.3
E. Nor. Central	17.2	16.1	17.1	19.0	17.3	17.7	18.0
W. Nor Central	8.0	8.8	7.1	8.0	7.9	8.2	6.3
South Atlantic	18.5	17.0	19.0	18.6	19.7	18.3	14.0
E. Sou. Central	7.3	5.5	8.3	9.5	7.6	6.7	7.0
W. Sou. Central	9.6	8.6	10.5	9.7	9.8	9.2	9.2
Mountain	6.4	7.1	6.1	5.0	6.1	6.9	6.3
Pacific	13.6	14.6	14.9	9.8	13.5	12.9	17.7
Religious attendance							
Never	17.2	22.3	21.2	15.7	12.4	15.2	22.7
< once a week	56.3	60.9	59.7	45.4	53.6	57.9	52.6
Once a week	19.1	12.7	13.4	27.3	24.1	20.2	19.2
> once a week	7.4	4.2	5.7	11.6	9.8	6.7	5.5

Source: GSS-NDI. N=20,410

Table 2. Odds Ratios from Ordered Logistic Regression Predicting Self-rated Health, U.S. Adults 18 and Over (1988–2002)

	Model 1		Model 2		Model 3		Model 4	
Marital status/happiness (Very happy marriage)								
Never married	1.63	***	1.53	***	1.55	***	1.48	***
Divorced/separated	1.77	***	1.71	***	1.72	***	1.63	***
Widowed	1.92	***	1.38	***	1.37	***	1.34	***
Pretty happy marriage	1.78	***	1.71	***	1.71	***	1.67	***
Not too happy marriage	2.33	***	2.26	***	2.27	***	2.18	***
Sociodemographic factors								
Age	1.03		1.02	***	1.02	***	1.02	***
Male	0.98	*	1.09	*	1.09	*	1.06	
Race (white)								
Black	1.58	***	1.23	***	1.19	***	1.23	***
Other race	1.54	***	1.33	***	1.37	***	1.40	***
Socioeconomic status								
Income-to-needs ratio (300%+)								
<100%			2.30	***	2.28	***	2.28	***
100–200%			1.57	***	1.57	***	1.60	***
200–300%			1.25	***	1.25	***	1.26	***
Education (college degree+)								
Less than high school			2.97	***	2.87	***	2.75	***
High school			1.84	***	1.80	***	1.76	***
Some college			1.44	***	1.43	***	1.41	***
Employment (full time)								
Part time			0.98		0.99		1.01	
Temp not working			1.45	**	1.45	**	1.45	**
Unemployed, laid off			1.43	***	1.44	***	1.44	***
Retired			1.53	***	1.54	***	1.55	***
In school			0.99		1.00		1.04	
Keeping house			1.55	***	1.55	***	1.58	***
Other			6.13	***	6.10	***	6.10	***
Location (Mountain)								
New England					0.95		0.96	
Middle Atlantic					1.24	**	1.25	**
E. Nor. Central					1.14	+	1.17	*
W. Nor. Central					1.10		1.13	
South Atlantic					1.08		1.11	
E. Sou. Central					1.49	***	1.55	***
W. Sou. Central					1.16	+	1.19	*
Pacific					1.01		1.00	
Religious attendance (> once a week)								
Never							1.46	***
Less than once a week							1.32	***
Once a week							0.96	
Cut 1	2.28	***	4.13	***	4.61	**	5.92	***
Cut 2	20.58	***	44.01	***	49.38	***	63.92	***
Cut 3	120.87	***	295.96	***	333.55	***	435.31	***

Notes: Referent is listed in parentheses. Odds ratios greater than 1 indicate greater likelihood of reporting worse health. N=15,442. Source: GSS-NDI. *** p < .001; ** p < .01; * p < .05; + p < .10

Table 3. Hazard Ratios from Cox Proportional Hazards Models, U.S. Adults 18 and Over (1988–2002)

	Model 1	Model 2	Model 3	Model 4
Marital status/happiness (very happy marriage)				
Never married	1.11 +	1.09	1.10	1.08
Divorced/separated	1.18 ***	1.14 **	1.14 **	1.11 *
Widowed	1.19 ***	1.13 *	1.12 *	1.11 *
Pretty happy marriage	0.97	0.96	0.96	0.95
Not too happy marriage	1.45 **	1.41 **	1.41 **	1.38 *
Sociodemographic factors				
Male	1.42 ***	1.46 ***	1.47 ***	1.44 ***
Race (white)				
Black	1.49 ***	1.38 ***	1.37 ***	1.39 ***
Other race	1.15	1.11	1.09	1.11
Socioeconomic status				
Income-to-needs ratio (300%+)				
<100%		1.08	1.08	1.08
100–200%		0.98	0.98	0.99
200–300%		0.91 *	0.91 *	0.91 *
Education (college degree+)				
Less than high school		1.33 ***	1.32 ***	1.31 ***
High school		1.23 ***	1.24 ***	1.23 ***
Some college		1.20 ***	1.20 **	1.19 **
Employment (full time)				
Part time		1.02	1.03	1.03
Temp not working		1.23 +	1.23 +	1.22 +
Unemployed, laid off		1.11	1.11	1.10
Retired		1.18 **	1.18 **	1.18 **
In school		0.94	0.94	0.95
Keeping house		1.18 **	1.19 **	1.19 **
Other		1.75 ***	1.75 ***	1.74 ***
Location (Mountain)				
New England			1.00	1.00
Middle Atlantic			1.05	1.05
E. Nor. Central			1.08	1.09
W. Nor. Central			0.86 +	0.86 +
South Atlantic			1.10	1.11
E. Sou. Central			0.99	1.01
W. Sou. Central			1.23 *	1.24 **
Pacific			1.09	1.07
Religious attendance (> once a week)				
Never				1.24 **
Less than once a week				1.19 **
Once a week				1.06

Notes: Referent is listed in parentheses. N=20,410.

Source: GSS-NDI

*** p < .001; ** p < .01; * p < .05; + p < .10

Table 4. *Effects of Marital Happiness and General Happiness on Health (Odds Ratios) and Mortality (Hazard Ratios), U.S. Adults 18 and Over (1988–2009)*

	SRH ^a				Mortality Risk ^b			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Marital status/happiness (very happy marriage)								
Never married	1.48 ***		1.08	1.06	1.16 ***		1.03	1.04
Divorced/separated	1.63 ***		1.12 *	1.08	1.00		1.06	0.98
Widowed	1.34 ***		0.94	0.82 +	1.03		1.06	1.13
Pretty happy marriage	1.67 ***		1.15 **	1.22 +	1.02		0.90 *	0.85
Not too happy marriage	2.18 ***		1.13	2.50 +	1.31 **		1.27 +	2.78 *
General happiness (very happy)								
Pretty happy		2.11 ***	2.11 ***	2.05 ***		1.11 **	1.12 **	1.13 *
Not happy		4.34 ***	4.34 ***	4.34 ***		1.22 ***	1.19 **	1.18
Marital status/happiness*overall happiness								
Never married*pretty happy				1.08				1.01
Never married*not happy				0.87				0.93
Divorced/separated*pretty happy				1.05				1.08
Divorced/separated*not happy				1.08				1.14
Widowed*pretty happy				1.16				0.90
Widowed*not happy				1.33				0.98
Pretty happy marriage *pretty happy				0.96				1.07
Pretty happy marriage *not happy				0.88				0.96
Not too happy marriage *pretty happy				0.38	+			0.36 *
Not too happy marriage *not happy				0.48				0.51

Notes: Models also control for sex, race, age (covariate in SRH models and entry in mortality models), education, income, employment, location, and religion. Referent is listed in parentheses.

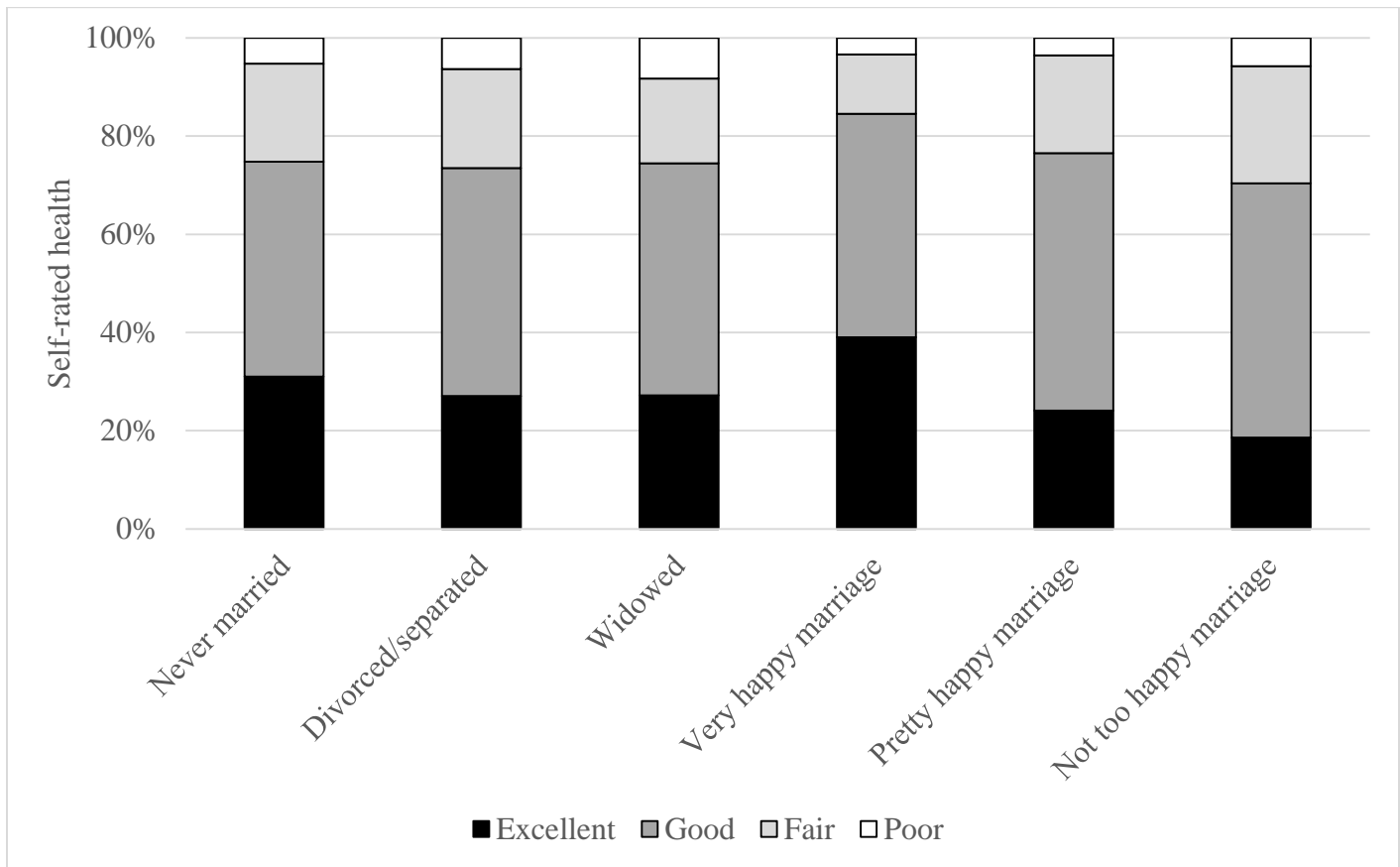
Source: GSS-NDI

^aN=15,442

^bN=20,410

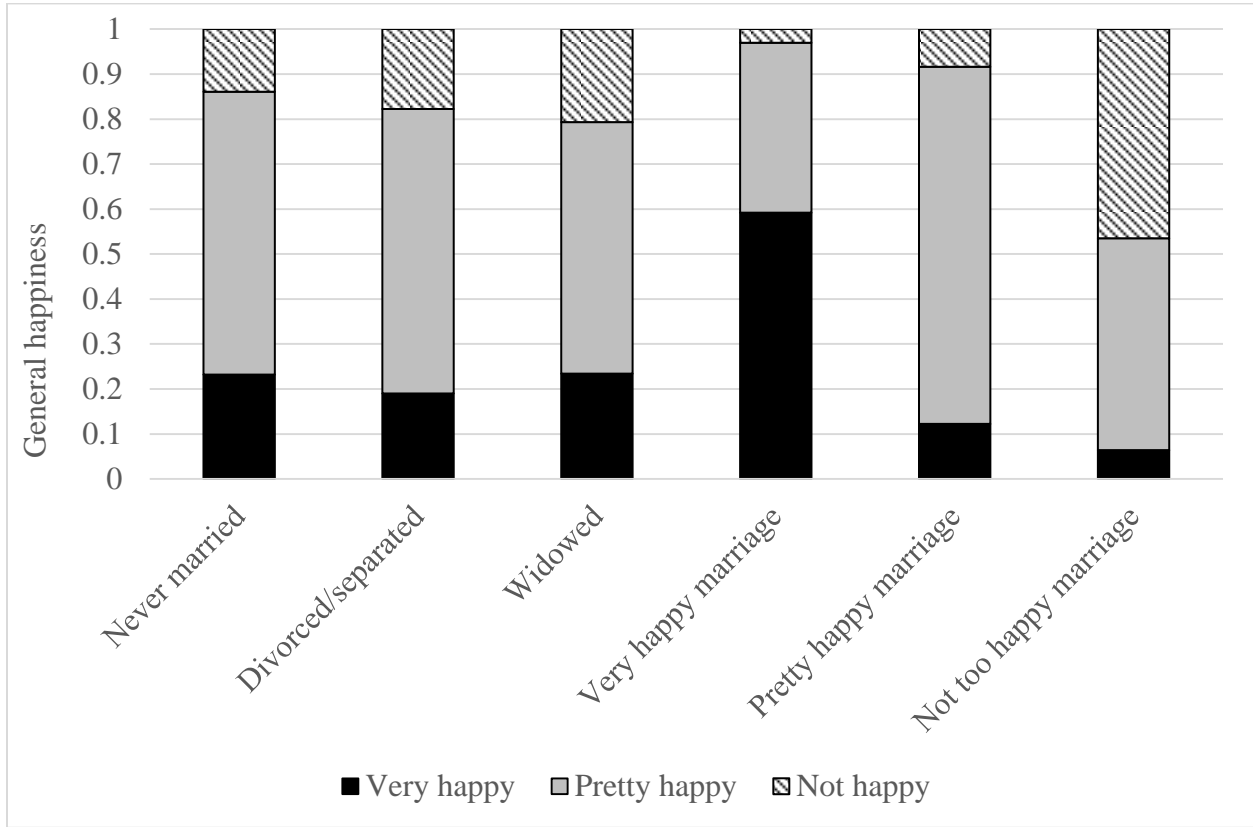
*** p < .001; ** p < .01; * p < .05; + p < .10

FIGURE 1. DISTRIBUTION OF SELF-RATED HEALTH ACROSS MARITAL STATUS AND HAPPINESS CATEGORIES, U.S. ADULTS 18 AND OVER (1988–2002)



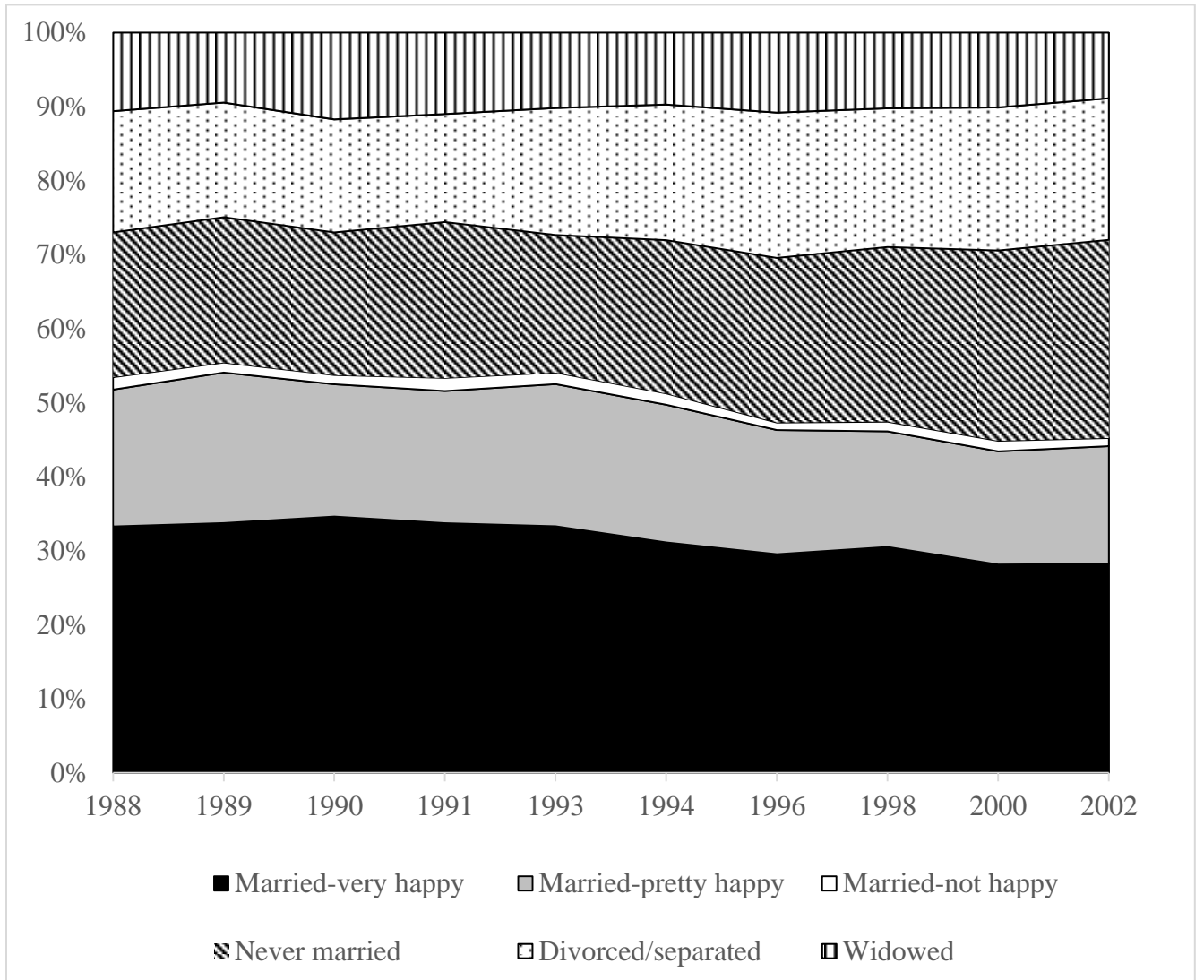
Source: GSS-NDI. N=15,442

FIGURE 2. DISTRIBUTION OF GENERAL HAPPINESS ACROSS MARITAL STATUS AND MARITAL HAPPINESS CATEGORIES, U.S. ADULTS 18 AND OVER (1988–2002)



Source: GSS-NDI. N=20,410

SUPPLEMENTAL FIGURE 1. DISTRIBUTION OF MUTUALLY EXCLUSIVE MARITAL HAPPINESS CATEGORIES OVER TIME, MARRIED U.S. ADULTS 18 AND OVER (1988–2002)



Source: GSS-NDI.