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The Association Between Marital Status and Health: Variation Across Age Groups and Dimensions of Psychological Well-Being

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THE ASSOCIATION BETWEEN MARITAL STATUS AND HEALTH:
VARIATION ACROSS AGE GROUPS AND DIMENSIONS OF PSYCHOLOGICAL
WELL-BEING

By

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A Dissertation submitted to the
Department of Sociology
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Degree Awarded:
Summer Semester, 2014

Tze-Li Hsu defended this dissertation on July 2, 2014.

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This is dedicated to my parents and family.

ACKNOWLEDGMENTS

First and foremost, I would like to thank my parents. More than anyone else they helped me reach this goal. I am blessed to have such great parents who inspire me each and every day and of course, thank you for the financial support!

To my advisor Dr. Anne Barrett, who chaired my dissertation committee, you have done more for me over the past several years than I can list here. I will simply say thank you for everything. I was unprepared for this graduate school journey and without your kindness and mentorship I surely would not have reached this goal. As an international student with modest writing skills, I was honored that you agreed to guide this dissertation and helped me tackle the challenge of writing it. Thank you so much, Dr. Barrett! I also want to thank the other members of the dissertation committee: Dr. Isaac Eberstein, Dr. Koji Ueno, and Dr. Ming Cui. From the first year of graduate school Dr. Eberstein has shown me many acts of kindness and support, which gave me the confidence to continue toward this degree. He was available anytime, and I could not have made it without his support and care. Later in graduate school, I was lucky enough to meet Dr. Ueno and Dr. Cui, both of whom have served as great examples of the type of scholar I aspire to be. I appreciate the time and consideration all the committee members put into this project. I am grateful for the opportunity to learn from their expertise.

A number of people who were not directly involved in this project also deserve to be mentioned. From the bottom of my heart, I would like to thank my dear colleagues and friends. Thank you to Dr. Lynne Cossman, Dr. Karin Brewster, Dr. Gaylen Phillips, and Dr. Robin Simon whose guidance and friendship were instrumental in helping me reach this goal. Also, thank you to Hsien-Yuan Hsu, JoEllen Pederson, Pina Valle, and Tara Stamm for their great friendships. I am indebted to each of you for the encouragement and support you have shown since beginning graduate school at FSU.

Finally, I would like to thank my friends, who are also part of the Sociology department staff, for their support. Many thanks to the greatest staff on campus: Lettie Simpson, Jamie Yeargan, Kim McClellan, and Brad Sorensen. You make my work and study so much easier, joyful, and possible to manage.

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ABSTRACT

Marital status significantly shapes individuals' psychological well-being, though more is known about its effect on negative than positive dimensions. This study examines the association between marital status and psychological well-being across negative and positive dimensions, using data from two waves of the Midlife in the United States Survey (MIDUS 1995-1996 and 2004-2006). Compared with prior studies, my research examines a more comprehensive set of indicators of psychological well-being: depression, autonomy, environmental mastery, personal growth, positive relations with others, self-acceptance, and purpose in life. I further examine how the associations between marital status and these dimensions of psychological well-being vary by age. I use three analytic samples to examine the cross-sectional associations and effects over time: Wave 1 sample (n=2,801), Wave 2 sample (n=1,737), and panel data containing respondents in both waves (n=1,657). Although the results vary across the two waves and between cross-sectional and panel analyses, results of Ordinary Least Regression (OLS) models indicate that, compared with those in other marital statuses, married adults tend to have better psychological well-being, including less depression and greater self-acceptance and positive relations with others. Differences among the married also are found, with remarried adults reporting more autonomy than continuously married adults. Using multiple-group-analysis structural equation modeling (SEM), results showed that the association between marital status and psychological well-being only holds for middle-aged adults ($45 \leq \text{age} \leq 60$). These findings of variation in the association between marital status and psychological well-being across not only dimensions of well-being but also age groups highlight the importance of further research examining sources of variation and explanations for them.

CHAPTER ONE

INTRODUCTION

Social science researchers have found that married adults are healthier than their unmarried counterparts (Umberson and Williams 1999; Waite and Gallagher 2000). They benefit from the social support, health monitoring, economic resources, and stress reduction provided by the marital relationship. The protective effect of marriage extends to not only physical health (Cohen et al. 1997; Goodwin et al. 1987; Gordon and Rosenthal 1995; Hughes and Waite 2009) but also mental health. Married adults have been found to enjoy better mental health than never-married and previously-married adults (Brown 2000; Gove, Style, and Hughes 1990; Horwitz, White, and Howell-White 1996; Lamb, Lee, and DeMaris 2003; Marcussen 2005; Ross 1995; Simon 2002; Uecker 2012; Williams, Frech, and Charlson 2010), at least in part because marriage increases an individual's economic, social, and psychological resources (Liu, Elliott, and Umberson 2010; Williams and Umberson 2004).

Marriage protects physical and mental health (Cohen et al. 1997; Goodwin et al. 1987; Gordon and Rosenthal 1995; Hughes and Waite 2009). Married people have fewer acute and chronic conditions, a lower risk of heart attack, and a lower rate of cancer compared with unmarried adults (Hughes and Waite 2009). Married adults also have a lower mortality rate than their unmarried counterparts (Hughes and Waite 2009; Lillard and Waite 1995; Ross, Mirowsky, and Goldsteen 1990). Physical health is also highly associated with mental health. Brown and colleagues (2005) found that non-married adults are characterized by greater depression, anxiety, and psychological distress than their married counterparts who enjoy financial stability and social support (Brown 2000; Brown et al. 2005).

The association between marital status and mental health is strong, relative to other social factors. Marks and Lambert (1998) showed the powerful effects of marriage on mental health using broader psychological well-being measures, including depression, happiness, self-esteem, irritability, and purpose in life. They used data from the U.S. National Survey of Families and Households (NSFH), a nationally representative sample with two waves of data collection (1988-1989 and 1992-1994). The results of their study indicated that separated, divorced, or widowed adults have significantly lower levels of mental health compared with continuously married adults. Never married adults are less happy and more depressed than the married, but they do exhibit higher autonomy and personal growth. The results also indicated that transitioning into marriage – whether from a never-married or formerly married status – significantly improved mental health, across almost all measures. Further, becoming separated or widowed increases depression and unhappiness. Also using NSFH, Lamb and colleagues (2003) found that the effect of marital status on mental health was stronger than the effects of all other social factors examined, including age, education, personal income, employment status, and number of children. For example, the effect was twelve times stronger than that of age and six times stronger than that of education.

Studies of the relationship between marriage and mental health have tended to focus on the negative dimensions of mental health – in other words, the presence of psychological problems like depression, anxiety, or substance abuse. Yet marriage not only protects against mental health problems but also provides a better subjective quality of life (Shapiro and Keyes 2008). Thus, for researchers to have a more comprehensive understanding of the effects of marital status on mental health, they must consider both the negative and positive dimensions of mental health. Marriage represents a social contract that binds individuals together in an intimate relationship

that can be both stress-buffering and socially integrative (Marks and Lambert 1998; Shapiro and Keyes 2008; Waite and Gallagher 2000). In fact, marriage purportedly bestows social integration to its participants, providing them with a feeling of belonging and purpose in life, which can improve their mental health (Shapiro and Keyes 2008; Waite and Gallagher 2000). More than just the presence or absence of psychological problems, mental health has come to be measured by positive functions, such as a subjective sense of psychological well-being (Keyes 2002, 2005; Keyes and Ryff 2000; Ryff 1989, 1995).

Keyes (2005) argued that researchers must take into account both the negative and positive dimensions of mental health and focus on the broader measures of well-being. Similarly, Ryff (1995) contended that researchers should include in their definition of mental health the presence of positive functioning. Ryff used six dimensions—environmental mastery, autonomy, personal growth, positive relations with others, purpose in life, and self-acceptance—to measure psychological well-being (see Keyes and Ryff 2000). Compared with prior research, my study that uses Ryff’s measures considers a wider range of measures of both positive and negative dimensions of psychological well-being.

In addition to the limited attention to positive dimensions of psychological well-being, few studies examine how this effect may vary across young, middle, and old age groups. The life course perspective emphasizes that the effects of roles and transitions are largely contingent on timing (Elder 1985; Williams and Umberson 2004). When any significant life event occurs (e.g., marital status changes) at a different point in time than that considered normative by society, the event has implications for an individual’s mental health and well-being. People who get married at normative ages, for example, report more mental health benefits than those who get married at earlier ages (Lehrer 2008; Uecker 2012). The fewer social resources available to people who

marry at non-normative times (Uecker 2012) can affect the extent to which marriage enhances health across the life course. Further, transitions out of marriage in later life, when people tend to have smaller social networks, may be more harmful than marital loss in younger age groups. An age difference in the effect of divorce also may stem from the fact that older adults came of age in an era when marriage was more prevalent and divorce less normative than today. In sum, the life course perspective highlights the importance of historical timing in shaping age-related variations in the health consequences of marital statuses and marital transitions.

A more thorough examination of the effect of age in the relationship between marital status and mental health is justified on several grounds. First, although most research on mental health reveals variations related to age, such patterns have not been thoroughly considered in the marriage and health literature. Second, previous studies reporting positive associations between marriage and mental health have typically employed mixed-age samples, treating age as a control rather than a moderating variable. Third, society has norms concerning the timing of marital transitions, and these norms change over time. As a result, non-normative marital transitions or transitions experienced “off-time” may negatively affect mental health. For these reasons, research on the effects of marital status on mental health should include an examination of possible variation by age.

The study has two goals. The first is to revisit the relationship between marital status and psychological well-being utilizing broader psychological well-being measures – namely, the negative and positive dimensions of psychological well-being. While previous research has focused on negative mental problems like depression, anxiety, loneliness, and substance abuse (Hughes and Waite 2009; Mirowsky and Ross 2010), the positive dimensions of psychological well-being must be considered as well. Looking at the positive aspects of psychological well-

being, like mastery, autonomy, personal growth, positive relations with others, purpose in life, and self-acceptance, is an important extension of the literature on the marital status-mental health association. A second goal is to ascertain whether the association between marital status and psychological well-being varies across different age groups. Many studies have focused on the association between marital status and mental health, but we know less about the effects of age on the mental health consequences of marital status. This study, then, is designed to highlight the age differences in understanding the relationships between marital status and psychological well-being.

CHAPTER TWO

LITERATURE REVIEW

The literature on the relationship between marriage and mental health is well-established. In general, married individuals report higher levels of psychological well-being compared to their unmarried counterparts (Frech and Williams 2007). While most research has examined the negative outcomes related to marital status, such as psychological distress and depressive symptoms (Simon 2000; Williams, Takeuchi, and Adair 1992), recent studies have begun to explore the positive effects – i.e., the indicators of mental health like happiness and life satisfaction (Diener 2000; Diener, Lucas, and Oishi 2002; Gove, Hughes, and Style 1983; Keyes 1998; Ryff 1989). What is especially lacking is attention to age differences in the association between marital status and mental health. Given these trends in the research on the connection between marital status and mental health, this review includes the literature in three areas: (1) marital status and mental health, (2) the negative and positive measures of mental health, and (3) age differences in the association between marital status and mental health.

Marital Status and Psychological Well-being

Most researchers have found that married individuals report higher levels of psychological well-being (e.g., fewer symptoms of depression and anxiety and fewer substance abuse problems) than adults in all other marital statuses (Frech and Williams 2007; Gibb, Fergusson, and Horwood 2011; Horwitz, White, and Howell-White 1996; Lamb, Lee, and DeMaris 2003; Scott et al. 2010; Simon 2002; Stack and Eshleman 1998; Williams 2003). In general, the married individuals tend to be better off than the formerly married, and the never-married occupy an intermediate position (Frech and Williams 2007; Gibb, Fergusson, and Horwood 2011; Horwitz,

White, and Howell-White 1996; Lamb, Lee, and DeMaris 2003; Scott et al. 2010; Simon 2002; Stack and Eshleman 1998; Williams 2003).

Consistent with cross-sectional research examining the association between marital status and psychological well-being, panel studies have found that marriage tends to improve well-being. Most researchers have observed that transitions into marriage are associated with a decline in depression and substance abuse (Frech and Williams 2007; Marks and Lambert 1998; Simon 2002; Simon and Marcussen 1999; Waite 1995; Williams 2003). However, they also find that transition into marriage is associated with only negligible or insignificant changes in psychological well-being, at least among younger adults (Horwitz and White 1991). Frech and Williams (2007) argued that these inconsistent findings indicate the extent to which researchers have yet to specify the range of factors moderating the effects of marital status on psychological well-being.

Longitudinal research on the impact of marital transitions also has produced consistent results demonstrating that ending marriage has adverse effects on mental health. Importantly, longitudinal analyses can avoid the limitations of cross-sectional analyses when studying the marriage-mental health effect since they enable better specification of the effects of selection on the marriage and health association. Menaghan and Lieberman (1986), for example, found that divorce led to an increase in depression, stemming, in part, from its creation of greater economic pressures, a lack of confidants, and a reduction in living standards. Similarly, Booth and Amato (1991) concluded that divorce was associated with a short-term (less than 2 years) increase in psychological distress and unhappiness. Mastekaasa (1995) discovered that persons who divorced or separated in the follow-up period of a longitudinal study experienced a significant increase in psychological distress over time. Marks and Lambert (1998) also showed that

individuals who transitioned out of marriage reported more depressive symptoms than persons who transitioned into marriage or remained continuously married. Simon (2002) found that the death of a spouse increases depressive symptoms, and Wade and Pevalin (2004) obtained similar results when studying the effects of marital transitions on a general measure of mental health.

Many other researchers have also concluded that psychological well-being tends to decline following marital disruption, across a range of dimensions of well-being (Barrett 2000; Johnson and Wu 2002; Kalmijn and Monden 2006; Marks and Lambert 1998; Menaghan and Lieberman 1986; Simon 2002; Waite, Luo, and Lewin 2009). For divorced or widowed individuals, fewer economic resources typically exist than for married couples, due to lack of specialization, economies of scale, and the pooling of wealth (Becker 1981). These factors may, in turn, prohibit the purchase of medical care or other health-enhancing resources (Waite and Gallagher 2000). The divorced and widowed also frequently have less access to social support systems and lower levels of social integration than married individuals, both of which can impair health (Waite and Gallagher 2000). Moreover, the divorced and widowed are more likely to engage in risky health behaviors like smoking, due to the absence of social control from a spouse (Umberson 1987). From this perspective, then, the status of being divorced or widowed could have a long-term detrimental effect on the health of individuals who do not remarry.

Researchers have posed two major explanations for the relationship between marital status and mental health: social causation mechanisms and selection mechanisms. Causation mechanisms concern the protective effect on health of marital gain and the detrimental effect of marital loss. From this protective perspective, the variations in mental health across different marital status groups can be attributed to marriage itself, because marital relationships are thought to do the following: (a) provide individuals with a sense of well-being, meaning in life,

and emotional support and (b) produce mutual obligations and reinforcements between two parties, which serve to reduce vulnerability to psychological disorders (Gove, Style, and Hughes 1990; Kim and McHenry 2002; Ren 1997). Another explanation for the relationship between marriage and well-being emerges from the selection perspective, which maintains that variations in individual well-being are attributable to characteristics of the individual, such as personal disposition, socioeconomic status, childhood background, substance abuse problems, or preexisting health conditions. Such personal attributes are thought to affect the likelihood of forming and maintaining social relationships, including the marital relationship (Kim and McHenry 2002; Umberson 1992).

Social Causation Explanation

The social causation explanation for the protective function of marriage asserts that marriage plays a significant role in daily life and has a strong effect on physical health. In this sense, marriage serves a protective function, and has been found by many researchers to increase such variables as health monitoring, emotional intimacy, social support, and social attachment (Umberson 1992; Waite and Gallagher, 2000; Waite and Hughes 2002; Ross 1995). Compared to unmarried persons, married individuals are less likely to engage in risky health behaviors and more likely to have a healthy lifestyle (Ross et al. 1990; Umberson 1987; Waite 1995) and seek medical advice (Verbrugge 1979). Because marriage also increases material well-being through specialization, economies of scale, and pooling of economic resources, married people may be better able to afford healthy diets and lifestyles (Becker 1981; Lupton and Smith 2003; Waite 1995). The tendency of married couples to be more economically stable is an important component of their psychological well-being and, in turn, may facilitate marital stability among married adults.

The satisfaction and support that marriage can provide, then, are primary contributors to mental health and psychological well-being (Holt-Lunstad et al. 2008). According to Brown (2000), the intimacy experienced in the marital relationship functions as a unique form of social support. In this context, social support is gained through an emotional and instrumental commitment between two individuals, which provides care and assistance and results in lower levels of depression, anxiety, and morbidity (Brown 2000; House et al. 1988; Ross et al. 1990). Brown's (2000) work also indicates that the marital relationship, when controlled for level of intimacy, is associated with greater resistance to strain, suggesting that marriage somehow assists individuals in coping with stress. Shapiro and Keyes (2008) similarly have asserted that marriage represents a social contract, bonding individuals in an intimate relationship that can be stress-buffering and socially integrative. Thus, marriage, which typically implies co-residence, has consistent positive effects on mental health that are not explained by marriage selection variables (Goldman, Korenman, and Weinstein 1995; Lillard and Waite 1995; Umberson 1992; Waite and Hughes 1999, 2002). In addition to providing spousal support, marriage ties people to other individuals (e.g., spouse's friends and in-laws) and social institutions (e.g., churches and voluntary organizations) (Stolzenberg et al. 1995; Waite 1995). An extensive review of the literature suggests that both social integration (i.e., the structural dimension of social relations) and social support (i.e., the sustaining content of social relations) positively affect individuals' mental health (Berkman and Glass 2000; House, Umberson, and Landis 1988; Hughes and Waite 2002; Seeman 1996; Simon 2002; Thoits 1995).

Researchers have posed two models with hypotheses to explain why marital status has a causal effect on health: the marital resource model and the marital dissolution/stress or crisis model (Avison 1999; Williams and Umberson 2004). According to the marital resource model,

being married provides access to more social, psychological, and economic resources than other marital statuses, and marital losses provide greater exposure to strains that result in differences in depressive symptoms (LaPierre 2009). In contrast, according to the crisis model, marital losses are stressful events leading to temporary changes in status and resources that, in turn, affect mental health. Waite and colleagues (2008) showed that those who are divorced or separated experience immediate declines in psychological well-being compared to those who remain married. According to a study by LaPierre (2009), both the crisis and resource models contribute to aggregate differences in depressive symptoms across marital statuses in cross-sectional snapshots. Moreover, marital dissolution is associated with declining mental health due to the loss of social, psychological, and economic resources presumably provided by marriage (Liu and Umberson 2008). However, while the marital resource model has demonstrated persistent differences in depressive symptoms over time for married and unmarried persons, the crisis model has revealed a convergence of depressive symptoms among divorcing and widowed people as they adjusted to their circumstances over time (Johnson and Wu 2002). Research that disaggregates the unmarried typically shows that differences in mental health based on marital status are greatest when the comparison group is divorced or widowed and smaller or insignificant when the comparison group is the never married (Cairney and Krause 2005; Williams et al. 1992), suggesting partial support for the crisis model (Williams, Frech, and Charlson 2010).

Social Selection Explanation

Another social process capable of generating mental health differences across marital status groups involves the selection of individuals into and out of marital statuses. Some researchers

emphasize the possibility that selection effects account for marital status, suggesting that individuals in better physical or mental health are more likely to get and stay married (Glenn and Weaver 1988; Horwitz, White, and Howell-White 1996; Joung et al. 1998; Lamb, Lee, and DeMaris 2003; Mastekaasa 1992). Mastekaasa's (1992) study of young Norwegians provided support for selection mechanisms by demonstrating that higher life satisfaction is associated with increased likelihood of marriage. Further support can be found in the work of Horwitz and colleagues (1996), who reported that higher levels of depression are associated with a lower likelihood of getting married and, among the married, a higher likelihood of dissolution. However, this pattern, found in a sample of never-married New Jersey residents, was observed for women rather than men. Lamb and colleagues (2003) also stressed that the selection effect implies an advantage of the married over the never-married in cross-sectional data, because those with the highest levels of well-being would be most likely to migrate from the never-married to the married status. In sum, a general consensus exists among researchers that marriage improves individuals' psychological well-being by virtue of selection as well as causation mechanisms.

Effects of Marital Status on Positive Psychological Well-being

There is relatively little research examining the association between marital status and positive psychological well-being, though there are rationales for doing so. Only a moderate correlation exists between the positive and negative dimensions of mental health when it has been measured by affect (Bradburn 1969; Carstensen, Pasupathi, Mayr, and Nesselroade 2000; Charles, Reynolds, and Gatz 2001) – a pattern highlighting the value of considering both dimensions. Such distinction between the positive and negative aspects of mental health is reinforced by the finding that the same events in a person's life may not directly correspond to

the positive and negative aspects of mental health (Baker, Cesa, Gatz, and Mellins 1992; Diener and Larson 1984; Watson, Clark, and Tellegen 1988). For this reason, Umberson and Gove (1989) argued that the examination of measures of psychological wellness—as well as psychological distress—may reveal a more comprehensive understanding of the complex psychological effects of involvement in significant social relationships, such as marriage. Because well-being is often conceptualized as the balance between positive and negative affect (e.g., Mroczek and Kolarz 1998; Ryff 1989), an increase in psychological well-being could be the result of an increase in positive affect, a decrease in negative affect, or a combination of the two factors (Charles, Reynolds, and Gatz 2001). Without a separate examination of each factor, the nature of any difference in overall well-being is impossible to discern. Accordingly, social psychologically oriented researchers have increasingly focused on the positive dimensions of mental health, using a variety of measures to examine psychological well-being, such as life satisfaction (Diener and Suh 1997) and happiness (Diener, Suh, Lucas, and Smith 1999), as well as more narrowly defined concepts, such as positive and negative affect (Charles and Carstensen 2010; Mroczek and Kolarz 1998).

Research examining the association between marital status and the positive dimensions of psychological well-being is limited, with most studies employing cross-sectional data; however, most studies find that married adults have higher psychological well-being than their unmarried counterparts. In one of the few studies of the effect of marital transitions on positive psychological well-being that uses panel data, Marks and Lambert (1998) found that subjects who were continuously separated, divorced, never married, or widowed—as well as those becoming separated and divorced—tended to report a decline in several positive dimensions of psychological well-being. Among these dimensions were global happiness, self-esteem,

personal mastery, and Ryff's psychological well-being measures. According to the protection perspective on marriage and mental health, variations in mental health across different marital status groups are attributable mainly to marriage itself because marital relationships provide individuals with a subjective sense of well-being, meaning in life, and emotional support. These relationships also produce mutual obligations and reinforcements between two parties, all of which can reduce vulnerability to psychological disorders (Gove, Style, and Hughes 1990; Kim and McHenry 2002; Ren 1997).

Married adults also consistently report greater subjective well-being than other marital status groups. A research review by Diener and colleagues (1999) concluded that the positive association between marriage and subjective well-being has been consistently replicated in national and regional surveys conducted in such countries as the United States (e.g., Glenn 1975; Gove and Shin 1989), Canada (White 1992), and Norway (Diener, Gohm, Suh, and Oishi 1998; Mastekaasa 1995). Again and again, in large-scale surveys (typically employing cross-sectional data) married people are found to report greater happiness and life satisfaction (Diener 2000) than those who were never-married or are divorced, separated, or widowed (Glenn and Weaver 1979; Gove, Style, and Hughes 1990; Mastekaasa 1994a; Veenhoven 1988). Further, marriage and positive well-being correlate significantly even when other sociodemographic factors, such as age and income, are controlled (Glenn and Weaver 1979; Gove, Hughes, and Style 1983). Nevertheless, it is important to recognize that among unmarried adults, those who cohabit with a partner are significantly happier than those who live alone (Kurdek 1991; Mastekaasa 1995).

Marriage may improve individuals' positive psychological well-being through a variety of mechanisms. Marriage may fulfill social norms, as well as universal human needs (Glenn and Weaver 1979; Henderson 1977; Rook 1984), since it provides companionship and freedom from

loneliness (Glenn 1975). Marriage may also provide enhanced positive feelings associated with having a purpose in life, an improved sense of self, and a heightened sense of mastery (Bierman et al. 2006; Marks 1996; Uecker 2012). Gove and colleagues (1990) argued that confiding in a spouse lessens the strains encountered in everyday life and increases coping ability. In addition, they suggested that when individuals see themselves as successfully fulfilling the role of spouse, their coping effectiveness increases due to an enhanced sense of self-esteem and mastery. Gove and Umberson (1985) similarly found that marriage provides a strong positive sense of identity, self-worth, and mastery. Williams (1988) stressed that the interpersonal intimacy and emotional support provided by a spouse lead to well-being. Many marital benefits also may be provided by socially approved alternatives to marriage, such as cohabitation, though married adults report greater positive well-being than do cohabitators (Glenn and Weaver 1988; Mastekaasa 1994b).

In addition to the benefits of marriage, the costs of single life contribute to the relationship between marital status and positive psychological well-being; however, the magnitude of these costs may vary over time. For instance, the prevalence of marriage and divorce may affect the degree of stress associated with singlehood (Gibbs 1969; Martin 1976). The work of Hackstaff (1999) revealed how changing cultural meanings of marriage and divorce have influenced individuals' well-being across different age groups. When most individuals in a society are married, unmarried individuals are seen as deviating from social role expectations and norms. In such an environment, a single or divorced status actually carries a social stigma (Diener et al. 2000; Gibbs 1969; Stack 1980, 1990). When divorce and remaining single become more common in a society, however, the stigma associated with these statuses becomes weaker (Gibbs 1969; Stack 1980, 1990), potentially attenuating the relationship between marital status and

subjective well-being (Diener et al. 2000; Glenn and Weaver 1988; for contradictory evidence, see Mastekaasa 1993).

Although research on marital status and mental health has moved toward the use of a broader set of measures, it continues to be limited not only by a focus on negative rather than positive measures but also by a reliance on single-item rather than multiple-item measures. In Marks and Lambert's (1998) study, they agree with Ryff's (1989, 1995) arguments, and they question the adequacy of traditional measures of psychological well-being using one-item assessments of happiness or life satisfaction. In particular, Ryff critiques both their lack of a developmental and theoretical basis and their coverage of a limited range of positive mental health and wellness. Drawing on work from developmental, humanistic, and clinical psychology, she developed and provided evidence of discriminant validity (i.e., in relation to each other, as well as in comparison to prior measures of well-being) for six new distinct dimensions of psychological well-being: (1) a sense of self-determination (autonomy), (2) the capacity to manage effectively one's life and surrounding world (environmental mastery), (3) a sense of continued growth and development as a person (personal growth), (4) the possession of quality relations with others (positive relations with others), (5) positive evaluation of oneself and one's past life (self-acceptance), and (6) the belief that one's life is purposeful and meaningful (purpose in life). The model's six dimensions come closer to capturing the breadth of psychological well-being, predicated upon the assumption that individuals strive to function fully and to realize their unique talents (Gallagher et al. 2009; Ryff and Keyes 1995; Ryff and Singer 2008). Because of its multi-dimensional nature, Ryff's psychological well-being (RPWB) measure is ideal for examining the association between marital status and positive well-being.

Although Ryff's measures offer benefits beyond those previously used, researchers have urged caution in using them for interpretation because the six dimensions may not be entirely distinct from one another. Springer and colleagues (2006), for example, found high factor correlations among the dimensions of RPWB – especially personal growth, purpose in life, self-acceptance, and environmental mastery. In fact, their findings led to their observation that Ryff and Singer's (2006) six-factor model of well-being is often irrelevant or incorrect.

My dissertation research contributes to the debate about Ryff's scales in two ways. First, it examines whether marital transitions have effects that differ across the various dimensions of psychological well-being. Second, my research assesses the effects of marital status on psychological well-being over a decade, illuminating not only age-related changes in each dimension but also the influence of marital status on change in each dimension. Finding evidence of variation across the dimensions will provide support for the argument that they are distinct from one another.

Age, Marital Status, and Psychological Well-being

Relatively few studies have examined the potential variation in the association between marital status and psychological well-being across age groups. The few studies that do examine this possibility are limited in three major ways. First, they tend to employ cross-sectional data, preventing an understanding of how marital status affects psychological well-being over time – including the ways these effects may vary across age groups. Second, none of the studies of age variation in the marital status-mental health association of which I am aware examine the positive dimensions of psychological well-being. Third, limited attention has been given to potential variation by age in the underlying processes through which marital status affects

psychological well-being. It is possible that some of the explanations for this association, such as those raised by the marital resource, marital crisis, or selection hypotheses, play a more substantial role in generating the association among certain age groups compared with others.

Although it has received limited attention in the marital status-psychological well-being association literature, age variation in the relationship between marital status and mental health can be expected for at least three reasons: (1) historical shifts in social norms regarding marital transitions, (2) age patterns in mental health, and (3) variations in resources and stresses across the life course that influence the effect of marital status on mental health. Regarding social norms, the prevalence and average age of various marital transitions have changed dramatically over time. For example, a review by Cherlin (2010) notes that the average age at first marriage has risen steadily since the 1950s. Age at first marriage influences marital instability.

According to Lehrer's (2008) study, the association between women's age at first marriage and marital instability is strongly positive until the mid-twenties. These demographic patterns raise the possibility that the health effects of occupying various marital statuses may similarly shift over time, contributing to age differences in the association between marital status and psychological well-being. For example, the negative health effect of experiencing divorce may be particularly strong for older adults, who came of age at a time when divorce was much less common than it is today.

The importance of examining age differences in the association between marital status and psychological well-being is further underscored by research indicating that age influences not only mental health but also factors that shape mental health, such as exposure to stress and access to supportive resources. Regarding the relationship between age and mental health, many cross-sectional studies have found differences in psychological well-being across age groups

(Daig et al. 2009; Lehrer 2008). These studies tend to find that psychological well-being has a curvilinear relationship with age, such that well-being is lowest in middle-age (House, Kessler, and Herzog 1990). For example, Stone and colleagues (2010) find that positive psychological well-being, as indicated by a global measure and individual measures of positive emotions, decreased over young adulthood, until about the age of 50, when it began to rise. The inverse was found with negative emotions, which tend to decrease with age – until about age 75, when they increase slightly (Morczek 2001; Morczek and Kolarz 1998). It is worth noting that relatively few longitudinal studies have investigated whether these differences are the result of cohort effects or developmental trends across the life span. In one of the few panel studies of age patterns in psychological well-being, Bennett (2005), found that older age was associated with lower psychological well-being, as indicated by morale and social engagement as two measures of psychological well-being. Turning to the relationship between age and factors shaping mental health, namely stress exposure and support availability, young adults experience more undesirable life events and have fewer psychological, social, and financial resources available, compared with middle-aged and older adults (Ensel et al. 1996; House, Kessler, and Herzog 1990). These patterns suggest that the experience of marital gains or losses may have different effects on different age groups, given age variation in the relative levels of stresses and resources accompanying these transitions. Taken together, these age-related patterns suggest the importance of examining age as a moderating influence in the association between marital status and psychological well-being.

The few studies examining age variation in the association between marital status and psychological well-being suggest that variation does exist, with some studies indicating a stronger association among older adults. For example, Williams and Umberson (2004) examined

self-reported health using three waves of data spanning 9 years, finding that the negative physical health consequences of transition out of marriage through divorce or widowhood increase with age. They argued that age and other life course markers are associated with “psychosocial and structural attributes” (Williams and Umberson 2004: 83), which may influence the relationship between marital status and mental health. Older adults may also find marital loss more detrimental to psychological well-being because of their lower prospects for remarriage compared with younger adults (Bumpass et al. 1989). Older divorcees are more likely to experience psychological distress, loneliness, depression, financial difficulties, and social isolation than younger divorced women (Hooymann and Kiyak 2011; Montenegro 2004; Wu and Schimmele 2007). Findings by Ensel and colleagues (1996) provide some indirect support for the expectation that the marital status-psychological well-being association is strongest among older adults; those findings indicate that, although people experience less stress as they age, stressors, such as marital transitions, account for more variation in depressed mood at older than younger ages.

Other studies suggest the possibility that the association is stronger for younger rather than older adults. For example, a study by Gove and Shin (1989)—using cross-sectional data from a sample of 2,248 Americans aged 18 or over between 1974 and 1975—found that widowhood is more psychologically problematic for younger widows in contrast to older widows (Gove and Shin 1989). Older people have higher odds of experiencing widowhood than younger adults. The negative impacts of being widowed may be weaker among older people because the elderly are more psychologically prepared for spousal death when compared with younger adults (Gove and Shin 1989). Their study revealed that the older widowed have higher happiness, life satisfaction, and a lower level of psychological distress than do younger widowed adults (Gove

and Shin 1989). Similarly, Barrett (2000) observed that experiences of divorce and widowhood earlier in life are more strongly, and negatively, associated with mental health than are those faced at older ages.

Further support for the expectation that marital loss is more problematic for younger than middle-aged or older adults is found in research on age patterns in the distribution of stress, as well as resources to ameliorate stress. Young adults experience more undesirable life events and have fewer psychological, social, and financial resources available to handle stress, compared with middle-aged and older adults (Ensel, Peek, Lin, and Lai 1996; Turner, Wheaton, and Lloyd 1995). These patterns suggest that the experience of marital loss in young adults—when other demands are relatively high and resources are relatively low—may be especially detrimental to their psychological well-being. Similarly, to the extent that marriage acts as a buffer against stress, the health benefits of marital gain may be most pronounced at younger ages when higher levels of stressful life events have been reported. Also leading to a prediction of a stronger association between marital status and psychological well-being in young adulthood is the observation that psychological maturity and life experience accrue over time (Baltes 1987; Baltes and Staudinger 1993; Brim 1992; Marks and Lambert 1998), making it easier for older (or middle-aged) adults to handle difficult marital transitions. Consistent with this prediction, Marks and Lambert (1998) suggested that, although being single is more normative at younger ages, middle-aged adults may be more resilient in the face of marital stress because of their accumulation of psychosocial resources, ameliorating the strains of singlehood (Marks and Lambert 1998).

Another possibility is that marital loss is more detrimental (and marital gain more beneficial) for the middle-aged, compared with younger and older adults. LaPierre (2009) found

in panel data following 9,507 adults over 6 years from two waves of the National Survey of Families and Households (NSFH), larger effects of marital loss on depressive symptoms among remarried and separated/divorced women between the ages of 40–59-year-olds, compared with younger and older age groups. These findings are consistent with the general findings of House, Kessler, and Herzog (1990), who reported that the relationship between mental health and social factors like socioeconomic status are strongest at midlife. Perhaps at midlife a decreasing frequency of undesirable life events (LaPierre 2009) converges with the increasing importance of stressors (Ensel et al., 1996) to create a period of increased vulnerability. It is also possible that midlife represents a period of risk because of the pile-up of multiple role demands, particularly those of paid work and family. These features of midlife may make it a period of the life course in which the social, psychological, and financial resources provided by marriages are most beneficial.

Other Factors Affecting the Marital Status-Psychological Well-being Association

Several key social factors influence the marital status-psychological well-being association, as they are associated with, I review the literature on both marital status and psychological well-being. These social factors include gender, race, socioeconomic status (i.e., education and total household income), employment, parenthood, physical health, and social support.

Gender

Gender is an important social factor to consider because it shapes not only marital status but also mental health. Using the Midlife in the United States Survey (MIDUS), Marks and colleagues (2004) find that 64 percent of women and 74 percent of men aged 25–74 are married

(Marks, Bumpass, and Jun 2004). Gender also patterns the relationship between marital status and mental health, as studies find that men appear to receive more benefits from marriage than women (Hemstrom 1996; Lillard and Waite 1995; Rogers 1995). Gender differences in the impact of divorce or widowhood on mental health are mixed. Compared to men, women reported greater increases in depressive symptoms and feelings of hostility and greater decreases in self-esteem, environmental mastery, and self-acceptance after a divorce (Kalmijn and Monden 2006; Marks and Lambert 1998; Simon 2002; Williams et al. 2010). With respect to widowhood, men who reported greater increases in depressive symptoms than women compared with the continuously married adults, but women appear to experience greater losses to life satisfaction (Lee and DeMaris 2007; Williams 2003; Williams et al. 2010). Gender patterns in mental health also are found, with men reporting more external mental health problems, such as substance abuse, and women suffer more internal mental health problems, like depression (Simon 2002).

Race

Race variation is found in marital status and mental health. Ninety percent of Americans will marry at least once, but only two-thirds of African Americans can expect to marry during their lifetime (Teachman, Tedrow, and Crowder 2000). Moreover, African Americans are more likely to experience non-marital childbearing, long-term cohabitation, and permanent singlehood (Edin and Kefalas 2005; Lichter, Qian, and Mellot 2006; Sigle-Rushton and McLanahan 2002). Race variation also is found in the association between marital status and mental health, with research suggesting that divorce may have weaker effects on African Americans than Whites (Barrett 2003; McKelvey and McKenry 2000). Some researchers have made much of the role

that extended kin plays in African American and Hispanic families (Cherlin 1998; Sarkisian and Gerstel 2004), and these social support resources may serve similar functions as marriage in protecting individuals' mental health.

Socioeconomic Status

Socioeconomic status (SES) is associated with marital status and individuals' mental health. For example, Becker (1981) argued that marriage leads to increase economic resources through family savings, economies of scale, specialization of housework, and the pooling of wealth. Economic resources benefit health by improving nutrition, providing care in daily life, living a healthier lifestyle, decreasing risky behaviors (e.g., smoking, drinking, and substance abuse), and allowing for the purchase of medical care and other health-enhancing supplies (Ross, Mirowsky, and Goldstein 1990). Researchers use the same two explanations offered for the marital status and health association – social causation and social selection – to examine the relationship between SES and mental health. With respect to social causation model, lower SES adults are subject to higher levels of stress, such as poverty, unemployment, discrimination, and living in dangerous neighborhoods. Further, it is the elevated stress that account for higher levels of mental disorder (Brown and Scheid 2010). The social selection model postulates that those with mental health problems will end up in lower SES groups in our society. These individuals are less likely to be able to hold a job or sustain meaningful relationships with others and, therefore, are more likely to “drift” down the SES ladder (Brown and Scheid 2010: p.166). Consistent with this line of argument, data from the 2010 Census finds that 75 percent of people with high school degree are married compared with only 5 percent of people only finish first grade.

Employment

Employment status affects both the odds of marriage and the level of mental health experienced. According to Mamun's (2008) study, employment and earnings are positively associated with marriage among men. Similarly, more earnings and hours worked increase men's likelihood of marriage and, in turn, marriage increases working hours and wage rates (Ahituv and Lerman 2007). Being employed for African American women outside the home is essential to maintaining individuals' psychological well-being, as well as their family's quality of life (Keith and Brown 2010). Employment is highly associated with individuals' psychological well-being. Perrucci and Perrucci (1990) concluded that there is a positive relationship between unemployment and poor mental health. Reynolds and Gilbert (1991) also found that unemployment contributed to psychological distress at the individual level. However, employment can also be a major source of stress, especially when it decreases individual opportunities for autonomy and self-control or is a source of anxiety (Scheid and Brown 2010). Unemployment has a negative effect on psychological well-being because it may reduce self-esteem and economic security and thus produce negative mental health outcomes, such as anxiety and depression (Lennon and Limonic 2010).

Parenthood

Parenthood influences psychological well-being, though patterns vary by marital status and social contexts. Erikson (1978) mentioned that adults often feel the need to fulfill the social expectation of having children after getting married, as it can be viewed as an important developmental task. Umberson and colleagues (2010, 2013) also argue that whether parenthood is a positive or negative influence on mental health depends on the social context of parenthood.

However, some studies do highlight the stressful nature of parenthood, as it brings dramatic life changes to the parents (Cowan et al. 1985; Wright, Henggler, and Craig 1986). Similarly, work by Evenson and Simon (2005) find that parenthood predicts worse mental health, with results consistent for mothers and father and all types of parenting arrangements (e.g., stepparents versus biological parents and parents of older versus younger children).

Social Support

Social epidemiological research finds that social relationships protect and enhance health (Berkman 1995; House, Umberson, and Landis 1988). Regarding the requisite level of support, House (1981) argues that the “minimum condition for experiencing social support...is to have one or more stable relationships with others” (p.29). The social support provided by these relationships involves “commitment, caring, advice and aid” (Ross, Mirowsky, and Goldsteen 1990: 1062). For many adults, their spouses are their most important providers of social support (Thoits 1995). Indeed, the social support provided by marriage has strong positive effects on psychological well-being that are often attributable to the benefits of living with a spouse (Ross 1995; Turner and Marino 1994).

Physical Health

Physical health shapes both marital status and psychological well-being. With respect to the social selection explanation, healthier adults are more likely to get married (Waite 1995). Moreover, physical health affects psychological well-being. The protective effect of marriage is especially important to an individual’s physical health (Cohen et al. 1997; Goodwin et al. 1987; Gordon and Rosenthal 1995; Hughes and Waite 2009). Research indicates that those who are

married are less likely to engage in risky health behaviors and have a healthier life-style than those who are not married (Ross et al. 1990; Umberson 1987; Waite 1995). Also, individuals who are married are more likely to seek medical advice (Verbrugge 1979). In addition, married people may be better able to afford healthier diets and lifestyles because marriage increases material well-being through specialization, economies of scale, and pooling economic resources (Becker 1981; Waite 1995). Further, Williams and Umberson (2004) find that the negative physical health consequences of transition out of marriage increase with age. They also state that research on aging and stress supports the theory that vulnerability to the short-term strains of exiting a marriage increases across age groups (Williams and Umberson 2004).

CHAPTER THREE

STUDY DESIGN

Research Questions and Hypotheses

The review of the literature on marital status, age, and psychological well-being led me to two major research questions. First, what is the nature of the relationship between marital status and a broader measure of psychological well-being, including both positive and negative dimensions? Second, does the relationship between marital status and psychological well-being differ among young, middle-aged, and older adults? This dissertation examines these questions using two waves of nationally representative data spanning a decade.

Drawing on the extensive literature findings of the health benefits of marital gain and the costs of experiencing marital loss, I test the following hypothesis regarding the positive and negative dimensions of psychological well-being:

Hypothesis 1: The continuously married have better psychological well-being, across negative and positive dimensions, than do the currently married, formerly married, and never-married.

I test two hypotheses about age variation in the association between marital status and psychological well-being. The expectations are derived from the observation that marital loss is more normative at older ages, while marital gain is more common at younger ages.

Experiencing events at non-normative ages is shown to be associated with worse mental health (Gove and Shin 1989; LaPierre 2009; Mark and Lambert 1998). Regarding the benefits of marital gain, I anticipate that the stresses of midlife and the shrinkage of social networks in later life would generate more positive effects of marital gain (i.e., being remarried) among middle-aged and older adults.

Hypothesis 2: The negative association between being formerly married (i.e., widowed, separated, or divorced) and psychological well-being is stronger among younger than middle-aged or older adults.

Hypothesis 3: The positive association between being remarried and psychological well-being is stronger among middle-aged or older adults than younger adults.

Data

Sample

In order to address these research questions, I use data from two waves of the National Survey of Midlife Development in the United States (MIDUS 1994-1995 & 2004-2006). The MIDUS was funded by the John D. and Catherine T. MacArthur Foundation Network on Successful Midlife Development to assess the physical and mental health of adults in middle and later life. The MIDUS II research was supported by a grant from the National Institute on Aging (P01-AG020166) to conduct a longitudinal follow-up of the MIDUS investigation. The funding of such a study reflects the growing interest of researchers and policymakers in midlife and later life development, particularly in regard to health outcomes in the United States. MIDUS investigated the role of behavioral, psychological, and social factors in accounting for age-related variations in health and well-being in a national sample in the United States. It also provided groundbreaking assessment of many psychological factors (e.g., different well-being measures, personality traits, positive and negative affect, sense of control, goal commitments) in a national sample. The sample was chosen through a random-digit-dialing method and is nationally representative of English-speaking, non-institutionalized adults between 20 to 74 years of age.

My analyses were based on data from two waves of MIDUS, which was collected between 1995-1996 and 2004-2006, by an initial telephone interview and a follow-up mail-in

questionnaire. All respondents were invited to participate in a phone interview of approximately thirty minutes in length from a national random digit dialing (RDD) sample and to complete two self-administered questionnaires (SAQs), each of approximately forty-five pages in length. In Wave 1, the overall response rate for completion of the survey process was around 87 percent (N=3,034 out of RDD sample N=3,487). A longitudinal follow-up of the original Wave 2 study was conducted in 2004-2006. Every attempt was made to contact all original respondents and invite them to participate in a second wave of data collection. Of the 3,487 participants in Wave 1, 2,257 were successfully contacted to participate in another phone interview of about thirty minutes in length. The average longitudinal follow-up interval was approximately 9 years and ranged from 7.8 to 10.4 years according to the technical report (MIDUS 2007). The longitudinal retention rates and response rates are adjusted for respondents' mortality (these deceased cases were confirmed by linking them to the National Death Index for the years 2004 through 2006). Wave 2 also included two self-administered questionnaires (SAQs), each of about fifty-five pages in length, which were mailed to participants, who returned them by mail. Response rates for completion of the Wave 2 SAQs, across the above samples, are 1,805 out of 2,257 respondents. Among the 30 percent of respondents who did not complete the Wave 2 phone interview, the top two reasons for non-response were Refusals and Non-working Telephone Numbers, according to the technical report (MIDUS 2007). Lower percentages of the sample were deceased, or unable to participate for health or other related reasons. The Wave 2 technical report has reported that the response rate between Wave 1 and Wave 2 is around 71 percent.

There are three samples from the two waves of MIDUS used in this study: (1) a cross-sectional sample composed of respondents completing the Wave 1 telephone survey and mailed questionnaire (N=2,801); (2) a cross-sectional sample of respondents completing the Wave 2

telephone survey and mailed questionnaire (N=1,737); and (3) a panel sample composed of respondents completing both Wave 1 and Wave 2 (N=1,657). Using the panel data from the two waves of MIDUS, I excluded respondents with missing values on any of the measures of psychological well-being resulting in a sample size of 2,801 in Wave 1. There are 233 missing values on the independent and control variables. I merged Wave 2 (2004-06) on Wave 1 (1994-95) to allow an examination of how marital status affects change in psychological well-being over time. I also excluded cases with missing values on either the dependent variables or major independent variables, including marital status, race, gender, and physical health variables – resulting in a sample size of 1,657 for the panel analyses. The longitudinal retention rate is around 60 percent after the exclusion of the missing values on psychological well-being. To handle missing values on household income (10%), I impute the mean household income, separated by gender and race.

Measures

Dependent Variables

Negative dimensions of mental health. *Depressive symptomatology* is assessed with a continuous measure based on a seven-item scale of symptoms of major depression from the short form of the Composite International Diagnostic Interview (CIDI-SF; Kessler, Andrews, Mroczek, Ustun and Wittchen 1998). The CIDI is designed to assess mental health disorders in epidemiological samples based on criteria from the DSM-IV. The initial question was as follows: “During the past 12 months, was there ever a time when you felt sad, blue, or depressed for two weeks or more in a row?” Those answering “yes” were asked whether they experienced the following specific symptoms of major depression during that two-week period: (1) “you lost

interest in most things,” (2) “you felt more tired out or low on energy than is usual for you,” (3) “you lost your appetite,” (4) “you had more trouble falling asleep than usual every night or nearly every night,” (5) “you had a lot more trouble concentrating than usual,” (6) “you felt down on yourself, no good, or worthless,” and (7) “you thought a lot about death.” Respondents who answered “no” to item 1 were assigned a score of 0. The scale has high internal reliability (Wave 1 Cronbach's alpha =0.48; Wave 2 Cronbach's alpha =0.93). Scores on this measure range from 0 to 7, with higher scores indicating greater depressive symptoms.

Positive dimensions of mental health. *Psychological well-being* is measured by six dimensions: autonomy, environmental mastery, personal growth, positive relationship with others, self-acceptance, and purpose in life. For both waves 1 and 2, only 3 of the original 20 psychological well-being items developed by Ryff were used to measure each construct. Ryff and colleagues (2003) decided to represent the multifactorial structure of each psychological well-being scale rather than select all these items to maximize high internal consistency (alpha reliability). That is, each of the six dimensions of psychological well-being had multiple underlying factors, each of which meaningfully reflected the theoretical origins of the scales (Ryff, Keyes, and Hughes 2003; Ryff 1987, 1989). In effect, the objective was to bring short-form scales into a national survey, but to do so in a way that maintained the conceptual foundations on which the scales were built. As such, alpha coefficients for the scales in the MIDUS technical reports indicated reasonably good reliability: autonomy (from .45 to .44), environmental mastery (from .54 to .55), personal growth (from .57 to .55), positive relations with others (.64 to .62), purpose in life (from .29 to .32), self-acceptance (from .68 to .66). The shortened scales correlated from .70 to .89 with the parent scales (Ryff and Keyes 1995). Inter-

correlations among the scales ranged from moderate to high, although prior analyses have supported the six-factor model of psychological well-being (Ryff and Keyes 1995). In Wave 2, instead of the three-item measures of psychological well-being, Ryff and colleagues (2004) added an extra four items to each psychological well-being measures in Wave 2. They found that the alpha coefficients of seven-item psychological well-being measures are larger than those of the original psychological well-being measures in Wave 1. As such, alpha coefficients for the scales in Wave 2 technical reports indicated an increase in reliability from Wave 1 to Wave 2: autonomy (from .72 to .75), environmental mastery (from .78 to .84), personal growth (from .75 to .87), positive relations with others (from .64 to .77), purpose in life (from .49 to .71), self-acceptance (from .68 to .84). I note that the alpha reliabilities reported for my study differs slightly from those reported elsewhere, due to the exclusion of cases with missing values on any of the dependent variables. All items included in the construction of psychological well-being scales are reported in Appendix A and B.

Autonomy is measured by the mean of the responses to the following three items: (1) “I have confidence in my own opinions, even if they are different from the way most other people think,” (2) “I tend to be influenced by people with strong opinions,” and (3) “I judge myself by what I think is important, not by the values of what others think is important.” The response categories for each item range from disagree strongly (coded 1) to agree strongly (coded 7). The seven-item scale used in cross-sectional Wave 2 analyses uses an additional four items. These items are the following: (1) “My decisions are not usually influenced by what everyone else is doing,” (2) “It’s difficult for me to voice my own opinions on controversial matters,” (3) “I tend to worry about what other people think of me,” (4) “I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.” The scale has low internal

reliability score (Wave 1 Cronbach's alpha =0.48; Wave 2 Cronbach's alpha =0.75). Scores on this measure range from 1 to 7, with higher scores indicating greater autonomy.

Environmental mastery is measured by the mean of the responses to the following three items: (1) “I am good at managing the responsibilities of daily life,” (2) “I feel I am in charge of the situation in which I live,” and (3) “The demands of everyday life often get me down.” The response categories for each item range from disagree strongly (coded 1) to agree strongly (coded 7). The seven-item scale used in cross-sectional Wave 2 analyses uses an additional four items. These items are the following: (1) “I do not fit very well with the people and the community around me,” (2) “I often feel overwhelmed by my responsibilities,” (3) “I have difficulty arranging my life in a way that is satisfying to me,” (4) “I have been able to build a living environment and a lifestyle for myself that is much to my liking.” The scale has fair internal reliability (Wave 1 Cronbach's alpha =0.52; Wave 2 Cronbach's alpha =0.84). Scores on this measure range from 1 to 7, with higher scores indicating more environmental mastery in people’s daily life.

Personal growth is measured by the mean of the responses to the following three items: (1) “I think it is important to have new experiences that challenge how I think about myself and the world,” (2) “For me, life has been a continuous process of learning, changing, and growth,” and (3) “I gave up trying to make big improvements or changes in my life a long time ago.” The response categories for each item range from disagree strongly (coded 1) to agree strongly (coded 7). The seven-item scale used in cross-sectional Wave 2 analyses uses an additional four items. These items are the following: (1) “I am not interested in activities that will expand my horizons,” (2) “When I think about it, I haven’t really improved much as a person over the years,” (3) “I have the sense that I have developed a lot as a person over time,” (4) “I do not

enjoy being in new situations that require me to change my old familiar ways of doing things.”

The scale has fair internal reliability (Wave 1 Cronbach's alpha =0.55; Wave 2 Cronbach's alpha =0.87). Scores on this measure range from 1 to 7, with higher scores indicating respondents feel more personal growth.

Positive relations with others is measured by the mean of the responses to the following three items: (1) “People would describe me as a giving person, willing to share my time with others,” (2) “Maintaining close relationships has been difficult and frustrating for me,” and (3) “I have not experienced many warm and trusting relationships with others.” The response categories for each item range from disagree strongly (coded 1) to agree strongly (coded 7). The seven-item scale used in cross-sectional Wave 2 analyses uses an additional four items. These items are the following: (1) “Most people see me as loving and affectionate,” (2) “I often feel lonely because I have few close friends with whom to share my concerns,” (3) “I enjoy personal and mutual conversations with family members and friends,” (4) “I know that I can trust my friends, and they know they can trust me.” The scale has fair internal reliability (Wave 1 Cronbach's alpha =0.58; Wave 2 Cronbach's alpha =0.64). Scores on this measure range from 1 to 7, with higher scores indicating more positive relations.

Self-acceptance is measured by the mean of the responses to the following three items: (1) “I like my personality,” (2) “I am pleased with my life,” and (3) “I am disappointed about my achievements in life.” The response categories for each item range from disagree strongly (coded 1) to agree strongly (coded 7). The seven-item scale used in cross-sectional Wave 2 analyses uses an additional four items. These items are the following: (1) “My attitude about myself is probably not as positive as most people feel about themselves,” (2) “In general, I feel confident and positive about myself,” (3) “I feel like many of the people I know have gotten more out of

life than I have,” (4) “When I compare myself to friends and acquaintances, it makes me feel good about who I am.” The scale has high internal reliability (Wave 1 Cronbach's alpha =0.59; Wave 2 Cronbach's alpha =0.68). Scores on this measure range from 1 to 7, with higher scores indicating higher levels of self-acceptance.

Purpose in life is measured by the mean of responses to the following three items: (1) “I do not think about future,” (2) “I feel I have done all there is,” and (3) “I have not wandered through life.” The response categories for each item range from disagree strongly (coded 1) to agree strongly (coded 7). The seven-item scale used in cross-sectional Wave 2 analyses uses an additional four items. These items are the following: (1) “I have a sense of direction and purpose in life,” (2) “I don’t have a good sense of what it is I’m trying to accomplish in life,” (3) “My daily activities often seem trivial and unimportant to me,” (4) “I enjoy making plans for the future and working to make them a reality.” The scale has low internal reliability (Wave 1 Cronbach's alpha =0.29; Wave 2 Cronbach's alpha =0.49), but I examine it because research has demonstrated that this psychological resource is an important predictor of mental health (Ryff 1989). Scores on this measure range from 1 to 7, with higher scores indicating greater purpose in life.

Table 1 summarizes psychological well-being in each wave based on the sample created by merging the two waves. I list the means, standard deviations, and alpha values of the positive and negative psychological well-being measures across three different age groups (<45, 45≤age≤60, >60) in the two waves. To examine differences between three age groups, I use general linear models to compare the groups on a continuous variable, such as different psychological well-being measures, total household income, education, and physical health. Dichotomous variables are compared across the three age groups using chi-square tests. It

should be noted that although some significant differences across the age groups are found, overall the variance in the psychological well-being measures is fairly low. Age differences are found for nearly all of the measures of psychological well-being. The only differences that do not reach significance are those for the three-item measures of personal growth and positive relations and the seven-item measure of personal growth – all of which were collected at Wave 2. Although patterns vary across the measures, in general, the older group reports the highest well-being of the three age groups. Across both waves and types of measures (i.e., three- versus seven-item measures), the oldest group reports the lowest depressive symptoms and the highest autonomy and environmental mastery. Table 2 reports the correlations among these psychological well-being measures, both within and between the waves. Correlations within each wave ranged from .10 to .55 in Wave 1 and .15 to .77 in Wave 2, while the correlations between the waves ranged from .10 to .77. Table 2 reports the correlations among these psychological well-being measures, both within and between the waves. Correlations within each wave ranged from .10 to .55 in Wave 1 and .15 to .77 in Wave 2, while the correlations between the waves ranged from .10 to .77.

Independent Variables

Marital status is measured using a series of dichotomous indicators based on items that asked respondents in both waves “Are you currently married, separated, divorced, widowed or never married?” and “How many times have you been married altogether?” Using information from these items, I created four dummy variables for each wave: continuously married between two waves (reference group), remarried, formerly married, and never-married. Based on these two questions, I depict individuals’ experiences of different marital status between two waves.

Therefore, there are two sets of marital status variables over both waves. Table 1 reports frequencies of the marital status measures in Waves 1 and 2. Of the total sample in Wave 1, 49 percent are continuously married, 15 percent are remarried, 24 percent are formerly married, and 12 percent are never-married. Of the total panel sample in Wave 2, 48 percent are continuously married, 20 percent are remarried, 25 percent are formerly married, and 7 percent are never-married. Age differences, noted in Table 1, are as expected. The percentages of continuously married and never-married are highest in the youngest group, the percentage of remarried is highest among the middle-aged, and the percentage of formerly married is highest in the oldest group. The continuously married adults who are in their first marriages are treated in analyses as the reference group.

Age is a central variable in this project. To better understand the relationships among age, marital status, and psychological well-being, I run models using two different measures of age. One measure is continuous (in years). Because prior research suggests that the relationship between age and depression is curvilinear (Mirowsky and Ross 1992), I also include *age-squared*. The second approach to measuring age uses three dichotomous variables, measured at Wave 2: young adults (age 30 to 44, 19.3%), middle-aged adults (age 45 to 60, 42.1%), and older adults (age 61 to 84, 38.6%). Finer-grain age distinctions are not possible because insufficient cell sizes would result, particularly in younger groups of the formerly married.

Control Variables

To control for other factors that may influence marital status and psychological well-being, the following sociodemographic variables are included in all the analyses: gender, education, race/ethnicity, parental status, paid work status, and physical health. Respondents' *gender* is

coded as 1 = female and 0 = male. Education is measured in years ranging from 4 to 22. Respondents' race/ethnicity is measured using three dichotomous variables: White (93%), African American (4%), and other racial groups (3%). Parental status is a dummy variable coded 1 if the respondent reported at least one biological or adopted child at Wave 1. Paid work status is coded 1 if the respondent reported working full- or part-time at Wave 1. I also control respondents' current physical health at Wave 1 using two measures: a single item tapping self-rated physical health (ranging from worst = 0 to best = 10) and a count of up to 21 chronic health conditions experienced in the past year. All control variables, including parenthood, employment, self-rated physical health and chronic conditions of health, are reported in Table 1.

Economic resources include household income and home ownership. *Household income* ranges from 0 to 12.5 and is measured in units of \$10,000. Since total household income measures can be highly skewed, it is transformed into to a logarithmic scale, with the addition of a unit to keep those with 'zero' income in the analyses. *Homeownership* is a dichotomous variable drawn from a single item, "Do you own a home outright, paying on a mortgage, or rent a place to live?" Respondents are coded 1 if they own a house or are paying on a mortgage and 0 otherwise.

Social support is a summary of eight items designed to measure perceived support from family members and friends. The items ask respondents to rate how much support (with each item asked separately for family and friends): (1) "family members or friends care about you," (2) "family members or friends understand you," (3) "you rely on family members or friends for help," and (4) "you open up to family members or friends." The response categories for each item range from not at all (coded 0) to a lot (coded 6). Higher scores indicate higher social support.

Table 1 reports differences across the age groups in control variables used in the analyses. The gender distribution does not differ significantly across the age groups. Race differences are minimal; a slightly higher percentage of younger respondents than those in other age groups report being of “other” race. Age patterns for other variables are as expected. The percentage of respondents who are parents is highest in the oldest group, while the percentage that is employed is highest in the youngest group. Age differences in self-rated health are not evident, but chronic conditions are highest among the oldest respondents. Education, homeownership, and income are highest among the middle-aged respondents. Social support is highest in the oldest group.

Analytic Strategy

In this section, I explain analytical approaches used to address my research questions. Since all my analyses are based on the assumption that six positive psychological well-being dimensions are distinguishable from one another, I conducted a Confirmatory Factor Analysis (CFA) in a traditional SEM framework (CFA-SEM) to investigate whether the assumption was valid. I specified two CFA models: integrated (one-factor) model and 6-factor model. In the integrated model, there was only one latent variables loading on all items, while in the 6-factor model, 6 latent variables loaded on their corresponding items and correlation between 6 latent variables were freely estimated (See Figure 2). Table 3 further provides information regarding the model fit for integrated model and 6-factor model after I analyzed Wave 1 and Wave 2 datasets. The results indicated that the 6-factor model had relatively good model fit compared with the integrated model. The results shown in Table 2 indicate that the correlations between different psychological well-being measures are moderate (i.e., from $-.10$ to $.70$). These findings suggested that the distinction of six positive psychological well-being dimensions is supported.

To test the hypotheses, I used Ordinary Least Squares (OLS) regression and Structural Equation Modeling (SEM). First, I run three sets of cross-sectional OLS regression models using STATA13 on three different samples – Wave 1 sample (n=2,801) , Wave 2 sample (n=1,737), and Wave 2 on Wave 1 panel sample (n=1,657). Following the descriptive analyses, this study proceeds to using OLS regression to predict seven psychological well-being measures as a function of the different marital status categories and respondents' age and age-squared, controlling for respondents' sociodemographic characteristics, including gender, race, parenthood, employment status, physical health, SES, and social support. These models allow the association between marital status and psychological well-being to be examined, but they use cross-sectional data. Therefore, they do not allow the issue of causal order to be addressed. Any significant associations that are found could be due to social causation or social selection mechanisms, or a combination of both.

To further clarify the association, I run similar models using panel data. I regress Wave 2 psychological well-being on marital status and other independent and control variables, including a control variable of psychological well-being on Wave 1. These models allow the association between marital status and Wave 2 psychological well-being measures to be examined which controlled for selection – i.e., selection into or out of marital statuses based on Wave 1 psychological well-being measures – allowing me to see the social causation processes more clearly in the panel analysis. Figure 1 shows the conceptual model for the OLS regression models from both cross-sectional and panel analyses.

In order to address the second research question focusing on age differences, I use both OLS and multiple-group-analysis SEM analysis. In the OLS analysis, age is treated as a continuous variable which allowed creating age by marital status interaction terms (i.e.,

age*remarried, age*formerly married, age*never-married, with continuously married as the reference group). I then test the potential age variation in the association between marital status and psychological well-being by regressing Wave 2 psychological well-being on age, marital status, age*marital status interaction terms, and a number of control variables described in the previous section. The statistically significant regression weight (slope) of interaction terms indicates age variation in the relationship between marital status and psychological well-being. Note that OLS analysis is a more restrictive approach because it only permits exploring potential interaction effects under the assumption that the influence of a control variable is fixed to all samples in the analysis. That is, the model can only obtain one estimated beta weight (or slope) for a control variable (e.g., social support), and the interpretation of this beta weight is assumed to be applicable to subgroups in the sample.

Multiple-group-analysis SEM is an alternative approach to examine age variation in the associations between marital status and psychological well-being. Instead of creating several age*marital status interaction terms, I divide samples into three groups, based on age at Wave 2: young (age<45), middle-age ($45 \leq \text{age} \leq 60$), and older (age>60). After that, I regress Wave 2 psychological well-being on marital status and a number of control variables for three age groups separately and simultaneously in SEM. In this manner, the regression weights of marital status and all the control variables would be freely estimated for three age groups in one analysis, which can be seen as an improvement over OLS analysis. The results of the multiple-group-analysis SEM analysis provide the opportunity for investigating the distinctive effects of marital status (and all control variables) on psychological well-being across three age groups.

Due to the different alpha values within these psychological well-being measures, I generate six latent variables from these positive psychological well-being measures to examine the marital

status-psychological well-being association across different age groups by using multiple-group-analysis SEM. Each multiple-group-analysis SEM model also controls for the corresponding measures of psychological well-being at Wave 1. These models allow for an assessment of the effect of marital status at Wave 1 on the level of change in psychological well-being between these two waves. Because Wave 1 psychological well-being is included as a predictor of Wave 2 well-being, these analyses yield more leverage on the question of whether results stem from social selection or causation processes. These multiple-group-analysis SEM models are also important in order to observe the marital status-psychological well-being association by different age groups. If the marital status-psychological well-being association shows the same pattern in each specific age group SEM model, the marital status-psychological well-being association does not vary by different age groups. These SEM models further examine the processes underlying the association between marital status and each dimension of psychological well-being across three age groups. This technique allows me to estimate path coefficients about how the social selection and causation processes may vary by different age groups. I run three sets of multiple-group-analysis SEM models – one for each of the three age groups (age<45, 45≤age≤60, age>60). These analyses will allow me to determine the relative strengths of the selection versus causation processes across the three age groups. A conceptual model for these analyses is found in Figure 2.

A Confirmatory Factor Analysis (CFA) in a traditional SEM framework (CFA-SEM) is conducted to address the concerns about construct validity of Ryff's measures of positive psychological well-being that were raised by Springer and Hauser (2006). They discovered high correlations among four of Ryff's six psychological well-being dimensions (i.e., personal growth, purpose in life, self-acceptance, and environmental mastery) and conducted CFA-SEM

on nationally representative data from three large surveys (i.e., MIDUS, NSFH II, and WLS). Their findings questioned the discriminant validity of Ryff's psychological well-being measures and raised a serious concern about interpreting scores from these subscales. Ryff and Singer (2006) criticized Springer and Hauser's claims and wrote an article entitled "Best news yet on the six-factor model of well-being" to point out that Springer and Hauser's findings were problematic in terms of scientific rationale or method of implementation. At the same time, Springer, Hauser, and Freese (2006) wrote an article entitled "Bad news indeed for Ryff's six-factor model of well-being" that defended their previous findings—the six-factor model failed to yield large or consistent empirical distinctions of six dimensions. These contradictions have created doubts about the construct validity of Ryff's psychological well-being measures in large-scale studies.

CFA-SEM is widely employed to validate the factorial structure of a scale (Jöreskog 1969). Two types of validity are often reported for the examination of factorial structure: discriminate validity and convergence validity. Discriminate validity can be verified by investigating whether the confidence interval of factor correlations include the value of 1.0 (Torkzadeh, Koufteros, and Pflughoeft 2009) and whether the items load more highly on another construct rather than on its own construct (Barclay, Higgins, and Thompson 1995). Convergent validity can be assessed from the measurement model by determining whether each indicator's estimated pattern coefficient on its posited underlying construct factor is greater than twice its standard error (Anderson and Gerbing 1988). Moreover, the magnitudes of main factor loadings can be evidence of convergent validity according to Anderson and Gerbing's (1988) study. Based on these studies, the unbiased estimates of main factor loadings and factor correlations are necessary for reaching a sound validation of factorial structure. In CFA-SEM, the error correlations and the

cross-loadings were often assumed to be zero when pursuing a more parsimonious measurement model. Indeed, a model estimating error correlations or cross-loadings became a very complex one. Many existing fit indices, such as CFI (Bentler 1990) and RMSEA (Steiger and Lind 1980), place a penalty for model complexity.

Using CFA-SEM, Ryff's positive psychological well-being measures have better validity before the paths connecting marital status and psychological well-being are freed. Also, at Wave 2, the new seven-item of Ryff's psychological well-being measures have higher alpha values than the three-item psychological well-being measures at Wave 1. For example, the alpha value of purpose in life is 0.29 at Wave 1 and 0.49 at Wave 2. However, purpose in life was dropped from the six-factor model due to its smaller alpha value compared with the five-factor model without purpose in life. The five-factor model without purpose in life have better model fit than the six-factor model in Table 3. These six psychological well-being measures were employed to determine the five-factor structure using seven retained items for each of the psychological well-being measures. The results yielded a five-factor measurement model with a good data fit from CFA-SEM (not shown). These five psychological well-being latent variables are used as the dependent variable indicating positive psychological well-being measures. Also, the alpha value of purpose in life was higher in Wave 2 than Wave 1, as mentioned earlier, so I decided to incorporate purpose in life in my analyses. After I dropped each of the negatively-worded psychological well-being items, the positively-worded psychological well-being measures hang together well, as indicated by the CFI and RMSEA (reported in Table 3). Therefore, I also incorporate purpose in life in these multiple-group-analysis SEM models. Using multiple-group-analysis SEM among the three different age groups helps to clarify age interaction in the marital status-psychological well-being association.

TABLE1. Means (and Standard Deviations) of Study Variables by Age from Panel Data

Study Variable	Young	Middle-aged	Old	Total	Range (Min, Max)
Wave 1 PWB	<45=694	45-60=666	>60=297	N=1,657	
Depressive Symptoms*	0.87 (2.09)	0.66 (1.81)	0.24 (1.12)	0.67 (1.85)	0,7 Alpha(.78)
Autonomy*	15.96 (3.35)	16.58 (3.16)	16.88 (3.11)	16.38 (3.25)	4,21 Alpha(.48)
Env. Mastery*	15.75 (3.52)	16.21 (3.50)	16.94 (2.89)	16.15 (3.43)	3,21 Alpha(.52)
Personal growth*	18.15 (2.98)	18.13 (3.09)	17.49 (3.10)	18.02 (3.06)	3,21 Alpha(.55)
Positive relations*	15.98 (4.05)	16.20 (4.11)	16.66 (3.85)	16.19 (4.05)	4,21 Alpha(.58)
Self-acceptance*	16.46 (3.58)	16.79 (3.35)	16.82 (3.06)	16.66 (3.40)	3,21 Alpha(.59)
Purpose in Life*	16.93 (3.29)	16.72 (3.47)	15.75 (3.87)	16.63 (3.50)	4,21 Alpha(.29)
Wave 2 PWB	<45=320	45-60=697	>60=640	N=1,657	
Depressive Symptoms*	0.78 (1.97)	0.66 (1.84)	0.29 (1.22)	0.54 (1.67)	0,7 Alpha(.93)
Three-item PWB					
Autonomy*	15.92 (2.99)	16.69 (3.11)	16.97 (2.92)	16.65 (3.04)	6,21 Alpha(.45)
Env. Mastery*	16.24 (3.21)	16.48 (3.40)	17.40 (2.97)	16.79 (3.24)	4,21 Alpha(.54)
Personal growth	17.22 (3.06)	17.19 (3.37)	17.00 (3.26)	17.12 (3.27)	4,21 Alpha(.57)
Positive relations	16.38 (3.81)	16.38 (3.96)	17.05 (3.79)	16.64 (3.88)	4,21 Alpha(.64)
Self-acceptance*	15.73 (3.93)	15.98 (4.05)	16.85 (3.46)	16.27 (3.84)	3,21 Alpha(.68)
Purpose in Life*	16.75 (3.31)	16.66 (3.28)	15.52 (3.52)	16.24 (3.42)	4,21 Alpha(.36)

TABLE1-Continued

Study Variable	Young	Middle-aged	Old	Total	Range (Min, Max)
Seven-item PWB					
Autonomy*	35.38 (6.85)	37.55 (7.25)	38.27 (6.65)	37.41 (7.02)	13,49 Alpha(.75)
Env. Mastery*	36.49 (7.24)	37.35 (7.87)	39.54 (6.73)	38.03 (7.43)	8,49 Alpha(.84)
Personal growth	38.38 (6.92)	38.63 (7.17)	37.93 (6.98)	38.31 (7.05)	11,49 Alpha(.87)
Positive Rel.*	39.46 (7.20)	39.67 (7.29)	41.23 (6.60)	40.23 (7.05)	14,49 Alpha(.64)
Self-acceptance*	36.27 (8.53)	37.69 (8.77)	39.30 (7.32)	38.04 (8.26)	7,49 Alpha(.68)
Purpose in Life*	38.35 (7.16)	38.72 (7.10)	37.90 (6.92)	38.33 (7.05)	10,49 Alpha(.49)
Marital History					
Continuously*	179(56%)	318(46%)	295(46%)	792(48%)	0,1
Remarried*	54(17%)	169(24%)	115(18%)	338(20%)	0,1
Formerly Married*	40(13%)	165(24%)	207(32%)	412(25%)	0,1
Never-married*	47(15%)	45(6%)	23(4%)	15(7%)	0,1
Current Age (%)*	320(19%)	697(42%)	640(39%)	1,657	30,84
Women (%)	190(59%)	363(52%)	354(55%)	907(55%)	0,1
Race (%)					
White	91%	91%	93%	92%	0,1
Black	4%	5%	5%	5%	0,1
Other*	5%	4%	2%	3%	0,1
Parenthood (%)*	81%	87%	92%	88%	0,1
Employment (%)*	84%	80%	31%	62%	
Self-rated Physical	7.35 (7.50)	7.34 (1.54)	7.21 (1.76)	7.29 (1.62)	0,10
# of Chronic Con.*	1.79 (2.18)	2.31 (2.28)	3.11 (2.78)	2.52 (2.52)	0,29
Education(years)*	14.36 (2.30)	14.47 (2.66)	14.02 (2.99)	14.28 (2.74)	4,22
Economic					
Homeowner(%)*	82%	87%	85%	85%	0,1
Hhd Income(ln)*	10.79 (0.83)	11.05 (0.82)	10.72 (0.97)	10.87 (0.90)	6,12
Social Support*	19.10 (4.19)	18.65 (4.50)	19.62 (3.87)	19.11 (4.22)	0,24

Note: * p<.05.

TABLE 2. Correlations among Measures of Psychological Well-Being

Wave 1	Depression	Autonomy	Env. Mastery	Personal Growth	Positive Relations	Self-acceptance	Purpose in Life
Depression	1						
Autonomy	-0.10	1					
Mastery	-0.29	0.35	1				
Personal Growth	-0.13	0.26	0.36	1			
Positive Relations	-0.19	0.25	0.37	0.39	1		
Self-acceptance	-0.27	0.30	0.55	0.41	0.49	1	
Purpose in Life	-0.13	0.15	0.26	0.40	0.35	0.36	1
Wave 2							
Depression	1						
Autonomy	-0.15	1					
Mastery	-0.30	0.53	1				
Personal Growth	-0.15	0.43	0.60	1			
Positive Relations	-0.19	0.38	0.63	0.59	1		
Self-acceptance	-0.28	0.50	0.77	0.65	0.67	1	
Purpose in Life	-0.21	0.41	0.64	0.71	0.60	0.70	1

TABLE 3. Confirmatory Factor Analysis Results of Psychological Well-Being in Wave 1 and 2

		Chi-Square	df	RMSEA	CFI	TLI	SRMR
Wave 1	Integrated 6-factor	58.214	9	0.059	0.914	0.856	0.035
	Covariate	7.823*	5	0.019	0.995	0.985	0.013
Wave 2	Integrated 6-factor	120.775	9	0.089	0.858	0.764	0.052
	Covariate	3.014*	2	0.018	0.999	0.990	0.009

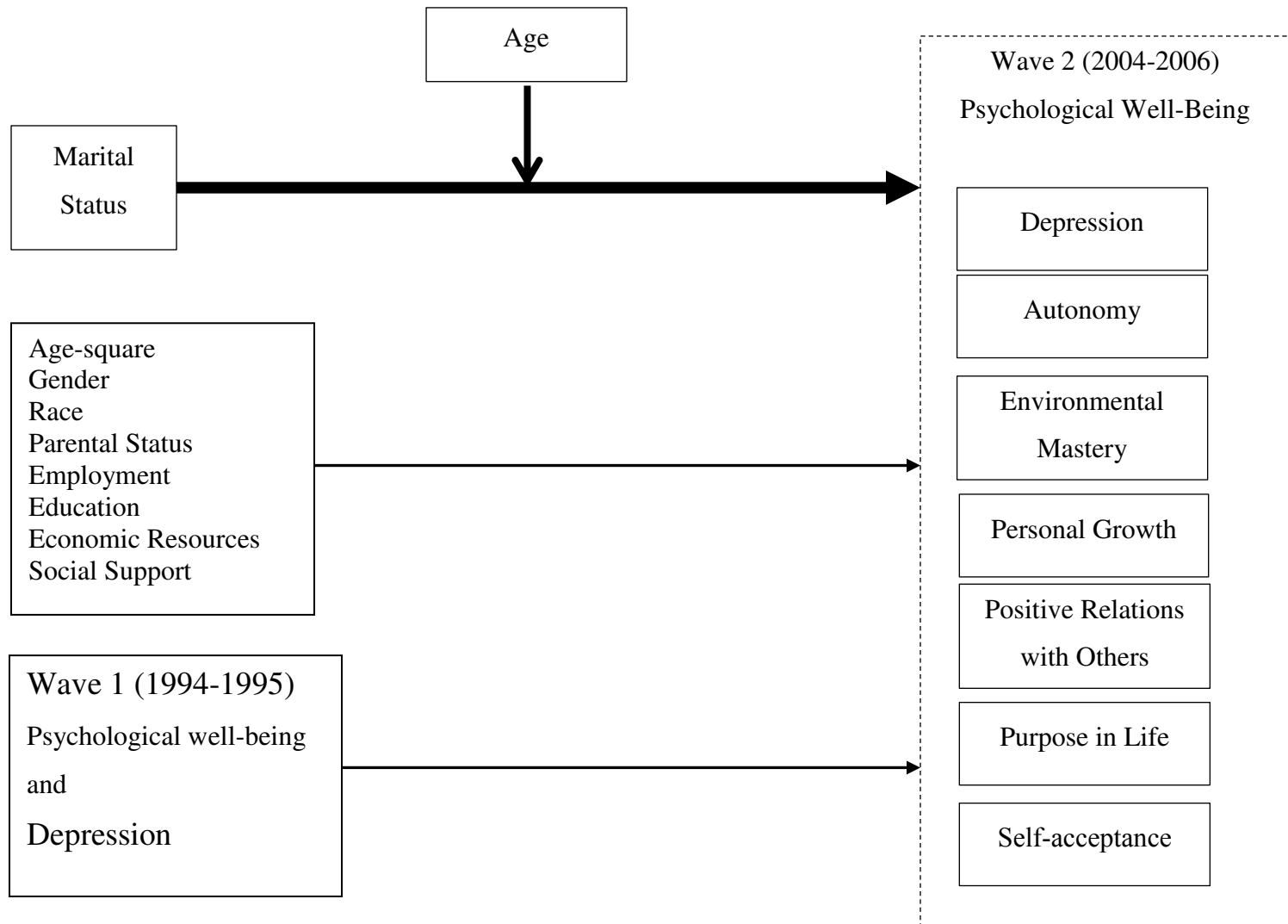


FIGURE 1. Conceptual Model

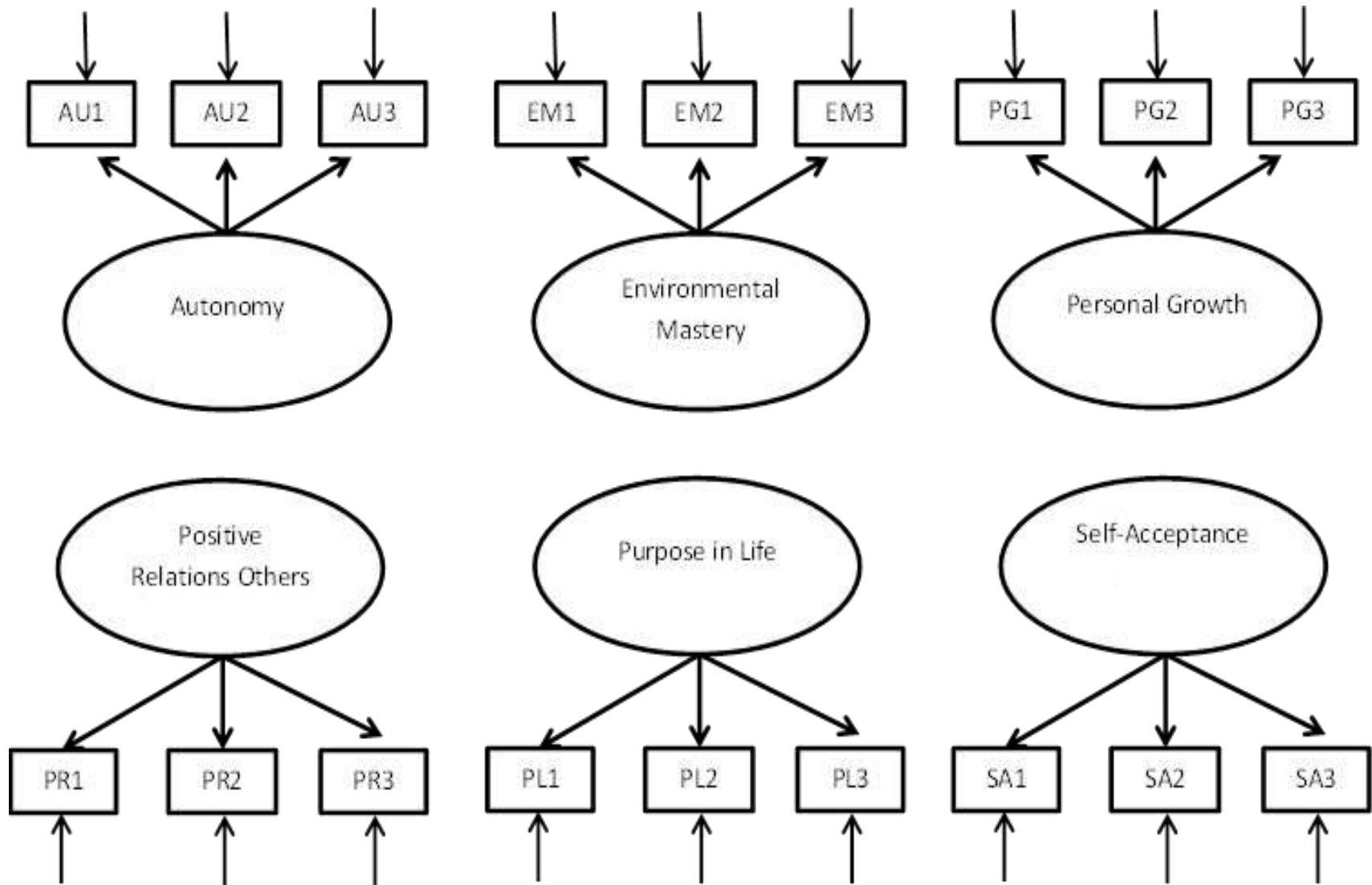


FIGURE 2. Hypothesized CFA-SEM Model with Six Factors: Autonomy (AU), Environmental Mastery (EM), Personal Growth (PG), Positive Relations with Others (PR), Purpose in Life (PL), and Self-acceptance (SA)
 Note: Factor covariances/correlations were freely estimated.

CHAPTER FOUR

RESULTS: THE RELATIONSHIP BETWEEN MARITAL STATUS AND PSYCHOLOGICAL WELL-BEING

To address the first research question, the relationship between marital status and broader psychological well-being measures across both negative and positive dimensions, I run several ordinary least regression (OLS) models. The first set of analyses examine the association between marital status and the psychological well-being measure using cross-sectional data from Wave 1 and Wave 2. I then run the same OLS model using panel data, Wave 2 on Wave 1, to examine the effect of marital status on change in psychological well-being between the waves. As I mentioned in the methods section, the psychological well-being measures in Wave 1 are measured using 3 items, and the alpha values among these positive psychological well-beings are smaller than those of the seven-item psychological well-being measures in Wave 2. I conduct analyses that enable me to not only make comparisons between the waves (i.e., comparison of three-item measures in Wave 1 with corresponding measures in Wave 2) but also take advantage of the seven-item scales available in Wave 2. Conducting these analyses allows me to better contextualize my findings within the ongoing debate regarding the validity of the Ryff scales.

Wave 1 Cross-sectional Results

Three-item Psychological Well-being Measures

Table 4 reports the results of the Wave 1 cross-sectional analyses that regress psychological well-being on marital status (treating continuously married adults as the reference group), net of age, age-squared, and background variables in Wave 1. The control variables include gender,

race, parenthood, employment status, educational attainment, self-rated health, number of chronic health conditions, logarithmic total household income, homeownership and social support. The results for depressive symptoms reveal that higher levels of depressive symptoms are reported by formerly married respondents, compared with the continuously married. This pattern is also found for four of the six Ryff's psychological well-being measures: self-acceptance, purpose in life, positive relations with others, and autonomy (coefficients of -0.50, -0.57, -1.11, and 0.32 respectively). Moreover, never-married adults also have somewhat lower levels of self-acceptance (-0.80), purpose in life (-0.57), and positive relations with others (-1.78) compared with continuously married adults. Contrary to expectations, remarried adults have somewhat higher levels of personal growth compared with continuously married adults.

Age and some of the other sociodemographic variables are associated with psychological well-being. The findings indicate that the relationship between age and psychological well-being vary across the dimensions of psychological well-being. Older adults reported lower levels of self-acceptance and positive relations with others, but a higher level of autonomy. Interestingly, the effect of linear age is always negative on self-acceptance and positive relations with others, while that of age-squared is positive on these two psychological well-being measures, indicating a U-shape association. Gender patterns also vary across the measures of psychological well-being. Compared with men, women reported a higher level of depressive symptoms and lower levels of self-acceptance, environmental mastery, and autonomy; but, they report a higher level of positive relations with others. Blacks reported a lower level of depressive symptoms, but higher levels of self-acceptance and personal growth than Whites. Parents reported lower levels of environmental mastery, positive relations with others, and autonomy compared to people without children. People who are employed reported lower levels of depressive symptoms and

environmental mastery, but a higher level of personal growth compared with unemployed respondents holding the other variables constant. Having more education is associated with higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, and personal growth.

Health also is associated with psychological well-being. An additional unit of self-rated health is associated with not only a lower level of depressive symptoms but also high levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Having more chronic conditions is associated with a higher level of depressive symptoms, but lower levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, and autonomy. Economic resources are also associated with psychological well-being. People who have higher total household income tend to have higher levels of self-acceptance, purpose in life, and environmental mastery, holding other background variables constant. Homeownership is associated with higher levels of self-acceptance, purpose in life, and environmental mastery, holding other background variables constant. Social support resources are associated with psychological well-being. Having more social support resources is associated with a lower level of depressive symptoms, but higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy, holding other background variables constant.

The normalized beta (standardized) coefficients for marital status (not shown), especially those for the formerly married and never-married, suggest that marital status is an important predictor of well-being, compared with other sociodemographic factors like gender and race. Across all the dimensions of well-being, the standardized coefficient for never-married is higher compared with other sociodemographic variables. Therefore, in the Wave 1 cross-sectional data,

marital status is an important predictor of psychological well-being, holding other background variables constant.

TABLE 4: Cross-sectional OLS Regression of Wave 1 Psychological Well-being (3 items) on Marital Status (N=2,801)

	Depression	Self-Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.02 (0.02)	-0.08** (0.04)	-0.01 (0.04)	-0.03 (0.04)	-0.12*** (0.04)	-0.04 (0.03)	0.09** (0.04)
Age ²	-0.00** (0.00)	0.00** (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00*** (0.00)	0.00 (0.00)	-0.00 (0.00)
Women	0.25*** (0.07)	-0.49*** (0.12)	-0.05 (0.13)	-0.63*** (0.12)	0.49*** (0.14)	-0.16 (0.12)	-0.64*** (0.13)
Black ^a	-0.27† (0.14)	0.71*** (0.24)	0.13 (0.26)	0.29 (0.24)	-0.01 (0.28)	0.54** (0.23)	0.16 (0.25)
Other ^a	-0.01 (0.15)	0.10 (0.26)	-0.04 (0.29)	0.45† (0.27)	0.47 (0.30)	0.13 (0.25)	0.30 (0.28)
Parent	-0.05 (0.10)	-0.25 (0.18)	-0.15 (0.19)	-0.35† (0.18)	-0.49** (0.20)	-0.17 (0.17)	-0.39** (0.19)
Employment	-0.24*** (0.09)	0.01 (0.16)	0.24 (0.17)	-0.36** (0.16)	0.04 (0.18)	0.34** (0.15)	0.12 (0.17)
Education	-0.01 (0.01)	0.14*** (0.02)	0.22*** (0.03)	0.04† (0.02)	0.06** (0.03)	0.20*** (0.02)	-0.03 (0.02)
Phy. Health	-0.08*** (0.02)	0.30*** (0.04)	0.21*** (0.04)	0.47*** (0.04)	0.23*** (0.05)	0.22*** (0.04)	0.17*** (0.04)
# of Chronic. Remarried ^b	0.14*** (0.01)	-0.20*** (0.03)	-0.13*** (0.03)	-0.15*** (0.03)	-0.18*** (0.03)	-0.04 (0.02)	-0.06** (0.03)
Formerly Married ^b	0.13 (0.10)	-0.13 (0.17)	0.15 (0.19)	0.14 (0.17)	-0.30 (0.20)	0.32† (0.16)	0.21 (0.18)
Never-married ^b	0.50*** (0.09)	-0.50*** (0.16)	-0.57*** (0.18)	0.25 (0.16)	-1.11*** (0.19)	-0.05 (0.15)	0.32† (0.17)
Homeowner	0.17 (0.14)	-0.80*** (0.24)	-0.57** (0.26)	-0.09 (0.25)	-1.78*** (0.28)	-0.14 (0.23)	-0.06 (0.25)
Hhd-income (ln)	-0.06 (0.04)	0.17** (0.07)	0.27*** (0.08)	0.15† (0.08)	0.13 (0.09)	-0.01 (0.07)	-0.06 (0.08)
Social Support	-0.06 (0.09)	0.73*** (0.16)	0.38** (0.17)	0.39** (0.16)	0.29 (0.18)	0.05 (0.15)	0.21 (0.17)
Constant	-0.02*** (0.01)	0.22*** (0.01)	0.15*** (0.02)	0.18*** (0.01)	0.37*** (0.02)	0.17*** (0.01)	0.09*** (0.01)
Adjusted R ²	2.12*** (0.63)	8.78*** (1.09)	7.38*** (1.20)	8.11*** (1.12)	8.73*** (1.27)	11.86*** (1.05)	12.32*** (1.16)
	0.11	0.22	0.16	0.18	0.25	0.13	0.05

Note: Unstandardized coefficients (standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference

Wave 2 Cross-sectional Results

Three-item Psychological Well-being Measures

Table 5 reports the results of the Wave 2 cross-sectional analyses that regress psychological well-being (3 items) on marital status (treating continuously married adults as the reference group), net of age, age-squared, and background variables. The control variables include gender, race, parenthood, employment status, educational attainment, self-rated health, number of chronic health conditions, logarithmic total household income, homeownership and social support. The results for depressive symptoms reveal that higher levels of depressive symptoms (0.31) are reported by formerly married respondents, compared with the continuously married, which is somewhat similar to the results in Wave 1. This is also the pattern for four of the six Ryff's psychological well-being measures: self-acceptance, purpose in life, positive relations with others, and autonomy (coefficients of -0.78, -0.42, -1.46, and 0.62 respectively). Moreover, never-married adults have reported lower levels of self-acceptance (-0.82), purpose in life (-0.71), positive relations with others (-1.70), but a higher level of autonomy (1.08) compared to continuously married adults. Furthermore, remarried adults have higher levels of environmental mastery (0.55), personal growth (0.48), and autonomy (0.64) compared with continuously married adults. Results in Table 5 show similar patterns compared with results from Wave 1 reported in Table 4.

Age and some of the other sociodemographic variables are associated with psychological well-being. The findings indicate that the relationship between age and psychological well-being varies across the dimensions of psychological well-being. Older adults reported higher levels of purpose in life, environmental mastery, personal growth, and autonomy. Interestingly, the effect of linear age is always positive on purpose in life, personal growth, and autonomy, while that of

age-squared is negative on these three psychological well-being measures, indicating a U-shape association. Gender patterns also vary across the measures of psychological well-being. Women reported higher levels of depressive symptoms and positive relations with others, but lower levels of self-acceptance, environmental mastery, and autonomy, compared with men. Race differences in psychological well-being were not found. Parenthood was not significant in these models. People who are employed reported a lower level of depressive symptoms compared with unemployed respondents. Higher educational attainment is associated with higher levels of self-acceptance, purpose in life, personal growth, and autonomy.

Health is also associated with psychological well-being. An additional unit of self-rated health is only associated with a lower level of depressive symptoms, but higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Having more chronic conditions is associated with a higher level of depressive symptoms, but lower levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Economic resources are associated with psychological well-being. Having more total household income is associated with a higher level of purpose in life, but no other measures of well-being. Homeownership is associated with higher levels of self-acceptance, purpose in life, and environmental mastery. Having more social support resources is associated with a lower level of depressive symptoms, but high levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. These social support patterns show somewhat similar results compared with results in Wave 1, with higher levels of support predicting fewer depressive symptoms and higher positive psychological well-being using three-item psychological well-being measures.

The normalized beta (standardized) coefficients for marital status (not shown), especially formerly married and never-married, suggests that marital status is very important, compared to other factors like gender, parenthood, and education. Across all the measures of well-being, the standardized coefficient for formerly married is higher than all other sociodemographic variables. Consistent with the patterns for Wave 1, the cross-sectional results for Wave 2 indicate that marital status is an important predictor of psychological well-being.

Seven-item Psychological Well-being Measures

Table 6 reports the results of the Wave 2 cross-sectional analyses that regress psychological well-being (7 items) on marital status (treating continuously married adults as the reference group), net of age, age-squared, and background variables. The control variables include gender, race, parenthood, employment status, educational attainment, self-rated health, number of chronic health conditions, logarithmic total household income, homeownership, and social support. The results for depressive symptoms reveal that a higher level of autonomy (1.60) is reported by formerly married respondents, compared with the continuously married – somewhat similar to the results in Wave 1 and the 3-item measures in Wave 2. This pattern is also found in two of the six Ryff’s psychological well-being measures: purpose in life (-1.00) and positive relations with others (-1.99). Results also indicate that never-married adults have lower levels of self-acceptance (-1.45), purpose in life (-1.66), and positive relations with others (-2.55), but a higher level of autonomy (2.92) compared with continuously married adults. Interestingly, in Table 6, remarried adults reported higher levels of purpose in life (0.77), environmental mastery (1.10), personal growth (1.29) and autonomy (1.68) compared with the continuously married adults. In summary, the associations between remarried and the seven-item psychological well-

being measures are stronger than the associations between remarried and three-item psychological well-being measures in Wave 2.

Age and some of the other sociodemographic variables are associated with psychological well-being. The findings indicate that the relationship between age and psychological well-being varies across the dimensions of psychological well-being. Older adults reported higher levels of self-acceptance, purpose in life, environmental mastery, personal growth, and autonomy. Table 6 also confirms the very strong effect that age is found to have across different psychological well-being measures. Age has a positive, linear effect on purpose in life, personal growth, and autonomy, as well as a negative quadratic effect. Taken together, these results indicate a U-shape association between age and well-being. Gender patterns also vary across the measures of psychological well-being. Women reported a higher level of positive relations with others, but lower levels of self-acceptance, environmental mastery, and autonomy than men. Racial differences are associated with psychological well-being. Blacks reported higher levels of self-acceptance and autonomy compared with Whites. Parenthood is not associated with the seven-item psychological well-being measures. Being employed is not associated with the seven-item psychological well-being measures compared with unemployed respondents. Higher educational attainment is associated with higher levels of self-acceptance, purpose in life, environmental mastery, and personal growth.

Health is also associated with psychological well-being. Self-rated health is only associated with higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Having more chronic conditions is associated with lower levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Economic resources are associated with psychological

well-being. Having more total household is associated higher levels of self-acceptance and purpose in life, but not associated with other well-being measures. Homeownership is associated with higher levels of self-acceptance, purpose in life, and environmental mastery. Having more social support resources is associated with high levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. These social support patterns show somewhat similar results compared with results in Wave 1 and the three-item psychological well-being measures, with higher levels of support predicting higher positive psychological well-being using seven-item psychological well-being measures.

Consistent with the other analyses presented in this chapter, across the dimensions of psychological well-being, the standardized coefficients for marital status (not shown), especially formerly married and never-married suggest that marital status matters a lot for well-being, compared to other factors like race, parenthood, and education. The standardized coefficients for never-married adults are higher in positive relations with others and autonomy than those of other variables like race, parenthood, and education. Also, the adjusted R-squared values across models predicting the seven-item psychological well-being measures are bigger than the values generated by models using the three-item psychological well-being measures in Wave 2. Larger adjusted R-squared scores reveal that these seven-item psychological well-being models are better explained by the independent variables used in the models. Taken together, the cross-sectional analyses undertaken for this project reveal that marital status is an important predictor of psychological well-being holding other background variables constant.

TABLE 5: Cross-sectional OLS Regression of Wave 2 Psychological Well-being (3 items) on Marital Status (N=1,737)

	Depression	Self-Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.02 (0.03)	0.07 (0.06)	0.15*** (0.06)	0.10** (0.05)	0.06 (0.06)	0.10** (0.05)	0.13** (0.05)
Age ²	-0.00** (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00** (0.00)	-0.00** (0.00)
Women	0.35*** (0.08)	-0.38** (0.17)	-0.23 (0.16)	-0.77*** (0.15)	0.44*** (0.17)	0.10 (0.15)	-0.59*** (0.15)
Black ^a	-0.28 (0.18)	0.62 (0.38)	-0.20 (0.36)	0.42 (0.33)	-0.05 (0.37)	0.50 (0.34)	0.36 (0.34)
Other ^a	-0.23 (0.16)	-0.31 (0.35)	-0.58† (0.33)	0.09 (0.30)	0.03 (0.34)	0.38 (0.31)	0.21 (0.31)
Parent	0.05 (0.14)	-0.09 (0.29)	-0.14 (0.28)	-0.05 (0.25)	-0.26 (0.29)	-0.18 (0.26)	0.24 (0.26)
Employment	-0.52*** (0.10)	0.22 (0.21)	0.01 (0.20)	0.07 (0.18)	-0.21 (0.20)	0.07 (0.19)	0.01 (0.18)
Education	-0.01 (0.01)	0.08** (0.03)	0.11*** (0.03)	0.03 (0.03)	0.02 (0.03)	0.13*** (0.03)	0.05† (0.03)
Phy. Health	-0.06** (0.03)	0.44*** (0.06)	0.21*** (0.05)	0.47*** (0.05)	0.25*** (0.05)	0.29*** (0.05)	0.13*** (0.05)
# of Chronic.	0.14*** (0.02)	-0.11*** (0.04)	-0.07† (0.04)	-0.13*** (0.03)	-0.11*** (0.04)	-0.08** (0.03)	-0.07** (0.03)
Remarried ^b	0.13 (0.10)	-0.28 (0.21)	0.19 (0.21)	0.55*** (0.19)	-0.03 (0.21)	0.48** (0.19)	0.64*** (0.19)
Formerly Married ^b	0.31*** (0.10)	-0.78*** (0.22)	-0.42** (0.21)	0.26 (0.19)	-1.46*** (0.21)	0.15 (0.20)	0.62*** (0.20)
Never-married ^b	0.12 (0.19)	-0.82** (0.39)	-0.71† (0.38)	0.38 (0.34)	-1.70*** (0.38)	0.05 (0.35)	1.08*** (0.35)
Hhd-income (ln)	0.02 (0.05)	0.13 (0.10)	0.25** (0.10)	0.08 (0.09)	-0.12 (0.10)	0.08 (0.09)	0.03 (0.09)
Homeowner	-0.12 (0.11)	0.55** (0.24)	0.75*** (0.23)	0.61*** (0.21)	-0.05 (0.23)	-0.10 (0.21)	0.34 (0.21)
Social Support	-0.03*** (0.01)	0.31*** (0.02)	0.17*** (0.02)	0.21*** (0.02)	0.43*** (0.02)	0.25*** (0.02)	0.12*** (0.02)
Constant	1.44 (0.92)	1.58 (1.94)	4.07** (1.86)	4.07** (1.68)	6.50*** (1.89)	5.26*** (1.73)	7.72*** (1.72)
<i>Adjusted R</i> ²	0.13	0.25	0.16	0.23	0.30	0.18	0.07

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference

TABLE 6: Cross-sectional OLS Regression of Wave 2 Psychological Well-being (7 items) on Marital Status (N=1,737)

	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.20† (0.12)	0.33*** (0.11)	0.27** (0.11)	0.15 (0.10)	0.30*** (0.11)	0.39*** (0.11)
Age ²	-0.00 (0.00)	-0.00*** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Women	-1.43*** (0.35)	-0.41 (0.31)	-1.84*** (0.32)	0.92*** (0.29)	0.17 (0.32)	-2.91*** (0.34)
Black ^a	1.79** (0.79)	1.12 (0.70)	0.45 (0.71)	-0.48 (0.64)	0.28 (0.71)	1.80** (0.75)
Other ^a	0.24 (0.72)	0.02 (0.65)	-0.48 (0.65)	-0.04 (0.59)	0.26 (0.65)	0.27 (0.69)
Parent	0.09 (0.61)	-0.25 (0.54)	-0.44 (0.55)	-0.48 (0.49)	-0.22 (0.54)	0.78 (0.58)
Employment	0.42 (0.43)	0.61 (0.39)	-0.15 (0.39)	-0.26 (0.35)	0.56 (0.39)	0.01 (0.41)
Education	0.19*** (0.06)	0.16*** (0.06)	0.16*** (0.06)	0.05 (0.05)	0.36*** (0.06)	0.09 (0.06)
Phy. Health	1.12*** (0.12)	0.81*** (0.10)	1.03*** (0.10)	0.48*** (0.09)	0.66*** (0.10)	0.28** (0.11)
# of Chronic.	-0.30*** (0.08)	-0.20*** (0.07)	-0.36*** (0.07)	-0.18*** (0.06)	-0.27*** (0.07)	-0.23*** (0.07)
Remarried ^b	0.34 (0.44)	0.77† (0.40)	1.10*** (0.40)	0.42 (0.36)	1.29*** (0.40)	1.68*** (0.42)
Formerly Married ^b	-0.67 (0.46)	-1.00** (0.41)	-0.01 (0.41)	-1.99*** (0.37)	0.55 (0.41)	1.60*** (0.44)
Never- married ^b	-1.45† (0.82)	-1.66** (0.73)	-0.01 (0.74)	-2.55*** (0.66)	0.10 (0.73)	2.92*** (0.78)
Hhd-income (ln)	0.48** (0.21)	0.34† (0.19)	0.25 (0.19)	-0.20 (0.17)	0.19 (0.19)	0.04 (0.21)
Homeowner	1.67*** (0.50)	1.32*** (0.44)	1.26*** (0.45)	-0.14 (0.40)	-0.05 (0.45)	0.49 (0.48)
Social Support	0.71*** (0.04)	0.56*** (0.04)	0.61*** (0.04)	0.89*** (0.03)	0.56*** (0.04)	0.39*** (0.04)
Constant	-0.52 (4.02)	6.49† (3.60)	4.47 (3.63)	17.08*** (3.26)	7.69** (3.61)	13.55*** (3.84)
<i>Adjusted R²</i>	0.31	0.25	0.30	0.37	0.23	0.13

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference

Panel Results

Three-item Psychological Well-being Measures

Table 7 reports the results of the panel analyses. These analyses regress Wave 2 psychological well-being measures (3 items) on marital status (treating continuously married adults as the reference group), age, age-squared, Wave 1 psychological well-being measures, and background variables. The results for depressive symptoms reveal that higher levels of depressive symptoms (1.13) are reported by formerly married respondents, compared with the continuously married, which is somewhat similar to the results in Wave 1 and Wave 2. The models reveal no statistical association between formerly married and the three-item measures of psychological well-being. Moreover, never-married adults have reported a slightly higher level of depressive symptoms (1.15) at Wave 2, controlling on Wave 1 levels; however, they have a slightly lower level of purpose in life (-2.16) compared to continuously married adults. Furthermore, remarried adults have higher Wave 2 levels of environmental mastery (0.50), personal growth (0.34), and autonomy (0.52) compared with continuously married adults, controlling on Wave 1 levels. Results in Table 7 show similar patterns compared with results in Wave 2 from Table 5, and data from both cross-sectional and panel analyses reveal similar patterns in the association between marital status and psychological well-being. However, the association between marital status and psychological well-being is weaker in panel study than two cross-sectional analyses.

Table 7 also shows that age or age-squared is weakly associated with higher levels of the three-item scales of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Older adults reported higher Wave 2 levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal

growth, and autonomy, controlling on Wave 1 well-being. Interestingly, the effect of linear age is positive in analyses of purpose in life, environmental mastery, positive relation with others, personal growth, and autonomy, while that of age-squared is negative in the analyses of these psychological well-being measures, indicating a U-shape association. Gender patterns also vary across the measures of psychological well-being. Women reported a higher level of depressive symptoms, but lower levels of environmental mastery and autonomy than men. Racial differences were not found. Parenthood also is not significant. People who are employed reported a lower level of depressive symptoms compared with unemployed respondents. Educational attainment is not associated with any psychological well-being measures except a lower level of depressive symptoms.

Health is also associated with Wave 2 psychological well-being, controlling on Wave 1 levels. Higher self-rated health is associated with a lower level of depressive symptoms, but higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Having more chronic conditions is associated with a higher level of depressive symptoms, but a lower level of environmental mastery. Higher total household income is associated with higher Wave 2 levels of purpose in life, environmental mastery, and personal growth, controlling on Wave 1 levels. Homeownership is associated with higher levels of purpose in life, environmental mastery, and autonomy. Having more social support resources is associated with a lower level of depressive symptoms, but high levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. These social support patterns show somewhat similar results compared with cross-sectional results. Social support resources are an influential factor to influence psychological well-being measures both in cross-sectional and panel analyses.

The normalized beta (standardized) coefficients for marital status (not shown), especially remarried in the panel analysis, would also suggest that marital status is very important, compared to other sociodemographic factors like gender and race. The standardized coefficients for remarried are higher compared with other sociodemographic variables across different dimensions of psychological well-being. Therefore, in the panel data, marital status is an important predictor of psychological well-being, holding Wave 1 psychological well-being measures and other background variables constant.

It is noteworthy that the panel results reported in Table 7 control on psychological well-being in Wave 1, which controls, to some degree, for the selection in the marital status-psychological well-being association. Results show that Wave 1 psychological well-being measures are highly associated with current psychological well-being. Moreover, the adjusted R-squared is larger than corresponding values in either of the cross-sectional analyses. Larger R-squared values in Table 7 indicate that more variance in well-being is explained using in the panel compared with both cross-sectional analyses. Though much of this variance in Wave 2 well-being is explained by Wave 1 levels of well-being, the observation of marital status effects in these models provides evidence that marital status has consequences for changes in psychological well-being over time.

TABLE 7: Panel OLS Regression of Wave 2 Psychological Well-being (3 items) on Marital Status (N=1,657)

	Depression	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.00 (0.03)	0.11† (0.05)	0.14** (0.05)	0.11** (0.05)	0.12** (0.05)	0.11** (0.05)	0.10** (0.05)
Age ²	-0.00 (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00† (0.00)	-0.00† (0.00)	-0.00** (0.00)	-0.00† (0.00)
Women	0.32*** (0.08)	-0.19 (0.16)	-0.23 (0.16)	-0.54*** (0.14)	0.24 (0.16)	0.21 (0.14)	-0.33** (0.14)
Black ^a	0.06 (0.18)	0.34 (0.35)	0.08 (0.34)	0.49 (0.31)	0.19 (0.34)	0.22 (0.31)	0.48 (0.31)
Other ^a	-0.31 (0.21)	0.22 (0.41)	-0.94** (0.40)	0.13 (0.36)	0.24 (0.40)	0.63† (0.37)	0.39 (0.37)
Parent	0.05 (0.14)	-0.08 (0.28)	-0.41 (0.27)	0.14 (0.24)	-0.33 (0.27)	-0.17 (0.25)	0.17 (0.25)
Employment	-0.48*** (0.10)	0.27 (0.19)	0.14 (0.19)	0.15 (0.17)	-0.07 (0.19)	0.09 (0.17)	0.07 (0.17)
Education	-0.13† (0.08)	0.14 (0.16)	0.20 (0.15)	0.03 (0.14)	0.04 (0.15)	0.17 (0.14)	-0.01 (0.14)
Phy. Health	-0.06** (0.03)	0.34*** (0.05)	0.20*** (0.05)	0.41*** (0.05)	0.25*** (0.05)	0.28*** (0.05)	0.12*** (0.05)
# of Chronic. Remarried ^b	0.12*** (0.02)	-0.03 (0.03)	-0.04 (0.03)	-0.07** (0.03)	-0.04 (0.03)	-0.05 (0.03)	-0.04 (0.03)
Formerly Married ^b	0.09 (0.10)	-0.05 (0.20)	0.21 (0.19)	0.50*** (0.18)	0.26 (0.19)	0.34† (0.18)	0.52*** (0.18)
Never- married ^b	1.13** (0.56)	-1.44 (1.10)	-1.51 (1.07)	0.15 (0.98)	-1.36 (1.07)	-0.89 (0.99)	0.51 (0.99)
Never- married ^b	1.15† (0.68)	-1.49 (1.34)	-2.16† (1.30)	0.43 (1.18)	-1.36 (1.30)	-1.00 (1.20)	1.10 (1.20)
Hhd-income (ln)	0.01 (0.05)	0.04 (0.09)	0.32*** (0.09)	0.21** (0.08)	-0.03 (0.09)	0.33*** (0.08)	0.06 (0.08)
Homeowner	-0.05 (0.12)	0.36 (0.23)	0.69*** (0.22)	0.50** (0.20)	0.14 (0.22)	-0.13 (0.20)	0.45** (0.20)
Social Support	-0.02** (0.01)	0.22*** (0.02)	0.12*** (0.02)	0.17*** (0.02)	0.31*** (0.02)	0.17*** (0.02)	0.08*** (0.02)
Psychological Well-being, Wave 1	0.14*** (0.02)	0.46*** (0.02)	0.32*** (0.02)	0.28*** (0.02)	0.37*** (0.02)	0.40*** (0.02)	0.35*** (0.02)
Constant	2.18** (0.95)	-2.97 (1.87)	0.07 (1.83)	-0.85 (1.67)	0.06 (1.83)	-2.54 (1.71)	4.03** (1.68)
<i>Adjusted R</i> ²	0.15	0.38	0.27	0.32	0.43	0.31	0.21

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference

Seven-item Psychological Well-being Measures

Table 8 shows the positive psychological well-being measures using 7 items, which have higher validity than do the three-item measures. In Tables 8, there is no statistical significance in the formerly married-psychological well-being and the never-married-psychological well-being associations, holding age, age-squared, and sociodemographic and socioeconomic variables constant. However, controlling on Wave 1 levels of well-being, remarried adults have higher Wave 2 levels of purpose in life (0.68), environmental mastery (0.93), positive relations with others (0.87), personal growth (0.85), and autonomy (1.26) compared with continuously married adults. Results in Table 8 show similar patterns of remarried adults compared with results in Table 7. They also are consistent with Wave 1 and Wave 2 cross-sectional analyses revealing an association between remarriage and psychological well-being. However, the association between remarried and psychological well-being is stronger in panel study using the seven-item scales.

Table 8 also shows that age or age-squared is strongly associated with higher levels of the seven-item scales of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Older adults reported higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy at Wave 2, controlling on Wave 1 well-being levels. Interestingly, the effect of linear age is positive on self-acceptance, purpose in life, environmental mastery, positive relation with others, personal growth, and autonomy, while that of age-squared is negative on these psychological well-being measures, indicating a U-shape association. Gender patterns also vary across the measures of psychological well-being. Women reported a higher level of positive relation with others, but lower levels of self-acceptance, environmental mastery

and autonomy than men. Racial differences are associated with psychological well-being. Blacks reported higher levels of self-acceptance, purpose in life, and autonomy compared with Whites. Parenthood is not associated with the seven-item psychological well-being measures. People who are employed reported higher levels of purpose in life and personal growth compared with unemployed respondents. Educational attainment is not associated with any seven-item psychological well-being measures.

Health is also associated with the seven-item measures of psychological well-being. Better self-rated health at Wave 2, controlling on Wave 1 levels, is associated with higher levels of self-acceptance, purpose in life, environmental mastery, positive relation with others, personal growth, and autonomy in Table 8. Having more chronic conditions predicts lower levels of self-acceptance, purpose in life, environmental mastery, personal growth, and autonomy using the seven-item psychological well-being measures. People who have higher total household income report high levels of purpose in life, environmental mastery, personal growth, and autonomy using the seven-item psychological well-being measures. Homeownership predicts higher levels of self-acceptance, purpose in life, and environmental mastery. Having more social support resources predicts higher levels of self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy. Also consistent with the analyses using three-item scales, the results indicate that Wave 1 well-being is a strong predictor of Wave 2 well-being.

The normalized beta (standardized) coefficients for marital status (not shown), especially remarried in the panel analysis, would also suggest that marital status is an important predictor of change in well-being between the waves, compared to other sociodemographic factors like gender and race. Across all the dimensions of psychological well-being, the standardized

coefficients for remarried are higher compared with other sociodemographic variables. It is noteworthy that the panel results reported in Table 8 also control on psychological well-being in Wave 1, which controls, to some degree, for the selection in the marital status-psychological well-being association. Results show that Wave 1 psychological well-being measures are highly predictive of current psychological well-being. Moreover, the adjusted R-squared is larger than models using the original three-item psychological well-being measures. Larger R-squared values in Table 8 indicate that more variance in well-being is explained using the seven-compared with three-item psychological well-being measures. Taken together, the panel analysis undertaken for this project reveals that marital status is an important predictor of psychological well-being holding other background variables and Wave 1 psychological well-being constant.

Summary of Findings

Table 9 provides the summary of the marital status-psychological well-being associations across the cross-sectional and panel analyses. In general, the results indicate that continuously married adults have better psychological well-being than adults in other marital status groups, especially compared to formerly married and never-married adults. However, the marital status-psychological well-being association varies along several other dimensions: (1) across groups of the unmarried, (2) across measures of well-being, (3) between cross-sectional waves, (4) between cross-sectional and panel analyses, and (5) between three- and seven-item psychological well-being measures.

The association varies across groups of the unmarried, with the patterns more consistent for formerly married and never-married adults, compared with the continuously married adults in

both Wave 1 and Wave 2 cross-sectional analyses. While the formerly married and never-married tend to have worse psychological well-being than do the continuously married, the remarried often do not differ from the continuously married – and sometimes are even better off on some positive psychological well-being measures, such as environmental mastery, personal growth, and autonomy. Results reveal evidence that individuals experiencing marital loss have lower levels of self-acceptance, purpose in life, and positive relations with others, but they reported a higher level of autonomy. Results are similar for the never-married adults, with evidence emerging that shows they have lower self-acceptance, purpose in life, and positive relations with other, compared with the continuously married in both Wave 1 and Wave 2 cross-sectional analyses. In contrast, the remarried adults are better off in environmental mastery, personal growth, and autonomy compared with continuously married. Interestingly, this results from both cross-sectional and panel analyses shows that people who decide to get remarried feel more autonomy than do the continuously married.

The association also varies across measures of well-being. With respect to negative psychological well-being measures, formerly married adults reported a higher level of depressive symptoms across cross-sectional and panel analyses. This result is consistent with marriage-mental health association literature. Continuously married adults reported fewer depressive symptoms compared with formerly married adults. With respect to positive psychological well-being measures, formerly married adults reported lower levels of self-acceptance, purpose in life, and positive relations with others in Wave 1 data. In Wave 2 data, the marital status-psychological well-being association is only significant in models of purpose in life, positive relations with others, and autonomy. Formerly married adults have lower levels of self-acceptance, purpose in life, and positive relations with others, but a higher level of autonomy on

the three-item measure. On the seven-item measures, formerly married adults have lower levels of purpose in life and positive relations with others, but a higher level of autonomy. Similarly, never-married adults have lower levels of self-acceptance, purpose in life, positive relations with others, but a higher level of autonomy on both three- and seven-item measures. Never-married adults have lower levels of self-acceptance, purpose in life, and positive relations with other in Wave 1 compared with continuously married adults. Also, they have lower levels of self-acceptance, purpose in life, and positive relations with others, but a higher level of autonomy compared with continuously married adults using both three- and seven-item measures. In short, the results reveal that the association between marital status and well-being varies across the positive and negative psychological well-being measures.

The association also varies between the two cross-sectional waves. In Wave 1, the marital status-psychological well-being association varies across both negative and positive psychological well-being measures. Formerly married adults reported more depressive symptoms than did the continuously married in both waves. They also reported lower self-acceptance, purpose in life, and positive relations with others compared with continuously married adults in Wave 1. However, the association between remarriage and psychological well-being is only significant on personal growth in Wave 1 and both three- and seven-item measures in Wave 2. The association between remarriage and psychological well-being is also significant on environmental mastery and autonomy in both three- and seven-item measures in Wave 2 cross-sectional and panel analyses. The association between marital loss and psychological well-being is only significant in the model of self-acceptance using the three-item measure.

The association varies between cross-sectional and panel analyses. Marital status patterns were more consistently found in the cross-sectional analyses. In the panel data, the association

between remarriage and psychological well-being is significant in both three- and seven-item psychological well-being measures. Using both three- and seven-item psychological well-being measures, remarried adults are better off in environmental mastery, personal growth, and autonomy than are continuously married adults. However, the panel analyses also show an association between remarriage and psychological well-being that approached significance – i.e., the association between remarriage and the seven-item purpose in life and personal growth measures.

The association varies between three- and seven-item psychological well-being measures. Using seven-item psychological well-being measures reveals more statistical associations between marital status and psychological well-being. Using seven-item positive relations with others measure in the panel analyses, remarried adults reported more positive relations with others than continuously married adults. Formerly married and never-married adults also reported more autonomy than continuously married adults using both the three- and seven-item measures in Wave 2 cross-sectional analyses. Moreover, the adjusted R-squared of models using seven-item psychological well-being measures is always larger than those of models using the original three-item psychological well-being measures. In other words, they explain more variance than do the original three-item models.

TABLE 8: Panel OLS Regression of Wave 2 Psychological Well-being (7 items) on Marital Status (N=1,657)

	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.29*** (0.11)	0.34*** (0.11)	0.30*** (0.11)	0.26*** (0.09)	0.32*** (0.10)	0.28*** (0.11)
Age ²	-0.00* (0.00)	-0.00*** (0.00)	-0.00** (0.00)	-0.00** (0.00)	-0.00*** (0.00)	-0.00** (0.00)
Women	-1.03*** (0.33)	-0.39 (0.30)	-1.31*** (0.31)	0.62** (0.27)	0.30 (0.30)	-2.15*** (0.32)
Black ^a	1.31* (0.72)	1.50** (0.67)	0.55 (0.67)	-0.22 (0.59)	-0.18 (0.65)	2.15*** (0.69)
Other ^a	1.21 (0.85)	-0.43 (0.78)	-0.13 (0.79)	0.39 (0.70)	0.50 (0.77)	0.39 (0.81)
Parent	0.01 (0.57)	-0.62 (0.53)	-0.19 (0.53)	-0.69 (0.47)	-0.29 (0.52)	0.62 (0.54)
Employment	0.55 (0.39)	0.76** (0.36)	0.13 (0.37)	-0.03 (0.32)	0.62† (0.36)	0.10 (0.37)
Education	0.35 (0.33)	0.34 (0.30)	0.33 (0.31)	0.02 (0.27)	0.09 (0.30)	-0.17 (0.31)
Phy. Health	0.95*** (0.11)	0.78*** (0.10)	0.91*** (0.10)	0.51*** (0.09)	0.67*** (0.10)	0.23** (0.10)
# of Chronic.	-0.12* (0.07)	-0.16** (0.07)	-0.21*** (0.07)	-0.05 (0.06)	-0.17*** (0.06)	-0.15** (0.07)
Remarried ^b	0.66 (0.41)	0.68† (0.38)	0.93** (0.38)	0.87** (0.34)	0.85** (0.37)	1.26*** (0.39)
Formerly Married ^b	-2.59 (2.28)	-2.85 (2.10)	-2.05 (2.12)	-1.52 (1.88)	0.11 (2.06)	2.42 (2.16)
Never- married ^b	-3.43 (2.77)	-4.09 (2.55)	-2.19 (2.57)	-1.75 (2.28)	-0.11 (2.50)	4.19 (2.63)
Hhd-income (ln)	0.25 (0.19)	0.49*** (0.18)	0.80*** (0.18)	-0.10 (0.16)	0.66*** (0.17)	0.40** (0.18)
Homeowner	1.31*** (0.47)	1.19*** (0.43)	0.83† (0.44)	0.19 (0.39)	-0.00 (0.42)	0.64 (0.44)
Social Support	0.52*** (0.04)	0.46*** (0.04)	0.51*** (0.04)	0.69*** (0.03)	0.41*** (0.04)	0.30*** (0.04)
Psychological Well-being, Wave 1	0.94*** (0.05)	0.58*** (0.04)	0.63*** (0.04)	0.60*** (0.03)	0.89*** (0.05)	0.86*** (0.05)
Constant	-9.69** (3.87)	-2.21 (3.59)	-8.73** (3.62)	7.00** (3.20)	-6.68† (3.55)	2.81 (3.69)
<i>Adjusted R</i> ²	0.43	0.33	0.39	0.47	0.36	0.29

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

a White=reference; b Continuously Married=reference

TABLE 9: Summary of OLS Regression Analyses

	Depression	Self-Acceptance	Purpose in Life	Env. Mastery	Positive Relations	Personal Growth	Autonomy
Wave 1 (N=2,801)							
Remarried ^b						+†	
Formerly married ^b	+***	-***	-***		-***		+†
Never-married ^b		-***	-**		-***		
Wave 2 (3 Items, N=1,737)							
Remarried ^b				+***		+**	+***
Formerly married ^b	+***	-***	-**		-***		+***
Never-married ^b		-**	-†		-***		+***
Wave 2 (7 Items, N=1,737)							
Remarried ^b	---		+†	+***		+***	+***
Formerly married ^b	---		-**		-***		+***
Never-married ^b	---	-†	-**		-***		+***
Wave 2 on Wave 1 (3 Items, N=1,657)							
Remarried ^b				+***		+†	+***
Formerly married ^b	+**						
Never-married ^b	+†		-†				
Wave 2 on Wave 1 (7 Items, N=1,657)							
Remarried ^b	---		+†	+**	+**	+**	+***
Formerly married ^b	---						
Never-married ^b	---						

Note: + positive association; - negative association: *** p<0.01, ** p<0.05, † p<0.1, --- N/A;

^b Continuously Married=reference

CHAPTER FIVE

RESULTS: AGE VARIATION IN THE ASSOCIATION BETWEEN MARITAL STATUS AND PSYCHOLOGICAL WELL-BEING

To address the second research question centering on potential age variation in the relationship between marital status and psychological well-being, I use two analytic approaches. I run several ordinary least regression (OLS) models, regressing psychological well-being on marital status, age, age-squared, and marital status-age interaction terms. Similar to previous analyses, I present three sets of analyses – cross-sectional using Wave 1, cross-sectional using Wave 2, and panel regressing Wave 2 on Wave 1. The second analytic approach uses the multiple-group-analysis structural equation modeling (SEM) to examine the marital status-psychological well-being association across three age groups (age<45; 45≤ age ≤ 60; age>60) using the panel data. As mentioned in the methods section, the psychological well-being measures in Wave 1 are measured using 3 items, but the validities are not strong. Therefore, Wave 2 psychological well-being measures are composed of not only the original 3 items but also 4 additional items.

Wave 1 Cross-sectional Results with Marital Status-Age Interaction Terms

Table 10 reports the results of the cross-sectional analyses that regress psychological well-being measures on marital status (treating continuously married as the reference group), age, age-squared, and marital status-age interactions, net of sociodemographic and socioeconomic variables in Wave 1. Table 10 shows that the age*formerly married interaction is significant in the models for depression and positive relations with others. These results indicate an age difference among the formerly married, such that older individuals report fewer depressive

symptoms than do their younger peers. Similarly, among the formerly married, older adults report a higher level of positive relations with others, compared with younger adults. The age*remarried interaction term is significant in one of the models. The results indicate that among the remarried, there is an age difference in environmental mastery, such that older adults report lower environmental mastery than do younger adults. Lastly, the age*never-married interaction term was significant and indicated that, among the never-married, older adults reported lower purpose in life than did their younger peers. Although some of the age interactions were significant, it should be noted that the R-squared values in models that include age interaction terms are fairly similar to models without these terms (reported in Table 4).

Wave 2 Cross-sectional Results with Marital Status-Age Interaction Terms

Three-item Psychological Well-being Measures

Table 11 reports the results of the cross-sectional analyses that regress three-item psychological well-being measures on marital status (treating continuously married as the reference group), age, age-squared, and marital status-age interactions, and controls. The control variables include gender, race, parenthood, employment status, educational attainment, self-rated health, number of chronic health conditions, logarithmic total household income, homeownership, and social support. Table 11 shows that the marital status*age interaction terms are significant in some of the models, though fewer than in the Wave 1 cross-sectional analyses. Age*formerly married is significant only in the model predicting depressive symptoms. The results indicate that the decline with age in depressive symptoms is steeper among formerly married than continuously married adults. The age*never-married coefficient is also significant only in the model predicting depressive symptoms. The results indicate that, among the never-

married, older adults report fewer depressive symptoms than do their younger peers. The age*remarried coefficient is significant in none of the models predicting the three-item measures of psychological well-being. Although some of the age interactions were significant, the R-squared values in these models are fairly similar to those of models excluding these terms.

Seven-item Psychological Well-being Measures

Table 12 reports the results of the cross-sectional analyses that regress seven-item psychological well-being measures on marital status (treating continuously married as the reference group), age, age-squared, and marital status-age interactions, and controls. The control variables include gender, race, parenthood, employment status, educational attainment, self-rated health, number of chronic health conditions, logarithmic total household income, homeownership, and social support. Table 12 shows that only one of the age*never-married interaction term is significant. This result indicates that age*never-married term is significant in the models predicting autonomy. These results indicate that the decline in autonomy that appears to occur with age is steeper among the never-married compared with continuously married. The remarried*age interaction term is significant in none of the Wave 2 cross-sectional models. As found in other interactive models, the R-squared values of models including age interaction terms are, however, fairly similar to those excluding these terms, suggesting a limited role of age patterns in explaining variance in psychological well-being.

Panel Results with Marital Status-Age Interaction Terms

Three-item Psychological Well-being Measures

Table 13 reports the results of the panel analyses that regress three-item psychological well-being measures on marital status (treating continuously married as the reference group), age, age-squared, and marital status-age interactions, and controls. These models include Wave 1 psychological well-being to control, to some degree for the social selection effects. As reported in Table 13, the results of these models indicate that the age*formerly married coefficient is not significant in any of the panel analyses. This result differs from the cross-sectional analyses, which show that the improvement in well-being that appears to occur with age is more marked in the formerly married than the continuously married. However, the age*remarried coefficient was significant in two of the models using panel data. These results reveal a different pattern than was observed in the cross-sectional analyses. The results indicate that the remarried tend to have lower levels of depressive symptoms at Wave 2, controlling on Wave 1 psychological well-being measures, than do the continuously married; however, this difference is smaller at older than younger ages (as indicated by the negative coefficient for remarried and positive coefficient for the remarried*age interaction term). Consistent with this pattern, remarried adults tend to have higher personal growth than do the continuously married, though this difference is smaller among older than younger adults. The age*never-married coefficient is not significant in any model predicting three-item measures of psychological well-being. As noted for other age interaction models, the R-squared values of these models are similar to those of models excluding these terms.

Seven-item Psychological Well-being Measures

Table 14 reports the results of the panel analyses that regress seven-item psychological well-being measures on marital status (treating continuously married as the reference group), age, age-squared, and marital status-age interactions, and controls. These models also include a control on Wave 1 psychological well-being, which provides a partial control for one of the selection mechanisms that is likely to operate. The results revealed that the age*formerly married interaction term is significant in none of the models. Moreover, the age*never-married term is also significant in none of the models. Furthermore, the age*remarried coefficient is significant in none of the models using panel data predicting seven-item measures of psychological well-being.

Age Interaction: Multi-group-analysis SEM Results

To further explore age variation in the association between marital status and psychological well-being in the panel data, I run a multiple-group-analysis structural equation model (SEM) for three age groups: young adults, middle-aged adults, and older adults (Age<45, 45≤age≤60, and Age>60 respectively). Each group has its own multiple-group-analysis SEM model regressing psychological well-being measures on marital status (treating continuously married as the reference group), age, age-squared, sociodemographic, socioeconomic variables, and Wave 1 psychological well-being. An identical regression model can be specified for different age groups simultaneously in SEM framework (i.e., multiple-groups-analysis). This approach provides not only a different vantage point on the issue of age variation in the focal association but also insight into possible age variation in the processes through which marital status influences psychological well-being. Model comparison across these three age groups for each

indicator of psychological well-being was conducted. Multiple-groups-analysis in SEM has a practical application – one is allowed to investigate whether the magnitudes of an estimated parameter of interest are statistically equal for different groups by conducting a model comparison. In practice, one has to specify two models. In Model A, the targeted parameter (e.g., slope of predictor X) is freely estimated for two groups (e.g., young and old-age groups), while in Model B, the targeted parameter is constrained to be equal for groups. Note that the values of overall chi-square statistics for Model A (X_A^2) and Model B (X_B^2) indicate the goodness-of-fit for both models and the degree of freedom (df) for Model B is equal to df for Model A plus 1. A chi-square difference (i.e., $X_A^2 - X_B^2$) larger than 3.84 (i.e., the critical value of the chi-square distribution for 1 df and $\alpha = .05$) suggests the magnitudes of the targeted parameter are not statistically equal. These analyses showed that the association between marital status and psychological well-being is especially strong for the middle-aged group.

The SEM models for the young adults revealed significant effects for marital status in none of the models predicting three- and seven-item measures of psychological well-being. The results for control variables were more in line with expectations. Across different dimensions of psychological well-being in these young adults SEM models, total household income and physical health outcomes are important predictors, with higher income and better health predicting higher well-being. Total household income is an especially strong predictor, a pattern that holds across dimensions of psychological well-being.

In contrast with the results for young adults, results for middle-aged adults revealed that remarried adults reported a higher level of autonomy compared with continuously married adults. This pattern is consistent with the results of the OLS models, reporting higher autonomy among the remarried, compared with continuously married. However, the results for the never-married

are different from those found using OLS. The SEM model using the middle-aged sample revealed that never-married adults reported lower levels of self-acceptance, purpose in life, positive relations with others, and personal growth compared with continuously married adults. Also contrasting with some of the OLS results, the formerly married adults in middle-aged group SEM models did not differ in levels of well-being from the continuously married compared with OLS analyses. Across the measures of psychological well-being in these middle-aged adults SEM models, several controls are important predictors, including total household income and physical health outcomes. As was found in the model for the younger adults, household income is a stronger predictor of psychological well-being than is physical health outcomes.

In the SEM model for older adults marital status was not significant. Like the models for the other age groups, total household income and physical health outcomes are important predictors of well-being. Interestingly, total household income's effect is weaker than that of physical health across dimensions of psychological well-being. Physical health outcomes are the strongest predictor of individuals' psychological well-being that is included in the model. In sum, age variation is only significant for middle-aged adults in the association between marital status and psychological well-being. Table 15 shows the summary of multiple-group-analysis SEM results across three age groups. Consistent with OLS results, remarried adults have more autonomy compared with continuously married adults among middle-aged adults. Interestingly, never-married adults reported worse of in self-acceptance, purpose in life, environmental mastery, and positive relations with others among middle-aged adults. For the middle-age group, age variation does exist in the association between marital status and different dimensions of psychological well-being using both three- and seven-item measures.

TABLE 10: Cross-sectional OLS Regression of Wave 1 Psychological Well-being (3 items) on Marital Status, Including Age Interactions (N=2,801)

	Depression	Self-Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.02 (0.02)	-0.06 (0.04)	0.02 (0.04)	-0.02 (0.04)	-0.10** (0.04)	-0.03 (0.04)	0.08** (0.04)
Age ²	-0.00† (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00** (0.00)	0.00 (0.00)	-0.00 (0.00)
Women	0.26*** (0.07)	-0.49*** (0.12)	-0.04 (0.13)	-0.62*** (0.12)	0.46*** (0.14)	-0.16 (0.12)	-0.66*** (0.13)
Black ^a	-0.26† (0.14)	0.72*** (0.24)	0.13 (0.26)	0.31 (0.24)	-0.01 (0.28)	0.54** (0.23)	0.15 (0.25)
Other ^a	-0.00 (0.15)	0.10 (0.26)	-0.04 (0.29)	0.47† (0.27)	0.45 (0.30)	0.13 (0.25)	0.29 (0.28)
Parent	-0.06 (0.10)	-0.28 (0.18)	-0.18 (0.19)	-0.39** (0.18)	-0.50** (0.20)	-0.18 (0.17)	-0.37** (0.19)
Employment	-0.24*** (0.09)	-0.00 (0.16)	0.22 (0.17)	-0.36** (0.16)	0.02 (0.18)	0.34** (0.15)	0.12 (0.17)
Education	-0.01 (0.01)	0.14*** (0.02)	0.21*** (0.03)	0.04† (0.02)	0.06** (0.03)	0.20*** (0.02)	-0.03 (0.02)
Phy. Health	-0.07*** (0.02)	0.29*** (0.04)	0.20*** (0.04)	0.47*** (0.04)	0.23*** (0.05)	0.21*** (0.04)	0.17*** (0.04)
# of Chronic.	0.14*** (0.01)	-0.20*** (0.03)	-0.13*** (0.03)	-0.15*** (0.03)	-0.18*** (0.03)	-0.04 (0.02)	-0.06** (0.03)
Remarried ^b	0.50† (0.27)	-0.55 (0.46)	-0.35 (0.51)	0.89† (0.47)	-0.79 (0.53)	-0.10 (0.44)	-0.00 (0.49)
Formerly Married ^b	1.09*** (0.22)	-1.05*** (0.39)	-0.74† (0.42)	0.65 (0.39)	-2.28*** (0.45)	0.03 (0.37)	-0.15 (0.41)
Never-married ^b	0.37† (0.22)	-0.39 (0.38)	-0.05 (0.42)	0.41 (0.39)	-1.80*** (0.44)	0.26 (0.37)	-0.36 (0.41)
Age*RM ^c	-0.01 (0.01)	0.01 (0.02)	0.02 (0.02)	-0.03† (0.02)	0.02 (0.02)	0.01 (0.01)	0.01 (0.02)
Age*FM ^c	-0.02*** (0.01)	0.02 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.04*** (0.01)	-0.00 (0.01)	0.02 (0.01)
Age*NM ^c	-0.01 (0.01)	-0.03 (0.02)	-0.03† (0.02)	-0.03 (0.02)	-0.00 (0.02)	-0.02 (0.02)	0.01 (0.02)
Hhd-income (ln)	-0.06 (0.04)	0.17** (0.07)	0.27*** (0.08)	0.15** (0.08)	0.13 (0.09)	-0.00 (0.07)	-0.06 (0.08)
Homeowner	-0.04 (0.09)	0.72*** (0.16)	0.37** (0.17)	0.40** (0.16)	0.27 (0.18)	0.05 (0.15)	0.20 (0.17)
Social Support	-0.02*** (0.01)	0.21*** (0.01)	0.15*** (0.02)	0.18*** (0.01)	0.37*** (0.02)	0.17*** (0.01)	0.09*** (0.01)
Constant	1.97*** (0.65)	8.37*** (1.13)	6.90*** (1.24)	7.64*** (1.15)	8.66*** (1.30)	11.52*** (1.08)	12.57*** (1.19)
Adjusted R ²	0.11	0.23	0.16	0.18	0.26	0.13	0.05

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference; ^c Age*Continuously Married=reference

TABLE 11: Cross-sectional OLS Regression of Wave 2 Psychological Well-being (3 items) on Marital Status, Including Age Interactions (N=1,737)

	Depression	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.02 (0.03)	0.08 (0.06)	0.18*** (0.06)	0.11** (0.05)	0.08 (0.06)	0.13** (0.05)	0.15*** (0.05)
Age ²	-0.00† (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00** (0.00)	-0.00** (0.00)
Women	0.38*** (0.08)	-0.39** (0.17)	-0.24 (0.16)	-0.76*** (0.15)	0.42** (0.17)	0.09 (0.15)	-0.60*** (0.15)
Black ^a	-0.29 (0.18)	0.64† (0.38)	-0.17 (0.37)	0.42 (0.33)	-0.02 (0.37)	0.53 (0.34)	0.39 (0.34)
Other ^a	-0.20 (0.16)	-0.32 (0.35)	-0.55† (0.34)	0.12 (0.30)	0.02 (0.34)	0.40 (0.31)	0.24 (0.31)
Parent	0.04 (0.14)	-0.09 (0.29)	-0.19 (0.28)	-0.08 (0.25)	-0.29 (0.29)	-0.22 (0.26)	0.20 (0.26)
Employment	-0.51*** (0.10)	0.21 (0.21)	0.01 (0.20)	0.07 (0.18)	-0.23 (0.20)	0.06 (0.19)	0.01 (0.18)
Education	-0.01 (0.01)	0.08** (0.03)	0.11*** (0.03)	0.03 (0.03)	0.02 (0.03)	0.13*** (0.03)	0.05† (0.03)
Phy. Health	-0.06** (0.03)	0.44*** (0.06)	0.21*** (0.05)	0.47*** (0.05)	0.25*** (0.05)	0.29*** (0.05)	0.13*** (0.05)
# of Chronic. Remarried ^b	0.14*** (0.02)	-0.11*** (0.04)	-0.07† (0.04)	-0.13*** (0.03)	-0.12*** (0.04)	-0.09*** (0.03)	-0.07** (0.03)
Formerly Married ^b	-0.15 (0.25)	-0.22 (0.53)	0.67 (0.51)	0.65 (0.46)	0.23 (0.51)	1.10** (0.47)	1.21*** (0.47)
Never- married ^b	0.73*** (0.25)	-1.17** (0.53)	-0.69 (0.51)	0.47 (0.46)	-2.12*** (0.52)	-0.11 (0.47)	0.63 (0.47)
Age*RM ^c	0.58† (0.32)	-0.93 (0.69)	-0.12 (0.66)	1.00† (0.59)	-1.64** (0.67)	0.57 (0.61)	1.72*** (0.61)
Age*FM ^c	0.01 (0.01)	-0.00 (0.02)	-0.02 (0.02)	-0.00 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Age*NM ^c	-0.01† (0.01)	0.01 (0.02)	0.01 (0.02)	-0.01 (0.01)	0.02 (0.02)	0.01 (0.01)	-0.00 (0.01)
Age*NM ^c	-0.02† (0.01)	0.00 (0.03)	-0.03 (0.03)	-0.03 (0.02)	-0.00 (0.03)	-0.03 (0.03)	-0.03 (0.02)
Hhd-income (ln)	0.03 (0.05)	0.12 (0.10)	0.26** (0.10)	0.09 (0.09)	-0.12 (0.10)	0.08 (0.09)	0.03 (0.09)
Homeowner	-0.10 (0.11)	0.54** (0.24)	0.75*** (0.23)	0.63*** (0.21)	-0.06 (0.23)	-0.10 (0.21)	0.35 (0.21)
Social Support	-0.03*** (0.01)	0.31*** (0.02)	0.17*** (0.02)	0.21*** (0.02)	0.43*** (0.02)	0.24*** (0.02)	0.12*** (0.02)
Constant	1.34 (0.94)	1.49 (2.01)	3.30† (1.92)	3.61** (1.73)	6.10*** (1.95)	4.50** (1.79)	6.98*** (1.78)
Adjusted R ²	0.14	0.25	0.16	0.23	0.30	0.18	0.07

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference; ^c Age*Continuously Married=reference

TABLE 12: Cross-sectional OLS Regression of Wave 2 Psychological Well-being (7 items) on Marital Status, Including Age Interactions (N=1,737)

	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.21† (0.12)	0.35*** (0.11)	0.30*** (0.11)	0.18† (0.10)	0.34*** (0.11)	0.43*** (0.12)
Age ²	-0.00 (0.00)	-0.00*** (0.00)	-0.00† (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Women	-1.44*** (0.35)	-0.41 (0.32)	-1.82*** (0.32)	0.91*** (0.29)	0.17 (0.32)	-2.90*** (0.34)
Black ^a	1.81** (0.79)	1.14 (0.71)	0.47 (0.71)	-0.44 (0.64)	0.31 (0.71)	1.84** (0.75)
Other ^a	0.23 (0.72)	0.06 (0.65)	-0.43 (0.65)	-0.02 (0.59)	0.33 (0.65)	0.37 (0.69)
Parent	0.08 (0.61)	-0.30 (0.55)	-0.50 (0.55)	-0.52 (0.49)	-0.31 (0.55)	0.68 (0.58)
Employment	0.41 (0.43)	0.62 (0.39)	-0.14 (0.39)	-0.27 (0.35)	0.56 (0.39)	0.02 (0.41)
Education	0.19*** (0.06)	0.16*** (0.06)	0.16*** (0.06)	0.05 (0.05)	0.36*** (0.06)	0.09 (0.06)
Phy. Health	1.12*** (0.12)	0.81*** (0.10)	1.03*** (0.10)	0.48*** (0.09)	0.66*** (0.10)	0.28** (0.11)
# of Chronic.	-0.30*** (0.08)	-0.21*** (0.07)	-0.36*** (0.07)	-0.18*** (0.06)	-0.27*** (0.07)	-0.23*** (0.07)
Remarried ^b	0.25 (1.09)	1.54 (0.98)	1.06 (0.99)	0.82 (0.89)	1.70* (0.98)	2.73*** (1.04)
Formerly Married ^b	-1.21 (1.10)	-0.63 (0.98)	-0.05 (0.99)	-2.50*** (0.89)	0.50 (0.99)	2.19** (1.05)
Never- married ^b	-1.54 (1.42)	-0.82 (1.27)	1.07 (1.28)	-2.11† (1.15)	1.55 (1.27)	4.83*** (1.35)
Age*RM ^c	0.00 (0.04)	-0.03 (0.03)	0.00 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.04 (0.04)
Age*FM ^c	0.02 (0.03)	-0.01 (0.03)	0.00 (0.03)	0.02 (0.03)	0.00 (0.03)	-0.02 (0.03)
Age*NM ^c	0.00 (0.06)	-0.04 (0.05)	-0.05 (0.05)	-0.02 (0.05)	-0.07 (0.05)	-0.09† (0.06)
Hhd-income (ln)	0.48** (0.22)	0.34† (0.19)	0.26 (0.19)	-0.20 (0.17)	0.20 (0.19)	0.05 (0.21)
Homeowner	1.66*** (0.50)	1.34*** (0.45)	1.28*** (0.45)	-0.14 (0.40)	-0.02 (0.45)	0.54 (0.48)
Social Support	0.71*** (0.04)	0.56*** (0.04)	0.61*** (0.04)	0.89*** (0.03)	0.56*** (0.04)	0.39*** (0.04)
Constant	-0.62 (4.16)	5.65 (3.72)	3.61 (3.75)	16.38*** (3.37)	6.35† (3.73)	11.83*** (3.97)
<i>Adjusted R</i> ²	0.31	0.25	0.30	0.37	0.23	0.13

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference; ^c Age*Continuously Married=reference

TABLE 13: Panel OLS Regression of Wave 2 Psychological Well-being (3 items) on Marital Status, Including Age Interactions (N=1,657)

	Depression	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.00 (0.03)	0.11† (0.06)	0.16*** (0.06)	0.12** (0.05)	0.13** (0.06)	0.12** (0.05)	0.11** (0.05)
Age ²	-0.00 (0.00)	-0.00 (0.00)	-0.00*** (0.00)	-0.00† (0.00)	-0.00** (0.00)	-0.00** (0.00)	-0.00† (0.00)
Women	0.33*** (0.08)	-0.19 (0.16)	-0.24 (0.16)	-0.53*** (0.14)	0.23 (0.16)	0.20 (0.14)	-0.33*** (0.14)
Black ^a	0.03 (0.18)	0.34 (0.35)	0.11 (0.34)	0.48 (0.31)	0.23 (0.34)	0.25 (0.31)	0.49 (0.31)
Other ^a	-0.31 (0.21)	0.22 (0.41)	-0.91** (0.40)	0.16 (0.37)	0.26 (0.40)	0.67† (0.37)	0.43 (0.37)
Parent	0.06 (0.14)	-0.08 (0.28)	-0.45† (0.27)	0.12 (0.25)	-0.35 (0.27)	-0.20 (0.25)	0.14 (0.25)
Employment	-0.46*** (0.10)	0.27 (0.19)	0.13 (0.19)	0.16 (0.17)	-0.09 (0.19)	0.09 (0.17)	0.07 (0.17)
Education	-0.06 (0.09)	0.17 (0.17)	0.13 (0.17)	0.05 (0.15)	-0.07 (0.17)	0.13 (0.16)	-0.01 (0.16)
Phy. Health	-0.05** (0.03)	0.34*** (0.05)	0.20*** (0.05)	0.41*** (0.05)	0.24*** (0.05)	0.28*** (0.05)	0.12*** (0.05)
# of Chronic. Remarried ^b	0.12*** (0.02)	-0.03 (0.03)	-0.04 (0.03)	-0.07** (0.03)	-0.04 (0.03)	-0.05† (0.03)	-0.04 (0.03)
Formerly Married ^b	-0.31 (0.25)	0.17 (0.49)	0.78 (0.48)	0.60 (0.44)	0.83† (0.48)	1.15*** (0.44)	1.00** (0.44)
Never- married ^b	1.04† (0.56)	-1.39 (1.11)	-1.34 (1.08)	0.20 (0.98)	-1.20 (1.08)	-0.67 (1.00)	0.65 (0.99)
Age*RM	0.93 (0.78)	-1.66 (1.54)	-1.23 (1.49)	0.83 (1.36)	-0.55 (1.50)	-0.26 (1.38)	1.69 (1.38)
Age*FM	0.02† (0.01)	-0.01 (0.02)	-0.02 (0.02)	-0.00 (0.02)	-0.02 (0.02)	-0.03** (0.02)	-0.02 (0.02)
Age*NM	-0.01 (0.01)	-0.01 (0.02)	0.01 (0.02)	-0.01 (0.01)	0.02 (0.02)	0.00 (0.02)	-0.00 (0.02)
Age*NM	-0.02 (0.01)	-0.00 (0.03)	-0.02 (0.03)	-0.03 (0.02)	0.00 (0.03)	-0.02 (0.02)	-0.03 (0.02)
Hhd-income (ln)	0.01 (0.05)	0.04 (0.09)	0.33*** (0.09)	0.21** (0.08)	-0.02 (0.09)	0.33*** (0.08)	0.06 (0.08)
Homeowner	-0.04 (0.12)	0.36 (0.23)	0.70*** (0.22)	0.52** (0.20)	0.14 (0.22)	-0.12 (0.20)	0.47** (0.20)
Social Support	-0.02** (0.01)	0.22*** (0.02)	0.12*** (0.02)	0.17*** (0.02)	0.31*** (0.02)	0.17*** (0.02)	0.08*** (0.02)
Psychological Well-being, Wave 1	0.15*** (0.02)	0.46*** (0.02)	0.32*** (0.02)	0.28*** (0.02)	0.37*** (0.02)	0.41*** (0.02)	0.35*** (0.02)
Constant	1.94** (0.97)	-3.12 (1.92)	-0.24 (1.87)	-1.31 (1.71)	0.11 (1.88)	-3.03† (1.75)	3.53** (1.73)
<i>Adjusted R</i> ²	0.16	0.38	0.27	0.32	0.43	0.31	0.21

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference; ^c Age*Continuously Married=reference

TABLE 14: Panel OLS Regression of Wave 2 Psychological Well-being (7 items) on Marital Status, Including Age Interactions (N=1,657)

	Self- Accept.	Purpose in Life	Env. Mastery	Positive Relation	Personal Growth	Autonomy
Age	0.29** (0.12)	0.35*** (0.11)	0.31*** (0.11)	0.28*** (0.10)	0.34*** (0.11)	0.30*** (0.11)
Age ²	-0.00† (0.00)	-0.00*** (0.00)	-0.00** (0.00)	-0.00** (0.00)	-0.00*** (0.00)	-0.00** (0.00)
Women	-1.03*** (0.33)	-0.41 (0.31)	-1.30*** (0.31)	0.61** (0.27)	0.30 (0.30)	-2.14*** (0.32)
Black ^a	1.31† (0.72)	1.52** (0.67)	0.55 (0.67)	-0.18 (0.60)	-0.17 (0.65)	2.14*** (0.69)
Other ^a	1.21 (0.85)	-0.39 (0.79)	-0.08 (0.79)	0.43 (0.70)	0.57 (0.77)	0.47 (0.81)
Parent	0.02 (0.57)	-0.64 (0.53)	-0.22 (0.53)	-0.72 (0.47)	-0.34 (0.52)	0.57 (0.54)
Employment	0.55 (0.40)	0.77** (0.36)	0.14 (0.37)	-0.04 (0.33)	0.63† (0.36)	0.13 (0.37)
Education	0.40 (0.36)	0.38 (0.33)	0.39 (0.34)	-0.07 (0.30)	0.12 (0.33)	-0.05 (0.34)
Phy. Health	0.95*** (0.11)	0.78*** (0.10)	0.91*** (0.10)	0.51*** (0.09)	0.67*** (0.10)	0.23** (0.10)
# of Chronic.	-0.12† (0.07)	-0.16** (0.07)	-0.21*** (0.07)	-0.06 (0.06)	-0.18*** (0.06)	-0.15** (0.07)
Remarried ^b	1.02 (1.02)	1.67† (0.94)	1.36 (0.95)	1.78** (0.84)	1.73† (0.92)	2.24** (0.97)
Formerly Married ^b	-2.52 (2.29)	-2.61 (2.11)	-1.91 (2.13)	-1.28 (1.89)	0.37 (2.07)	2.72 (2.17)
Never- married ^b	-3.90 (3.18)	-4.05 (2.93)	-1.65 (2.96)	-0.80 (2.62)	0.85 (2.87)	4.87 (3.02)
Age*RM ^c	-0.01 (0.04)	-0.04 (0.03)	-0.02 (0.03)	-0.04 (0.03)	-0.03 (0.03)	-0.04 (0.03)
Age*FM ^c	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	0.01 (0.03)	-0.02 (0.03)	-0.04 (0.03)
Age*NM ^c	0.00 (0.05)	-0.02 (0.05)	-0.05 (0.05)	-0.01 (0.04)	-0.05 (0.05)	-0.08 (0.05)
Hhd-income (ln)	0.25 (0.19)	0.49*** (0.18)	0.80*** (0.18)	-0.10 (0.16)	0.66*** (0.18)	0.39** (0.18)
Homeowner	1.31*** (0.47)	1.19*** (0.43)	0.85† (0.44)	0.20 (0.39)	0.02 (0.42)	0.67 (0.44)
Social Support	0.52*** (0.04)	0.46*** (0.04)	0.51*** (0.04)	0.69*** (0.03)	0.41*** (0.04)	0.30*** (0.04)
Psychological Well-being, Wave 1	0.94*** (0.05)	0.58*** (0.04)	0.63*** (0.04)	0.60*** (0.03)	0.89*** (0.05)	0.86*** (0.05)
Constant	-9.90** (3.98)	-2.87 (3.68)	-9.65*** (3.72)	6.69** (3.29)	-7.80** (3.65)	1.18 (3.79)
<i>Adjusted R</i> ²	0.43	0.33	0.39	0.47	0.36	0.29

Note: Unstandardized coefficients (Standard errors): *** p<0.01, ** p<0.05, † p<0.1;

^a White=reference; ^b Continuously Married=reference; ^c Age*Continuously Married=reference

TABLE 15. Summary of Multiple-group-analysis SEM of Psychological Well-being on Marital Status (N=1,805)

	AGE<45	45≤AGE≤60	AGE>60
AUTONOMY	I > P	I > P > REMARRIED+	I < P
ENVIRONMENTAL MASTERY		I > P	
PERSONAL GROWTH		I > P > NEVER-MARRIED-	
POSITIVE RELATIONS WITH OTHERS			
PURPOSE IN LIFE			
SELF-ACCEPTANCE			

Note. I = Income; P = Physical health.

CHAPTER SIX

DISCUSSION

This dissertation contributes to the extensive literature on marital status and mental health. It makes two main contributions. First, it sheds light on the potential effects of marital status on broader dimensions of psychological well-being, such as self-acceptance, purpose in life, environmental mastery, positive relations with others, personal growth, and autonomy, in contrast with the bulk of the literature which focuses on depression or other measures of the negative dimension of psychological well-being. By using Ryff's measures of positive psychological well-being, this study also contributes to the ongoing debate about these measures and their theoretical utility. Second, this study provides insight on age differences in the association between marital status and psychological well-being. The relatively few studies examining age differences have given little attention to positive dimensions of psychological well-being. They also have yielded inconsistent findings, with some suggesting a stronger association for young adults, others indicating a stronger relationship for older adults, and still others suggesting a stronger association for middle-aged adults. Using two waves of nationally representative panel data, this dissertation examines potential age variation in the association between marital status and dimensions of psychological well-being.

This study is consistent with previous research finding that the married adults tend to have better mental health than previously married or never-married adults (Kessler and McRae 1984; Pearlin and Johnson 1977; Simon 2002; Thoits 1986; Waite and Gallagher 2000). I found this pattern across cross-sectional data and panel data. The Wave 1 cross-sectional results reveal that the formerly married adults reported a higher level of depressive symptoms and lower levels of

self-acceptance, purpose in life, and positive relations with others. The analyses using Wave 2 cross-sectional data and the three-item measures of psychological well-being reveal patterns that are similar to results of Wave 1 cross-sectional analyses. Similarly, analyses using the Wave 2 cross-sectional data using the seven-item measures find that the formerly married have lower purpose in life and positive relations than do the continuously married. While this pattern is found for both negative and positive psychological well-being measures in cross-sectional analyses, it was only found for negative psychological well-being measure in the panel analysis. I also find that never-married adults are worse off than the continuously married – and this pattern was found in Wave 1 and Wave 2 cross-sectional analyses of self-acceptance, purpose in life, and positive relations with others.

The findings of my study are inconsistent, however, with prior work reporting differences among the currently married. In particular, I find that the remarried have better psychological well-being than do the continuously married. Remarried adults reported a higher level of personal growth compared with the continuously married adults in Wave 1 cross-sectional data. Moreover, they also reported better psychological well-being in Wave 2 cross-sectional data using both three- and seven-item measures of environmental mastery, personal growth, and autonomy. Further, the remarried are universally advantaged in panel analyses using both three- and seven-item measures of psychological well-being, relative to the continuously married adults. This pattern is revealed by the results for positive dimensions of well-being. In panel data, remarried adults reported better positive psychological well-being than do the continuously married using three-item measures of environmental mastery, personal growth, and autonomy. Also, remarried adults reported better positive psychological well-being than continuously married in panel data using seven-item measures of environmental mastery, personal growth,

autonomy, and purpose in life, and positive relations with others. These results reveal that remarried adults are better off than the continuously married adults in terms of environmental mastery, personal growth, and autonomy. These results may suggest that the often traumatic experience of losing a spouse, either to widowhood or divorce, but eventually recreating intimate bonds with new partners might cultivate a sense of environmental mastery, personal growth, and autonomy.

Similar to the results for formerly married adults, there is mixed evidence on the relationship between being never-married and psychological well-being. Never-married adults are worse off than the continuously married adults in terms of self-acceptance, purpose in life, and positive relations with others in Wave 1 cross-sectional analyses. They are also worse off than the continuously married adults in terms of self-acceptance, purpose in life, and positive relations with others in Wave 2 cross-sectional analyses both using three- and seven-item measures. But never-married adults are not universally disadvantaged, relative to the continuously married adults. Never-married adults reported a higher level of autonomy in Wave 2 cross-sectional analysis using both three- and seven-item measures of autonomy. However, these results did not appear in the panel data. Never-married adults reported a lower level of purpose in life using three-item measures of purpose in life, but a higher level of depressive symptoms in the panel analyses. These results underscore the importance of examining positive dimensions of psychological well-being, rather than exclusively focusing on the negative dimensions. Future research should examine other possible “exceptions” to the truism of mental health benefits of marriage.

In short, different conclusions are drawn from negative compared with positive dimensions of mental health. Results for negative dimension are consistent with prior work pointing to the

benefits of marriage, while results for the positive dimension are more complex and point to some beneficial aspects of unmarried or remarried statuses. Perhaps facing fewer family-related social expectations, unmarried and never-married adults may have more time and opportunities to cultivate a sense of environmental mastery, personal growth, and autonomy. Future research should examine specific social and personal investments that may underpin the higher environmental mastery, personal growth and autonomy of the never-married and remarried adults.

In addition to uncovering variation across dimensions of psychological well-being, this study reveals age patterns. Among the formerly married, older adults reported fewer depressive symptoms and more positive relations with others than did their younger peers – a pattern found in Wave 1 cross-sectional analyses. Older adults reported fewer depressive symptoms than did their younger peers among formerly married in Wave 2 cross-sectional analyses. No age variation is found in panel analyses among formerly married adults. Similarly, among the remarried, older adults have lower environmental mastery than do their younger peers in Wave 1 cross-sectional analyses. Also, among the remarried, older adults have fewer depressive symptoms than do their younger peers in the panel analyses. In contrast, age patterns are not found among the remarried in Wave 2 cross-sectional analyses using either the three- or seven-item measures of psychological well-being. Among the never-married, older adults have lower purpose in life than do their younger peers in Wave 1 cross-sectional analyses. Also, among never-married, older adults have lower autonomy than do their younger peers in Wave 2 cross-sectional analyses using seven-item measures of autonomy. Moreover, among never-married, older adults have fewer depressive symptoms than do their younger peers in Wave 2 cross-sectional analyses. The SEM results reveal a different picture about the association between

marital status and well-being. These models reveal that marital status is a predictor of Wave 2 well-being, controlling on Wave 1 levels, only for the middle-aged group – not the younger or older groups. In particular, these models reveal that, compared with continuously married adults, remarried adults in middle-age have more autonomy and never-married adults have lower levels of self-acceptance, purpose in life, positive relations with others, and personal growth.

These age patterns are an important contribution to the literature, as few studies have considered potential age variation in the marital status-psychological well-being association. The marital status-psychological well-being association varies across age. Consistent with the literature, older adults tend to have better psychological well-being than do their younger peers among formerly married or never-married adults based on these two cross-sectional analyses. These age patterns are consistent with some prior work finding that young adults experience more undesirable life events and have fewer psychological, social, and financial resources available, compared with middle-aged and older adults (Ensel et al. 1996; House, Kessler, and Herzog 1990). However, SEM results reveal that the marital status-psychological well-being association is only significant for middle-aged group. The inconsistent findings reveal that future research should incorporate more different methods to examine the association between marital status and psychological well-being across age.

This study was framed around the social causation hypothesis – i.e., focusing on the effect of marital status on psychological well-being. However, other explanations are possible for the observed associations and their variation by age. In particular, social selection is likely to be operating, as well as social causation. This explanation is especially likely, as many of the analyses for this study were conducted using cross-sectional analyses. Lamb and colleagues (2003) stressed that the selection effect implies an advantage of the married over the never-

married in cross-sectional data, because those with the highest levels of well-being would be most likely to migrate from the never-married to the married status. Although I control on Wave 1 well-being in the panel analyses, it is likely that selection mechanisms are not completely accounted for in these analyses. For example, those with poor mental health are selected out of marriage through lower educational attainment, reduced or withdrawal from labor force participation, thereby reducing their wage income and wealth accumulation. This process of mental health selection can start as early as childhood. Similarly, poor health lowers one's income and limit one's earning potential (Macinko, Shi, Starfield, and Wulu 2003). Moreover, the health selection is also related to people's marital status. Healthy people tend to get married and maintain their marriage because of their better health. Data collected over a longer-range data with multiple time points is needed to fully explore these alternative explanations.

This study is further limited by other features of the data, including its representativeness. The sample was national representative, but is not ideal. First, there are many missing values on sociodemographic, socioeconomic variables, and psychological well-being measures. Those lost between two waves were more likely to be of lower socioeconomic status. Second, the MIDUS dataset only samples respondents who live in a household with a telephone, so it may under-represent respondents with lower socioeconomic status backgrounds or respondents without a land-line because of the random-digit-dialing samples. Third, only seventy percent of respondents from Wave 1 were interviewed at Wave 2, though this attrition rate is not surprising given the span of a decade between waves. Fourth, the sample is limited in racial diversity; 92 percent of participants are whites, 5 percent are blacks, and only 3 percent are from other racial or ethnic groups. Researchers cannot observe using these data the racial/ethnic differences

among different marital statuses. Lastly, MIDUS is not ideal for studying marital transitions, as it collects data at a 10 year interval and has limited marital history data.

In summary, this study contributes to the extensive literature on marital status and mental health by revealing variation across dimensions of psychological well-being and age groups. It suggests that the often-touted psychological benefits of marriage may not encompass all aspects of well-being or phases of the life course. It lays the groundwork for future studies examining not only other aspects of psychological well-being but also social psychological processes that may explain variation in the health effects of marital status.

APPENDIX A

CONSTRUCTIONS OF WAVE 1 (3 ITEMS) PSYCHOLOGICAL WELL-BEING MEASURES

Autonomy	
AU1	“I tend to be influenced by people with strong opinions.” (N)
AU2	“I have confidence in my own opinions, even if they are different from the way most other people think.”
AU3	“I judge myself by what I think is important, not by the values of what others think is important.”
Environmental Mastery	
EM1	“In general, I feel I am in charge of the situation in which I live.” (N)
EM2	“The demands of everyday life often get me down.” (N)
EM3	“I am quite good at managing the many responsibilities of my daily life.”
Personal Growth	
PG1	“I think it is important to have new experiences that challenge how you think about yourself and the world.”
PG2	“For me, life has been a continuous process of learning, changing, and growth.”
PG3	“I gave up trying to make big improvements or changes in my life a long time ago.” (N)
Positive Relations with Others	
PR1	“Maintaining close relationships has been difficult and frustrating for me.” (N)
PR2	“People would describe me as a giving person, willing to share my time with others.”
PR3	“I have not experienced many warm and trusting relationships with others.” (N)
Purpose in Life	
PL1	“I live life one day at a time and don't really think about the future.” (N)
PL2	“Some people wander aimlessly through life, but I am not one of them.”
PL3	“I sometimes feel as if I've done all there is to do in life.” (N)
Self-acceptance	
SA1	“When I look at the story of my life, I am pleased with how things have turned out.”
SA2	“I like most parts of my personality.”
SA3	“In many ways I feel disappointed about my achievements in life.” (N)

N means negative wording in questionnaire.

APPENDIX B

CONSTRUCTIONS OF WAVE 2 (7 ITEMS) PSYCHOLOGICAL WELL-BEING MEASURES

Autonomy	
AU1	“I tend to be influenced by people with strong opinions.” (N)
AU2	“I have confidence in my own opinions, even if they are different from the way most other people think.”
AU3	“I judge myself by what I think is important, not by the values of what others think is important.”
AU4	“I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.”
AU5	“My decisions are not usually influenced by what everyone else is doing.”
AU6	“It’s difficult for me to voice my own opinions on controversial matters.” (N)
AU7	“I tend to worry about what other people think of me.” (N)
Environmental Mastery	
EM1	“In general, I feel I am in charge of the situation in which I live.”
EM2	“The demands of everyday life often get me down.” (N)
EM3	“I am quite good at managing the many responsibilities of my daily life.”
EM4	“I do not fit very well with the people and the community around me.” (N)
EM5	“I often feel overwhelmed by my responsibilities.” (N)
EM6	“I have difficulty arranging my life in a way that is satisfying to me.” (N)
EM7	“I have been able to build a living environment and a lifestyle for myself that is much to my liking.”
Personal Growth	
PG1	“I think it is important to have new experiences that challenge how you think about yourself and the world.”
PG2	“For me, life has been a continuous process of learning, changing, and growth.”
PG3	“I gave up trying to make big improvements or changes in my life a long time ago.” (N)
PG4	“I am not interested in activities that will expand my horizons.” (N)
PG5	“When I think about it, I haven’t really improved much as a person over the years.” (N)
PG6	“I have the sense that I have developed a lot as a person over time.”
PG7	“I do not enjoy being in new situations that require me to change my old familiar ways of doing things.” (N)

N means negative wording in questionnaire.

Positive Relations with Others	
PR1	“Maintaining close relationships have been difficult and frustrating for me.” (N)
PR2	“People would describe me as a giving person, willing to share my time with others.”
PR3	“I have not experienced many warm and trusting relationships with others.” (N)
PR4	“Most people see me as loving and affectionate.”
PR5	“I often feel lonely because I have few close friends with whom to share my concerns.”(N)
PR6	“I enjoy personal and mutual conversations with family members and friends.”
PR7	“I know that I can trust my friends, and they know they can trust me.”
Purpose in Life	
PL1	“I live life one day at a time and don't really think about the future.” (N)
PL2	“Some people wander aimlessly through life, but I am not one of them.”
PL3	“I sometimes feel as if I've done all there is to do in life.” (N)
PL4	“I have a sense of direction and purpose in life.”
PL5	“I don't have a good sense of what it is I'm trying to accomplish in life.” (N)
PL6	“My daily activities often seem trivial and unimportant to me.” (N)
PL7	“I enjoy making plans for the future and working to make them a reality.”
Self-acceptance	
SA1	“When I look at the story of my life, I am pleased with how things have turned out.”
SA2	“I like most parts of my personality.”
SA3	“In many ways I feel disappointed about my achievements in life.” (N)
SA4	“In general, I feel confident and positive about myself.”
SA5	“I feel like many of the people I know have gotten more out of life than I have.”(N)
SA6	“My attitude about myself is probably not as positive as most people feel about themselves.” (N)
SA7	“When I compare myself to friends and acquaintances, it makes me feel good about who I am.”

N means negative wording in questionnaire.

APPENDIX C

USE OF HUMAN SUBJECTS IN RESEARCH APPROVAL MEMORANDUM



Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 - FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 12/23/2013

To: Tao-Li Hsu [REDACTED]

Address: [REDACTED]

Dept.: SOCIOLOGY

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
THE ASSOCIATION BETWEEN MARITAL STATUS AND HEALTH VARIATION ACROSS AGE GROUPS
AND DIMENSIONS OF PSYCHOLOGICAL WELL-BEING

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Exempt per 45 CFR § 46.101(b)(4) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 12/18/2014, you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date, however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Anne Barrett <abarrett@fsu.edu>, Advisor
HSC No: 2013.11881

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BIOGRAPHICAL SKETCH

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