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MARITAL BIOGRAPHY AND HEALTH IN MIDDLE AND LATE LIFE

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A long tradition of research has found that being married is associated with better mental health, lower rates of chronic illness, fewer functioning problems and disabilities, and longer life expectancy in the United States (Pienta, Hayward, & Jenkins, 2000; Umberson, Thomeer, & Williams, 2013; Waite & Gallagher, 2000). More recent research on marriage and health has suggested that health is influenced not only by current marital status but also by marital history (Dupre & Meadows, 2007; Hughes & Waite, 2009; Zhang & Hayward, 2006). Growing interest in how cumulative marital history, or marital biography, impacts health in later life can be attributed both to substantial changes in American family life over the past few decades and to the growing prominence of the life course perspective in health research. This

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Couple Relationships in the Middle and Later Years: Their Nature, Complexity, and Role in Health and Illness,
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perspective posits that the aging process starts in early life and that health at any age is a product of biological, psychological, social, and environmental risk factors “acting independently, cumulatively, or interactively across the whole life course” (Kuh & the New Dynamics of Ageing Preparatory Network, 2007, p. 717).

Over the past 6 decades, the institution of marriage has faced significant changes and challenges. For both men and women, the age at marriage has increased, first-marriage and remarriage rates have declined, and divorce and cohabitation have increased markedly for adults of all ages (Casper & Bianchi, 2002). Recent national data has shown that by age 50, more than one third of Americans have divorced at least once, and approximately one quarter have married two times or more (Kreider & Ellis, 2011). For adults ages 50 and over, S. L. Brown and Lin (2012) found that divorce rates doubled between 1990 and 2010, rising from 4.9 to 10.1 divorced persons per 1,000 married persons, and in 2010 about one in four persons who divorced were ages 50 and over. Given these changes, more and more Americans now enter midlife and late life with complex marital histories. A sharp rise in cohabitation represents another significant change to union formation trends during this period. Although only about 8% of first marriages in the 1960s were preceded by cohabitation, the proportion increased to 56% in the 1990s (Casper & Bianchi, 2002). All of these changes suggest that traditional norms about marriage, divorce, and cohabitation have given way to a variety of union formations and family configurations in the United States. They also provide an ideal context to explore how marital biography influences health among baby boomers, who are the first cohort of Americans to experience these changes in adulthood, and who are now on the cusp of old age.

Since the 1970s, the life course perspective has gained prominence in health research. One of its core principles is that “health at any point in the life course has been shaped not only by recent, proximal circumstances and resources, but also by a lifetime of opportunities and constraints, or more distal influences” (Pavalko & Caputo, 2013, p. 1041). As individuals’ marital biographies have become more heterogeneous, current marital status alone is viewed as less informative than measures such as union timing, transition, sequencing, and duration to characterize and investigate associated benefits and risks (Barrett, 2000; Dupre, Beck, & Meadows, 2009; Zhang & Hayward, 2006).

In this chapter, we discuss the use of marital biography to measure an individual’s cumulative history of marital transitions and theoretical perspectives linking marital biography and health; review research on marital biography and health in midlife and late life; and discuss gaps in the literature, future directions for research, and clinical and policy implications of findings.

MARITAL BIOGRAPHY

Family researchers have identified at least five interrelated components of marital biography: marital status, marital transitions, marital timing, marital sequencing, and marital status duration (Barrett, 2000; Dupre & Meadows, 2007; Hughes & Waite, 2009). *Marital status* refers to one's current state of being married, divorced, separated, widowed, or never married. *Marital transitions* include movements into and out of marital statuses. *Marital timing* refers to the ages at which marital transitions occur or sometimes the timing of marital transitions relative to other life events (e.g., widowhood and retirement). *Marital sequencing* refers to the order of marital transitions (e.g., married-divorced-remarried vs. married-widowed-remarried). *Marital status duration* reflects the accumulated time spent in a specific marital status, which may include marriage duration, divorce duration, and widowhood duration. Durations can thus differentiate among those who have the same marital status or those who have experienced the same type and number of marital transitions (Dupre & Meadows, 2007). Using measures of marital biography allows researchers to examine health effects that extend beyond current marital status and to analyze more nuanced questions such as: Is remarriage as protective of health as first marriage? Is widowhood at the age of 70 as damaging to health as widowhood at the age of 40? Are multiple divorces more harmful to health than single divorce? Is being married for 30 years at age 65 more protective than being married for 20 years? (Dupre et al., 2009; Zhang, 2006).

THEORETICAL PERSPECTIVES ON MARITAL BIOGRAPHY AND HEALTH

The majority of the research on marital biography and health draws from three theoretical models: the marital resource model, the stress model, and the selection model. Increasingly, researchers also integrate the cumulative advantage/disadvantage theory in their studies on marital biography and health (Dupre & Meadows, 2007; Umberson et al., 2013).

Marital Resource Model

The marital resource model suggests that marriage provides social, psychological, and economic resources, which in turn promote mental/physical health and longevity (Waite & Gallagher, 2000). In terms of social and psychological resources, marriage increases access to social support for both spouses (i.e., providing and receiving love, advice, and care), social integration (i.e., feeling

connected to others), and social control of health behaviors (i.e., monitoring a spouse's health and health behaviors; Liu & Umberson, 2008; Umberson, 1992). Social support decreases anxiety and depression and buffers the negative effects of stress and other health hazards, which may in turn improve physical health and survival (Umberson & Montez, 2010). Other psychological benefits of marriage include stronger feelings of meaning and purpose in life, more self-acceptance, and a stronger sense of mastery (Marks, 1996). In terms of economic resources, marriage may lead to an increase in income and wealth through specialization, economies of scale, and the pooling of wealth (Becker, 1981). Economic resources directly enhance health through their positive effects on nutrition, caregiving for illness, and access to medical or other health-enhancing resources (Waite & Gallagher, 2000).

Stress Model

It is widely acknowledged that divorce and death of the spouse are two of the most stressful events a person can experience (Umberson et al., 2013). In contrast to the marital resource model, which attributes health benefits to the institution of marriage, the stress model suggests that the strains of marital dissolution are the primary factor responsible for undermining the health of the divorced, separated, and widowed (Williams & Umberson, 2004). Stress researchers distinguish short-term stressful life events from chronic strains (Turner, Wheaton, & Lloyd, 1995). A *stressful life event* refers to an undesirable event that occurs in a relatively short period of time (e.g., transition to divorce), whereas *chronic strains* refer to persistent or ongoing sources of stress over prolonged periods of time (e.g., persistent marital conflict). Divorce and widowhood are viewed as life events that entail both short- and long-term stress (Carr & Springer, 2010), including decreased financial resources; disruption in social network; loss of social support; and when children are involved, the strain of either single parenthood or of coparenting with a former spouse (Zhang & Hayward, 2006).

Selection Model

The selection model suggests that individuals in better health or with more favorable health characteristics are more likely to be selected into marriage, whereas those in worse health or with fewer favorable health characteristics are more likely to be selected out of marriage (Fu & Goldman, 1996; Karraker & Latham, 2015). Healthy individuals may be selected into marriage directly, through individuals' preferences for mentally and physically fit spouses, or indirectly, through selection criteria that are themselves associated with health and well-being such as socioeconomic status, health

behaviors, and psychological characteristics (Fu & Goldman, 1996; Musick, Brand, & Davis, 2012). Marriage selection seems to work on health at two levels: first, more healthy individuals are more likely to marry, and second, less healthy people are more likely to divorce. For example, a recent study has found that wife's heart problem onset increases the risk of divorce (Karraker & Latham, 2015). However, what is noteworthy is that researchers have found a significant association between marital status and health even after controlling for selection factors such as education, income, personality, health behaviors, and health before marriage (Carr & Springer, 2010; D. R. Johnson & Wu, 2002).

Cumulative Advantage/Disadvantage Theory

The cumulative advantage/disadvantage theory provides a useful framework for understanding how duration across marital statuses and multiple marital transitions can influence health and survival over the life course. Morbidity and mortality are often influenced by negative events and exposures (e.g., marital distress, marital dissolution, poverty, unhealthy behaviors) that can accumulate over the life course (Kuh & Ben-Shlomo, 1997). Moreover, early disadvantages can compound over time and set in motion more disadvantages. For example, women with children who divorce in early adulthood may face single parenting, along with limited educational/career opportunities and poor economic outlook. The chronic stress of being a single parent with limited resources may lead to psychological distress and unhealthy coping behaviors such as overeating, smoking, and drinking, which further undermine well-being in later life. On the other hand, the positive effects associated with a happy and stable marriage—such as social support and integration, socioeconomic advantages, and support for healthy behaviors—can also accumulate and have lasting beneficial effects on health (Umberson et al., 2013; Zhang & Hayward, 2006). Therefore, this theory posits that the accumulated duration of exposures to negative or positive marital experiences, and especially the number of negative exposures, act to compound the impact on health and mortality (Zhang, 2006).

EMPIRICAL FINDINGS ON MARITAL BIOGRAPHY AND HEALTH

A burgeoning literature suggests that marital biography affects morbidity and mortality in later life. In this section, we focus on recent research evidence on the association between different dimensions of marital biography and health outcomes.

Marital Status and Health

Current marital status, an important dimension of marital biography, is strongly associated with health and survival. Researchers have found that married people, on average, enjoy better mental health, fewer chronic illnesses, and longer life expectancy than the divorced/separated, the widowed, and the never married (e.g., Hughes & Waite, 2009; Rendall, Weden, Favreault, & Waldron, 2011; Simon, 2002). In terms of trends, Liu and Umberson (2008) found that differentials in self-reported health have widened in the past several decades between the married and the formerly married, whereas there is a convergence in the self-reported health between married men and never-married men largely due to reported improvements among the latter. Potential explanations for the divergent trends in health between the married and the formerly married include the increasingly important role of marriage in providing social support in the context of greater geographic mobility and the growing advantage in marriage selection of the healthier individuals (Liu & Zhang, 2013). As for the convergence in health between the married men and the never-married men over time, Liu and Umberson attributed it partly to the changes of family and marriage norms.

Marital Transitions and Health

In recent years, a burgeoning literature has focused on the impact of marital transitions on health—most often mental health, self-rated health, and mortality. Consistent with the marriage resource model, research has shown that entry into marriages improves psychological well-being and decreases depression (Frech & Williams, 2007; Simon, 2002). A recent study (Musick & Bumpass, 2012) found that, even after controlling for preexisting individual characteristics, getting married is associated with moderate improvement in mental and physical health (although these benefits dissipate over time).

On the other side, much research has found that exiting marriage through divorce or widowhood is associated with significant declines in health and increases in mortality. In terms of psychological well-being, studies have found that divorce and widowhood often lead to declines in mental health, although most people seem to recover over time (Lee & DeMaris, 2007; Lorenz, Wickrama, Conger, & Elder, 2006). The results are less consistent for physical health. It is plausible that because chronic disease develops slowly, the negative effects of divorce on physical health may appear years or decades later (Hughes & Waite, 2009). A growing body of research seems to support this view. For example, although Lorenz and colleagues (2006) saw similar levels of physical health among newly divorced and married women, they found that after 10 years the divorced women had significantly higher

levels of illness than their continuously married counterparts. Zhang and Hayward (2006) found that marital loss (separation/divorce or widowhood) is associated with a higher prevalence of cardiovascular disease for both men and women ages 51 to 61 years in 1992. Transitions to divorce or widowhood also increase the risk of dying for both men and women (Rendall et al., 2011). As for the pathways linking marital transitions with physical/mental health and mortality, researchers have found that socioeconomic conditions partially explain health differences between married persons and those who experience marital disruptions (particularly for women), whereas social support and healthy behaviors play smaller roles (more so for women than for men; Umberson et al., 2013; Zhang & Hayward, 2006). More recently, researchers have identified factors that moderate the association between marital transitions and physical health. For example, Bookwala, Marshall, and Manning (2014) found that between 1992 and 2004, respondents who became widowed but had a friend who acted as confidante had similar health outcomes as those continuously married during this period and better health than those widowed without a friend as confidante.

Studies examining the effect of the number of marital transitions on health have indicated that people experiencing multiple divorces or widowhoods have worse health than those with a single disruption (Dupre, George, Liu, & Peterson, 2015; Dupre & Meadows, 2007; Zhang, 2006; see Hughes & Waite, 2009, for an exception). For example, Barrett (2000) found that twice-divorced persons were significantly more depressed than the singly divorced, and those twice widowed reported more symptoms of anxiety and substance abuse than singly widowed persons. In Zhang's (2006) analysis, she found that people with multiple marital losses had a higher risk of cardiovascular disease than those with a single loss. Similarly, Dupre et al. (2009) found a graded relationship between the number of divorces and mortality: Compared with men without a divorce, men with one divorce were 1.30 times more likely to die, and men with two or more divorces were 1.80 times more likely to die during a 14-year follow-up, whereas the comparable risks were 1.68 and 1.72, respectively, among women.

Marital Status Duration and Health

Relatively few studies have examined the health effects of marital status duration, although research has consistently shown that marriage duration contributes to longevity (Dupre et al., 2009). Lillard and Waite (1995) found subtle gender differences in the marital duration-longevity association: For men, mortality risk drops immediately after marriage and then decreases gradually with each additional year of marriage; for women, mortality risk does not decrease immediately after marriage, but decreases more over marriage

duration than it does for men. As expected, widowhood significantly increases the risk of death for both men and women during the first few months of bereavement, and then the effect of widowhood declines monotonically until the second year of widowhood and plateaus thereafter (Elwert & Christakis, 2006). Mortality risk also increases during the first few years after a divorce and then attenuates thereafter (Dupre et al., 2009).

The relationship between marriage duration and physical health is more complex. For example, in a study that looked at the prevalence of chronic conditions among 51- to 61-year-olds, those married 20 to 29 years had fewer conditions than those married for shorter periods, whereas those married 30 and more years did not (Pienta et al., 2000). Zhang and Hayward (2006) found that longer marriages were associated with a slightly higher risk of cardiovascular disease onset for both men and women in later life, in part because longer marriages were associated with less healthy behaviors and an accumulation of chronic conditions, such as hypertension, diabetes, and high cholesterol. In another study that examined marital biography and the onset of chronic diseases (i.e., diabetes, cancer, heart attack, or stroke), Dupre and Meadows (2007) found that the health effects of marital duration were contingent on the number of married years accumulated by a specific age. For example, they found that a woman married 20 years at age 50 had a 24% lower risk of disease onset than a woman married only 10 years at age 50. And in another twist, McFarland, Hayward, and Brown (2013) found evidence of differences in the effects of marital duration on biological risks for disease by gender and type of biological risk. They found that marital duration was protective of cardiovascular health for women but not for men and that marital duration was not significantly associated with metabolic and chronic inflammation risk for either men or women.

Fewer studies have examined the effects of widowhood and divorce duration on physical health, and the results are inconsistent. Whereas Zhang and Hayward (2006) found no association between the duration of divorce or widowhood and cardiovascular disease, Dupre and Meadows (2007) found that longer divorce duration was associated with a higher risk of chronic disease onset for men, but widowhood duration was not associated with disease onset when the number of widowhood transitions was controlled for. Hughes and Waite (2009) found that a higher percentage of time spent in divorce or widowhood was associated with a greater number of chronic conditions and mobility limitations. These mixed findings are particularly difficult to interpret in light of the different health outcomes examined, the different measurements of divorce/widowhood duration (current divorce duration vs. the percentage of years spent in being divorced since first marriage), and the variation in study design (cross-sectional vs. longitudinal).

A significant body of research has analyzed the effects of widowhood duration and divorce duration on mental health. Most studies on widowhood duration have found that widowhood is associated with an initial steep decline in mental health, followed by a gradual recovery to prewidowhood mental health over 2 years (Sasson & Umberson, 2014). As for divorce, research has found that it can have a long-term negative impact on psychological well-being—an impact that is partly reduced only if the divorced remarry or enter a cohabiting relationship (D. R. Johnson & Wu, 2002; Lucas, 2005; Mastekaasa, 1994).

Marital Timing, Sequencing, and Health

A small but growing number of studies have examined the health implications of marital timing among older men and women. These studies show that age at marriage matters for health in later life (Dupre et al., 2009; Hughes & Waite, 2009; McFarland et al., 2013). For example, Dupre and colleagues (2009) found that getting married before age 19 increased mortality risk for both men and women. Compared with getting married between the ages of 19 and 25, marriage at age 18 or younger has also been associated with a higher risk of disease onset for women (Dupre & Meadows, 2007). A recent study found a negative association between age at first marriage and the risk of chronic inflammation for men (McFarland et al., 2013). Part of the reason that early marriages have pernicious effects on health in later life may be that getting married as a teenager is often associated with poverty, dropping out of school, stress, untimely parental responsibilities, and a high risk for divorce over the life course (Dahl, 2010; Dupre et al., 2009).

Analyses have also found that the timing of marital dissolutions has important implications for health (Sasson & Umberson, 2014; Williams & Umberson, 2004). Liu (2012) recently showed that the negative effects of transitions to divorce on self-reported health decreased with age, whereas the health consequences of transitions to widowhood increased with age. Moreover, Liu (2012) found that health effects of marital transitions varied across birth cohorts—for example, divorce had a larger negative health impact for the 1950s cohort than the 1940s cohort, whereas the negative health impact of widowhood was larger for the 1910s cohort than the 1920s cohort.

Few studies have examined how different sequences of marital transitions are associated with health. Barrett (2000) found that those who remarried following divorce did not differ in mental health from those who remarried following widowhood. However, twice-widowed persons had higher rates of substance abuse symptoms than previously divorced and currently widowed individuals. Although the mechanisms through which different sequences of marital transitions affect health were not explored in the study, Barrett

suggested that “experiencing both divorce and widowhood may provide an individual with enhanced psychological resources that prevent the negative health outcomes that marital loss often brings” (p. 461).

HETEROGENEITY IN THE EFFECTS OF MARITAL BIOGRAPHY ON HEALTH: GENDER, RACE, AND MARITAL QUALITY

Increasingly, recent research has shown that the effects of marital biography on later health vary by a variety of demographic and relationship characteristics. Here, we highlight the most important of these moderators: gender, race, and marital quality.

Gender

Although research has established that marriage tends to benefit both men’s and women’s health, debate continues on whether it benefits men more than women (Simon, 2002; Williams, 2003). For example, some have posited that men derive more from marriage than women because wives are more likely than husbands to nurture their partners’ well-being through maintaining social connections, providing emotional support, encouraging the adoption of healthy behaviors, and helping monitor their health. In addition, women’s role in marriage may consist of more sacrifices and stresses than men’s, especially given their generally larger responsibility for parental and household work (Bernard, 1972). Supporting these arguments, a number of studies have documented greater marital status disparities in mental health, physical health, and mortality for men than for women (Hughes & Waite, 2009; Liu, 2009). For example, using 25 years of data from the 1979 National Longitudinal Study of Youth, Teachman (2010) found that marriage was associated with reduced health limitations for men but increased health limitations for women. Although the reasons for this effect are not entirely clear, Teachman hypothesized that increasing caregiving responsibilities and associated stress over a married woman’s life (i.e., caring for spouse, children, and elderly parents) may undermine her health.

Other researchers have questioned whether marriage provides more health benefits to men than to women, especially among more recent birth cohorts. They have argued that gender differences in the benefits of marriage may have attenuated or disappeared in recent years because of the significant changes taking place in American family life including declines in male wages, increases in the rates of women’s labor force participation and the proportion of dual-earner couples, and increases in men’s participation in child care and household chores (Casper & Bianchi, 2002). Some

studies have supported this position, reporting that entry into first marriages imparts equal benefits for men and women, and there were no gender differences in the benefits of marriage for psychological well-being (Simon, 2002; Williams, 2003).

A few studies on marriage and physical health have suggested that divorce in later life may be more detrimental to women than men, especially in terms of cardiovascular disease. Clinical studies of marital strain reveal that marital conflict tends to evoke greater and more persistent physiological changes (e.g., increases in systolic blood pressure and elevated stress hormones) for women than for men. As divorce is often a protracted and stressful process marked by marital conflicts, women's greater sensitivity to marital distress may put them at higher risk for cardiovascular and other stress-related diseases than men (Kiecolt-Glaser & Newton, 2001). For example, Zhang and Hayward (2006) found that the risk of experiencing cardiovascular disease onset was higher for divorced women in midlife but not for divorced men. Given the findings that the effects of marital biography are sensitive to gender and the type of health outcome, it is important for researchers to continue to examine gendered effects of marriage and marital dissolution on a variety of health outcomes for mature adults of different birth cohorts.

Race

Few studies have specifically examined racial/ethnic differences in the effects of marital biography on health. Some researchers have suggested that the meaning of each marital status may be different by race because of social, economic, historical, and cultural factors. For example, the nonmarried statuses may be less stigmatized and have less detrimental consequences on health among Blacks than Whites because of the more common occurrence of divorce, separation, and never-married status among Blacks (Liu & Zhang, 2013). Marriage may also provide fewer social, psychological, and economic resources for Blacks (especially for Black women) than for Whites because of the relatively disadvantaged socioeconomic status of Blacks and the reported lower marital quality among Black couples (Broman, 1993; Bulanda & Brown, 2007). Evidence on race differences in the link between marital biography and health from cross-sectional and longitudinal studies is limited and varies by the health outcomes examined. For example, Barrett (2003) found that separation has a less adverse effect on depressive symptoms for Blacks than for Whites, but divorced Blacks have more symptoms of substance abuse/dependence than divorced Whites, suggesting that divorce may have a stronger negative effect for Blacks. In terms of widowhood and mortality, largely consistent with theoretical arguments about racial differences in marital cultures and marital contexts, Elwert and Christakis (2006) found that widowhood does not

increase the risk of mortality among Blacks, whereas it has a strong effect among Whites. Interestingly, other researchers have found that older Blacks seem to benefit more from marriage than older Whites in terms of nonfatal chronic conditions (e.g., back problems, arthritis), functioning problems, and disability (Pienta et al., 2000).

Marital Quality

Research has found that the health benefits of marriage largely hinge on marital quality. *Marital quality* often refers to a married person's assessment of his or her marriage in terms of marital happiness and satisfaction, marital conflict and disagreement, marital interactions, attitudes, and behaviors. A growing body of research has shown that whereas a happy and satisfying marriage is related to better mental and physical health (Bookwala, 2005; Gallo, Troxel, Matthews, & Kuller 2003), staying in a poor-quality marriage can undermine health, and its negative effect on health can be similar to or sometimes worse than divorcing or remaining unmarried (Hawkins & Booth, 2005). Marital distress can act like a chronic stressor and lead to psychological distress, which is closely associated with physical health problems. Moreover, the efforts to control and change a spouse's unhealthy behaviors are less likely to be successful in an unhappy marriage than a happy marriage (Robles, Slatcher, Trombello, & McGinn, 2014; see also Chapter 15, this volume). Recent studies on biological pathways between marital quality and health have shown that negative marital interactions (e.g., angry behaviors during marital conflicts, high levels of hostility) can undermine cardiovascular health, elevate inflammatory responses, and depress the immune system—all of which may contribute to the development of chronic diseases in later life (Kiecolt-Glaser et al., 2005; Robles et al., 2014). Prior research has also suggested that negative aspects of marital functioning have stronger effects on health than positive aspects of marital functioning (Bookwala, 2005). It is therefore not surprising that researchers have found that increases in marital quality over time are associated with decreases in the number of physical illnesses (Wickrama, Lorenz, Conger, & Elder, 1997), that marital distress is associated with earlier onset of hypertension among long-time married men and women (Wickrama et al. 2001), and that exiting troubled marriages does not negatively impact health relative to staying in those marriages (Hawkins & Booth, 2005).

In addition, high-quality marriages may help ameliorate the negative effects of functional limitations and disability on older adults' mental health and quality of life, whereas low-quality marriages may exacerbate the negative effects of such conditions (Bookwala, 2011; Bookwala & Franks, 2005; Warner & Kelley-Moore, 2012). For example, Bookwala (2011) found that although poor vision was associated with higher levels of depressive symptoms

and functional limitations among older adults in less satisfying marriages, it was not associated with either outcome in more satisfying marriages.

WHERE DO WE GO FROM HERE?

In the past few decades, researchers have made important strides in the study of marital biography and health, using advanced statistical techniques such as growth curve and structural equation modeling with longitudinal data sets. Still, questions remain about how marital experiences over the life course affect well-being and how to account for the tremendous heterogeneity among people with different marital biographies. Here we discuss what we see as the most promising directions for future research.

Methodology Issues

Significant research gaps remain in terms of methodologies in the field of marital biography and health. One of the most prominent issues is that researchers rarely look beyond their disciplinary boundaries, despite the importance of intersectional processes of social, biological, psychological, and behavioral mechanisms linking marriage to health (Robles & Kiecolt-Glaser, 2003). For example, most biopsychological studies of marital relationships are clinic-based, relying on small community and cross-sectional data without accounting for other social and behavioral covariates. At the same time, social and demographic researchers analyze national datasets, with a focus on self-rated physical health measures or mental health outcomes but lacking biological measures. A recent development of the biodemographic approach provides an innovative tool to address this issue. The biodemographic approach is usually involved with collecting and analyzing biological risk factors (e.g., systolic blood pressure, diastolic blood pressure, total cholesterol, C-reactive protein) in major longitudinal population-based surveys of older adults, such as the Health and Retirement Study (HRS) and the National Social Life, Health, and Aging Project, which present exciting opportunities for researchers to examine the biological pathways linking marital biography and health. In addition, the HRS just completed genotyping 12,507 respondents, and the addition of genetic data will enable scientists to explore how genes interact with marital transitions to produce different health outcomes.

Moreover, previous investigations of marital biography and health have not fully captured the complexities of marital relationships given their focus on the individual rather than the dyad as the unit of analysis. Most studies, especially population-based ones, model the relationship between marriage and health at the individual level and ignore the dyadic nature of

marriage (Carr & Springer, 2010). Thus, we know little about how one's own health is related to spousal/dyadic characteristics. Leading scholars in marriage and health have long emphasized the linked lives of spouses and posited that spouses influence each other's social context and thus health risks (Lillard & Waite, 1995). Recent studies in European countries and the United States found that spouse's education influenced health, net of one's own education (D. C. Brown, Hummer, & Hayward, 2014; Jaffe, Eisenbach, Neumark, & Manor, 2006). Future studies should adopt a dyadic approach in the study of marriage and health and examine how various spousal characteristics (e.g., education, race, health and health behavior, personality, and marital satisfaction) affect one's own health risks.

Heterogeneity of Intimate Relationships in Later Life

So far, research on marital biography and health among older adults has focused on married heterosexual couples. With the legalization and growing societal acceptance of same-sex marriages, it is important to examine the health implications of marriage for same-sex couples. We also think that as an increasing number of older adults choose to cohabit rather than remarry following a divorce or widowhood, research on marital biography and health should take cohabitation into consideration. Recent studies on cohabitation in older adulthood have shown that cohabiting unions in later life are quite stable and may operate as long-term alternatives to marriage (S. L. Brown, Bulanda, & Lee, 2012). Moreover, older cohabitators and married persons do not differ significantly in their reports of relationship quality including emotional satisfaction, pleasure, time spent together, demands, criticism, etc. (S. L. Brown & Kawamura, 2010). However, other research has also suggested that cohabitators have poorer health than their married peers (S. L. Brown, Bulanda, & Lee, 2005; Zhang, 2006). Future research should examine the same areas studied among married heterosexual couples for same-sex and cohabiting couples in later life, looking at the impact on different health outcomes by marital/cohabitational biography factors and relationship quality.

Last, what we know about marital biography and health in midlife and late life is largely based on samples of the general population, and therefore the results tend to be dominated by the experiences of Whites, the largest racial group in the United States (Koball, Moiduddin, Henderson, Goesling, & Besculides, 2010). As the composition of the U.S. older population becomes more racially diverse, we need more research that examines how marital biography influences health in African American, Hispanic, and Asian American populations. Couples are influenced by their own ethnic and cultural backgrounds, health beliefs and behaviors, and unique migration histories and circumstances, which in turn may influence couple relationships and health.

CLINICAL AND POLICY IMPLICATIONS

Our review indicates that in midlife and late life, marital biography is significantly associated with health and survival, and the protective effects of marriage vary by gender, race, marital quality, and specific health outcomes. Several groups seem to be particularly disadvantaged: those recently divorced or widowed, those with multiple marital breakups, those married as teenagers, and those in low-quality marriages. Thus, health professionals should understand the dynamic impact of marital biography on health and periodically assess their patients from this perspective. In particular, knowing the stresses associated with marital loss in later life and the importance of various forms of social support will help practitioners provide a range of compassionate and effective services.

Also, given that marital quality is strongly linked to health and moderates the relationship between disability and psychological well-being in later life, older adults in unhappy marriages might be encouraged by health professionals, family members, and friends to try marital therapy. Previous research has shown that marital therapy has been effective in helping some couples to improve communication and interpersonal relationship skills, to cope with spousal and children's health problems, and ultimately to enhance marital functioning and satisfaction (S. M. Johnson, 2003; Mead, 2002).

Our review also shows that more and more Americans are entering old age without a partner or with complex marital histories, and many of these individuals are less healthy than their married counterparts, partly because of their disadvantages in socioeconomic resources and social integration. Divorced and widowed older women have higher poverty rates than their male counterparts. Policies aiming at improving women's economic well-being over the life course (e.g., increasing minimum wages, eliminating the gender gap in pay, granting caregiving credit, increasing Social Security survivor benefits) would help reduce poverty for older women in general and for nonmarried older women in particular (Richardson, 2006). At a local level, municipal governments should assess the needs of the increasingly large nonmarried older population and encourage companies, hospitals, and organizations to provide innovative services and programs that improve the health and well-being of nonmarried older adults.

REFERENCES

- Barrett, A. E. (2000). Marital trajectories and mental health. *Journal of Health and Social Behavior*, 41, 451–464. <http://dx.doi.org/10.2307/2676297>
- Barrett, A. E. (2003). Race differences in the mental health effects of divorce: A re-examination incorporating temporal dimensions of the dissolution process. *Journal of Family Issues*, 24, 995–1019. <http://dx.doi.org/10.1177/0192513X03256396>

- Becker, G. S. (1981). *A treatise on the family*. Cambridge, MA: Harvard University Press.
- Bernard, J. S. (1972). *The future of marriage*. New York, NY: World.
- Bookwala, J. (2005). The role of marital quality in physical health during the mature years. *Journal of Aging and Health*, 17, 85–104. <http://dx.doi.org/10.1177/0898264304272794>
- Bookwala, J. (2011). Marital quality as a moderator of the effects of poor vision on quality of life among older adults. *The Journals of Gerontology: Series B. Psychological Sciences and Social Sciences*, 66, 605–616. <http://dx.doi.org/10.1093/geronb/gbr091>
- Bookwala, J., & Franks, M. M. (2005). Moderating role of marital quality in older adults' depressed affect: Beyond the main-effects model. *The Journals of Gerontology: Series B. Psychological Sciences and Social Sciences*, 60, P338–P341. <http://dx.doi.org/10.1093/geronb/60.6.P338>
- Bookwala, J., Marshall, K. I., & Manning, S. W. (2014). Who needs a friend? Marital status transitions and physical health outcomes in later life. *Health Psychology*, 33, 505–515. <http://dx.doi.org/10.1037/hea0000049>
- Broman, C. L. (1993). Race differences in marital well-being. *Journal of Marriage and Family*, 55, 724–732. <http://dx.doi.org/10.2307/353352>
- Brown, D. C., Hummer, R. A., & Hayward, M. D. (2014). The importance of spousal education for the self-rated health of married adults in the United States. *Population Research and Policy Review*, 33, 127–151. <http://dx.doi.org/10.1007/s11113-013-9305-6>
- Brown, S. L., Bulanda, J. R., & Lee, G. R. (2005). The significance of nonmarital cohabitation: Marital status and mental health benefits among middle-aged and older adults. *The Journals of Gerontology: Series B. Psychological Sciences and Social Sciences*, 60, S21–S29. <http://dx.doi.org/10.1093/geronb/60.1.S21>
- Brown, S. L., Bulanda, J. R., & Lee, G. R. (2012). Transitions into and out of cohabitation in later life. *Journal of Marriage and Family*, 74, 774–793. <http://dx.doi.org/10.1111/j.17413737.2012.00994.x>
- Brown, S. L., & Kawamura, S. (2010). Relationship quality among cohabitators and marrieds in older adulthood. *Social Science Research*, 39, 777–786. <http://dx.doi.org/10.1016/j.ssresearch.2010.04.010>
- Brown, S. L., & Lin, I. F. (2012). The gray divorce revolution: Rising divorce among middle-aged and older adults, 1990–2010. *The Journals of Gerontology: Series B. Psychological Sciences and Social Sciences*, 67, 731–741. <http://dx.doi.org/10.1093/geronb/gbs089>
- Bulanda, J. R., & Brown, S. L. (2007). Race-ethnic differences in marital quality and divorce. *Social Science Research*, 36, 945–967. <http://dx.doi.org/10.1016/j.ssresearch.2006.04.001>
- Carr, D., & Springer, K. W. (2010). Advances in families and health research in the 21st century. *Journal of Marriage and Family*, 72, 743–761. <http://dx.doi.org/10.1111/j.1741-3737.2010.00728.x>

- Casper, L. M., & Bianchi, S. M. (2002). *Continuity and change in the American family*. Thousand Oaks, CA: Sage.
- Dahl, G. B. (2010). Early teen marriage and future poverty. *Demography*, 47, 689–718.
- Dupre, M. E., Beck, A. N., & Meadows, S. O. (2009). Marital trajectories and mortality among US adults. *American Journal of Epidemiology*, 170, 546–555. <http://dx.doi.org/10.1093/aje/kwp194>
- Dupre, M. E., George, L. K., Liu, G., & Peterson, E. D. (2015). Association between divorce and risks for acute myocardial infarction. *Circulation: Cardiovascular Quality and Outcomes*, 8, 244–251. <http://dx.doi.org/10.1161/CIRCOUTCOMES.114.001291>
- Dupre, M. E., & Meadows, S. O. (2007). Disaggregating the effects of marital trajectories on health. *Journal of Family Issues*, 28, 623–652. <http://dx.doi.org/10.1177/0192513X06296296>
- Elwert, F., & Christakis, N. A. (2006). Widowhood and race. *American Sociological Review*, 71, 16–41. <http://dx.doi.org/10.1177/000312240607100102>
- Frech, A., & Williams, K. (2007). Depression and the psychological benefits of entering marriage. *Journal of Health and Social Behavior*, 48, 149–163. <http://dx.doi.org/10.1177/002214650704800204>
- Fu, H., & Goldman, N. (1996). Incorporating health into models of marriage choice: Demographic and sociological perspective. *Journal of Marriage and Family*, 58, 740–758. <http://dx.doi.org/10.2307/353733>
- Gallo, L. C., Troxel, W. M., Matthews, K. A., & Kuller, L. H. (2003). Marital status and quality in middle-aged women: Associations with levels and trajectories of cardiovascular risk factors. *Health Psychology*, 22, 453–463. <http://dx.doi.org/10.1037/0278-6133.22.5.453>
- Hawkins, D. N., & Booth, A. (2005). Unhappily ever after: Effects of long-term, low-quality marriages on well-being. *Social Forces*, 84, 451–471. <http://dx.doi.org/10.1353/sof.2005.0103>
- Hughes, M. E., & Waite, L. J. (2009). Marital biography and health at mid-life. *Journal of Health and Social Behavior*, 50, 344–358. <http://dx.doi.org/10.1177/002214650905000307>
- Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2006). Effects of husbands' and wives' education on each other's mortality. *Social Science & Medicine*, 62, 2014–2023. <http://dx.doi.org/10.1016/j.socscimed.2005.08.030>
- Johnson, D. R., & Wu, J. (2002). An empirical test of crisis, social selection, and role explanations of the relationship between marital disruption and psychological distress: A pooled time-series analysis of four-wave panel data. *Journal of Marriage and Family*, 64, 211–224. <http://dx.doi.org/10.1111/j.1741-3737.2002.00211.x>
- Johnson, S. M. (2003). The revolution in couple therapy: A practitioner–scientist perspective. *Journal of Marital and Family Therapy*, 29, 365–384. <http://dx.doi.org/10.1111/j.1752-0606.2003.tb01213.x>

- Karraker, A., & Latham, K. (2015). In sickness and in health? Physical illness as a risk factor for marital dissolution in later life. *Journal of Health and Social Behavior*, 56, 420–435. <http://dx.doi.org/10.1177/0022146514568351>
- Kiecolt-Glaser, J. K., Loving, T. J., Stowell, J. R., Malarkey, W. B., Lemeshow, S., Dickinson, S. L., & Glaser, R. (2005). Hostile marital interactions, proinflammatory cytokine production, and wound healing. *Archives of General Psychiatry*, 62, 1377–1384. <http://dx.doi.org/10.1001/archpsyc.62.12.1377>
- Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin*, 127, 472–503. <http://dx.doi.org/0033-2909.127.4.472>
- Koball, H. L., Moiduddin, E., Henderson, J., Goesling, B., & Besculides, M. (2010). What do we know about the link between marriage and health? *Journal of Family Issues*, 31, 1019–1040. <http://dx.doi.org/10.1177/0192513X10365834>
- Kreider, R. M., & Ellis, R. (2011). Number, timing, and duration of marriages and divorces: 2009. *Current Population Reports*, 70–125. Washington, DC: U.S. Census Bureau.
- Kuh, D., & Ben-Shlomo, Y. (1997). *A life course approach to chronic disease epidemiology*. New York, NY: Oxford University Press.
- Kuh, D., & the New Dynamics of Ageing (NDA) Preparatory Network. (2007). A life course approach to healthy aging, frailty, and capability. *The Journals of Gerontology: Series A. Biological Sciences and Medical Sciences*, 62, 717–721. <http://dx.doi.org/10.1093/gerona/62.7.717>
- Lee, G. R., & DeMaris, A. (2007). Widowhood, gender, and depression: A longitudinal analysis. *Research on Aging*, 29, 56–72. <http://dx.doi.org/10.1177/0164027506294098>
- Lillard, L. A., & Waite, L. J. (1995). Til death do us part: Marital disruption and mortality. *American Journal of Sociology*, 100, 1131–1156. <http://dx.doi.org/10.1086/230634>
- Liu, H. (2009). Till death do us part: Marital status and mortality trends, 1986–2000. *Journal of Marriage and Family*, 71, 1158–1173. <http://dx.doi.org/10.1111/j.1741-3737.2009.00661.x>
- Liu, H. (2012). Marital dissolution and self-rated health: Age trajectories and birth cohort variations. *Social Science & Medicine*, 74, 1107–1116. <http://dx.doi.org/10.1016/j.socscimed.2011.11.037>
- Liu, H., & Umberson, D. J. (2008). The times they are a changin': Marital status and health differentials from 1972 to 2003. *Journal of Health and Social Behavior*, 49, 239–253. <http://dx.doi.org/10.1177/002214650804900301>
- Liu, H., & Zhang, Z. (2013). Disability trends by marital status among older Americans, 1997–2010: An examination by gender and race. *Population Research and Policy Review*, 32, 103–127. <http://dx.doi.org/10.1007/s11113-012-9259-0>
- Lorenz, F. O., Wickrama, K. A., Conger, R. D., & Elder, G. H., Jr. (2006). The short-term and decade-long effects of divorce on women's midlife health. *Journal of Health and Social Behavior*, 47, 111–125. <http://dx.doi.org/10.1177/002214650604700202>

- Lucas, R. E. (2005). Time does not heal all wounds. *Psychological Science*, *16*, 945–950. <http://dx.doi.org/10.1111/j.1467-9280.2005.01642.x>
- Marks, N. F. (1996). Flying solo at midlife: Gender, marital status, and psychological well-being. *Journal of Marriage and Family*, *58*, 917–932. <http://dx.doi.org/10.2307/353980>
- Mastekaasa, A. (1994). The subjective well-being of the previously married: The importance of unmarried cohabitation and time since widowhood or divorce. *Social Forces*, *73*, 665–692. <http://dx.doi.org/10.1093/sf/73.2.665>
- McFarland, M. J., Hayward, M. D., & Brown, D. (2013). I've got you under my skin: Marital biography and biological risk. *Journal of Marriage and Family*, *75*, 363–380. <http://dx.doi.org/10.1111/jomf.12015>
- Mead, D. E. (2002). Marital distress, co-occurring depression, and marital therapy: A review. *Journal of Marital and Family Therapy*, *28*, 299–314. <http://dx.doi.org/10.1111/j.1752-0606.2002.tb01188.x>
- Musick, K., Brand, J. E., & Davis, D. (2012). Variation in the relationship between education and marriage: Marriage market mismatch? *Journal of Marriage and Family*, *74*, 53–69. <http://dx.doi.org/10.1111/j.1741-3737.2011.00879.x>
- Musick, K., & Bumpass, L. (2012). Reexamining the case for marriage: Union formation and changes in well-being. *Journal of Marriage and Family*, *74*, 1–18. <http://dx.doi.org/10.1111/j.1741-3737.2011.00873.x>
- Pavalko, E. K., & Caputo, J. (2013). Social inequality and health across the life course. *American Behavioral Scientist*, *57*, 1040–1056. <http://dx.doi.org/10.1177/0002764213487344>
- Pienta, A., Hayward, M. D., & Jenkins, K. R. (2000). Health consequences of marriage for the retirement years. *Journal of Family Issues*, *21*, 559–586. <http://dx.doi.org/10.1177/019251300021005003>
- Rendall, M. S., Weden, M. M., Favreault, M. M., & Waldron, H. (2011). The protective effect of marriage for survival: A review and update. *Demography*, *48*, 481–506. <http://dx.doi.org/10.1007/s13524-011-0032-5>
- Richardson, V. (2006). Implications for public policies and social services: What social workers and other gerontology practitioners can learn from the Changing Lives of Older Couples Study. In D. S. Carr, R. M. Nesse, & C. B. Wortman (Eds.), *Spousal bereavement in late life* (pp. 279–312). New York, NY: Springer.
- Robles, T. F., & Kiecolt-Glaser, J. K. (2003). The physiology of marriage: Pathways to health. *Physiology & Behavior*, *79*, 409–416. [http://dx.doi.org/10.1016/S0031-9384\(03\)00160-4](http://dx.doi.org/10.1016/S0031-9384(03)00160-4)
- Robles, T. F., Slatcher, R. B., Trombello, J. M., & McGinn, M. M. (2014). Marital quality and health: A meta-analytic review. *Psychological Bulletin*, *140*, 140–187. <http://dx.doi.org/10.1037/a0031859>
- Sasson, I., & Umberson, D. J. (2014). Widowhood and depression: New light on gender differences, selection, and psychological adjustment. *The Journals of Gerontology: Series B. Psychological Sciences and Social Sciences*, *69*, 135–145. <http://dx.doi.org/10.1093/geronb/gbt058>

- Simon, R. W. (2002). Revisiting the relationships among gender, marital status, and mental health. *American Journal of Sociology*, 107, 1065–1096. <http://dx.doi.org/10.1086/339225>
- Teachman, J. (2010). Family life course statuses and transitions: Relationships with health limitations. *Sociological Perspectives*, 53, 201–219. <http://dx.doi.org/10.1525/sop.2010.53.2.201>
- Turner, R. J., Wheaton, B., & Lloyd, D. A. (1995). The epidemiology of social stress. *American Sociological Review*, 60, 104–125. <http://dx.doi.org/10.2307/2096348>
- Umberson, D. (1992). Gender, marital status and the social control of health behavior. *Social Science & Medicine*, 34, 907–917. [http://dx.doi.org/10.1016/0277-9536\(92\)90259-S](http://dx.doi.org/10.1016/0277-9536(92)90259-S)
- Umberson, D., & Montez, J. K. (2010). Social relationships and health: A flashpoint for health policy. *Journal of Health and Social Behavior*, 51(Suppl. 1), S54–S66. <http://dx.doi.org/10.1177/0022146510383501>
- Umberson, D., Thomeer, M., & Williams, K. (2013). Family status and mental health: Recent advances and future directions. In C. S. Aneshensel, J. C. Phelan, & A. Bierman (Eds.), *Handbook of the sociology of mental health* (pp. 405–431). Dordrecht, the Netherlands: Springer. http://dx.doi.org/10.1007/978-94-007-4276-5_20
- Waite, L. J., & Gallagher, M. (2000). *The case for marriage: Why married people are happier, healthier, and better off financially*. New York, NY: Doubleday.
- Warner, D. F., & Kelley-Moore, J. (2012). The social context of disablement among older adults: Does marital quality matter for loneliness? *Journal of Health and Social Behavior*, 53, 50–66. <http://dx.doi.org/10.1177/0022146512439540>
- Wickrama, K. A. S., Lorenz, F. O., Conger, R. D., & Elder, G. H. J. (1997). Marital quality and physical illness: A latent growth curve analysis. *Journal of Marriage and Family*, 59, 143–155. <http://dx.doi.org/10.2307/353668>
- Wickrama, K. A. S., Lorenz, F. O., Wallace, L. E., Peiris, L., Conger, R. D., & G. H. Elder, Jr. (2001). Family influence on physical health during the middle years: The case of onset of hypertension. *Journal of Marriage and Family*, 63, 527–539. <http://dx.doi.org/10.1111/j.1741-3737.2001.00527.x>
- Williams, K. (2003). Has the future of marriage arrived? A contemporary examination of gender, marriage, and psychological well-being. *Journal of Health and Social Behavior*, 44, 470–487. <http://dx.doi.org/10.2307/1519794>
- Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: A gendered life course perspective. *Journal of Health and Social Behavior*, 45, 81–98. <http://dx.doi.org/10.1177/002214650404500106>
- Zhang, Z. (2006). Marital history and the burden of cardiovascular disease in midlife. *The Gerontologist*, 46, 266–270. <http://dx.doi.org/10.1093/geront/46.2.266>
- Zhang, Z., & Hayward, M. D. (2006). Gender, the marital life course, and cardiovascular disease in late midlife. *Journal of Marriage and Family*, 68, 639–657. <http://dx.doi.org/10.1111/j.1741-3737.2006.00280.x>