ABSTRACT

MARKS, JENNIFER PARKS GERTEISEN. Living in Sin, In Sickness and In Health? An Investigation of Cohabitation, Marriage, and Health. (Under the direction of Theodore N. Greenstein).

The physical and psychological health benefits of marriage have been well documented in the family and medical sociology literature. Given the recent increases in the prevalence of cohabitation, this research asks whether marriage still confers the same health benefits, and whether cohabitation might do the same. Using two waves of a nationally representative sample, the effects of union type on eleven health outcomes were examined, both cross-sectionally and longitudinally; processual factors such as social support, health behaviors, and socioeconomic status were also examined. Union type was not a consistent predictor of health outcomes: spouses may be better off than singles in some cases, but major differences between cohabitation and marriage were not found. Interaction effects indicate that benefits of both union types are more pronounced for younger persons. Social support was a consistent and positive predictor of physical and psychological health. Health behavior measures were not consistently effective predictors of health outcomes, but this may be due to measurement issues. Socioeconomic status measures, however, were consistent predictors of physical and psychological health, although an individual's employment was more often significant than total household income. Additional analyses were conducted to test the "selection hypothesis" – that healthier people are more likely to enter unions. Results are supportive of selective

effects for marriage, but not nearly as much so for cohabitation, implying that perhaps different mate selection processes are at work for the two union types. Theoretical, research, and policy implications are discussed.

Living in Sin, In Sickness and In Health? An Investigation of Cohabitation, Marriage, and Health.

by
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BIOGRAPHY

Jennifer Parks Gerteisen Marks was born on July 15, 1976 in Chicago, IL. She began her undergraduate career at Tulane University, and earned a Bachelor of Arts degree in Sociology and Psychology in 1998 from Meredith College. Jennifer first began her graduate work in Sociology at North Carolina State University in 1998. After a break in her studies, she returned part-time in 2001, and then full-time in 2002. During her graduate training, she worked as a teaching assistant in the Department of Sociology and Anthropology, and as a research assistant in the Office of University Planning and Analysis, where she is now employed as a Survey Research Coordinator.

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CHAPTER 1: INTRODUCTION AND REVIEW OF PRIOR RESEARCH

Introduction

Sociologists have studied the association between intimate relationships and health for many years. Until recently this has meant studying marital relationships. However, recent increases in the rate of cohabitation in the United States means that there is a new sort of intimate relationship context for family and medical sociologists to explore. It is my intent to study health and well-being in this "new" context of cohabitation in comparison to the more socially established contexts of marriage and being single.

The health of a given individual is affected by many factors, a few of which are internal to the individual (hereditary factors, for example), and many of which are external to the individual. External factors operate at the interpersonal level: there is a distinct effect on overall health of one's relationships, or lack thereof (Thoits, 1995b: 9). Further, engagement in health behaviors (either healthful or not), while ostensibly an individual-level, internal factor is also affected by one's social relationships (Umberson, 1987, 1992; Wickrama, Lorenz, Conger, Matthews, & Glen H. Elder, 1997). Finally, it is being argued more and more that health is determined – or at least affected – by factors even further outside the individual, at the level of social structure (Link & Phelan, 1995; Phelan, Link, Diez-Roux, Kawachi, & Levin, 2004). My research will focus on the juncture of the social and the individual, and contribute to the existing body of research on interpersonal relationships and health.

In this chapter I begin by providing an overview of the theoretical traditions that inform and underlie the present research. I then review empirical research on the association between marriage and health, including theory and evidence on protective and selective effects of marriage on health, the role of gender, and methodological issues which must be considered. Next I discuss research that addresses the nature of marital and cohabiting relationships and compares the two union types. Finally, I bring the two themes in the empirical literature together and review the limited research that has heretofore addressed cohabitation and health. This chapter will conclude with a discussion of the present research project and hypotheses.

Review of Previous Theory and Research

Theoretical Background

Research thus far on the topics of relationships and health has been largely guided by prior empirical research and as such has often been lacking an explicit theoretical basis. At the broadest societal level, any study of social relationships and health owes a theoretical debt to Durkheim (1897). Durkheim's work concerning suicide concluded that the degree of integration and shared normative behaviors of the larger society in which an individual existed had implications for that individual and for his/her mental health – to the extent that suicide is viewed as an acceptable solution to his/her problems. Durkheim's work, however, was much more structural in its level of analysis than the present research.

A more recently developed perspective which can be applied to the research at hand is family development or life-course perspective, referenced more frequently in the realm of family sociology (Klein & White, 1996). In this view, individuals have "family careers" with relatively discrete stages through which they progress over their life course: childhood, adolescence, leaving the parental home, marriage, parenthood, older adulthood, and so on. The sequence and timing of these stages are defined by societal norms. Deviating from these norms may have implications for individuals' psychological well-being: they may experience discrimination, shame, and a lack of understanding from others, for example.

Cohabitation outside marriage provides an interesting case for the family development perspective. While it is becoming more common (see "Marriage vs. Cohabitation" below for an in-depth treatment of the demographic shift in cohabitation), it still to an extent falls outside the normed (or at least the traditional) sequence of a family career. This is even more the case for those who do not move from cohabitation to marriage.

It seems, however, that any perspective on relationships and health will always come back to the stress process – after all, simply being an individual in a more or less socially integrated society does not directly lead to suicide; suicide is in part a response to stress, whether it be due to the lack of integration as a result of rapid social change (as in anomic suicide) or the perceived threat to a highly integrated group (as in altruistic suicide). Correspondingly, simply being an individual in a non-normative family situation does not lead to poor psychological

outcomes; rather, psychological distress may result from the stress that arises from the experience and results of living in such a situation. Stress theories therefore play a bridging role, allowing us to examine the effects of relationships on physical health and psychological health.

The roots of sociological research on stress are found in the work of Selye (1956) who focused on physiological responses to stimuli which were theorized to follow a pattern (General Adaptation Syndrome, or GAS) of alarm, resistance, adaptation, and exhaustion. While a decidedly biological perspective initially, psychological and sociological researchers have since applied it to social processes and outcomes. Pearlin (1989; 1999; Pearlin, Lieberman, Menaghan, & Mullan, 1981) conceives of stress as a *process*, involving stressors (both eventful and chronic), mediators and moderators (such as coping resources and social support), and outcomes (health and well-being). Conceiving of this process sociologically (Pearlin, 1989) means looking at the larger context of all three aspects: what structural or institutional factors affect exposure to stressors? Do the quantity or quality of mediators differ for different groups of people? Are particular stress outcomes more likely to be manifest in some groups than in others? In the current research, I ask how a familial institution – marriage – and how a newly emerging family arrangement – cohabitation – affect physical and psychological well-being. In doing so, I consider all three aspects of the stress process sociologically, as discussed below: exposure to stressors and mediators are both discussed under the protective

effects of marriage, and outcomes are addressed in the section on gender, as well as in the measures section.

While these theoretical perspectives underlie this research project, it should be reiterated that the research question addressed here is largely empirically guided and seeks to help fill in an emergent gap in the literature.

Marriage and Health

The association between marriage and health has been explored by sociologists and demographers for several decades. The general findings have been that married persons have better physical health (Pienta, Hayward, & Jenkins, 2000), better mental health (Gove, Hughes, & Style, 1983; Mirowsky & Ross, 2003), and lower mortality (Gove, 1973; Lillard & Waite, 1995) than unmarried persons (but c.f. Hippisley-Cox, Coupland, Pringle, Crown, & Hammersley, 2002). Lillard and Waite (1995) assert that "[t]he relationship between marriage and death rates has now reached the status of a truism, having been observed across numerous societies and among various social and demographic groups" (1131). It should be noted that some aspects of the positive relationship between health and marriage could be historically specific. Even as recent as 50 years ago, remaining unmarried was a stigmatized social status to a degree. However, demographic trends including delayed marriage and high levels of divorce, among others, have had the result of decreasing the stigma associated with being single and/or unmarried (Mintz & Kellogg, 1988: 250). Citing these factors as well as changing gender roles, Horwitz and colleagues (1996) assert that a "central empirical question is whether or not

marriage is associated with enhanced well-being in an era when the value of marriage is coming under increased scrutiny and many aspects of marital roles are changing" (896). The answer so far appears to be "yes," but perhaps less definitively; the question still remains, "why?" The literature on the relationship between marriage and health generally falls under two different but by no means mutually exclusive hypothesized processes: selection and protection.

Selection

The selection hypothesis is a more methodologically driven than theoretically driven one. This relatively simple argument for married people having better health than single people is essentially that people who are healthier to begin with are more likely to get married. Selection can occur directly (that is, someone who is in good health is more likely to get married) or indirectly (someone who engages in unhealthy behaviors is less likely to get married, because potential mates would infer a future of ill health). Taken to the logical extreme, this would mean that the relationship between marriage and health is actually spurious, that good health occurs temporally prior to and exclusive of marriage, and that there is no causal association. The research, however, has been equivocal on the matter of selection, at least in part due to the methodological challenge peculiar to this issue. Determining whether selection processes are at work requires longitudinal data (Goldman, 1993) to determine the temporal order of good health and entrance into marriage.

Considering the direct effects of selection, Mastekaasa (1992), using longitudinal data from Norway, found a robust effect of subjective psychological and

physical well-being on the likelihood of marriage. Joung and colleagues (1998) however, find no direct effects of selection into marriage using data from the Netherlands – the only selection effects they found were in the context of poor health and increased likelihood of divorce. Fu & Goldman (1996), examining first marriages among a younger cohort, found lower marriage rates both among those who engage in unhealthy behaviors (such as alcohol and drug use) and those who exhibit physical characteristics hypothesized to be associated with poorer health (such as obesity and short stature), compared to those who, essentially acted and appeared more healthy.

Horwitz and colleagues (1996) find some evidence of selection effects, but only for women. Looking at young adults longitudinally and two measures of psychological problems (problematic alcohol use and depression), they find that women suffering from depression are selected out of marriage – and that those depressed women who do marry are more likely to subsequently separate and/or divorce. They find no selection effects among the young men in their study.

Using longitudinal research on women, Waldron and colleagues (1996) found evidence for selection effects on the basis of physical health, but only among those women who were either unemployed or employed only part-time. They hypothesize that this is an indication that any health problems that are not severe enough to keep a women from working are likely also not severe enough to select them out of marriage. Lillard and Panis (1996) on the other hand, study only men and find evidence of both "positive" selection into marriage (based on unmeasured factors

which are positively associated with health) and interestingly, what they term "adverse selection," whereby relatively unhealthy men tend to marry and remarry early. The authors argue that men in poorer health have a greater incentive to marry and receive marriage's health benefits. They do point out that unhealthy people may have difficulty finding partners, although Joung and colleagues (Joung et al., 1998) argue that assortative mating processes may mean that unhealthy people marry each other.

Overall then, there is certainly evidence that selection processes play some role in the documented relationship between marriage and health. However, it is apparent that selection cannot fully explain the association, given that the findings are less than unequivocal.

Protection

The protection argument, on the other hand, is a causal one asserting that essentially, marriage makes people healthier. Marriage's positive effect can happen via several different mechanisms (none of which are mutually exclusive): social support, relationship quality, social control, and material well-being.

Social Support. The study of social support and health has been largely intertwined with the study of the stress process. Social support's impact on health is widely believed to operate as a coping resource, by either mediating or buffering the negative effects of stress on health; it is what Pearlin would refer to as a mediator. Lin & Ensel (1989) conceive of social support as "the process (e.g., perception or reception) by which resources in the social structure are brought to bear to meet the

functional needs (e.g., instrumental and expressive) in routine and crisis situations" (383). What are these resources? They can be instrumental (e.g., money, child care), informational, or emotional, although Thoits (1995b) points out that "these various supportive functions are highly correlated and often form a single underlying factor" (64). She further reports that the presence of an "intimate, confiding relationship" (1995b: 64) is the most powerful measure of social support. The current Western ideal of marriage is exactly that: an intimate, confiding relationship characterized by the availability of emotional and instrumental resources from one's spouse. In studying chronic disease patients, Sherbourne & Hays (1990) found that marital status was associated only indirectly with mental health – through social support. In their sample, married respondents reported significantly higher levels of all types of social support than those who were not married.

Pearlin and Johnson (1977) make the case that marriage has buffering effects which are additive in their effects on psychological health. They point out that spouses and singles are differentially exposed and differentially vulnerable to life strains and economic hardship (addressed below under material well-being). Steptoe and colleagues (2000) found some evidence of interactive effects of household structure and social support on physical health. In their small sample of British schoolteachers, they found that those respondents who were married or cohabiting without children and reported high levels of social support exhibited greater drops in blood pressure in the evening than did those who were single. The

interactive benefit was even greater for those respondents who were parents with high reported levels of social support.

Finally, and of particular note to the research at hand, Anson's (1989) research argues that the effects of social integration and support on health need not be restricted to marriage. She found that merely having another adult (which she terms a "proximal adult") in one's household was positively associated with physical health and negatively associated with illness behaviors. Anson argues that the likely mechanism is social regulation or control, which is addressed next.

Social Control. In the context of the relationship between marriage and health, social control comes into play primarily when considering health behaviors. Social control can operate directly (spousal sanction of negative health behaviors or encouragement of healthful behaviors) or indirectly (self-regulation of health behaviors as a result of feelings of responsibility to one's spouse and/or children). Some evidence has been found for this mechanism. For example, Umberson (1987) found that being married (and being a parent) was associated with reduced problematic health behaviors (such as risk-taking behaviors, alcohol abuse, and marijuana use). However, her data for this study are cross-sectional, and only compare married, divorced, and widowed persons – not singles.

Later research by Umberson (1992) more specifically addresses the experience of social control, and finds that unmarried men – regardless of their prior marital status – experience less health-oriented social control (measured by a question asking "how often does anyone tell or remind you to do anything to protect

your health?" [909]) than married men. For women, however, marital status is unrelated to the frequency of experiences of health-oriented social control efforts. As might be expected, men generally report that women - their wives, ex-wives and "partners" (the data do not indicate coresidential status among the unmarried; presumably, some of those who are unmarried could be cohabiting) – are the ones prodding them to behave healthfully. As a group, married persons tend to report their spouse as filling this role, but a lower percentage of married women (59%) than married men (80%) do. Regardless of marital status, Umberson finds that these reported "agents of social control" are overwhelmingly female – that is, if it's not a wife, it's often a mother. Further, Umberson finds evidence that such social control efforts pay off in health benefits – her analyses show a time-lagged effect of the initial level of social control on decreases in cigarette smoking for both men and women who are continuously married.

Wickrama and colleagues (1997), studying married men and women, found that marital integration decreased health-risk behaviors for men both directly and indirectly, via an enhanced sense of control. It could be hypothesized that the separate, direct effect of marital integration on health-risk behaviors is tapping into some social control aspects. Indeed, when one compares the findings for men to those for women, one sees that the direct effect of marital integration on health-risk behaviors is non-significant for women, while the indirect effect is very similar to that seen for men. It should be noted that some health behaviors are related to age

as well, which may be a confounding factor in the interpretation of social control effects of marriage.

Relationship Quality. Relationship quality is an additional possible mechanism through which marriage confers health benefits. No doubt, relationship quality and social support are very closely intertwined, and measures of each might capture aspects of the other. Horwitz and colleagues (1996) find beneficial effects of marriage on the mental health of young men and women, even when controlling for premarital mental health. While they did not find effects of social support or economic well-being on the relationship between marriage and mental health, they did find an effect of relationship quality: marital quality was negatively associated with depression for both men and women, and negatively associated with alcohol problems for women. Similarly, Gove and colleagues (1983) demonstrate that while being married is a powerful positive predictor of mental health, this relationship in fact operates via relationship quality (marital happiness). This effect can happen in the other direction as well: Ren (1997) finds that living in an unhappy relationship can have adverse effects on self-rated overall health and well-being. Of course, this relationship is likely reciprocal: better relationship quality improves mental health, and those experiencing psychological well-being have higher levels of relationship quality and satisfaction. In fact, Booth & Johnson (1994) find that declining overall health does have a negative impact on marital quality – especially on the marital quality of the spouse whose health is not declining. They find that this relationship is largely explained by "changes in financial circumstances, shifts in the division of

household labor, declines in marital interaction, and problematic behavior by the afflicted individual" (222).

Relationship quality is not, however, solely the province of spouses. Pertinent to the research at hand is the question of whether high relationship quality may confer the same benefits to cohabitors as to spouses. Research addressing this question is reviewed below, under the heading "Marriage vs. Cohabitation."

Material Well-being. Marriage is additionally hypothesized to protect individuals against poor health by helping to prevent them from being financially poor. Living in poverty and lower socioeconomic status (SES) are overwhelmingly associated with poor physical and mental health (Lantz et al., 2001; Link & Phelan, 1995; McDonough, Williams, House, & Duncan, 1999; McLeod & Shanahan, 1996; Robert, 1999; U.S. Department of Health and Human Services, 2000; D. R. Williams & Collins, 1995) and higher rates of exposure to stressors (Turner & Avison, 2003; Turner, Wheaton, & Lloyd, 1995). Married couples are assumed to benefit from the economies of scale inherent in multi-person households, and in a society where dual-earner couples are increasingly the norm (Gerson & Jacobs, 2005), from the combined income of both spouses. In addition, women generally earn less than men (U.S. Department of Labor, 2002), so it is hypothesized that they gain more by marrying. Light's (2004) research indicates that this is the case: "[w]omen receive a 52-55% gain in family income even after increased family size is taken into account, whereas men's increase in predicted family income is exactly offset by gains in family size" (277).

Rogers (1995) finds that the relationship between marriage and decreased mortality is mediated by income – so while marriage does appear to be protective, "high incomes within marriage can further increase that protection" (524). Waldron and colleagues (1996) find a protective effect of marriage among unemployed women, which they argue is in part due to the higher risk of poverty among single, unemployed women – a risk alleviated by marriage to an employed husband. Hahn's (1993) research demonstrates an association between access to income in excess of one's personal income and private health insurance and women's self-rated health, although these factors do not account for all of the variation in health status by marital status. Zick and Smith (1991) find that economic factors associated with marriage reduced the risk of mortality among women. Further, there is evidence that, even controlling for age, labor market experience, and education, married men earn more (Korenman & Neumark, 1991) than unmarried men.

Gender

Prior to any discussion of the effects of gender on the relationship between marriage and health, the broader relationship between gender and health should be acknowledged at least briefly. Previous research has shown that men have higher mortality rates, but women tend to have much higher morbidity and lower self-rated health than men (Schnittker, 2007; Verbrugge, 1985). There is some evidence, however, that this gender gap has been narrowing in recent years (Schnittker, 2007; U.S. Department of Health and Human Services, 2000). The role of intimate

relationships in the association between gender and health has been a key strain of this body of research, and is addressed presently.

The existence of differential benefits of marriage for women and men dates back to the work of Bernard (1982) and Gove (1972), among others, who asserted that men reaped greater psychological rewards from marriage than did women and that in some cases, marriage may even be detrimental to women's mental health. Gove argued that sex roles were the primary culprit. Specifically, he argued that the role of housewife, as women's primary and often sole potential source of satisfaction, is frustrating, unrewarding, and invisible, which leads to greater psychological distress.

While Bernard also discusses the restrictions of the housewife role, she acknowledges "structural differences" (1982: 9) as an important source of discrepancies in men's and women's experiences of marriage. Rosenfield's (1992) research addresses such structural differences, in that she builds on prior research on power in marital relationships to explore the impact of wives' employment on husbands' psychological well-being. While wives' employment itself is not specifically related to husbands' well-being, she does find that the increased relative income and decreased domestic participation that accompany women's employment decrease men's psychological health (as measured by demoralization, sadness, anxiety, poor self-esteem, hopelessness, and helplessness).

An obvious critique of Gove's work, with its focus on housewives, is that it is very specific to a particular class of women, and a particular time in United States

history. As stated above, dual-earner households are more common today. Further, feminist and family researchers have pointed out that less privileged women and women of color have long worked outside the home, whether formally or informally (Coontz, 1992). The research of Williams and colleagues (K. Williams, Sassler, & Nicholson, 2008) provides an example of a more modern particular class of women who may not benefit from marriage: single mothers. While their research looked only at women, when comparing mothers to childless women they found that mothers do not receive the same health benefits from marriage that childless women do. Relationship stability is a key factor: they find that single mothers may see mental health benefits of marriage similar to those seen by childless women, but only if the marriage is enduring – and being a mother prior to marriage is associated with a greater risk of marital dissolution.

Another critique of Gove's research involves the possible confounding effect of gender-specific patterns of psychological distress. Research has shown women to be more prone to internalizing disorders (e.g., depression) than men, and men to be more prone to externalizing disorders (e.g., substance abuse) (Rosenfield, 1999; Simon, 2002). In addition, baseline levels of problematic behaviors may be higher for men than women. Verbrugge (1989) finds that men in general are more likely to smoke, drink, sleep fewer hours, report more hazard exposure, and engage in more strenuous leisure activity than women. Rogers (1995) finds that being unmarried is associated with greater mortality for men than for women, especially from "social pathologies" – accidents, suicide, homicide, and cirrhosis. Contrary to some

speculation, Verbrugge (1985; 1989) did *not* find that women are more likely to report health problems.

Some research has explored the supposed gender-differential benefits and costs of intimate relationships in terms of what can be termed "role saliency," a concept that comes from the field of Identity Theory. The central idea is that each individual has a set of role identities – some quite fixed (gender, race), and others more fluid, based on one's position in the social structure (e.g., mother, husband, plumber, etc.). The centrality, or saliency, of each of these roles to an individual's overall identity and self-conception varies (both from person to person as well as over the life course of a given individual). Much of the research on role saliency or meaning has come from the stress literature, in an attempt to understand how some roles can be a source of stress for some, and not for others. As noted in the previous discussion of social control, wives traditionally have taken on the role of caregiver. While this may be a rewarding and salient role, it can also be a stressful one (Pearlin, Aneshensel, & LeBlanc, 1997). However, overall, the literature on role saliency as a factor in the impact of stress has been equivocal (Thoits, 1992; Wheaton, 1990), although this may be due in part to the limitations of quantitative data to adequately capture such nuanced concepts (Thoits, 1995a).

Finally, an additional interesting component of the relationship between gender, stress, and health is found in the work of Doumas and colleagues (2003). In examining spillover and crossover effects between health behaviors (very broadly defined) and marital interaction, they found that "wives are more reactive to their

husbands than are husbands to their wives" (17). Neff and Karney (2007), however, when examining the effects of stress spillover and crossover on reported marital satisfaction of newlyweds, find that husbands are more likely to experience decreased marital satisfaction as a result of their wives' stress, while the converse is not found. Differential thresholds for stress in intimate relationships could certainly have an impact on differential health outcomes.

Methodological Issues

It should be noted that some researchers argue that the association between marriage and health may be a methodological artifact. This argument (sometimes termed the crisis model) asserts that the strains associated with the dissolution of marriage will cause a temporary deterioration in health. Therefore, cross-sectional research that measures health around the time of marital dissolution might attribute poor health to marital dissolution – and make the argument that divorce or widowhood is universally detrimental to individuals' health. Longitudinal research, however, measuring health at times points further removed from the event, would allow researchers to determine whether health eventually rebounds to pre-dissolution levels. Williams and Umberson (2004) find some support for the crisis model in terms of physical health, especially for men. However, this argument applies mainly to comparisons of married persons to divorced and widowed persons – not to comparisons of married persons to never-married singles. While the authors acknowledge a beneficial effect of the transition into marriage for men, they characterize it as a honeymoon period, after which health returns to pre-marital

levels. Huston and colleagues (1986) similarly report relatively short-lived honeymoon effects on emotional well-being among newlyweds.

Simon and Marcussen (1999) find that over the course of two waves of a national longitudinal study, transitioning into marriage (compared to remaining unmarried) is associated with a decrease in depressive symptoms and that conversely, transitioning out of marriage (in comparison to remaining married) is associated with an increase in depressive symptoms. Further, they find that beliefs about marriage as an institution affect the relationship between these transitions and depressive symptomatology: the association in both cases is "substantially greater for people who believe in the permanence, desirability, and importance of marriage than for individuals who do not hold these beliefs about the spousal role and the institution of marriage" (120).

Additional support for this theory comes from the recent work of Frech and Williams (2007), whose research controls for premarital depression levels. While marriage was found to be universally beneficial in terms of depressive symptoms, those who were depressed prior to marriage experienced larger improvements than did those who were not depressed before marrying.

Waldron and colleagues (1996) assert that their longitudinal analysis of women does not support the crisis model, "since separated, divorced, and widowed women did not have worse health or worse health trends than women who had never married" (120); however, they do not speak to a comparison of separated, divorced, and widowed women to married women (their analyses grouped all unmarried

women together) and as such include no measures of time since marital dissolution. Lorenz and colleagues' (2006) research does compare divorced women to married women. Their research is somewhat supportive of the crisis model for women: they find that "volatile" outcomes like psychological distress are more sensitive to stressors such as divorce, and the crisis model in the case of this outcome may be supported. However, they also found that divorced women were more prone to physical illnesses a decade after divorce, suggesting long-term, cumulative effects of chronic stress as a result of divorce. Their research seems to indicate that support for the crisis model may depend on the outcome one is measuring.

Finally, Ren (1997) finds that separated persons are worse off than divorced persons when it comes to overall health and well-being. Given the assumption that separation temporally precedes divorce, he characterizes this finding as evidence that "one's perception of one's own health is more easily affected by a recent bitter experience of separation than by relatively remote memories of divorce" (247), although again, there is no measure of time since dissolution. The crisis model should perhaps be considered a modification of the stress or life strain perspective, where the ups and downs of life — including significant life events like marriage and marital dissolution — are more generally responsible for changes in health than any particular relationship.

Barrett (2000) takes an even wider view of marital transitions in light of the fact that people are increasingly likely to experience multiple marital transitions. Her findings support a modification of the crisis model, in that the mental health-

enhancing effect of a current marriage is moderated by the presence and number of prior marital losses. Further, there is evidence that mental health suffers more after second and subsequent transitions out of marriage, regardless of the length of time since the most recent transition, implying that marital losses may have a negative and cumulative effect on health – perhaps because the first "places an individual on a trajectory of compromised mental health; hence any subsequent negative effects, including the loss of a second spouse, would have even stronger effects on well-being" (453) (but c.f. Pienta et al., 2000 for a different perspective on higher-order marriages).

Marriage vs. Cohabitation

Cohabitation in the United States is a fairly new demographic trend. In 1984, Glick (1984) described a jump in "the number of households composed of an unmarried couple (i.e., of one man and one woman) … [of] 331 percent between 1960 and 1983, with most of the increase occurring after 1970" (206). While census data historically did not explicitly delineate the relationship between the two persons (reinforcing the point that this phenomenon is relatively new), since 1990, the decennial Census has included an "unmarried partner" category to describe household members, and reports that in 2000, 5.2% of all American households were so-called "unmarried partner households" (up from 3.5% in 1990), with almost 90% of these being opposite-sex partner households (Simmons & O'Neill, 2001). Further, while this percentage may seem relatively small, there is evidence that ever-cohabited rates are likely substantially higher than the rates of current cohabitation

at any given point in time. For example, Bumpass & Lu (2000) report that in 1995, about 50% of women between 25 and 39 reported having ever cohabited, and nearly 60% of women aged 19-44 cohabited prior to their first marriage. Fifty-four percent of these women's first unions began as cohabitation.

A sizeable portion of the research on cohabitation has looked at general characteristics and attitudes of cohabitors. Rindfuss and VandenHeuvel (1990), examining cohabiting couples in comparison to both singles and married couples, find that for all comparisons made (childbearing and marriage plans, employment and education, finances and independence), "cohabitors are consistently intermediate between those who are single and those who are married" (721). Elizabeth's (2001) research on Australian cohabiting couples exposes a propensity toward independent, as opposed to joint, money-management practices, which can be conceptualized as resembling "single" behavior. Studies examining attitudes have shown that many young couples choose cohabitation over marriage because it "allows for flexibility and freedom from traditional gender-specific marital roles" (Clarkberg, Stolzenberg, & Waite, 1995: 623), that single men who hold egalitarian views are more likely to cohabit than their counterparts who hold more traditional gender views (Kaufman, 2000), and that persons with liberal or left-oriented political views are more likely to cohabit (Wilhelm, 1998).

There is some research on relational aspects of cohabitors as well. Research has characterized cohabiting relationships as marked by lower levels of commitment than marriage (Nock, 1995; Stanley, Whitton, & Markman, 2004). Brines and

Joyner (1999) theorize that the uncertainty inherent in a cohabiting relationship leads cohabitors to be more reluctant to adopt a specialization and exchange model of household production. In such a model, each partner "specializes" in a particular aspect or aspects of the required work to keep a household going, "exchanging" their contribution for the other partner's contrasting contribution. For example, in what is often called the traditional model, husbands will specialize in market-based employment, contributing income to the household's productivity. Wives, on the other hand, will specialize in household labor – the cleaning, cooking, and child care. There are certainly benefits to the household in such a model; however, there are risks to the individuals as well – particularly women, whose specialization requires not participating in the market labor force and focusing on skills which have a much lower market value should the relationship dissolve. While Brines and Joyner find that adopting a specialization and exchange model slightly increases the stability of marital unions, they find that cohabiting unions are actually more stable under conditions of equality (in terms of earnings and time spent working).

Brown (2000; 2003; Brown & Booth, 1996) has used the National Survey of Families and Households data to compare aspects of cohabiting relationships to marital relationships. Generally, her research has indicated that relationship quality for cohabitors is dependent on marital intentions (Brown & Booth, 1996) and, to an extent, the transition to marriage (Brown, 2004) and the duration of the cohabitation phase of the relationship (Brown, 2003). Specifically, reported intention to marry explains much of the difference in relationship quality between

cohabitors and spouses, with those cohabitors who have marriage intentions being very similar to married respondents. Those cohabitors who do marry report better relationship quality than those who do not. Further, longer-lasting cohabiting unions are associated with decreased relationship quality – relationship quality of marriages also decreases over time, but Brown finds that marriages do not have the same duration-dependent risks to stability that cohabiting unions do. Relationship quality, of course, has been shown to have an impact on health, and it may be the case that its impact is universal across relationship type.

Stafford and colleagues' (2004) research found no significant differences between long-term cohabitors, cohabitors who married, and long-term spouses on measures of companionship or coital frequency; they did however find that long-term cohabitors were more prone to relationship conflicts — and to violent ones. In contrast, Stanley and colleagues (Stanley et al., 2004) found that cohabitors were less satisfied with their relationships than spouses but were generally not any more likely than spouses to report negative or violent interaction. Nock (1995) did not find significant differences between spouses and cohabitors in terms of frequency of disagreements, perceptions of fairness, and intended fertility.

Cohabitation and Health

There are a few studies that have explicitly addressed cohabitation and health. Wu and colleagues (2003), for example, studied the physical and mental health of Canadian men and women in a variety of union types. They found that while initially it may appear that spouses are in better health than cohabitors, and cohabitors, in

turn, in better health than singles or previously married persons, the addition of controls (risk factors, social support, SES, and demographic characteristics) renders the differences between spouses and cohabitors insignificant.[1] Stafford and colleagues (2004) found that continuously married individuals reported less depression than those individuals who were long-term cohabitors or those who transitioned from cohabitation to marriage.

Brown (2000) conducted a comparison of married and cohabiting couples in terms of depression. She found that even when controlling for sociodemographic characteristics (albeit limited ones: age, sex, and race), cohabitors reported higher levels of depression, which cannot be explained by selection effects. She asserts that this difference is primarily due to differences in relationship stability (which she uses as a proxy for relationship quality[2]).

Another aspect of cohabitation and health that is relevant to the current research is the possible confounding effect of social class – that is, whether social class is associated with both likelihood to cohabit and health. Research from the past decade (Bumpass & Lu, 2000; Nock, 1995; Thornton, Axinn, & Teachman, 1995) has indicated that cohabitation seems to be slightly more prevalent among those persons of lower socioeconomic status, although Smock (Smock, 2000) points out that "all in all, cohabitation is common in all [socioeconomic and racial/ethnic]

[1] This study does not provide bivariate data on relationship type and risk factors, so we do not know if, for example, spouses have fewer risk factors than cohabitors. However, as noted above, risk factors are controlled for in the analyses.
[2] Ren (1997) did actually assess relationship happiness in addition to prospects for the future of the relationship, using Wave 1 of the NSFH data. His findings indicate that cohabitors were more likely to be unhappy with their relationships than were spouses.

subgroups" (4). Considering social class and health, there is some evidence that detrimental health behaviors are more common among persons of lower socioeconomic status (Boardman, Finch, Ellison, Williams, & Jackson, 2001; Grzywacz & Marks, 2001; Lantz et al., 2001; D. R. Williams & Collins, 1995). Certainly, health behaviors play a large role in health outcomes. However, Phelan and Link (Phelan et al., 2004) point out that higher SES confers additional advantages in terms of neighborhood context, social networks, and work opportunities, for example, leading them to classify social class as "fundamentally" related to health. That is, fundamental social "causes" (money, power, prestige, knowledge) influence multiple disease outcomes via multiple risk factors. Further, they argue that "it is important to understand and address the risk factors that mediate the association between socioeconomic status and mortality at any given time, because addressing these risk factors may improve the current situation with regard to mortality disparities, and neglecting them may make it worse. However, we cannot expect these measures to lead to long-lasting reductions in socioeconomic disparities in mortality" (268). From this perspective, then, it is certainly important to examine health behaviors – they are currently understood to be one of the factors through which health outcomes are produced – and the current research will do so. However, the fundamental causes perspective argues that persons of higher socioeconomic status will always be better informed about changing risk factors and have more resources to protect their health.

Gaps in the Literature and the Current Research

One overarching theme of the existing literature that emerges, then, is that marriage most likely has some protective and some selective effects on psychological and physical health. Protective effects likely occur via social support, changes in or monitoring and sanctioning of health behaviors, and the decreased likelihood of dire financial straits. Another theme is the importance of gender when it comes to people's experiences of marriage and marital dissolution, and even when it comes to their experience of illness. A third theme is apparent: cohabitation is a feature of the United States' demographic terrain which is emerging and is not likely to disappear anytime soon, given its large, if not explosive, increases. There is a gap in the existing literature at the convergence of these themes. It is not clear from the existing research that, for example, the protective effects of marriage cannot be generalized to those in a nonmarital, "intimate, confiding relationship" (Thoits, 1995b: 64) such as cohabitation, or, based on Anson's (1989) work, a "proximal adult." It is also less than clear that the meaning(s) of marriage is the same today as it was 30 or more years ago (Mintz & Kellogg, 1988); therefore, it is less than clear that marriage in the late 20th- and early 21st-century will confer the same benefits that it historically has. Family researchers are just beginning (in the timeline of academic research) to tap into this new well of potential research. This research, which will study health and well-being in the context of cohabitation, both alone and in comparison to marriage and being single, is part of that well.

Using prior research on marriage's relationship to health as a model, the aforementioned protective, selective, and gender effects will be explored. In addition, the methodological questions brought up, including those relating to union transitions, point to a need for longitudinal analyses.

Hypotheses

The first question to address is whether union status has any effects on health at all, and so it is the first predictor examined:

> *Hypothesis 1a: Union status will affect reported physical and psychological health: spouses are hypothesized to have the highest levels of physical wellness and psychological health, followed by cohabitors and singles.*

> *Hypothesis 1b: Changes in union status over time will have effects on physical wellness and psychological health over time. Specifically, entering a union will have positive effects, and entering marriage will have a greater effect than entering cohabitation.*

Hypotheses 2, 3, and 4 seek to confirm the findings of previous research on relationships and health. Prior to making any conjecture that a given process works similarly or differently in cohabitation versus marriage, it is important to confirm that such processes do appear to be at work at all in the particular data being used.

Since social support has been shown to play a large role in both intimate relationships and in health outcomes, it is an important predictor in the realm of protective effects.

Hypothesis 2: Social support will be positively associated with levels of physical and psychological health.

Also implicated in the literature as having a role in marriage's protective effect on health are health behaviors, which serve as a proxy for the social control aspect of being in an intimate relationship.

Hypothesis 3: Positive health behaviors will be positively associated with levels of physical wellness and psychological health; and negative ones, negatively associated.

Finally, another aspect of the protective effect of marriage explored in the literature is that of financial well-being. Therefore, socioeconomic indicators such as income, education, and employment status are important variables to consider.

Hypothesis 4: Employment, education, and income will be positively associated with levels of physical wellness and psychological health.

Hypothesis 5 addresses the potential *selection* of healthy people into marriage or cohabitation, and requires looking at initial levels of health among a subgroup of respondents:

> *Hypothesis 5: Initially single respondents with higher initial levels of physical wellness and psychological health will be more likely to have entered a union at time 2 than those with lower levels of initial health.*

To explore what effects gender has on any of the above processes, longitudinal analyses will be conducted separately for men and women (since the fixed effects model does not allow the inclusion of time-stable predictors, as will be explained in Chapter 2); selection and cross-sectional analyses will include gender as a predictor.

Summary

In this chapter, I have provided the context and direction for the current research; in effect, the "why" and "what" of this project. The following chapter will address the "how," that is, a detailed explanation of the data, measures (including descriptive statistics for all measures), and analytical methods to be used.

CHAPTER 2: DATA, MEASURES, AND METHOD

Introduction

The current research explores how intimate relationships affect health. In particular, the protective, selective, and gender effects of different types of such relationships (specifically, marriage and cohabitation, in comparison to being single) on health are addressed. In order to do so, I needed data which met several criteria: explicitly identified cohabitors in large enough numbers to allow subgroup comparisons, at least two time points, and measures of physical health, mental health, health behaviors, and social support. This chapter will describe the data chosen for this study including sampling procedures, survey methodology, and methods for dealing with missing data. In addition, the measures selected to represent key concepts are detailed, including descriptive statistics. Finally, I conclude this chapter with an explanation of the analytical strategies this study will employ to evaluate the hypotheses presented in Chapter 1.

Method

Data

The data for this research come from the National Survey of Alcohol, Drug, and Mental Health Problems (Healthcare for Communities), 1997-1998 and 2000-2001 (Wells, Sturm, & Burnam, 2003, 2005). Despite the impression its name might give, the dataset is not a clinical sample.

The Healthcare for Communities survey (hereafter: HCC) is drawn from the Community Tracking Survey (CTS), a multi-wave, repeated cross-sectional study

with a health-care focus which began in 1996. The CTS interviewed households, physicians, and employers; the HCC sample is drawn from the household component of the CTS only.

The CTS used a complex, three-tiered sample design. The first two tiers consisted of 60 sites, or primary sampling units (generally, metropolitan statistical areas or MSAs). MSAs were stratified by size (large metropolitan areas having a population greater than 200,000; small metropolitan areas having a population smaller than 200.000; and non-metropolitan areas) and geographically by region. These 60 sites were sampled with probability proportional to their population. The first tier consisted of 12 "high-intensity" sites (including Boston, MA; Miami, FL; and Seattle, WA), randomly selected from among those MSAs with a population of 200,000 or more. The "high-intensity" moniker indicates that large enough samples were drawn from each to support site-specific estimates. The second tier consisted of 48 "low-intensity" sites, from which smaller numbers of households were drawn. Of these, 36 are large metropolitan areas (having a population larger than 200,000 and including Atlanta, GA; Milwaukee, WI; and Washington, DC), 3 are small metropolitan areas (having a population smaller than 200,000 and including: Dothan, AL; Terre Haute, IN; and Wilmington, NC), and 9 are nonmetropolitan (including West Central Alabama, Northeastern Indiana, and Northwestern Washington). Finally, the third tier consisted of a national, unclustered sample of households. The rationale for this design is to allow for both site-specific and

nationally representative estimates to be made with a reasonable degree of statistical power.

The first HCC sample (1997-1998 data, hereafter: HCC1) was drawn from respondents to the household telephone interview. While the CTS ambitiously interviewed all adults and one randomly selected child in each selected household, the HCC1 used a stratified random sample of individuals out of the CTS adult household sample. All individuals from the CTS national sample were included in the HCC1 sample, and the HCC1 overselected from the low-intensity sites in comparison to the high-intensity ones within eight strata based on three factors of interest to the study designers: income, psychological distress, and use of mental health services. Information on these three factors from the CTS was used to create eight strata (e.g., non-poor non-distressed non-users; non-poor non-distressed users, non-poor distressed non-users, and so on). All respondents who reported distress, and all respondents who reported using psychological services with the past year were selected. Within the remaining strata (non-poor non-distressed non-users and poor non-distressed non-users) one individual was randomly selected from among the (12) high intensity sites for every four individuals selected randomly from the (48) low-intensity sites. Thus, everyone in the sampling frame with psychological distress or mental health service use in the past year was selected. The response rate for HCC1 was 64%, with a sample size of 9,585.

The second HCC sample (2000-2001 data, hereafter: HCC2), the researchers followed all respondents to HCC1, providing the opportunity to conduct longitudinal

analyses. The response rate for this component was 69.5%, with a sample size of 6,659.

Weights, provided by the study designers, are used with all samples to make estimates that are nationally representative[3]. Computer-assisted telephone interviewing (CATI) was used for collection of HCC data.

These data were selected for several reasons. First and foremost, the questionnaire design allows for the explicit identification of cohabitors. Many other secondary datasets either group spouses and cohabitors together or group singles and cohabitors together. The distinction between these relationships is crucial for this project. Further, the number of cohabitors in the dataset is large enough (depending on the wave, between 310 and 376) to conduct statistical analyses on them as a subgroup. In addition, these data include items addressing both physical and psychological health, health behaviors, and social support – all conceptually important variables.

Missing Data and Imputation

The HCC data included both unimputed and imputed files. Both logical and extended hot-deck imputation methods were used. Logical imputation was the preferred method when possible. Since HCC respondents were selected from the CTS sample, in which multiple members of the same family were interviewed, in some cases responses (e.g., to items related to income) could be used from other family members in the CTS data, although the study designers stress that this was

[3] Nationally representative is defined by study authors as: non-institutionalized adults (aged 18 and older) in households with telephones.

only done when there was no ambiguity about family structure and no data inconsistencies. When logical imputation methods were not possible, the study designers used hot-decking and multiple imputations:

> This procedure is based on cycling through each missing-data pattern on each variable with incomplete information (Little 1988; Bell 1999). This method involves two steps: (1) forming imputation classes based on the predicted mean of the variable being imputed from a multiple regression model, and (2) drawing imputations at random from observed data within each class based on an approximate Bayesian bootstrap method. The order in which variables were imputed was determined based on judgments about the analytic importance of the variables and the degree of missing data. Earlier imputed values were used during subsequent imputation steps, implying some dependence on the order in which variables were imputed.
>
> Generally speaking, single imputations tend to overstate the precision of estimates. Therefore, when imputed variables are used for data analysis, multiple imputation (MI) procedures, which address the uncertainty in the imputation process, should be used (Rubin 1987). (Wells, Sturm, and Burnam 2005: 17-18)

The imputed datasets were used for all analyses, and multiple-imputation methods were used. Item non-response was generally quite low, with the exception of some income-related variables, which had missing rates of 10-27%. Comparative analyses were conducted using both imputed and non-imputed datasets (results available upon request). The results were overall quite similar, with differences between the two being mainly in terms of magnitude of coefficients – and small differences (generally less than one tenth of a point) at that. Given the lack of major differences, and that this project requires the use of subgroup comparisons – where the cohabiting subgroups in particular are relatively small – it was determined that

using the imputed datasets and losing as few cases to missing data as possible was the best option.

Measures

Dependent Variables

Physical Health. A general measure of physical health will be the PCS-12, the Physical Component Summary of the Short Form-12 (SF-12) (Ware, Kosinski, & Keller, 1996), representing physical dimensions of overall health status. It is constructed from six items including self-rated overall health and limits on activities due to physical health. Norm –based standardized scores are computed (by the study designers) for the scale to have a mean of 50 and a standard deviation of 10. Higher scores on this measure indicate better health. See Appendix A for item wording and response categories.

The HCC data contain measures of multiple specific health conditions of varying severity. The survey asked, "Here is a list of health problems some people have. Please indicate if you now have any of these problems," and the interviewer then read each condition on the list, giving the respondent the opportunity to respond yes or no (they could also respond "don't know" or refuse). The current study groups some of these conditions together. Asthma, overweight (as measured by Body Mass Index or BMI which is derived from self-reported height and weight), high blood sugar/diabetes, and hypertension are all health problems in their own right in addition to being risk factors for further problems (U.S. Department of Health and Human Services, 2000). Therefore, a variable is constructed to indicate

whether a respondent currently has problems with any of these "gateway" conditions.

A second constructed variable measures "serious" conditions: whether a respondent has had a cancer (not skin) diagnosis within the past 3 years; a neurological condition (such as epilepsy, convulsions, fainting spells, or Parkinson's disease); a stroke or major paralysis; or heart trouble (e.g., angina, heart failure, or Coronary Artery Disease).

A third such variable measures the experience of various "chronic" health conditions: chronic back problems; gastrointestinal conditions such as stomach ulcer, chronic inflamed bowel, enteritis, or colitis; chronic liver disease such as cirrhosis or hepatitis; migraines or other chronic severe headaches; chronic urinary or bladder problems; or other chronic pain conditions.

Mental Health. A primary focus of the HCC project is mental health and substance abuse problems, so the measures available for such concepts are comprehensive. Data are available for responses to individual questions as well as for constructed "flags" indicating that a respondent has answered multiple questions in such a way as to meet the clinical criteria for particular disorders or conditions (e.g., alcohol abuse, psychosis, dysthymia, etc.). There is a long-standing debate, however (Klerman, 1989; Mirowsky & Ross, 1989; Swartz, Carroll, & Blazer, 1989; Tweed & George, 1989), about the usefulness of a clinical or diagnostic perspective on mental health and illness. According to such a perspective, diagnosis is a zero-sum game: either you are or are not mentally ill, based on whether you exhibit x

number of symptoms. However, opponents of this perspective ask that we consider a hypothetical case of two people, one of whom meets the criteria for diagnosis of depression; the other is one criterion short. Are their experiences with depressive symptoms really all that different? Should one be treated and the other deemed "well"? Clinicians, however, argue that there needs to be some standard to adhere to, so that treatment decisions can be made with some efficiency and consistency.

Coming back to the research at hand, my interest is not necessarily in the clinical standards for diagnosis. My research is more holistically oriented; I wish to compare the general mental health and well-being of people in different types of intimate relationships. However, much previous research does use clinical criteria, and the HCC surveys only ask the specific criteria questions of those respondents who answer "yes" to a screener question. In other words, only those respondents who stated they had had a period in the past year lasting one month or longer when most of the time they felt worried and anxious answer questions like "did you worry a great deal about things that were not really serious?" For this reason, my analyses will use questions indicating any problems (as denoted by a "yes" answer to a screener question) with anxiety, major depression (sad, blue, or depressed for two weeks or more in a row), dysthymia (feeling sad or depressed most of the time), and panic attacks. For the anxiety and depression measures, items are taken from the Composite International Diagnostic Interview-Short Form (CIDI-SF) (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998); the dysthymia and panic measure items are taken from the CIDI (World Health Organization (WHO), 1990). While I

have placed alcohol and drug use under "Health Behaviors" (below), constructed problem-drinking (based on the WHO's Alcohol Use Identification Test) (Sturm et al., 1999) and drug problem variables are also used as outcome variables.

Finally, the MCS-12, the Mental Component Summary for the SF-12 (Ware et al., 1996), is also used as a mental health evaluation variable. The MCS-12 is constructed from 6 items including evaluations of energy, feeling blue or sad, and social and emotional functioning. Like the PCS-12, this scale is normed such that in the general population, the mean is 50 with a standard deviation of 10, and higher scores indicate better mental health. See Appendix A for additional information on the items in this scale.

Independent Variables

Marital Status. Marital status is a constructed variable with three values: single (including never married, divorced, separated, widowed), living with a partner/companion/significant other, and married. It should be noted that such a broad "single" category can be problematic. A never-married single would be expected to have different health outcomes than a divorced single. Unfortunately, these data do not allow for a more explicit delineation of this category. To address this issue, analyses include an interaction effect between relationship status and age. It would be reasonable to expect that older singles are more likely to have been married than younger singles. However, it is also possible that older singles have been selected out of marriage.

An additional limitation of the marital status variable in terms of longitudinal analyses is the lack of relationship history. That is, there is no way to be sure that if a respondent reports being married (or in a cohabiting relationship) at each wave that they are married to (or cohabiting with) the same person. Further, there is no way to know that a respondent who reports cohabiting at time 1 and being married at time 2 married the person they were previously cohabiting with. While this threat to the data is worth keeping in mind, the relatively short (about three years) span of time between waves should temper the threat somewhat. Finally, these data do not include information on cohabitation or marriage experiences either prior to the data collection period or between waves of the survey, nor is there any information on union duration.

Health Behaviors. The first wave of HCC did not include any items relating to tobacco use. However, the CTS (from which the HCC sample was drawn) did. The CTS self-response module contains the question, "Do you now smoke cigarettes every day, some days, or not at all?" The HCC2 questionnaire contains a question about tobacco use, "Do you currently smoke or chew tobacco?" While these questions do not line up exactly, the CTS1 question is recoded to create a yes/no item comparable to the HCC2 item.

For alcohol use, measures include an item measuring frequency of alcohol in the past 12 months (with response categories being never, monthly or less, 2-4 times per month, 2-3 times per week, and 4 times a week or more.

For drug use, items are grouped together, resulting in variables measuring prescription drug use ("on your own," meaning "either without a doctor's prescription, or in larger amounts than prescribed, or for a longer period than prescribed") including sedatives, tranquilizers, amphetamines, and analgesics; marijuana/hashish use; and "other" drug use (including inhalants, cocaine, crack, LSD, other hallucinogens, and heroin).[4]

In addition, I include categorical measures indicating whether the respondent has seen a primary care provider (PCP) within the past 12 months and whether the respondent is insured.

Social Support. While the HCC does not have explicit relationship quality measures, it does include a series of items measuring social support. The question wording for these items was as follows:

> People sometimes look to others for companionship, assistance, or other types of support. How often was each of the following kinds of support available to you if you needed it during the past 4 weeks? (Someone to help with daily chores if you were sick, Someone to love and make you feel wanted, Someone to confide in or talk to about yourself or your problems, Someone to have a good time with, Someone to give you information to help you understand a situation, Someone to give you money if you needed it)

Response categories were: all of the time, most of the time, a good bit of the time, some of the time, a little of the time, and none of the time. Items were recoded as needed so that higher values indicate higher levels of support. These items tap into both tangible support (Cronbach alpha = .60 at both waves) and emotional support

[4] Measures of alcohol frequency and other drug use are not included in models predicting alcohol problems, and measures of marijuana, prescription drug, and other drug use are not included in models predicting drug problems.

(Cronbach alpha .88 at Wave 1 and .89 at Wave 2) and together form a broader overall social support scale (Cronbach alpha = .88 at both waves). For the purpose of this research, tangible and emotional support are not used as separate predictors for two reasons. First, the tangible support scale consists of only two items, and the lower Cronbach alpha is reflective of this. Second, while the literature on social support does differentiate types of support, the research has not generally shown that these different types differ in their effects (Thoits, 1995b).

Sex, Race, Dependents. The respondent's self-reported sex is used. The respondent's self-reported race was collected from the CTS survey, and collapsed into four categories: White (non-Hispanic), Black (non-Hispanic), Hispanic, and Other. The respondent's number of dependents ("people who you can claim as a dependent on your tax form. These usually include any children you have who are living with you, or children or elderly parents who rely on you for more than half or their financial support") at each wave is also included. This measure is included in part to address the finding of Williams and colleagues (K. Williams et al., 2008) that mothers receive fewer health benefits from marriage than do childless women. While the measure included here is of how many dependents the respondent has, it is clear from the skew of the frequency distributions of this variable (see "Descriptive Statistics" below) that for most respondents, it is a measure of whether they have any dependents at all.

Age/Cohort. Age is a derived variable representing age at the time of the interview (date of birth was collected but masked to protect respondent identity).

Birth cohort variables were also constructed: birth year was derived from the interview year and current age, and cohorts were grouped in five year intervals. These variables were constructed for two reasons. The first was a technical one: to explore whether there might be effects of age which might be so finely graded as to be lost when using the traditional age in years metric. The magnitude of change in an outcome variable associated with a single year increase in age (the way the coefficient is interpreted) may well be so small as to be rendered substantively meaningless. The second reason was a theoretical one, inspired by the research of Schoen (1992) who showed that the significance of cohabitation as a factor in predicting divorce was smaller (or nonexistent) for more recent birth cohorts than for older birth cohorts – the idea being that cohabitation is becoming more and more normed.

However, after using the cohort variables in preliminary analyses, the decision was made to eliminate them for several technical reasons. First, they could not be used in longitudinal analyses due to the nature of fixed-effects models (see "Longitudinal Analyses" below). Second, when used in cross-sectional analyses, no clear or illuminative patterns of inter-cohort differences were found. Finally, in several of the cross-sectional analyses, due to some very small (or zero) cell sizes, coefficients for cohort variables could not be calculated at all. As a result, age – and not cohort – is used in all analyses.

Education. Education is measured categorically. For the first wave, this information comes from the CTS, and has four categories: less than high school, high

school graduate, some college, and college graduate or more. At the second wave, this information was captured by the HCC survey, and collapsed into three categories: less than high school, high school graduate to some college, and college graduate. By combining the middle 2 categories from Wave 1, a measure that was comparable across waves was created; however, univariate analyses indicated that the vast majority of respondents (87% at Wave 1) had at least graduated high school. For this reason, education will be measured with a dummy variable indicating whether or not the respondent graduated from college.

Employment and Income. A categorical measure indicates whether the respondent was working or doing any work for pay at the time of the interview. Income is another constructed variable, and is the sum of all family income from work, retirement, unemployment, social security, and public assistance in the past 12 months, in thousands of dollars.

Interaction terms. Several interaction terms are included in analyses (where appropriate, given the restrictions of fixed-effects models). To address the previously mentioned research which suggests a temporally diminishing effect of cohabitation, a union type*age term is included, which will indicate whether any effects of union type differ by age. A union type*gender term is also included, since prior research (discussed in Chapter 1 under "Gender") indicates that men and women may experience different health outcomes based on their relationships. Finally, a union type*income (in thousands) term is included. This is done to address whether social class is a confounding factor in union type effects on health –

that is, whether those at the lower end of the socioeconomic spectrum are both more likely to, for example, cohabit and have alcohol or drug problems.

Descriptive Statistics

Tables 1 and 2, respectively, present descriptive statistics for the first and second waves of data, overall and by the main variable of interest, marital status. To test for significant differences between marital status subgroups, Analysis of Variance (ANOVA) was used for continuous measures, and Chi-Square for categorical ones. In addition, Table 1 notes significant differences, where applicable, between those who responded to both waves of the survey and those lost to attrition[5].

[TABLES 1 AND 2 ABOUT HERE]

The mean age of respondents was about 47 years at Wave 1. At both waves, married respondents were substantially older (with a mean age of 47.94 at Wave 1 and 49.27 at Wave 2) than cohabiting respondents (36.29 at Wave 1 and 37.51 at Wave 2). Those who were single at the first wave tended to fall between married and cohabiting respondents; those who were single at the second wave were older than both. Women made up a larger share of the respondents at both waves – especially among single respondents at Wave 2. The majority of respondents were White, and more of those White respondents were married than their counterparts of other racial/ethnic backgrounds. Less than a quarter of respondents had completed college at Wave 1, although that percentage rose to 25.49 by Wave 2. The majority of

[5] Information on source of attrition (e.g., death, refusal, unable to locate) was not collected.

respondents (67.18% at Wave 1 and 66.25% at Wave 2) were employed, with a mean annual total income of $45,870 at Wave 1 and $49,410 at Wave 2.

In terms of physical health, the mean score on the PCS-12 was 46.66 at Wave 1 and 46.36 at Wave 2. At both waves, married and cohabiting respondents scored higher on this measure than did single respondents. At both waves, cohabiting respondents were least likely to report having gateway or serious conditions, and married respondents, least likely to report having chronic conditions.

Turning to the mental health measures, married respondents scored higher on the MCS-12 (indicating better health) at both waves than single or cohabiting respondents. Cohabitors reported far more negative problems: frequent alcohol consumption, problem drinking, marijuana use, prescription drug use, other drug use, and drug problems than singles, who in turn reported more than spouses.

Overall social support ratings were higher for all groups at Wave 2 than at Wave 1; at each wave, spouses reported the highest levels, followed by cohabitors and then singles. Most respondents reported having health insurance at both waves (87.76% at Wave 1 and 89.91% at Wave 2). Greater than 90% of spouses at both waves were insured, while just under three-quarters of cohabitors were; singles ranked between the two groups. Correspondingly, at both waves, married respondents were most likely to report having visited a Primary Care Physician (PCP) within the past year, followed by singles and cohabitors. Finally, rates of smoking at both waves were highest among cohabitors, followed by singles, and lowest among spouses.

Analyses not provided here were conducted to determine whether spouses and cohabitors differed significantly in social class, using college graduation as a proxy. Indeed, more spouses than cohabitors were college graduates. This correlation leads to concerns that results of later analyses might be confounded by the interrelationship of union type, class, and health behaviors. When examining only cohabitors, however, college graduation (as a proxy for class) was not a statistically significant predictor of alcohol problems, drug problems, marijuana use, prescription drug abuse, other drug use, or having seen a doctor in the past year. Being a college graduate was a significant positive predictor of alcohol frequency and being insured, and a significant negative predictor of being a smoker. When these models were duplicated just among married respondents, the results were strikingly similar: having a college degree was only a statistically significant predictor of alcohol frequency (a positive relationship), being insured (a positive relationship), and smoking (a negative relationship). These results lead me to conclude that any subsequent findings of associations between union status and health outcomes are valid, and not due to inter-predictor correlations.

[TABLE 3 ABOUT HERE]

Table 3 provides descriptive statistics for those persons who were respondents at Wave 1, but not at Wave 2. It is important to examine these cases to determine if there is nonresponse bias – essentially, whether those who responded to both waves of the survey are different than those who did not, particularly in terms of what the survey measures (e.g., health outcomes, health behaviors, union status).

Considering the respondents lost to attrition, we see that they were significantly younger and more likely to be male and minority than those respondents who completed both waves of the survey. They were less likely to have finished college and they reported lower incomes than those who responded to both waves. They scored lower on the PCS-12, had fewer gateway conditions, and more serious health conditions. They also scored lower on the MCS-12, were more likely to report using marijuana, and had higher rates of anxiety, MDD, dysthymia, and panic disorder. They reported lower levels of social support, were less likely to be insured or have visited a doctor in the past year, and reported higher rates of smoking. These differences between respondents to both waves of the survey and those lost to attrition could have some implications for the results of the analyses, particularly the longitudinal ones. Such implications will be addressed below, in the context of each of the types of analyses to be conducted.

Analytic Strategy

The data at hand are unique and well-suited for the current research goals in that they provide the opportunity for both cross-sectional and longitudinal analysis.

Cross-Sectional Analyses

Cross-sectional analyses (Chapter 3) will be conducted for each of the two waves using standard OLS (for continuous outcome measures) and logistic regression (for dichotomous outcome measures) techniques. These models will include all predictor variables discussed above. For the polytomous marital status variable, "married" is the omitted or reference category. The substantive reason for

this coding is that marriage is the "ideal type" or gold standard for relationships in the United States, and most prior research has compared other statuses to marriage. Using married as the reference category means that the coefficients for marital status will be interpreted in terms of singles in comparison to spouses, and cohabitors in comparison to spouses. Considering attrition, if it is the case that those with poorer health are disproportionately lost, then analyses of the Wave 2 data might paint a rosier picture than those at Wave 1 (which included those individuals who did not respond to Wave 2), and ultimately, than is accurate.

Due to the large number of outcome measures, only those tables presenting the full models – with all predictor variables – are included in the main body of this document. Four models were run for each of the outcomes at each wave, however, in accordance with the hypotheses: the first included demographic and union type predictors, the second added social support, the third added health behaviors, and the final, full models add in the socioeconomic predictors. Appendix B provides all nested models for all outcomes.

Selection Analyses

Selection effects (testing Hypothesis 5) will be addressed in Chapter 4. These models will use information from both waves of data to evaluate the possibility that those who are healthier at Wave 1 will be more likely to be in a union at Wave 2. In the context of the prior research, the respondents lost to attrition would be considered at high risk of being selected out of marriage. If this is the case, then any supportive findings for Hypothesis 5 would be erring on the conservative side. If,

however, those respondents lost to attrition were in reality *more* likely to enter a relationship, their omission from these models could result in misleading findings.

Longitudinal Analyses

Longitudinal analyses will use a fixed-effects model (Petersen, 1993), which addresses within-person change over time, and includes time-varying predictors. While time-invariant variables cannot be included in a fixed effects model, all unmeasured time-stable individual effects (regardless of independence from measured variables) are implicitly controlled, and, further, interaction effects can be tested.

A multilevel model for change might be considered for these analyses, since such a model can include both fixed and random effects. However, the complex nature of the sampling strategy used in HCC data collection necessitates use of SUDAAN (Research Triangle Institute, 2005)[6,7], which does not have the capability to specify random effects. In addition, a key assumption of the multilevel model is that the error terms are not correlated; with the possibility of selection effects, however, this assumption could be violated. Further, the suitability of the multilevel model for data with only two time points is debatable (Singer & Willett, 2003).

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[6] Other software packages (SAS, STATA, SPSS) do not take into account without-replacement sampling at the first stage. While this would usually yield overly conservative estimates in which the standard errors are overestimated, there is some evidence that for subgroups, the standard errors may in fact be underestimated, leading to potential Type I errors. For a detailed comparison of statistical packages for CTS data analysis, see Schaefer and colleagues (2003).

[7] Given the oversampling of low-income respondents, users of specialty health services, and those persons reporting high levels of psychological distress, and given that mental health measures are key outcomes for this research, it was essential to take the sampling design and weight variables into account for these analyses.

The equation for the fixed-effects model is as follows:

$$Y_{it} = \lambda_t + \beta x_{it} + \alpha_i + \varepsilon_{it}$$

Where

Y_{it} = respondent i's true health status at time t,

λ_t = time-linked effect,

x_{it} = a person-specific, time-varying predictor variable,

α_i = individual effect, and

ε_{it} = person-specific unexplained variance, or error.

As a longitudinal model of change, the fixed effects model dictates a different interpretation of coefficients than that of typical OLS models. Specifically, the beta coefficients represent the amount of *change over time* in the outcome variable associated with a one-unit *change over time* in the predictor variable. The reference category of the marital status variable was changed to single for the fixed effects models. As a result, beta coefficients for the married variable represent the amount of predicted change over time associated with having transitioned from being single to married, and the inverse of the coefficients represent the amount of predicted change over time associated with having transitioned from married to single. The same is the case for the "cohabiting" predictor. Had the reference category remained married persons, the models would have predicted change in outcomes associated with leaving or entering marriage from either singlehood or cohabitation[8]. Using

[8] Respondents who do not experience a change in relationship status do not contribute to the analysis for the estimation of the union status coefficients. Petersen (1993) notes that this aspect of the fixed-effects models "can sometimes reduce the sample size…as individuals with no across-time variation in

single as the reference category allows for a relative comparison of the health effects of marriage to those of cohabitation in comparison to singlehood – specifically, it allows for direct evaluation of Hypothesis 1b. This choice is also substantively driven, in order to evaluate whether the health benefits of marriage still exist, and whether they are the sole province of marriage, or can be extended to those in a cohabiting relationship.

Additionally of note regarding interpretation is that both continuous and dichotomous outcome variables are used in longitudinal analyses as well. For dichotomous outcome variables, beta coefficients and odds ratios are provided; odds ratios are used to determine the increase in likelihood over time that a respondent will develop a given condition.

Finally, considering the cases lost to attrition, two scenarios present themselves. First, if those particular respondents did not enter or exit a union, then they would not contribute to the models for the union status predictors, and therefore their exclusion via attrition would not affect the outcomes for those predictors. The same goes for the other predictors: those respondents would only impact the results if they experienced a change over time. However, if they do experience change over time, their exclusion from the models could mean the results of these models are affected. This topic will be further discussed in Chapter 6, under "Limitations."

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all the variables do not contribute in the computation of the estimator" (448). However, if a given respondent does experience change on any one or more of the predictors, s/he is still included in the analysis for those predictors.

As is the case with the cross-sectional analyses, only the full models are presented in the main body of this research. Nested models (adding groups of predictors to correspond to the hypotheses) were run for each of the outcomes, for men and for women, and are included in Appendix D for reference as needed.

Summary

In this chapter, I have described the data and analytical strategies to be used for the current research. Subsequent chapters will provide the results of these analyses: Chapter 3 will address cross-sectional analyses; Chapter 4, selection effects analyses; and Chapter 5, the longitudinal fixed-effects analyses. Each of the analysis chapters will follow the same general structure. First, I will present the statistical results and interpretations of the analyses, followed by a summary of the findings within the context of my hypotheses. Each chapter will conclude with a discussion of the findings. Chapter 6 will synthesize and discuss all analyses and address limitations and implications of this research.

CHAPTER 3: CROSS-SECTIONAL ANALYSES

In order to explore the effects of time-stable characteristics and get a snapshot of the data at each point in time, OLS regression analyses (for continuous outcome measures) and logistic regression analyses (for categorical outcome measures) were performed for all eleven outcome measures at each of the two waves. I will first simply present the results of the Wave 1 analyses in detail – first looking at demographics and union status, followed by social support, health behaviors, and then socioeconomic factors. This will be followed by a more abbreviated presentation of the Wave 2 findings, focusing primarily on similarities to and differences from the Wave 1 results. As explained in Chapter 2, only the full models are presented in this chapter. Where appropriate, findings from the nested models will be noted, and will reference those tables in Appendix B. Next, I will provide a summary and discussion of all results in the context of the hypotheses. The final component of this chapter will consist of broader conclusions and implications of the findings.

Results

Wave 1 Models

Tables 4 and 5 present the results of the cross-sectional analyses for continuous and categorical variables, respectively, at Wave 1. These tables will be discussed jointly; they are separated primarily due to the different analytical procedures used based on the type of outcome measure (i.e., continuous vs. categorical).

[TABLES 4 AND 5 ABOUT HERE]

The main variable of interest, marital status, was a significant predictor of more than half of the outcome measures, although the direction of the findings is less than consistent. For example, cohabitors fare better on the overall mental health measure (MCS-12) and likelihood of having panic problems than spouses, but they are three and a half times more likely to report suffering from dysthymia. Singles are more likely to report having a chronic health condition, MDD, and alcohol problems than spouses. Both cohabitors and singles are far more likely to have drug problems than spouses. The nested models (Appendix B) provide some additional information of note regarding the union status predictors. In the two cases where cohabitors are better off than spouses (MCS-12 and panic problems), the nested models show that this association only reaches statistical significance once the health behavior (for panic problems) and socioeconomic (MCS-12) factors are included. In two other cases (chronic conditions and MDD), cohabitors are significantly more likely to report the conditions until the health behavior predictors are included. Singles initially appear more likely to report having anxiety problems and dysthymia, but this effect is no longer statistically significant with the addition of the socioeconomic variables.

Age is a significant predictor in nearly all Wave 1 models. It is positively associated with MCS-12 score and likelihood of having a gateway condition, chronic condition, or serious condition. It is negatively associated with general physical

health and likelihood of anxiety problems, MDD, panic problems, and alcohol problems. Gender is less frequently significant, with women being less likely than men to report gateway conditions, serious conditions, and alcohol problems; and more likely to report MDD and panic problems. Examination of the nested models shows that for several outcomes, gender is initially a significant predictor, but loses significance once health behaviors (for PCS-12, MCS-12, and dysthymia) and socioeconomic factors (for chronic conditions) are included.

Race is also an inconsistent predictor: Blacks report lower overall health, a much greater likelihood to have a gateway condition, lower likelihood of having a chronic condition, and a greater likelihood of dysthymia than Whites. Respondents classified as "other" race are more likely to have a serious condition and less likely to have MDD or alcohol problems than whites.

There are some significant marital status interaction terms that may shed more light on the relationships between relationship type and health outcomes. The significant cohabitation*age interaction on the MCS-12 outcome indicates that overall mental health is lower at higher ages for cohabitors, but is positively associated with age for spouses. For the dysthymia outcome measure, the same interaction term indicates that singles and cohabitors are both more likely to suffer it than spouses at higher ages – although the coefficient for single by itself is not statistically significant in this model. This same interaction term is also significant for panic problems, indicating that while the risk of suffering such problems decreases with age for both cohabitors and spouses, the trajectory for spouses is

sharper than that of cohabitors – that is, their risk decreases at a slightly higher rate than cohabitors. The significant single*age interaction term in the model for drug problems indicates that for spouses, age is positively associated with higher risk for drug problems than singles. This same interaction term is significant for the chronic conditions outcome, and indicates that while the risk of chronic conditions increases with age for all respondents, it increases at a very slightly (yet significantly) higher rate for spouses than for singles. There are also several significant interactions between marital status and gender. For the PCS-12 measure, the cohabiting*female term indicates that cohabiting women fare more poorly than cohabiting men, married men, and married women. Single women are more likely than single men, married men, and married women to suffer from either chronic conditions or dysthymia. Finally, singles and cohabitors of both sexes – and married men – are more likely than married women to report alcohol problems. Number of dependents is only a significant and negative predictor for having any serious health conditions.

Social support is a significant predictor in most models (with the exception of gateway conditions and alcohol and drug problems), and is consistently associated with positive health outcomes. For alcohol and drug problems, social support is a significant and negative predictor in earlier models, but not once health behaviors and socioeconomic factors, respectively, are included.

Turning to the health behavior predictors, it should first be noted that smoking is a universally significant predictor for the health outcomes measured, and is associated with negative health in all except one: being a smoker is associated with

about a 15% reduced likelihood of reporting a gateway condition (although the nested models show this is only the case in the full model). Interestingly, alcohol frequency is associated with positive health on many of the health outcomes measured: PCS-12, gateway conditions, chronic conditions, serious conditions, and dysthymia. The same effect is seen in the nested models for MDD and panic problems, but not in the full model, once the socioeconomic predictors are included. As would be expected, however, increasing frequency of alcohol consumption is associated with a greater likelihood of having a drug problem. Marijuana use is associated with greater likelihood of chronic conditions, anxiety problems, MDD, and, as would be expected, alcohol problems. Prescription drug abuse is a nearly universal (with the exception of serious conditions) predictor of poor health outcomes at Wave 1. Other drug use, however, is not a significant predictor of any of the outcomes. Having visited a primary care provider (PCP) within the past year is a significant predictor of poor health for all outcomes measured except for dysthymia and alcohol and drug problems. Insurance coverage is positively associated with overall mental health, and negatively associated with the likelihood of having a drug problem. The nested models show that insurance coverage is associated with better health in several other cases (PCS-12, chronic conditions, dysthymia, anxiety), but that the inclusion of the socioeconomic predictors render its effect nonsignificant.

The socioeconomic predictors, where significant, are consistent in their effects. Having a college degree (a significant predictor for PCS-12, gateway conditions, and dysthymia), having a job (PCS-12, MCS-12, chronic conditions,

serious conditions, anxiety problems, MDD, dysthymia, and panic problems), and higher income (PCS-12, anxiety problems, dysthymia, and panic problems) are all associated with better health.

Wave 2 Models

Tables 6 and 7, respectively, present the results for Wave 2 cross-sectional analyses for continuous and categorical outcomes.

[TABLES 6 AND 7 ABOUT HERE]

Union status is a much less frequent statistically significant predictor of health outcomes at Wave 2. These predictors were significant only for serious conditions (with singles being 3.7 times more likely than spouses to suffer such conditions) and for having a drug problem (with, as at Wave 1, singles and especially cohabitors having a much greater risk of such problems). In several other cases, though, union status predictors were statistically significant in earlier models, but these effects disappeared once social support (for singles and PCS-12, anxiety problems, and MDD), health behaviors (for singles and dysthymia), and socioeconomic (for cohabitors and alcohol problems) predictors were included.

Age has effects that are consistent with those at Wave 1, with the exception of drug problems, for which it was not a significant predictor at Wave 1, but is negatively associated with at Wave 2.

Gender's effects at Wave 2 are consistent in significance and direction with those at Wave 1. The effects of race are not quite as consistent across waves of the survey. As at Wave 1, Black respondents report worse general physical health and a

greater likelihood of gateway conditions than Whites, as well as increased likelihood of dysthymia. No significant associations are found for serious conditions, MDD, or panic problems (as was the case at Wave 1), although they are only about half as likely as Whites to report an alcohol problem at Wave 2. "Other" race respondents report lower likelihood of MDD and alcohol problems – as at Wave 1 – as well as dysthymia, and panic problems (and this racial category is not a significant predictor of serious conditions at Wave 2, as it is at Wave 1).

As at Wave 1, there were several significant interaction terms between marital status and age and marital status and gender, although they are seen for different outcomes at Wave 2. For the serious conditions outcome, the age*single interaction term indicates that not only do singles have a higher risk of having a serious condition (as shown by the significance of the "single" predictor alone), but that their risk consistently increases with age, more so than spouses. A similar effect is found for cohabitors' likelihood of reporting anxiety problems or MDD – their risk increases with age at a steeper rate than that of spouses. The significant age*cohabiting interaction term for alcohol problems indicates that spouses' risk decreases over time compared to the relatively steady risk seen by cohabitors.

Turning to the marital status*gender interactions (which also differ from those seen at Wave 1), we see that on the MCS-12 measure, cohabiting women fare worse than married women and married men, although they do fare better than cohabiting men. Single women have a lower likelihood of anxiety problems than

single men, married women, and married men, and they are less likely to report alcohol problems than either single men or married men.

At Wave 2 social support has similar positive effects on health outcomes – the one difference from Wave 1 being the addition of reduced likelihood of drug problems to the benefits afforded by increasing levels of social support.

Considering the health behavior predictors, it is apparent that alcohol frequency has effects that are very similar to those seen in the Wave 1 models. That is, Wave 2 models show several cases in which alcohol frequency is associated with positive outcomes (including decreased likelihood of MDD, not seen at Wave 1). The nested models show that it appears to be negatively associated with anxiety problems as well, until socioeconomic predictors are included. As at Wave 1, it is also positively associated with drug problems.

Smoking is slightly less frequently a significant predictor of outcomes at Wave 2 in comparison to Wave 1; it is not significant in the models for MCS-12, serious conditions, and panic problems at Wave 2 (the nested models show its initial association with increased likelihood of panic problems is eliminated with the inclusion of socioeconomic factors). The direction of the associations, however, is consistent with Wave 1, including the reduced likelihood of having a gateway condition. As at Wave 1, marijuana use is associated with an increased likelihood of anxiety and alcohol problems. It is no longer a significant predictor of chronic conditions or MDD at Wave 2, but new findings include its negative association with gateway conditions and positive association with panic problems. The findings for

prescription drug abuse are identical in direction to those at Wave 1, but it is not linked to quite as many outcomes as at Wave 1. As at Wave 1, other drug use is not a significant predictor in any of the models. Having visited one's PCP in the past year is associated with poor health outcomes on nearly all outcomes, as at Wave 1. Having health insurance is associated with a decreased likelihood of anxiety problems and MDD – earlier models indicated a similar beneficial effect for general physical health and dysthymia, but this predictor failed to reach significance once socioeconomic variables were included. These findings differ from those at Wave 1, when insurance coverage was associated with benefits for general mental health and likelihood of drug problems.

The socioeconomic variables are, as at Wave 1, frequently significant predictors of health outcomes. Having a college degree is associated with the same positive health outcomes as at Wave 1, with the addition of reduced likelihood of chronic conditions or panic problems. Similarly, being employed is associated with better physical and mental health on all the same measures as at Wave 1, and with the addition of reduced odds of drug problems. Income is less frequently a predictor of health outcomes than at Wave 1 – it is consistent in its positive effect on general physical health, but a new finding is the positive association with likelihood of alcohol problems.

Unlike at Wave 1, there are a handful of statistically significant marital status*income interaction terms. For the general physical health measure, the gains in health tied to increases in income are greater for singles than for spouses. For the

MCS-12, cohabitors show a greater rate of returns to increases in income than do spouses. Finally, for MDD, examination of the cohabiting*income interaction reveals that while spouses' risk of suffering MDD ever so slightly increases with increasing income, cohabitors' risk steadily decreases with increasing income.

Summary and Discussion

Considering both waves of data, Hypothesis 1 was not overwhelmingly supported – that is, spouses do not consistently have higher levels of physical and psychological health than cohabitors and singles. For nearly all of the physical health outcomes, union type was not a significant predictor at all. When union type is a significant predictor of physical health outcomes, however, it indicates that spouses are better off than singles (for chronic conditions at Wave 1 and serious conditions at Wave 2). The mental health outcomes models show a greater number of significant union type effects, and these generally favor spouses – primarily over singles (MDD and alcohol and drug problems at Wave 1 and drug problems at Wave 2), but over cohabitors (dysthymia and drug problems at Wave 1 and drug problems at Wave 2) to a lesser extent. The findings related to alcohol and drug problems might be expected given the social control research, as these are mental health problems that are health-behavior based. Interaction effects between union type and age generally indicate that older singles and cohabitors are more disadvantaged than their married peers.

The findings of positive outcomes at Wave 1 on the MCS-12 and panic measures for cohabitors in comparison to spouses are of note, especially given the

additional information provided by the nested models. These findings indicate that when holding health behaviors and socioeconomic status constant, cohabitors are better off than spouses on these measures; if health behaviors and socioeconomic status are not controlled for, there is no difference by union type. The significant interaction with age in the full model for MCS-12, however, shows that cohabitors suffer decreased mental health with age, while spouses experience the opposite.

What do the differences between Waves 1 and 2 tell us with regard to union status? The loss of the statistically significant effect of cohabitation for dysthymia at Wave 2 could be seen as an indication that disadvantaged cohabitors were lost to attrition. However, the significant effect of cohabitation in the drug problems model remains at Wave 2. Further, the positive effects of cohabitation seen at Wave 1 are nonexistent at Wave 2. It could be the case that these "happy cohabitors" got married between waves, or that enough of them were lost to attrition to eliminate the association at Wave 2. In either case, the results do not seem to indicate an attrition bias for the union type predictors.

One unexpected finding is the interaction term for singles at Wave 1, indicating that older singles are less likely to have drug and alcohol problems than older spouses. This finding is not replicated at Wave 2. A possible explanation could be that the stress associated with caring for aging partners leads these older spouses to turn to drugs and/or alcohol.

Interaction effects also indicate that the impact of union type may vary by gender. Cohabiting women appear particularly disadvantaged when it comes to

overall physical health at Wave 1 and overall mental health at Wave 2. At Wave 1, single women are worst off when it comes to chronic conditions and dysthymia at Wave 1, but at Wave 2, single women fare better on the anxiety and alcohol problems measures. The findings with regard to single women lead one to ask what happened between waves. One explanation is that a greater proportion of the single women lost to attrition were those with chronic conditions and dysthymia. Referring back to Tables 1 and 2, however, reminds us that among all singles (both men and women), the incidence of both chronic conditions and dysthymia increased over time, which might indicate that single men caught up to single women between waves of the survey.

Hypothesis 2, in contrast, was far more clearly supported overall. The magnitude of the effect of social support varied, appearing stronger for the mental health outcomes than for the physical health outcomes. The findings for social support are remarkably consistent across waves of the survey. In a few cases, the nested models indicate that social support is one mechanism by which union status might appear to have effects on health. In particular, in the Wave 2 models for general physical health, anxiety problems, and MDD, singles appear to be worse off than spouses until social support is controlled for.

Hypothesis 3 was partially supported with some important qualifications. These include the negative effect of smoking on the likelihood of having a gateway condition, the apparent health benefits of increasing alcohol frequency on a number

of outcomes, and the association between having seen one's doctor in the past year with deleterious health outcomes in several cases.

What could be the explanation for these findings? Let us first consider smoking and the gateway conditions (which, as explained in Chapter 2, are: asthma, overweight, high blood sugar/diabetes, and hypertension). Smoking is a well-documented correlate of three of the four of these; however, smokers tend to both weigh less and have lower body mass index than nonsmokers (Albanes, Jones, Micozzi, & Mattson, 1987). Further, the incidence of asthma (8.1% at Wave 1), high blood sugar/diabetes (7.0% at Wave 1), and hypertension (20.0% at Wave 1) are all much lower in this sample than that of being overweight (60.0% at Wave 1). This points to the conclusion that the findings regarding smoking and gateway conditions are an artifact of measurement, resulting from the combination of two factors: smokers being less likely to be overweight, and the majority of those suffering gateway conditions being those who are overweight. Further, it should be reiterated that smoking is associated with numerous other negative health outcomes.

Turning to the consistent unexpected findings with regard to alcohol frequency, I again suspect a methodological reason. The scaling of this variable in the original survey protocol, as discussed in Chapter 2, is such that the highest-frequency category (4 times a week or more) still represents what could be considered moderate alcohol consumption. Numerous medical studies (e.g., Berger et al., 1999; Gaziano et al., 1993; Rimm, Williams, Fosher, Criqui, & Stampfer, 1999; Sacco et al., 1999; Stampfer, Colditz, Willett, Speizer, & Hennekens, 1988) have

demonstrated a protective effect of moderate alcohol consumption against heart disease and some types of stroke; in these studies, "moderate" consumption is typically defined as between 1 and 3 drinks per day. Therefore, I conclude that any potential negative effects of excessive alcohol consumption are masked by the operationalization of this variable. The consistent positive effect of alcohol frequency on the likelihood of drug problems is likely reflective of comorbidity of alcohol and drug problems (Kessler & Zhao, 1999).

The third unexpected finding relates to seeing one's doctor. While I had originally conceived of seeing one's doctor regularly as a predictor of good health – in effect, as a measure of preventative care – it would appear that in reality, people in poor health are more likely to visit their doctor.

There are, then, some supportive findings for Hypothesis 3: the majority of the results for smoking, the effects of alcohol frequency for drug problems, and the findings related to prescription drug abuse. Further, a number of findings from the nested models indicate support for the idea that health behaviors are one of the mechanisms through which union status and gender may affect health.

Hypothesis 4, regarding socioeconomic factors, is generally supported; that is, employment, education, and income, when significant, are all positively associated with physical and mental health (with one exception, to be discussed below). Being employed is the most frequently significant predictor of the three at both waves, and it is worth considering that there could be a bidirectional association here – people in poor health may be less likely to be employed, *and* employment may be beneficial

to one's health (Dooley, Prause, & Ham-Rowbottom, 2000; Ross & Mirowsky, 1995)[9]. These effects are generally consistent at both waves in their magnitude, and in many cases, the magnitude is not trivial. To point out just two examples, at Wave 1, being employed is associated with a 68% lower risk of serious conditions; at Wave 2 being a college graduate is associated with a 44% lower risk of dysthymia.

Income, where significant, has an effect that is very small in magnitude; this is likely in part due to the scaling of the variable (thousands of dollars). An increase of one thousand dollars in annual income would conceivably have only minor effects on these outcomes. Of course, it is possible to see the effects of larger increases in income by manipulating the coefficient – multiplying it by ten, for example, to see the effects of a ten thousand dollar increase in income. There is one direct effect of income that is not in the expected direction: at Wave 2, higher income is associated with increased likelihood of alcohol problems. One possible explanation for this finding is methodological – if a large number of the respondents with alcohol problems lost to attrition were lower-income persons, then this finding might be an artifact of that. A more substantive theory would be that alcohol is a socially endorsed means of dealing with stress among those in the upper classes. Muntaner and colleagues (Muntaner, Eaton, Diala, Kessler, & Sorlie, 1998), for example, find a greater prevalence of alcohol disorders among men whose wealth was estimated at

[9] Of course, employment may not be a universally positive predictor of health. Research has shown that characteristics of one's job – e.g., autonomy, demands, control – may play an important role in physical and psychological health (Tausig & Fenwick, 1999; Warren, Hoonakker, Carayon, & Brand, 2004)

$50,000 or more. However, this conjecture cannot explain the lack of consistent findings across waves.

Interestingly, the significant interaction effects between relationship type and income seen at Wave 2 seem to indicate consistently that gains in income are more beneficial for singles and cohabitors than they are for spouses. This makes sense: singles and cohabitors rely far more heavily on their own incomes, in addition to generally having lower incomes and most likely less wealth than spouses, so increases in their incomes might have a more profound stress-reducing impact. Married persons, on the other hand, may already be benefiting from economies of scale and higher household incomes, so increases in income, while generally beneficial to their health, may not cause such a substantial change. That these interactions are only significant at Wave 2 is perplexing. It could be the case that poorer spouses were more represented among those lost to attrition – this would mean that those spouses who would benefit more from increases in income were not included in the Wave 2 analyses.

The findings regarding gender seem to fall in line with some previous research (Rosenfield, 1999; Verbrugge, 1985) demonstrating gender differences in the types of health problems encountered – these data indicate that men are more likely to suffer from gateway and serious conditions and alcohol problems at both waves. Women, on the other hand, are more likely to suffer from mental health problems such as MDD and panic disorder at both waves, which could more generally be characterized as "internalizing."

Conclusions

Given the volume of research that has shown marriage to be beneficial to physical and psychological health, marriage has been touted (indeed, even promoted) as a sort of gold standard to which individuals should aspire (Waite & Lehrer, 2003). However, the findings presented in this chapter demonstrate that the picture may not be so clear. The results for Hypothesis 1 are anything but consistent. Perhaps what is most telling is that marriage is not consistently a predictor of good health – in fact, in many of the models, union status is not a significant predictor. To be sure, there are a couple notable faint patterns: for some outcomes, singles are at a disadvantage, and marriage may exert some protective effects for older adults. Considering these findings (or the lack of consistent ones) with that of a very consistently positive effect of the social support measure, however, is supportive of the idea that an intimate, confiding relationship (Thoits, 1995b) is a key predictor of health – and that the type of relationship might not be of great importance.

The (sometimes unexpected) findings with regard to health behaviors illustrate the complexities of their relationships to health and point to the need for longitudinal research for better explanation of their effects. For example, marijuana use and prescription drug abuse are both associated with a number of poor health outcomes – perhaps some respondents who are using these drugs are attempting to self-medicate in response to having these conditions – cross-sectional data cannot tell us which came first. In addition, longitudinal analyses might help elucidate the effects of smoking and alcohol frequency and determine whether the unexpected

direction of some of the findings for these variables might be spurious, even given the methodological justifications provided in this chapter.

Education, employment, and income variables (either singly or together) were also key predictors of health at both waves for all outcomes measured. However, these findings do not necessarily support the idea that marriage exerts a protective effect on health via prevention of poverty: total household income (contributed to by all family members) is far less frequently a significant predictor than is the individual's own employment (which could be unrelated to union status).

Gender effects show some consistency with prior data (U.S. Department of Health and Human Services, 2000) indicating that women experience lower rates of mortality, as evidenced by their lower risk of serious conditions. In addition, men are more likely to suffer from gateway conditions at both waves. Further, the findings here support previous research showing gender-specific patterns of psychological illness: women in this study are less likely than men to have alcohol problems but more likely to suffer MDD and panic problems at both waves.

While it is not a primary focus of the current research, the findings regarding race are of note. As has been found in prior research (e.g., Hayward, Crimmins, Miles, & Yang, 2000; Huie, Hummer, & Rogers, 2002; U.S. Department of Health and Human Services, 2000), Blacks are at significantly higher risk than whites for a number of outcomes. The findings of this study show increased risk of gateway conditions and dysthymia and overall poorer physical health at both waves.

An additional interesting finding which is not a central focus of the current research is the evidence of a possible protective effect of age on mental health. As would be expected, increasing age is associated with declining physical health. However, increasing age is associated with improved overall mental health and decreased risk of nearly all of the other mental health outcomes measured. Prior research has generally focused on the detrimental effects of aging on both physical and mental health; however, Kim and Durden's (2007) study of adults shows a U-shaped curve for depression, with incidence dropping through middle age and then rising again in later life.

In this chapter, I have presented and discussed the findings of the cross-sectional component of the research project. However, even when repeated cross-sectional analyses can be done, as they have here, their explanatory power can only go so far. Without looking at respondents over time, we cannot know with complete certainty the *direction* of a causal association or *how associations might change over time*. Chapter 4 will explore the former (that is, whether relationships are selective of those in better health), and Chapter 5, the latter (that is, whether changes over time in union status, social support, health behaviors, and socioeconomic status are associated with changes in health outcomes).

CHAPTER 4: SELECTION EFFECTS

This chapter presents the first part of the longitudinal component of this research, and tests the hypothesis that healthier people are selected into unions. I begin with simply presenting the results of the statistical analyses, and conclude with a summary and discussion of the findings in terms of my hypotheses and the broader literature.

As discussed in Chapter 2, logistic regression models were run on a subsample of respondents. Specifically, among those who reported being single – neither married nor cohabiting – at the first wave (n=2,345), the effects of health-related factors at Wave 1 on the likelihood of being in any union (n = 401), and, more specifically, in a cohabiting (n=178) or marital (n=223) union, at Wave 2 were modeled.

Results

The results of these analyses are provided in Table 8, which includes three models: Model A addresses the likelihood of being in any union at Wave 2; Model B, of being married at Wave 2; and Model C, of being in a cohabiting union at Wave 2. Remaining single is the reference status for all analyses.

[TABLE 8 ABOUT HERE]

What is striking about Model A (odds of transitioning into any union) is its overall lack of statistically significant health-related factors, with the sole exception of MDD (major depressive disorder), which has a negative effect on the likelihood of entering a union. Otherwise, only demographic variables are statistically significant:

age, being Black, and being female are all negatively associated with odds of entering a union, and being a college graduate is positively associated.

Model B has the same statistically significant predictors as Model A (and all are similar in direction and magnitude), and shows several additional statistically significant health-related factors affecting the odds of getting married between Wave 1 and Wave 2. Specifically, better overall physical and mental health (as measured by the PCS-12 and MCS-12) and having a gateway condition are positively associated with odds of marriage, and having a problem with drugs substantially decreases the odds of marriage.

Model C, on the other hand, includes even fewer statistically significant predictors than Model A. Having a serious condition at Wave 1 is associated with a 71% reduction in likelihood of transitioning to cohabitation, and each year of increasing age is associated with a 6% reduction. Being a smoker at Wave 1, however, is associated with a greatly increased likelihood of moving from singlehood to cohabitation between waves.

Additional analyses (not shown here) used the approach of modeling each of the health-related predictors (along with the demographic predictors) separately. This was done to address the possibility that including them all together would essentially wash out the effects of the individual conditions. This did not appear to be the case, however. Comparisons of the individual-predictor models and the full models were remarkably consistent in terms of direction and significance of effects.

Summary and Discussion

This analysis was conducted to evaluate Hypothesis 5: that those who enter a union between waves of the survey will have exhibited better physical and psychological health at Wave 1 than those who were single at both waves – that is, healthier people are more likely to enter any union. Three models are presented, to allow for the possibility that healthier people are more likely to specifically be selected into marriage than into cohabitation. Indeed, this appears to be the case.

While MDD does negatively affect the likelihood of entering any union, it is the only health variable that does so. Blacks (compared to whites), women, and older respondents were less likely to have entered a union between waves, and college graduates, more likely than those who did not have a college degree at Wave 1. In contrast, the overall physical and mental health measures are significantly, positively associated with entering marriage between waves of the survey. Having a drug problem or MDD at Wave 1 has a significant reductive effect on the likelihood of marrying between waves; these findings support and extend the works of Horwitz and colleagues (Horwitz et al., 1996) and Fu and Goldman (1996).

An unexpected finding is that having a gateway condition at Wave 1 is positively associated with the odds of marriage. Gateway conditions, again, include asthma, being overweight, high blood sugar/diabetes, and hypertension (and overweight is the most common of the conditions). Perhaps these particular conditions are not considered by potential mates to be harbingers of a future of ill health, or at least not such serious ones as to dissuade one from marrying a person

with them. It is also worth noting that the United States has a very high and increasing rate of obesity and overweight (Ogden et al., 2006) – perhaps it is seen as somewhat normal and again, therefore not a factor which would discourage relationship formation.

The findings presented in Model C – indeed, the overall dearth of significant findings – would indicate that selection processes on the basis of health are not as powerful for cohabitation as for marriage. Prior research (Blackwell & Lichter, 2000; Schoen & Weinick, 1993) has found evidence of different mate selection processes or standards for cohabitation versus marriage. Other research has found that individuals enter into cohabitation rather quickly (Sassler, 2004) and are more hesitant about entering marriage than cohabitation (Reed, 2006). An additional explanation is that those who transition to cohabitation are more similar to those that remain single than are those who get married. This explanation falls in line with the prior research of Rindfuss and VanDenHeuvel (1990).

This brief analysis, then, adds to the body of previous research indicating some support for selective processes operating to link health to marriage. Very little support is found for a similar link between health and cohabitation. The following chapter will use longitudinal methodology to explore causal processes: that is, whether entering unions is associated with improvements in health.

CHAPTER 5: LONGITUDINAL ANALYSES

This chapter will present the results of the fixed effects longitudinal analyses for this project; these analyses are a central part of answering the questions of whether union status has an effect on health, and how. As explained in Chapter 2, fixed effects models predict the effects of *changes* in the independent variables on *changes* in the dependent variables. Conditional marginal coefficients (not shown here) were computed for all statistically significant interaction terms. These marginal coefficients show the different trajectories of outcomes for individual union statuses (single, married, cohabiting). In discussing statistically significant interaction terms in the context of change over time, changing from one status to another indicates changing trajectories. Figures are provided in Appendix C for all significant interaction terms to aid in interpretation. As noted in Chapter 2, the full models are presented in the text; nested models are discussed where appropriate and are provided in Appendix D for reference.

One caveat to the fixed effects method of analysis of change is that those respondents who do not experience change over time on the outcome variable do not contribute to the analysis. As noted in Chapter 2, this can have the effect of reducing sample sizes. For the continuous measures in this study, the PCS-12 and the MCS-12, this does not appear to be an issue. For the categorical outcomes, however, this aspect of the procedure often results in greatly reduced sample sizes, as can be seen in the N sizes reported in Table 10. For this reason, less emphasis will be placed on the findings of the categorical outcomes models.

Results

Tables 9 and 10 present the results of the fixed effects analyses for continuous and categorical variables, respectively. Again, only those predictors that could vary over time were included, and models were run separately for men and women (see Chapter 2 for a discussion of the fixed-effects model). Single was the reference category for marital status, and coefficients are interpreted in terms of change over time.

[TABLE 9 ABOUT HERE]

Table 9 shows that changes in relationship status were, overall, not predictive of changes in general physical and mental health. Increasing age is associated with slight decreases in physical health for both men and women. The interaction term for married*age (Figure C-1) is marginally statistically significant in the model for men's general physical health. The relationship between age and physical health is dependent on marital status – single men have a slightly steeper downward trajectory with increasing age than do spouses, indicating that men who go from married to single over time would be expected to experience poorer health as they age than had they stayed married. However, the small size of the effect should be noted. When it comes to mental health, women actually saw a slight increase in mental health ratings with increasing age. The marginally significant cohabiting*age interaction term for women in the model for general mental health (Figure C-2) indicates that this positive relationship is dependent on union type – cohabiting women actually experience declining mental health as they age, as opposed to

singles. Going from singlehood to cohabitation, then, appears to have negative effects on aging women's mental health. The nested models for general physical health also indicate that entering cohabitation is associated with declines in this outcome for women, until the socioeconomic predictors are included.

Increases in social support over time were associated with improvements in physical and mental health for both men and women, although it is worth noting that the magnitude of the coefficients is greater in both cases for women than for men.

Increasing alcohol frequency was associated with moderately improved physical health for both men and women. Taking up smoking was associated with decreased physical health for both men and women, as well as with decreased mental health for women. Becoming a prescription drug abuser was predictive of decreased physical health for women and mental health for men. As was seen in the cross-sectional models, it would appear that the relationship between seeing one's doctor and health may be recursive. Seeing one's PCP in the prior year when one had not done so at the first wave was associated with decreasing health across all models.

Improvements in education and employment status pay off in marked increases in physical health for both men and women, and going from unemployment to employment contributed to improvements in mental health as well. Increasing income is also associated with improvements in physical health.

[TABLE 10 ABOUT HERE]

Prior to discussion of the categorical outcomes results, the sample sizes of the individual models should be noted. In particular, the models for serious conditions, panic problems, and alcohol and drug problems show severely reduced Ns, and so their results should be interpreted and generalized only with great caution. The models for gateway conditions and dysthymia have somewhat larger N sizes, but still are of questionable generalizeability. The models for chronic conditions, anxiety problems, and MDD are slightly less problematic, but considering the fact that they still include only about 22% of the respondents, they should still be interpreted and used with caution.

That said, relationship transitions do not universally have significant effects on the categorical health status changes shown in Table 10. However, there is an emergent pattern concerning gender: women see reduced likelihood of several physical (gateway conditions) and mental (MDD, dysthymia, alcohol and drug problems) health problems when they transition from single to married (or, conversely, their health suffers over time if they go from married to single). Looking at men, however, we see fewer overall significant effects of relationship transitions, and they are not consistent in direction: going from single to cohabiting is associated with increased likelihood of developing a chronic health condition, but decreased likelihood of developing alcohol problems. The only significant direct effect of marriage for men is the greatly decreased risk of developing a drug problem associated with the transition from single to married.

The nested models show a handful of additional cases in which union transitions were initially predictive of changes in health outcomes, but not once additional factors were included. For example, transitioning from singlehood to either marriage or cohabitation appears to reduce men's likelihood of developing a serious condition over time until the socioeconomic variables are included. Men also appear to have a reduced risk of dysthymia if they go from singlehood to marriage, but the addition of the health behavior predictors renders this association nonsignificant. Finally, getting married is initially associated with decreased risk of anxiety problems for women, but this association is no longer significant once social support is accounted for.

Aging is consistently associated with increasing odds of developing any gateway, chronic, or serious conditions for both men and women, with the exception of women and chronic conditions. Aging appears to generally have protective effects against the odds of developing mental health problems, as is seen with anxiety, MDD, panic problems, alcohol problems, and drug problems for both men and women; and for dysthymia for women. The married*age interaction term is significant for women in the models for gateway conditions, anxiety, and dysthymia. Considering gateway conditions (Figure C-3), single women are at greater risk at earlier ages, but the upward trajectory for married women is steeper. For anxiety (Figure C-4), both married and single women see decreasing odds of developing the condition with age, but the decrease is sharper for single women. The risk of developing dysthymia (Figure C-5) decreases with age for both single women and

married women, but younger single women are at a much higher risk to start with. However, their risk decreases far more sharply with age than married women's. Two of the models for men include significant married*age interaction terms: serious conditions (Figure C-6)[10] and drug problems (Figure C-7). Married men start out with a lower risk of developing any serious conditions than single men, but they see a sharper increase with age then do their single counterparts. Considering the risk of developing drug problems, married men's risk remains generally low and constant with increasing age. Young single men have a higher risk than young married men, but they see a marked decrease in risk of drug problems as they get older.

Age interacts with cohabitation in several cases. While cohabiting men start out with a lower risk of serious conditions at younger ages than do single men, they face a sharp uptick in risk as they age, compared with single men's slow increase (Figure C-6). Similarly, while younger cohabiting men have a lower risk of developing an alcohol problem than their single counterparts, their risk increases as they age – and single men's risk declines (Figure C-8). For women and anxiety problems (Figure C-4)[11], cohabiting women face increasing risk of the condition as they age, while single women see a decreasing risk. Again, the coefficients for these interaction terms are generally rather small in magnitude.

[10] Figure C-6 displays both the married*age and the cohabiting*age interaction effects for serious conditions among women; single is the reference category for both married and cohabiting.
[11] Figure C-4 displays both the married*age and the cohabiting*age interaction effects for anxiety among men; single is the reference category for both married and cohabiting.

Increases in social support are associated with decreased odds of both men and women developing any of the conditions with the exceptions of gateway conditions and alcohol problems.

Increasing alcohol frequency is associated with reduced likelihood of a number of health problems: gateway conditions (men and women), chronic conditions (women), serious conditions (men and women), MDD (men), and dysthymia (men and women). It is only associated with increased odds when it comes to drug problems – for both men and women. With the exception of being associated with *reduced* risk of men developing gateway conditions, taking up smoking is consistently predictive of developing physical and mental health problems. Beginning to use marijuana is associated with increased likelihood of men developing a chronic condition, anxiety, panic, and alcohol problems; and of women developing MDD, dysthymia, and alcohol problems. Beginning to abuse prescription drugs is associated with increased likelihood of women developing gateway or chronic conditions as well as all mental health outcomes; men see increased odds of developing a chronic condition and all mental health problems measured. Other drug use is associated with increased risk for women of anxiety problems or dysthymia.

Beginning to see a PCP at least annually is predictive of increased risk nearly across the board – the only exceptions are men and dysthymia, men and alcohol and drug problems, and women and drug problems. Gaining insurance coverage is

associated with decreased risk of men developing anxiety problems, MDD, or dysthymia.

Earning a college degree is associated with decreasing odds of developing gateway conditions or dysthymia for both men and women. Becoming employed is associated with decreased odds of developing chronic or gateway conditions, anxiety, MDD, or dysthymia for both women and men. Additionally, it is associated with decreased likelihood of panic problems for men and drug problems for women. Increases in income are associated with a slight decrease in the odds of women developing a gateway condition and men developing anxiety or panic problems. In addition, the married*income interaction term in the model for men and panic problems (Figure C-9) indicates that while increasing income is not associated with changes in risk of developing panic problems for married men, single men do see some lowered risk with increases in income.

Summary

Hypothesis 1b, that entering unions will have positive effects on health outcomes – and that the effects will be greater for entering marriage than entering cohabitation – is not overwhelmingly supported by the longitudinal models. When considering the continuous outcomes, which have very reasonable N sizes, there are no direct effects of entering either type of union, for either men or women. The significant interaction effects indicate only that older men who transition from marriage to singlehood see reduced physical health, and that older women who transition from singlehood to cohabitation see reduced mental health. Considering

the more problematic (due to small N sizes) categorical outcome findings, we see some different effects that appear to interact with gender. For men, entering marriage is directly associated with decreased risk of developing a drug problem, and the interaction effect indicates this is especially the case for younger men. Men who enter marriage or cohabitation from singlehood at later ages see an *increased* risk of developing serious conditions. Entering cohabitation is directly associated with men's increased likelihood of developing a chronic condition, and decreased likelihood of developing problems with alcohol. However, the apparent protective effect of entering cohabitation against developing alcohol problems is the province of younger men – as cohabiting men age, their risk slowly increases, while their single counterparts see a sharp decrease.

Turning to women, we see that those who transition from singlehood to marriage see only positive effects: a decreased likelihood of developing gateway conditions, MDD, dysthymia, and alcohol and drug problems (although older women do not see the same protective effects as younger women for gateway conditions, dysthymia, and anxiety problems). Women realize far fewer benefits from the transition to cohabitation. There are no significant direct effects of cohabitation for women; the sole significant interaction suggests that aging women who go from single to cohabiting see a slightly increased risk of developing anxiety problems. Of note is the lack of protective effects for women of entering cohabitation on the risk of developing drug and alcohol problems, possibly implying that for women, cohabitation does not carry the same social controls that marriage does. However,

this finding could also be due to the small numbers of respondents who transitioned in or out of cohabitation at all, in addition to the extremely small N sizes for these outcomes. Overall, then, this research fails to prove that there are consistent and significant effects of entering unions on changes in health outcomes. I would cautiously note that women – especially younger ones – may see some health benefits of entering marriage (but not cohabitation). For men, the limited benefits of entering unions appear to be primarily conferred upon younger men and are not primarily related to marriage; entering unions at later ages may even have negative health effects.

Hypothesis 2 (that social support will have positive effects on health outcomes) is overwhelmingly supported in the context of the longitudinal models. Increases in social support over time are associated with improvements in overall physical and mental health, decreased odds of developing chronic or serious conditions, anxiety, MDD, dysthymia, panic attacks, and drug problems – for both men and women. Women often appear to realize a greater benefit of these increases in support over time than do men, although the difference in magnitude of the coefficients is generally small.

Considering Hypothesis 3 in the context of the longitudinal analyses means examining the effects of changes in health behaviors on changes in health outcomes. These effects, where seen, are generally in the predicted direction and supportive of the hypothesis. An exception is the alcohol frequency predictor: increases in this variable are associated with improvements in general physical health; decreased

likelihood of developing gateway, chronic (for women), and serious conditions; and decreased risk of MDD (for men) and dysthymia. Another exception was that taking up smoking was associated with decreased likelihood of developing a gateway condition for men, although for other outcome measures, it had predictably degenerative effects on general physical (for both men and women) and mental health (for women), and increased the likelihood of developing chronic conditions (for men), and all the mental health conditions measured – including alcohol and drug problems. The effects of beginning to regularly see a PCP are significant and consistent in direction with the cross-sectional models – implying support for the idea that the relationship between regularly seeing a doctor and various health outcomes is bidirectional.

Hypothesis 4 concerns the effects of socioeconomic factors on health outcomes; in terms of longitudinal analysis this means examining the effects of changes in these factors on changes in the health outcomes. Overall, this hypothesis is supported: improvements in employment, education, and income are associated with improvements in health. An interesting finding with this hypothesis is that in most cases, men seem to reap a greater benefit from positive changes in their education and employment statuses than do women.

Discussion

The analyses and findings in this chapter are presented to answer questions about whether marriage and cohabitation confer health benefits. A longitudinal model specifically allows me to examine whether entering either of these unions is

associated with changes – either positive or negative – in various physical and psychological health outcomes, at least in the short term (3-4 years in this case). As reported above, the evidence is not overwhelmingly supportive of this hypothesis. While the categorical outcomes models must be interpreted with caution, there does appear to be some evidence that marrying or entering a cohabiting relationship may effect positive changes in health outcomes, but mainly for women and marriage – and these protective effects may be experienced to a greater degree by younger women. Women do not appear, however, to reap any health benefits by transitioning to cohabitation. Further, transitioning into or out of marriage has effects on more outcomes overall than transitioning into or out of cohabitation, and the effects of marriage are more consistent in (a positive) direction. Cohabiting transitions therefore may have less of an impact on individuals' health over time than do marital ones.

The effects of changes in social support on health outcomes are much more clear, and consistent with both the previous literature and the cross-sectional models: increases in social support lead to positive changes in health (and reduction in risk of negative health conditions), with the exception of developing gateway conditions and alcohol problems, where changes in social support had no impact. As discussed in earlier chapters, this is supportive of the idea that social support is a key component of any associations between union type and positive health outcomes.

Also generally consistent with prior research are the findings regarding health behaviors (with the exceptions noted above) and socioeconomic factors. In Chapter

3, I surmise that some of the counterintuitive findings from the cross-sectional analyses regarding health behaviors might prove spurious when looked at in the context of the longitudinal analyses. This conjecture is unsupported – the findings in the longitudinal analysis that smoking and alcohol use are associated with several positive health outcomes are consistent with the cross-sectional findings. Therefore, I stand behind my assertion that these are primarily methodologically driven findings. Also consistent with the findings from the cross-sectional analyses is the finding that the magnitude of income's effect on health is negligible, especially in comparison to that of employment and education.

In this chapter, I have presented the findings from the longitudinal analysis component of the research project and discussed them in the context of my own hypotheses, the cross-sectional findings, and the larger social context. This chapter represents the final component of the analytical section of this project. The following chapter will summarize and discuss all findings, address limitations, and consider the implications of the present research for theory, future research, and public policy.

CHAPTER 6: DISCUSSION AND CONCLUSION

Introduction

A large body of research to date has addressed the role of intimate relationships and health; most of this research has focused on marriage. Marriage has been the traditional, normed means by which individuals in the United States fulfill emotional, sexual, and procreational goals and desires. Research dating back at least 30 years has indicated that individuals who adhere to this norm are rewarded not only with social approval but also with physical and psychological health benefits.

However, the landscape of American family life has undergone a broad transformation over the past 50 years, with certain features seeing drastic alteration in more recent decades. While marriage is still a dominant feature of that landscape, it is not the only one; alternate family forms are becoming increasingly visible – and accepted. One such form is pre- and non-marital cohabitation. With recent research indicating that most unions in the United States may at least begin as cohabiting ones (Bumpass & Lu, 2000), cohabitation is a key type of relationship for family researchers to explore. The current research does just that. It specifically seeks to determine whether, considering this changing landscape, marriage still confers the health benefits which have reached the status of "a truism" (Lillard, Brien, & Waite, 1995), and whether cohabitation might confer such benefits as well. Singlehood is also considered in the present analyses; as the trends relating to marriage have

changed, it is possible that the perception and experience of singlehood have changed as well.

In this chapter, I discuss my findings and their place in the existing research. In addition, I address the inevitable limitations of the project, as well as theoretical, research, and policy implications of my results.

Summary and Discussion of Findings

In this project, I hypothesized first and foremost that union status would affect physical and psychological health, both at fixed points and with change over time. Specifically, I hypothesized that marriage would confer the most health benefits, followed by cohabitation and singlehood. This hypothesis was not overwhelmingly supported. In the cross-sectional models, it appears that singles do fare worse than spouses on a number of measures. Cohabitors, on the other hand, fare no differently than spouses in terms of physical health outcomes; differences in psychological health outcomes are fairly evenly split, with cohabitors faring better than spouses on some and worse on others. Age does play a role, however, as older singles and cohabitors do not fare as well as older spouses. Turning to the longitudinal models, we see a potential interaction with gender: women may reap more and greater benefits of transitioning to marriage than transitioning to cohabitation (in comparison to staying single), at least in the short term. Men, however, do not appear to see nearly the same array of health benefits of marriage. The effects of entering cohabitation for men are equivocal – about as likely to be negative as positive – and older men in particular may be disadvantaged by entering

either cohabitation or marriage. It bears emphasizing, though, that entering cohabitation was not a significant predictor for most of the health outcomes examined here. Further, the models that showed these gender effects were compromised by very small sample sizes.

Given that these gender-related findings cannot be generalized with full confidence, there is still a question to be asked: why is it that women are found to benefit from marriage, and not men? The prior literature, as discussed in Chapter 1, has generally found that the gender differential in marriage benefits favors men. I propose two answers to this question. The first is technical, and goes back to the small sample sizes: more women than men experience changes on the outcome measures, so perhaps there were simply not enough men who experienced changes in both union status and health outcomes to result in any statistically significant effects. A second possibility is related to the short time frame between waves of the survey. The data do not provide exact relationship duration, but we know that for those who made a union transition, the transition happened no more than three or four years prior to the second wave of the survey. As discussed in Chapter 1 under "Methodological Issues," there is some evidence in the literature of a "honeymoon effect," in which the time period directly following entrance into marriage is marked by increased psychological well being, which may then level off as the relationship continues. It could be that we are seeing evidence of a honeymoon effect of entering marriage among women (or, conversely, a crisis effect of exiting marriage) that may dissipate over the course of the relationship (or, conversely, as women adjust to

separation and/or divorce). Additional waves of data would be illuminative on this question, as would a statistical model which would allow examination of trajectories of health over time even when there is no change in union status.

The small body of existing research on the topic of cohabitation and health has yielded less than consistent findings, and my research continues that trend. However, in this case, I see the lack of a strong pattern as being an important finding in and of itself. If we cannot say with certainty that marriage is beneficial to health – or that cohabitation is either beneficial or detrimental to health – there are significant implications for policy, as will be addressed below.

My second hypothesis, that social support will have positive effects on both physical and psychological health outcomes, is consistently supported. This is found both in the cross-sectional and longitudinal analyses, although there is some evidence in the longitudinal analyses that women may benefit more from increases in social support than do men. That social support is a key predictor of health outcomes in this study is consistent with a large body of previous research (Thoits, 1995b; Turner, 1999; Turner & Marino, 1994). The finding of potential gender differences is an interesting one. Some previous research (Neff & Karney, 2005; Verhofstadt, Buysse, & Ickes, 2007) has demonstrated gender differences in perceived support, although not necessarily in actual support – and in these cases, wives are perceived as being more supportive, which does not seem to fit with my findings. However, research has shown (Thoits, 1995b) that women are more likely

to *seek* social support in response to stressors, which could provide an explanation for their greater benefits from it.

My third hypothesis addresses health behaviors and health outcomes. The inclusion of the health behavior variables yielded some unexpected effects. While I had conceived of visiting one's PCP at least annually as a preventative activity, and therefore likely to be associated with positive health outcomes, it is consistently associated with negative health outcomes. This does make sense, however, when one considers that sick people are more likely to visit the doctor more often. Future research could perhaps control for initial health when using such a measure.

Another unexpected and consistent finding was that the frequency of alcohol consumption is associated with positive health outcomes. As I argue in Chapters 3 and 5, this is likely due to the measurement of the alcohol frequency variable. The finding that smoking was associated with a couple of positive health outcomes is both counterintuitive and counter to decades of health research and public health campaigns; indeed, a search of the literature yielded no studies showing positive effects of smoking. As discussed in Chapters 3 and 5, though, I believe that this relationship is also a product of the measurement and distribution of the conditions included in the gateway conditions variable. Prescription drug abuse was far more frequently a significant predictor of negative health outcomes. This finding is murky in its implications, though. Is it the case that this measure actually taps into a drug problem and so we are seeing comorbidity of drug problems and the outcomes measured here? Or is it the case that, as mentioned previously, people who suffer

some of the negative health outcomes measured here are attempting to self-medicate, or begin to abuse prescription drugs as a result of their conditions? These questions, while not germane to the current research, present an interesting direction for future research.

Hypothesis 4 is based on prior research indicating that marriage may exert a protective effect via financial security, and that socioeconomic factors such as education and employment may have such an effect as well. The findings do generally support this hypothesis; at least one of the three predictors (total household income, having graduated college, and being employed) is significant in nearly all the models presented. Looking at the findings more closely, however, yields some interesting observations. First (as mentioned in Chapter 3), income is less frequently a significant predictor than employment status. Considering this result in conjunction with the fact that the magnitude of income's effects is always quite small, leads me to the conclusion that while the financial protection effect of marriage on health should not be discounted, perhaps it should not be overstated either. In comparison, being employed has a more frequently significant and larger in magnitude effect on the health outcomes measured here. Manning and Brown (Manning & Brown, 2006) have found that increased material well-being of children in married households compared to cohabiting ones is explained by demographic characteristics such as race and parental education. Future research might examine the effects of interactions between union type and socioeconomic predictors on health outcomes.

Finally, Hypothesis 5 was evaluated in Chapter 4, based on existing research showing that some of the relationship between marriage and health is not causal but selective in nature – that is, that healthier people are more likely to marry. I performed three separate analyses to evaluate this hypothesis, modeling the likelihood of singles entering any union, marriage, and cohabitation. Hypothesis 5 was partially supported. When modeling the likelihood of entering any union, MDD was the only significant (and negative) health predictor. When modeling the likelihood of entering marriage, however, health status at Wave 1 appears to be much more important: overall physical and mental health are positive predictors, and drug problems and MDD are negative predictors of marriage odds. Comparing this model to the one looking at those who transition to cohabitation yields striking differences: of the health status measures included, only having a serious condition is a significant (and negative) predictor of transitioning to cohabitation. Therefore, the results indicate that entrance into marriage is selective of those in better health, but entrance into cohabitation is not nearly as selective on health factors. As discussed in Chapter 4, these findings are consistent with the existing research demonstrating differential mate selection processes for marital and cohabiting partners.

Limitations

This research, of course, is not without limitations, many of which are related to the particular data chosen for the project. As discussed in Chapter 2, these data were particularly well-suited for my research, given the large enough numbers of explicitly identified cohabitors; the availability of two waves of data; and the

inclusion of health behavior, health outcome, and social support measures. Indeed, finding data that satisfied all these criteria was a difficult task. That said, it would have been ideal to have additional measures of health behaviors, especially positive ones such as exercise. From a policy or interventions perspective, it would be useful to know whether social control is exerted in relationships in a positive way (encouraging healthful behaviors) – not just in the sanctioning of negative behaviors. The findings regarding alcohol frequency point to a need for a measure with more response categories that would more accurately sort out those who drink moderately from those who drink to excess.

These data also do not allow for examination of union histories. It might have been enlightening to know, for example, whether the cohabitors were serial cohabitors, which of the spouses (of those who were married at Wave 1) had premaritally cohabited or been married multiple times, and whether any of the respondents had experienced divorce or separation. Relationship duration might have been an interesting predictor to include as well, although some prior research (Booth & Johnson, 1994; Pienta et al., 2000) indicates that this may not be an important factor in the relationship between marriage and health. It is possible – indeed, likely – that cohabitors in general and in this sample are a heterogeneous group. They may differ in their reasons for choosing cohabitation: it may be a trial phase before marriage, it may be an ideological alternative to marriage, or it may be a temporary means of saving some money. More detailed information on union

history and duration and plans for the current relationship would likely be very illuminative.

While the HCC includes a suitable measure of social support, there are not any specific measures of relationship quality. I do, however, feel confident that the former is a satisfactory proxy for the latter based on prior research demonstrating the interrelated nature of the two (Brock, Sarason, Sarason, & Pierce, 1996; Mickelson, Claffey, & Williams, 2006). In addition, relationship quality measures would have yielded no information about singles, where the social support measure does. Another limitation of the data is that there was no measure of reason for attrition from the study. It is not possible to know what particular segments of the Wave 1 respondents died, could not be found, or refused to participate at Wave 2. This would be useful information in further exploring the possibility of nonresponse bias. In addition, given that health is the outcome of interest, knowing whether death was the source of attrition might have been especially helpful.

Attrition bias was certainly a concern in this study. It is entirely reasonable to speculate that those who did not participate in the second wave of the study might have been nonrandomly distributed on some of the variables of interest here: union type, health behaviors, health outcomes, and social class. The fact that attrition type was not collected only serves to further cloud the picture. In considering the results as a whole, however – and especially considering the cross-sectional analyses, I argue that while it is of course not possible to rule out attrition bias completely, I do not think it is precludes my ability to draw valid inferences from the data.

In the cross-sectional analyses, the results were generally consistent over time; while there were some variations between individual outcomes, the broader patterns are by and large stable. In the cases where they are not, there is not a clear pattern that emerges to indicate any one particular direction of attrition bias. For example, union status is less frequently a predictor of health outcomes at Wave 2 than Wave 1 – so at Wave 2, both singles and cohabitors more closely resemble spouses than they did at Wave 1. While this might initially make one think that those cohabitors in poorer health were lost to attrition, closer examination of the findings shows that the beneficial effects of cohabitation seen at Wave 1 are no longer seen at Wave 2 – which would indicate that the cohabitors in *better* health were in fact lost to attrition. It could be the case that these healthier cohabitors got married between waves[12] and that the less healthy cohabitors were lost to attrition. Ad hoc analyses (not shown here) show that those cohabitors who were lost to attrition were more likely to have alcohol problems at Wave 1 than those who were not. However, the Wave 1 cross-sectional analyses do not show that cohabitors are more likely to have alcohol problems than spouses.

The analyses presented in Chapter 4, as noted above, indicate support for the hypothesis that healthier people are more likely to get married than less healthy people. If it is the case that those in poor health were more likely to be lost to attrition, then they are not likely to have affected the findings regarding marriage in

[12] Selection analyses were conducted to examine whether health status variables had an impact on cohabitors' likelihood of entering marriage; however, these analyses were deemed neither valid nor reliable due to very small cell sizes and related warnings given by the statistical software used for this project.

the fixed-effects analyses – they were probably less likely to have gotten married, and to be included in the computations for those variables. If they were to have entered a cohabiting relationship (perhaps more likely than marriage), then they would have been used in the computation of effects of entering cohabitation, which could have resulted in more frequent statistically significant findings for the cohabitation variable. However, I would still argue that the lack of a consistent pattern when comparing Wave 1 to Wave 2 results does not point to a compelling case for attrition bias.

Another point to consider with attrition bias and the longitudinal analyses is that those persons who did not experience changes on the health outcome measures would not have contributed to the analyses. The bivariate distributions of these outcome variables show little change from Wave 1 to Wave 2; indeed, the categorical longitudinal models show that the vast majority of respondents did not, in fact, change over time. Unless those respondents who were lost to attrition were more likely to change over time on those health outcome measures – and, given their propensity to be in poorer health at Wave 1, this would mean being more likely to see health improvements over time – their exclusion from the longitudinal analyses via attrition is likely trivial in impact.

Turning to the analytical strategy, it would have been ideal to be able to include both time-varying and time-stable predictors in the longitudinal analyses. This was simply not possible, however, given the technological constraints. A multilevel model would be an interesting analytic strategy – were more than 2 waves

of data available, this would allow for comparisons of both starting points and trajectories of health outcomes over time. The most obvious limitation of the fixed effects model, of course, is that those cases which do not see change over time on the outcome measure are not used in the analysis, which resulted in dramatically reduced sample sizes on the categorical outcomes fixed effects models. This is an unavoidable attribute of the technique, and was likely exacerbated by a related limitation of this project, the short amount of time between waves. Three to four years is simply not a very long time frame in which to experience change on some of these major health condition measures. Additional waves of data at similarly short or shorter intervals would provide some insight into whether people are simply not likely to experience changes in these outcomes, or whether it just takes longer for such changes to happen.

The final limitation from a technical standpoint is that this research relied on a large and varied assortment of outcome variables, which can make drawing substantive conclusions difficult. This strategy was pursued for two reasons. First, the measures for general mental and physical health were constructed from only six items each, and very general ones at that. I feared that in isolation they might not prove very predictive, and that if they did, they might not be informative. Second, I wished to be as thorough as possible, and felt that it made sense to take full advantage of the array of outcomes available in the data. Future analyses of these data might benefit from being more selective of outcomes to use, and perhaps grouping some of the mental health ones together (e.g., MDD and dysthymia, or

panic and anxiety, or drug and alcohol problems), which might also alleviate slightly the issues of small sample sizes in the categorical outcomes fixed effects models.

Implications

Theory

As noted in Chapter 1, this project is largely empirically guided, and does not aim to test any particular propositions of a particular theory. It is not, however, atheoretical or without implications for current family and health theory. For example, my findings lend support to the argument, based on the life course perspective, that cohabitation is becoming a more accepted stage in family development. As this happens, the benefits once exclusive to marriage may be dissipating or generalizing to alternate family forms or paths. My research is also supportive of the stress process framework. In particular, social support continues to be a key predictor of health, although these data do not allow for elucidation of the *process* by which this occurs (whether it buffers the negative effects of stress or serves as a resource by which individuals cope with said negative effects).

An interesting question related to both these theories remains, though: is there some aspect of social support (or relationship quality) that is exclusive to marriage? That is, does the more explicit expectation of permanence (or perhaps some other relational factor exclusive to marriage) in the relationship translate to either more or better social support? And given the relatively high rates of divorce in the United States in recent years, would such an effect be disappearing along with

the expectation of permanence? In-depth, qualitative research might be needed to explore answers to such questions.

Another interesting theoretical implication of this research is found in the interactions between age and union status when it comes to health outcomes. In a number of cases, it appears that benefits of unions are primarily conferred upon younger people. This effect could be seen as supportive of the life course perspective: younger persons entering unions – whether they be cohabiting or marital – are conforming to the socially expected family life cycle. Those who form unions at later ages are not. Are they suffering the adverse effects of stress as a result? Or are the benefits of unions actually cumulative over time – that is, does one need to be in a union from a younger age and for a longer time to see lasting health benefits?

Future Research

One obvious direction for future research is to address some of the aforementioned limitations: more measures of health behaviors and relationship quality, and different statistical analyses that allow for time-stable predictors and the inclusion of cases which do not see change over time. Previous research indicates that relationship quality may interact with union type. Further research in this vein might be a way to explore the mechanisms by which health benefits of intimate relationships are conferred to determine whether marital relationships are inherently more likely to be of high quality than cohabiting ones. My bivariate analyses indicate that spouses do report higher levels of social support than

cohabitors (who in turn report higher levels than singles), but the differences between spouses and cohabitors are smaller than those between cohabitors and singles. As mentioned above, this might be an area in which qualitative research would be informative.

Future research could also look more closely at race. Since both prior research and the present research has shown race to be a significant predictor of physical and mental health, it would be interesting to see what, if any, role race plays in the relationship between union status and health – whether one mediates or moderates the effects of the other.

Public Policy

Policy implications of the research at hand have been a consideration from the very start of the project; indeed they were somewhat of an inspiration for it. In recent years, "Marriage Promotion" policies and initiatives have become more and more common at both the state and federal level (Ooms, Bouchet, & Parke, 2004), especially in the context of public assistance programs. As citizens, we should be able to trust that our tax dollars are being spent in a responsible manner; that is, that programs receiving public funding are based on solid and thorough research. If it is truly the case that marriage – and marriage alone – is beneficial to health and well-being, then marriage promotion programs may be a reasonable expenditure of public monies. However, if it is not marriage per se, but, for example, being in a relationship and having good social support, that confers said benefits, then such programs may be off-target. In short, responsible public policy in this area dictates

learning whether marriage is a *necessary* – not just a *sufficient* – predictor of health and well-being.

My findings do indicate that marriage in and of itself is not a panacea. It does not appear to be the case that the status of marriage automatically confers health benefits, and cohabitation may in fact confer benefits. The specific policy implications of my research seem to be that individuals in all relationship statuses could benefit from educational programs aimed at improving relationship quality and increasing social support to partners. To be sure, the physical and mental health of the population are not necessarily the only – or even primary – goals of Marriage Promotion programs. Many claim that the goal is to provide children with stable, two-parent homes. However, the "truism" that married people are happier and healthier (Waite & Gallagher, 2000) is frequently cited as support for such programs and further, it might be the case that children of cohabiting parents could benefit from programs aimed at improving their families as they are, not at changing the face structure of them[13]. Huston and Melz (2004), however, caution that:

> The focus in marriage education programs on problem-solving skills…is woefully inadequate because…the emotional climate of the marriage matters. The assumption that problem-solving skills, once learned, can be deployed effectively, even if the marriage is not founded on mutual respect and admiration, is problematic. If spouses have a reservoir of good will and they show their affection regularly, they are far more likely to be able to work through their differences, to warm to each other's points of view, and to cope effectively with stress…Though helping couples resolve conflict effectively may reduce some of their antagonism, the relative absence of conflict does not

[13] See, for example, CLASP's "Marriage-Plus" initiative (Ooms et al., 2004), aimed at improving children's lives by first and foremost promoting healthy two-biological-parent married families, but given that marriage may not always be a desirable option, by also providing nonmarried parents with resources to improve their children's lives.

> inevitably give rise to greater warmth and affection. Such positive feelings, if they do not go deep, are likely to evaporate quickly when couples confront deep differences and the stress of day-to-day living. (955)

Prior research indicates that marriage may not be a readily available option to women, especially poor ones, and those with children (Graefe & Lichter, 2007; Qian, Lichter, & Mellott, 2005) – and that even when it is an option, it may not prove beneficial to their health if they have children, and if it is not enduring and of high quality (K. Williams et al., 2008). While the current research presents some findings which may indicate that women's health can benefit from marriage, further research with more generalizeable results, and which has a longer time frame will be necessary to draw any firm conclusions on this matter.

Finally, I reiterate that the most consistent findings with regard to health outcomes were in the realms of social support (addressed above) and socioeconomic factors. Improvements in education and employment were associated with numerous improvements in health of substantial magnitude. These findings are far more robust than those regarding union status and type. I would argue that this research adds to a growing body of literature that calls for more empirically driven and evidence-based social programs. These results would imply that more resources should be focused on getting people education and well-paying jobs, and perhaps fewer should be focused on whether they have partners (and what kind).

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TABLES

Table 1. Descriptive statistics for Wave 1 variables

Measure (unweighted N)	Mean/Percent (SD)			
	All	Married	Single	Cohabiting
	N=9577	N=5382	N=3673	N=522
		59.10 (1.06)	35.76 (1.14)	5.14 (.39)
Demographics				
Age (9577)*** ‡	47.06 (.34)	47.94 (.48)	47.15 (.45)	36.29 (.78)
Sex (9577)*** ††				
Male	47.51 (.66)	50.84 (.78)	41.37 (1.13)	52.04 (2.92)
Female	52.49 (.66)	49.16 (.78)	58.63 (1.18)	47.96 (2.92)
Race (9577)*** ‡				
White	72.28 (2.10)	77.32 (1.70)	64.26 (3.02)	70.10 (3.32)
Black	11.98 (1.12)	7.79 (.90)	18.67 (1.68)	13.57 (2.21)
Other	6.07 (.41)	5.38 (.45)	7.10 (.66)	6.81 (2.67)
Hispanic	9.68 (1.71)	9.50 (1.50)	9.98 (2.40)	9.53 (1.85)
College Grad (9577)*** ‡	23.16 (.73)	26.70 (.93)	17.85 (1.00)	19.50 (2.84)
Employed (9574)***	67.18 (.78)	69.75 (.92)	61.11 (1.48)	79.84 (2.51)
Income in thousands (9577)*** ††	45.87 (.62)	54.93 (.84)	30.60 (.68)	47.86 (2.09)
Number of dependents (9562)***	.85 (.02)	1.18 (.04)	.30 (.02)	.83 (.09)
Physical Health				
PCS-12 (9577)*** †	46.66 (.09)	47.12 (.12)	45.82 (.15)	47.25 (.41)
Any Gateway Conditions (9509)*** ††	66.48 (.78)	68.60 (.89)	63.79 (1.22)	60.70 (3.06)
Any Chronic Conditions (9492)*	33.77 (.89)	32.06 (1.13)	35.92 (1.13)	37.47 (3.21)
Any Serious Conditions (9538)* ††	8.79 (.41)	8.05 (.49)	10.23 (.65)	7.34 (1.86)

Significant differences between marital status subgroups: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Significant differences between Wave 1 measures for those who responded to both waves and those lost to attrition: † $p \leq .05$, †† $p \leq .01$, ‡ $p \leq .001$

Table 1 continued

Measure (unweighted Nn)	Mean/Percent (SD)			
	All	Married	Single	Cohabiting
	N=9577	N=5382	N=3673	N=522
		59.10 (1.06)	35.76 (1.14)	5.14 (.39)
Mental Health				
MCS-12 (9577)*** †	45.58 (.09)	45.91 (.11)	45.04 (.13)	45.58 (.37)
Frequency of alcohol (9567)***	1.26 (.02)	1.26 (.03)	1.22 (.04)	1.61 (.09)
Problem drinking (9570)***	6.44 (.32)	4.62 (.35)	8.99 (.68)	9.63 (1.31)
Use marijuana (9569)*** †	5.02 (.35)	2.80 (.35)	7.32 (.57)	14.71 (2.92)
Use prescription drugs (9572)***	5.96 (.29)	4.22 (.32)	8.45 (.59)	8.74 (1.54)
Use other drugs (9571)***	.83 (.11)	.39 (.13)	1.45 (.20)	1.57 (.43)
Drug Problem (9570)***	1.99 (.17)	.99 (.17)	3.12 (.33)	5.67 (1.34)
Anxiety (9560)*** ††	15.97 (.54)	13.39 (.64)	19.92 (.82)	18.11 (2.30)
MDD (9516)*** †	18.49 (.78)	14.29 (.68)	24.28 (1.16)	26.57 (2.91)
Dysthymia (9492)*** ‡	10.46 (.43)	7.53 (.46)	14.79 (.88)	14.19 (1.74)
Panic (9577)** ††	5.38 (.27)	4.52 (.38)	6.62 (.43)	6.56 (1.45)
Additional Controls				
Social Support (9577)*** †	4.55 (.01)	4.71 (.01)	4.26 (.02)	4.67 (.05)
Insured (9544)*** ††	87.76 (.70)	91.43 (.78)	84.00 (.97)	71.65 (2.71)
Visited PCP past year (9563)*** ‡	74.36 (.61)	76.23 (.77)	72.11 (1.04)	68.40 (2.63)
Smoke (9550)*** †	24.70 (.77)	21.61 (.91)	27.52 (1.04)	40.80 (3.52)

Significant differences between marital status subgroups: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Significant differences between Wave 1 measures for those who responded to both waves and those lost to attrition: † $p \leq .05$, †† $p \leq .01$, ‡ $p \leq .001$

Table 2. Descriptive statistics for Wave 2 variables

Measure (unweighted N)	Mean/Percent (SD)			
	All	Married	Single	Cohabiting
	N=6641	N=3993	N=2272	N=376
		62.03 (1.28)	32.54 (1.29)	5.42 (.47)
Demographics				
Age (6641)***	49.53 (.38)	49.27 (.52)	52.02 (.59)	37.51 (.70)
Sex (6641)***				
Male	47.84 (.73)	52.87 (.85)	37.76 (1.39)	50.93 (3.70)
Female	52.16 (.73)	47.13 (.85)	62.24 (1.39)	49.07 (3.70)
Race (6641)***				
White	72.86 (2.26)	77.56 (1.97)	65.01 (3.21)	66.19 (4.21)
Black	11.88 (1.28)	7.55 (.96)	19.85 (2.05)	13.69 (2.32)
Other	5.84 (.50)	5.24 (.53)	6.34 (.77)	9.64 (3.84)
Hispanic	9.42 (1.75)	9.64 (1.63)	8.80 (2.54)	10.48 (2.19)
College Grad (6641)***	25.49 (.83)	27.89 (1.06)	22.15 (1.34)	18.06 (2.69)
Employed (6637)***	66.25 (.91)	69.35 (1.19)	56.85 (1.46)	87.28 (2.0)
Income in thousands (6641)***	49.41 (.78)	60.81 (1.09)	26.76 (.78)	54.93 (2.26)
Number of dependents (6629)***	.82 (.03)	1.07 (.04)	.33 (.04)	.82 (.09)
Physical Health				
PCS-12 (6641)***	46.36 (.12)	47.03 (.13)	45.04 (.23)	46.59 (.44)
Any Gateway Conditions (6612)	72.10 (.91)	72.16 (1.09)	72.84 (1.23)	66.94 (3.58)
Any Chronic Conditions (6599)*	34.37 (1.06)	32.02 (1.62)	38.13 (1.80)	38.73 (4.36)
Any Serious Conditions (6619)***	10.72 (.60)	10.32 (.77)	12.48 (.89)	4.82 (1.13)

Significant differences between marital status subgroups: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 2 continued

Measure (unweighted N)	Mean/Percent (SD)			
	All	Married	Single	Cohabiting
	N=6641	N=3993	N=2272	N=376
		62.03 (1.28)	32.54 (1.29)	5.42 (.47)
Mental Health				
MCS-12 (6641)***	45.64 (.09)	45.98 (.10)	45.11 (.17)	44.97 (.47)
Frequency of alcohol (6631)**	1.24 (.03)	1.25 (.04)	1.17 (.04)	1.49 (.07)
Problem drinking (6634)**	5.64 (.45)	4.68 (.53)	7.15 (.79)	7.60 (1.6)
Use marijuana (6637)***	4.72 (.41)	2.77 (.45)	6.62 (.66)	15.63 (3.79)
Use prescription drugs (6634)***	6.13 (.68)	4.92 (.63)	7.23 (1.22)	13.36 (2.22)
Use other drugs (6639)**	.90 (.16)	.54 (.20)	1.26 (.27)	2.76 (.83)
Drug Problem (6637)***	1.44 (.15)	.87 (.16)	1.82 (.29)	5.82 (1.36)
Anxiety (6624)***	14.74 (.76)	12.19 (.77)	19.25 (1.51)	16.92 (2.48)
MDD (6620)***	16.24 (.81)	12.98 (.75)	21.78 (2.26)	20.33 (3.16)
Dysthymia (6612)***	10.72 (.67)	7.31 (.52)	16.70 (1.73)	13.91 (2.35)
Panic (6641)**	5.20 (.33)	4.22 (.41)	6.32 (.59)	9.63 (1.86)
Additional Controls				
Social Support (6641)***	4.85 (.03)	5.08 (.02)	4.40 (.05)	4.86 (.09)
Insured (6598)***	89.91 (.54)	93.74 (.59)	85.33 (1.04)	73.55 (3.77)
Visited PCP past year (6634)***	79.39 (.74)	81.76 (.85)	76.08 (1.51)	72.23 (3.16)
Smoke (6641)***	23.95 (.89)	20.84 (1.09)	26.74 (1.62)	42.66 (4.60)

Significant differences between marital status subgroups: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 3. Descriptive statistics for respondents lost to attrition

Measure (unweighted N)	Mean/Percent (SD)			
	All	Married	Single	Cohabiting
	N=2922	N=1480	N=1231	N=211
		53.90 (1.54)	39.33 (1.6)	6.77 (.68)
Demographics				
Age (2922)***‡	45.21 (.52)	46.54 (.70)	45.19 (.93)	34.79 (1.05)
Sex (2922)††				
Male	50.92 (1.43)	53.26 (1.65)	47.89 (2.54)	49.90 (4.42)
Female	49.08 (1.43)	46.74 (1.65)	52.11 (2.54)	50.10 (4.42)
Race (2922)***‡				
White	67.04 (2.25)	72.32 (2.00)	60.56 (3.45)	62.58 (4.71)
Black	13.34 (1.13)	9.22 (1.29)	18.26 (1.68)	17.64 (4.08)
Other	7.30 (.72)	7.07 (.84)	8.20 (1.22)	3.83 (1.27)
Hispanic	12.32 (2.03)	11.39 (1.73)	12.98 (3.10)	15.95 (3.89)
College Grad (2922)***‡	19.26 (1.07)	23.17 (1.57)	14.60 (1.30)	15.21 (3.13)
Employed (2921)***	66.88 (1.33)	70.76 (1.51)	59.92 (2.69)	76.48 (4.21)
Income in thousands (2922)***††	43.28 (1.15)	53.13 (1.51)	29.49 (1.36)	45.00 (2.99)
Number of dependents (2916)***	.84 (.04)	1.19 (.05)	.35 (.03)	.98 (.17)
Physical Health				
PCS-12 (2922)***†	46.35 (.15)	46.84 (.19)	45.57 (.26)	47.02 (.56)
BMI (2921)†	26.41 (.18)	26.79 (.22)	26.01 (.29)	25.73 (.69)
Any Gateway Conditions (2903)**††	62.08 (1.63)	66.48 (1.86)	57.44 (2.89)	53.83 (4.28)
Any Chronic Conditions (2893)	33.59 (1.30)	32.26 (1.64)	35.24 (1.98)	34.65 (4.06)
Any Serious Conditions (2912)**††	10.45 (.78)	10.69 (1.11)	10.95 (1.17)	5.61 (1.37)

Statistics shown are Wave 1 values.

Significant differences between marital status subgroups: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Significant differences between Wave 1 measures for those who responded to both waves and those lost to attrition: † $p \leq .05$, †† $p \leq .01$, ‡ $p \leq .001$

Table 3 continued

Measure (unweighted N)	Mean/Percent (SD)			
	All	Married	Single	Cohabiting
		N=1480	N=1231	N=211
		53.90 (1.54)	39.33 (1.6)	6.77 (.68)
Mental Health				
MCS-12 (2922)†	45.30 (.13)	45.62 (.18)	44.86 (.26)	45.31 (.60)
Frequency of alcohol (2917)**	1.27 (.04)	1.25 (.05)	1.23 (.07)	1.68 (.13)
Problem drinking (2920)***	7.32 (.63)	4.63 (.71)	9.88 (1.20)	13.86 (2.66)
Use marijuana (2919)***†	5.95 (.57)	3.55 (.63)	7.43 (.88)	16.42 (3.54)
Use prescription drugs (2920)***	6.54 (.60)	3.97 (.50)	9.14 (1.32)	11.85 (2.98)
Use other drugs (2921)***	1.02 (.18)	.10 (.04)	2.24 (.46)	1.27 (.37)
Drug Problem (2918)***	2.35 (.37)	.64 (.19)	3.95 (.76)	6.70 (2.50)
Anxiety (2915)**††	17.97 (.93)	15.24 (1.08)	21.45 (1.47)	19.50 (4.01)
MDD (2911)***†	20.59 (1.33)	15.88 (1.05)	25.82 (2.42)	27.72 (4.54)
Dysthymia (2896)***‡	13.03 (.73)	9.97 (.86)	15.98 (1.30)	20.32 (3.54)
Panic (2922)††	6.50 (.51)	5.45 (.61)	7.40 (.93)	9.54 (3.10)
Additional Controls				
Social Support (2922)***†	4.50 (.02)	4.70 (.03)	4.20 (.05)	4.66 (.09)
Insured (2912)***††	85.60 (.91)	89.52 (1.18)	83.46 (1.45)	66.70 (4.18)
Visited PCP past year (2913)**‡	69.49 (1.32)	72.64 (1.72)	67.12 (1.92)	58.21 (4.42)
Smoke (2906)***†	26.81 (1.12)	24.24 (1.50)	27.91 (1.67)	40.74 (4.42)

Significant differences between marital status subgroups: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Significant differences between Wave 1 measures for those who responded to both waves and those lost to attrition: † $p \leq .05$, †† $p \leq .01$, ‡ $p \leq .001$

Table 4. OLS regression results for Wave 1 continuous outcome measures

	Outcome	
	PCS-12	MCS-12
Intercept	43.66 (0.72)***	38.12 (0.81)***
Single	0.57 (0.59)	0.95 (0.61)
Cohabiting	-0.07 (1.19)	2.72 (1.36)*
Age	-0.05 (0.01)***	0.02 (0.01)**
Gender	0.24 (0.23)	-0.14 (0.2)
Age*single	-0.02 (0.01)	-0.01 (0.01)
Age*cohabiting	0.02 (0.02)	-0.06 (0.03)*
Single*female	-0.31 (0.38)	-0.64 (0.35)
Cohabiting*female	-1.6 (0.81)*	-0.64 (0.78)
Black	-0.85 (0.27)**	-0.31 (0.3)
Other	-0.17 (0.42)	0.27 (0.37)
Hispanic	-0.82 (0.51)	0.2 (0.39)
Number of dependents	0.11 (0.07)	0.01 (0.07)
Social support	0.71 (0.1)***	1.26 (0.11)***
Alcohol frequency	0.41 (0.07)***	-0.01 (0.08)
Smoke	-1.2 (0.21)***	-0.49 (0.18)**
Use marijuana	-0.41 (0.41)	-0.61 (0.39)
Abuse prescription drugs	-1.23 (0.37)***	-1.02 (0.42)*
Use other drugs	-0.72 (0.78)	1.08 (0.69)
Visited PCP in last year	-0.97 (0.16)***	-0.93 (0.21)***
Insured	0.01 (0.25)	0.74 (0.32)*
College graduate	1.47 (0.2)***	-0.31 (0.2)
Employed	2.22 (0.2)***	0.89 (0.26)***
Income	0.02 (0)***	0.01 (0)***
Single*income	0.01 (0.01)	0 (0.01)
Cohabiting*income	0 (0.01)	0 (0.01)
R^2	.183	.061

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 5. Logistic regression results for Wave 1 categorical outcome measures

	Outcome					
	Any gateway conditions		Any chronic conditions		Any serious conditions	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	-0.09	0.91	-0.25	0.78	-3.13***	0.04
Single	-0.31	0.73	0.49*	1.63	0.28	1.32
Cohabiting	-0.2	0.82	0.49	1.63	-0.82	0.44
Age	0.02***	1.02	0.01***	1.01	0.03***	1.03
Gender	-0.79***	0.45	0.12	1.12	-0.69***	0.5
Age*single	0	1	-0.01**	0.99	-0.01	0.99
Age*cohabiting	0.01	1.01	-0.01	0.99	0.02	1.03
Single*female	0.25	1.29	0.33**	1.39	0.34	1.41
Cohabiting*female	-0.07	0.93	0.29	1.34	0.48	1.61
Black	0.93***	2.54	-0.36***	0.7	0.02	1.02
Other	-0.02	0.98	-0.02	0.98	0.36*	1.43
Hispanic	0.1	1.11	0.07	1.07	0	1
Number of dependents	0.01	1.01	0.03	1.03	-0.18**	0.83
Social support	0.01	1.01	-0.26***	0.77	-0.14**	0.87
Alcohol frequency	-0.11***	0.9	-0.11***	0.89	-0.19***	0.83
Smoke	-0.17*	0.84	0.29***	1.33	0.4***	1.5
Use marijuana	-0.07	0.93	0.33*	1.39	-0.31	0.74
Abuse prescription drugs	0.33*	1.39	0.76***	2.14	0.15	1.16
Use other drugs	-0.14	0.87	-0.21	0.81	0.02	1.02
Visited PCP in last year	0.42***	1.52	0.63***	1.88	1.01***	2.74
Insured	0.07	1.07	-0.18	0.83	0.24	1.27
College graduate	-0.51***	0.6	-0.09	0.91	-0.02	0.98
Employed	0.06	1.06	-0.36***	0.7	-1.15***	0.32
Income	0	1	0	1	0	1
Single*income	0	1	0	1	0	1
Cohabiting*income	0	1	0	1	0	1

Unstandardized coefficients.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 5 continued

	Outcome					
	Anxiety problems		MDD		Dysthymia	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	0.53	1.7	0.56	1.76	1.12**	3.07
Single	0.37	1.45	0.74**	2.11	0.43	1.54
Cohabiting	-0.31	0.73	0.72	2.06	1.26*	3.52
Age	-0.01*	0.99	-0.01**	0.99	-0.01	0.99
Gender	-0.08	0.93	0.4***	1.5	0.1	1.1
Age*single	-0.01	0.99	-0.01	0.99	-0.01*	0.99
Age*cohabiting	0	1	-0.01	0.99	-0.03*	0.97
Single*female	-0.21	0.81	-0.17	0.84	0.33*	1.39
Cohabiting*female	0.34	1.41	0.42	1.53	0.39	1.48
Black	0.26	1.3	0.11	1.11	0.6***	1.81
Other	-0.1	0.91	-0.48**	0.62	-0.03	0.97
Hispanic	0.07	1.07	0.05	1.05	0.14	1.15
Number of dependents	0.01	1.01	-0.03	0.97	-0.02	0.98
Social support	-0.42***	0.66	-0.48***	0.62	-0.59***	0.56
Alcohol frequency	-0.03	0.97	-0.06	0.94	-0.12**	0.89
Smoke	0.54***	1.71	0.47***	1.6	0.61***	1.83
Use marijuana	0.38**	1.46	0.42**	1.53	-0.23	0.8
Abuse prescription drugs	0.68***	1.97	0.84***	2.31	0.83***	2.29
Use other drugs	0.46	1.58	0.74	2.09	0.47	1.61
Visited PCP in last year	0.56***	1.75	0.56***	1.74	0.12	1.13
Insured	-0.22	0.8	-0.08	0.92	-0.18	0.84
College graduate	0.09	1.09	-0.09	0.91	-0.57***	0.57
Employed	-0.36**	0.7	-0.23*	0.8	-0.56***	0.57
Income	-0.01**	0.99	0	1	-0.01**	0.99
Single*income	0	1	0	1	0	1
Cohabiting*income	0	1	0	1	0	1

Unstandardized coefficients.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 5 continued

	Outcome					
	Panic problems		Alcohol problem		Drug problem	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	-0.17	0.84	-1.66**	0.19	-3.1***	0.05
Single	0.15	1.16	1.12*	3.08	2.22**	9.22
Cohabiting	-1.79*	0.17	-0.25	0.78	2.09*	8.11
Age	-0.03***	0.97	-0.02**	0.98	-0.01	0.99
Gender	0.46**	1.59	-2.09***	0.12	-0.44	0.64
Age*single	0	1	-0.02	0.98	-0.05***	0.95
Age*cohabiting	0.03*	1.03	0.02	1.02	-0.04	0.96
Single*female	-0.09	0.92	0.7**	2.01	0	1
Cohabiting*female	1.07	2.91	1.07**	2.91	0.47	1.59
Black	-0.12	0.89	-0.09	0.92	0.31	1.37
Other	-0.11	0.9	-0.82**	0.44	-0.44	0.64
Hispanic	-0.63	0.53	0.18	1.2	0	1
Number of dependents	-0.03	0.97	-0.09	0.91	-0.1	0.91
Social support	-0.43***	0.65	-0.09	0.92	-0.18	0.83
Alcohol frequency	-0.07	0.93	--	--	0.23**	1.26
Smoke	0.66***	1.93	1***	2.72	1.23***	3.42
Use marijuana	0.22	1.24	0.94***	2.57	--	--
Abuse prescription drugs	0.71***	2.04	0.69***	1.98	--	--
Use other drugs	0.53	1.7	--	--	--	--
Visited PCP in last year	0.75***	2.12	-0.14	0.87	0.13	1.14
Insured	-0.24	0.79	0.2	1.22	-0.57*	0.56
College graduate	0.24	1.27	-0.13	0.88	0.35	1.41
Employed	-0.39**	0.68	0.02	1.02	-0.41	0.66
Income	-0.01*	0.99	0	1	0	1
Single*income	0	1	0	1	0.01	1.01
Cohabiting*income	0	1	-0.01	0.99	0	1

Unstandardized coefficients.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 6. OLS regression results for Wave 2 continuous outcome measures

	Outcome	
	PCS-12	MCS-12
Intercept	46.27 (0.95)***	37.69 (0.98)***
Single	-1.4 (0.82)	0.64 (0.76)
Cohabiting	0.72 (1.33)	0.02 (1.6)
Age	-0.08 (0.01)***	0.02 (0.01)*
Gender	-0.09 (0.27)	0.2 (0.24)
Age*single	0.02 (0.01)	0 (0.01)
Age*cohabiting	-0.05 (0.02)	-0.03 (0.04)
Single*female	-0.65 (0.44)	-0.22 (0.5)
Cohabiting*female	-0.62 (0.89)	-2.1 (0.92)*
Black	-1.15 (0.33)***	0.36 (0.32)
Other	0.51 (0.55)	0.83 (0.36)*
Hispanic	-0.74 (0.39)	0.29 (0.38)
Number of dependents	0.11 (0.08)	-0.05 (0.08)
Social support	0.62 (0.1)***	1.16 (0.1)***
Alcohol frequency	0.3 (0.1)**	0.02 (0.09)
Smoke	-1.49 (0.29)***	-0.14 (0.25)
Use marijuana	-0.63 (0.51)	-0.86 (0.51)
Abuse prescription drugs	-1.27 (0.42)**	-0.38 (0.81)
Use other drugs	0.5 (0.75)	-0.16 (1.2)
Visited PCP in last year	-1.11 (0.22)***	-0.77 (0.23)***
Insured	0.41 (0.32)	0.14 (0.36)
College graduate	1.34 (0.24)***	-0.22 (0.2)
Employed	1.53 (0.29)***	1.6 (0.24)***
Income	0.01 (0)***	0.01 (0)**
Single*income	0.02 (0.01)**	0 (0.01)
Cohabiting*income	0.01 (0.01)	0.03 (0.01)*
R^2	.200	.094

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 7. Logistic regression results for Wave 2 categorical outcome measures

	Outcome					
	Any gateway conditions		Any chronic conditions		Any serious conditions	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	0.25	1.29	-0.08	0.93	-3.69***	0.02
Single	0.22	1.24	0.03	1	1.31*	3.7
Cohabiting	-0.32	0.73	0.12	1.03	-0.83	0.44
Age	0.02***	1.02	0.01*	1.12	0.04***	1.05
Gender	-0.97***	0.38	0.16	1.01	-0.64***	0.53
Age*single	0	1	0	1.17	-0.03**	0.97
Age*cohabiting	0	1	0.01	1	0.02	1.02
Single*female	0.26	1.3	0.17	1.01	0.21	1.23
Cohabiting*female	0.43	1.54	0.24	1.19	1.02	2.76
Black	0.92***	2.51	-0.13	1.27	-0.03	0.97
Other	-0.14	0.87	-0.15	0.88	0.41	1.51
Hispanic	0.28	1.33	-0.24	0.86	-0.21	0.81
Number of dependents	0.02	1.02	-0.04	1	-0.08	0.93
Social support	-0.02	0.98	-0.27***	0.85	-0.16**	0.86
Alcohol frequency	-0.13***	0.88	-0.01	0.96	-0.19***	0.83
Smoke	-0.32***	0.72	0.22*	0.99	0.05	1.05
Use marijuana	-0.44*	0.64	0.41	1.25	-0.39	0.68
Abuse prescription drugs	0.44*	1.56	0.68***	1.51	0.07	1.08
Use other drugs	-0.13	0.87	0.24	1.98	0.78	2.19
Visited PCP in last year	0.56***	1.75	0.79***	1.27	1.08***	2.94
Insured	0.11	1.12	-0.16	2.21	-0.02	0.98
College graduate	-0.64***	0.53	-0.2*	0.79	-0.16	0.85
Employed	0.09	1.1	-0.41***	0.82	-0.87***	0.42
Income	0	1	0	0.66	0	1
Single*income	0	1	0	1	0	1
Cohabiting*income	0	1	0	1	-0.01	0.99

Unstandardized coefficients.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 7 continued

	Outcome					
	Anxiety problems		MDD		Dysthymia	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	1.27**	3.55	1.72**	5.57	0.53	1.69
Single	0.61	1.85	0.67	1.94	0.94	2.55
Cohabiting	-1.16	0.31	-1.24	0.29	0.23	1.26
Age	-0.02***	0.98	-0.03***	0.98	-0.01	0.99
Gender	0.28	1.32	0.31*	1.37	0.18	1.2
Age*single	0	1	0	1	-0.01	0.99
Age*cohabiting	0.04**	1.04	0.05***	1.05	0.01	1.01
Single*female	-0.68*	0.51	-0.37	0.69	-0.24	0.78
Cohabiting*female	0.41	1.5	-0.01	0.99	0.6	1.83
Black	-0.15	0.86	-0.23	0.79	0.61***	1.84
Other	-0.27	0.77	-0.48*	0.62	-0.46*	0.63
Hispanic	-0.08	0.92	-0.26	0.77	0.26	1.3
Number of dependents	-0.06	0.94	0.01	1.01	0.03	1.03
Social support	-0.4***	0.67	-0.47***	0.63	-0.49***	0.61
Alcohol frequency	-0.07	0.93	-0.11*	0.9	-0.13*	0.88
Smoke	0.35**	1.41	0.36*	1.43	0.56***	1.75
Use marijuana	0.46*	1.59	0.33	1.39	-0.05	0.95
Abuse prescription drugs	0.75***	2.11	0.96***	2.61	0.54	1.72
Use other drugs	0.18	1.2	0.24	1.27	0.56	1.76
Visited PCP in last year	0.48**	1.61	0.47**	1.6	0.43*	1.54
Insured	-0.38**	0.68	-0.44*	0.64	-0.27	0.76
College graduate	-0.09	0.92	-0.25	0.78	-0.58**	0.56
Employed	-0.43***	0.65	-0.56***	0.57	-0.65***	0.52
Income	0	1	0	1	0	1
Single*income	-0.01	0.99	-0.01	0.99	-0.01	0.99
Cohabiting*income	-0.01	0.99	-0.01*	0.99	-0.01	0.99

Unstandardized coefficients.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table 7 continued

	Outcome					
	Panic problems		Alcohol problem		Drug Problem	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	-1.03	0.36	-0.53	0.59	-1.7	0.18
Single	0.56	1.75	0.41	1.51	1.66*	5.28
Cohabiting	0.86	2.36	-1.55	0.21	3.77**	43.34
Age	-0.03***	0.97	-0.04***	0.96	-0.04**	0.96
Gender	0.7**	2.02	-2***	0.14	0.43	1.54
Age*single	-0.01	0.99	0	1	-0.02	0.98
Age*cohabiting	0.01	1.01	0.05**	1.05	-0.02	0.98
Single*female	0.37	1.45	0.71*	2.03	-0.9	0.41
Cohabiting*female	-0.33	0.72	0.61	1.84	-0.94	0.39
Black	-0.36	0.7	-0.59*	0.55	-0.01	0.99
Other	-0.91*	0.4	-1.55**	0.21	-0.55	0.57
Hispanic	-0.39	0.68	0.5	1.64	-0.86	0.42
Number of dependents	-0.15*	0.86	-0.24*	0.79	-0.05	0.95
Social support	-0.36***	0.7	-0.04	0.96	-0.43***	0.65
Alcohol frequency	0.02	1.02	--		0.33**	1.39
Smoke	0.24	1.27	1.04***	2.84	0.67*	1.95
Use marijuana	0.62*	1.86	0.79**	2.19	--	--
Abuse prescription drugs	1***	2.72	0.51	1.66	--	--
Use other drugs	-0.09	0.91	--	--	--	--
Visited PCP in last year	1.12***	3.08	0.13	1.14	0.17	1.19
Insured	-0.04	0.96	-0.3	0.74	0.29	1.34
College graduate	-0.54*	0.58	0.14	1.15	-0.26	0.77
Employed	-0.39*	0.68	-0.49	0.61	-0.71*	0.49
Income	0	1	0.01***	1.01	0.01	1.01
Single*income	-0.01	0.99	-0.01	0.99	0	1
Cohabiting*income	-0.01	0.99	-0.01	0.99	-0.02	0.98

Unstandardized coefficients.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 8. Selection effects analyses

	Model A Odds of Entering Any Union		Model B Odds of Entering Marriage		Model C Odds of Entering Cohabitation	
N	2345		2167		2122	
	Beta	Odds Ratio	Beta	Odds Ratio	Beta	Odds Ratio
Intercept	-1.12	.33	-4.91***	.01	1.6	4.93
PCS-12	.02	1.02	.05**	1.05	-.02	.98
MCS-12	.02	1.02	.06**	1.06	-.02	.98
Any gateway conditions	.16	1.18	.43*	1.54	-.20	.82
Any chronic conditions	-.20	.82	-.16	.86	-.21	.81
Any serious conditions	-.43	.65	.08	1.08	-1.25*	.29
Smoke	.32	1.38	-.04	.96	.86**	2.35
Alcohol problem	-.47	.63	-.65	.52	-.26	.77
Drug problem	-.27	.77	-1.86*	.16	.39	1.47
Anxiety problems	.41	1.50	.58	1.79	.04	1.04
MDD	-.53**	.59	-.57*	.56	-.38	.68
Dysthymia	36	1.43	.20	1.23	.56	1.75
Panic problems	.25	1.28	-.11	.90	.51	1.66
Age	-.05***	.96	-.04***	.96	-.06***	.94
Gender	-.52**	.60	-.62**	.54	-.32	.73
Black	-.45*	.64	-.65*	.52	-.17	.84
Other	-.14	.87	-.28	.76	.05	1.06
Hispanic	-.16	.85	-.31	.73	.18	1.20
College graduate	.50**	1.65	.55*	1.74	.36	1.43
Employed	-.05	.95	-.14	.87	.16	1.17
Income in thousands	-.00	1.00	-.00	1.00	-.00	1.00

Unstandardized coefficients.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table 9. Fixed effects models for continuous outcomes

	Outcome			
	PCS-12		MCS-12	
	Men (N=2489)	Women (N=4097)	Men (N=2489)	Women (N=4097)
Intercept	45.48 (0.98)***	41.52 (0.93)***	39.77 (0.98)***	37.47 (0.99)***
Married†	-1.47 (0.94)	0.83 (0.74)	-1.44 (0.84)	0.17 (0.77)
Cohabiting††	0.52 (1.52)	-2.68 (1.55)	0.33 (1.73)	2.99 (1.96)
Age	-0.06 (0.01)***	-0.06 (0.01)***	0 (0.01)	0.02 (0.01)*
Married*age	0.04 (0.02)*	-0.01 (0.01)	0.02 (0.02)	0 (0.01)
Cohabiting*age	0.03 (0.03)	0.04 (0.04)	-0.01 (0.04)	-0.08 (0.04)*
Number of dependents	0.03 (0.09)	0.14 (0.11)	-0.08 (0.09)	0.09 (0.11)
Social support	0.4 (0.13)**	1.08 (0.14)***	1.11 (0.15)***	1.38 (0.14)***
Alcohol frequency	0.22 (0.09)*	0.73 (0.1)***	-0.02 (0.1)	0.01 (0.1)
Smoke	-1.47 (0.3)***	-0.98 (0.26)***	-0.25 (0.31)	-0.72 (0.25)**
Use marijuana	-0.68 (0.49)	0.64 (0.65)	-0.73 (0.46)	-0.43 (0.69)
Abuse prescription drugs	-0.78 (0.56)	-1.48 (0.41)***	-1.55 (0.54)**	-0.49 (0.5)
Use other drugs	-0.75 (0.91)	-1.4 (1.1)	1.15 (0.8)	1.01 (1.09)
Visited PCP in last year	-1.06 (0.23)***	-0.88 (0.25)***	-0.86 (0.25)***	-0.9 (0.29)**
Insured	-0.16 (0.34)	0.45 (0.34)	0.71 (0.4)	0.76 (0.5)
College graduate	1.67 (0.26)***	1.18 (0.27)***	-0.36 (0.29)	-0.24 (0.24)
Employed	2.77 (0.35)***	1.75 (0.25)***	1.38 (0.52)**	0.63 (0.23)**
Income	0.02 (0.01)**	0.03 (0.01)***	0.01 (0.01)	0.01 (0.01)
Married*income	-0.01 (0.01)	-0.01 (0.01)	0 (0.01)	0 (0.01)
Cohabiting*income	-0.03 (0.01)	-0.01 (0.01)	0 (0.02)	0 (0.02)
R^2	.170***	.191***	.067***	.053***

Unstandardized coefficients with standard errors in parentheses. *: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

† "Married" coefficient represents change in outcome associated with entering marriage from singlehood; inverse of coefficient represents change associated with leaving marriage to singlehood.

†† "Cohabiting" coefficient represents change in outcome associated with entering cohabitation from singlehood; inverse of coefficient represents change associated with leaving cohabitation to singlehood.

Table 10. Fixed effects models for categorical outcomes

	Outcome			
	Any gateway conditions		Any chronic conditions	
	Men (N=265)	Women (N=501)	Men (N=536)	Women (N=953)
Intercept	-0.11 (0.43)	0.01 (0.34)	-0.5 (0.35)	0.65 (0.26)*
Married†	0.11 (0.4)	-0.69 (0.3)*	-0.02 (0.35)	-0.42 (0.25)
Cohabiting††	-0.91 (0.58)	-0.22 (0.56)	0.95 (0.47)*	-0.45 (0.45)
Age	0.02 (0.01)**	0.02 (0)***	0.02 (0.01)**	0 (0)
Married*age	-0.01 (0.01)	0.01 (0)**	0 (0.01)	0.01 (0)
Cohabiting*age	0.01 (0.01)	0.01 (0.01)	-0.02 (0.01)	0.02 (0.01)
College graduate	-0.55 (0.12)***	-0.58 (0.1)***	-0.19 (0.1)	-0.1 (0.08)
Number of dependents	0.05 (0.05)	0.03 (0.04)	0.02 (0.04)	-0.04 (0.03)
Social support	0.03 (0.06)	-0.04 (0.03)	-0.23 (0.04)***	-0.28 (0.03)***
Alcohol frequency	-0.07 (0.03)*	-0.21 (0.04)***	0.01 (0.03)	-0.13 (0.04)***
Smoke	-0.33 (0.1)***	-0.13 (0.1)	0.36 (0.11)***	0.15 (0.09)
Use marijuana	-0.32 (0.17)	-0.25 (0.19)	0.44 (0.21)*	0.28 (0.18)
Abuse prescription drugs	0.28 (0.21)	0.44 (0.13)***	0.67 (0.16)***	0.79 (0.13)***
Use other drugs	-0.04 (0.3)	-0.19 (0.4)	0.01 (0.37)	0.11 (0.37)
Visited PCP in last year	0.48 (0.09)***	0.53 (0.09)***	0.63 (0.11)***	0.78 (0.08)***
Insured	0.18 (0.14)	-0.11 (0.1)	-0.18 (0.13)	-0.17 (0.12)
Employed	0.23 (0.15)	0.05 (0.08)	-0.61 (0.13)***	-0.26 (0.07)***
Income	0 (0)	-0.01 (0)*	-0.01 (0)	0 (0)
Married*income	0 (0)	0 (0)	0.01 (0)	0 (0)
Cohabiting*income	0.01 (0.01)	0 (0.01)	0 (0.01)	0 (0)

Unstandardized coefficients with standard errors in parentheses. *: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

† "Married" coefficient represents change in outcome associated with entering marriage from singlehood; inverse of coefficient represents change associated with leaving marriage to singlehood.

†† "Cohabiting" coefficient represents change in outcome associated with entering cohabitation from singlehood; inverse of coefficient represents change associated with leaving cohabitation to singlehood.

Table 10 continued

	Outcome			
	Any serious conditions		Anxiety	
	Men (N=199)	Women (N=355)	Men (N=515)	Women (N=874)
Intercept	-2.92 (0.57)***	-2.74 (0.41)***	1.25 (0.34)***	0.98 (0.3)***
Married	-0.97 (0.74)	-0.84 (0.52)	-0.04 (0.37)	-0.42 (0.31)
Cohabiting	-1.99 (1.34)	-0.45 (1.06)	-0.64 (0.64)	-0.75 (0.48)
Age	0.02 (0.01)***	0.02 (0.01)***	-0.01 (0.01)*	-0.02 (0)***
Married*age	0.02 (0.01)*	0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)*
Cohabiting*age	0.06 (0.02)**	0.01 (0.02)	0.01 (0.01)	0.02 (0.01)*
Number of dependents	-0.1 (0.08)	-0.16 (0.08)*	-0.02 (0.05)	-0.01 (0.04)
Social support	-0.17 (0.06)**	-0.13 (0.05)**	-0.37 (0.05)***	-0.43 (0.03)***
Alcohol frequency	-0.16 (0.06)**	-0.24 (0.06)***	-0.02 (0.04)	-0.08 (0.04)
Smoke	0.26 (0.15)	0.18 (0.12)	0.39 (0.12)**	0.51 (0.09)***
Use marijuana	-0.35 (0.27)	-0.17 (0.31)	0.53 (0.19)**	0.09 (0.21)
Abuse prescription drugs	0.29 (0.22)	-0.08 (0.24)	0.79 (0.16)***	0.64 (0.12)***
Use other drugs	0.25 (0.56)	0.67 (0.46)	-0.01 (0.29)	1.15 (0.4)**
Visited PCP in last year	1.22 (0.2)***	0.86 (0.16)***	0.46 (0.13)***	0.63 (0.14)***
Insured	-0.08 (0.23)	0.19 (0.22)	-0.46 (0.13)***	-0.18 (0.16)
College graduate	-0.16 (0.18)	0.02 (0.17)	0.15 (0.13)	-0.13 (0.1)
Employed	-1.03 (0.19)***	-0.95 (0.14)***	-0.54 (0.15)***	-0.3 (0.1)**
Income	0 (0.01)	-0.01 (0.01)	-0.01 (0)*	-0.01 (0)
Married*income	-0.01 (0.01)	0.01 (0.01)	0 (0)	0 (0)
Cohabiting*income	-0.02 (0.01)	0.01 (0.01)	-0.01 (0.01)	0 (0.01)

Unstandardized coefficients with standard errors in parentheses. *: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

† "Married" coefficient represents change in outcome associated with entering marriage from singlehood; inverse of coefficient represents change associated with leaving marriage to singlehood.

†† "Cohabiting" coefficient represents change in outcome associated with entering cohabitation from singlehood; inverse of coefficient represents change associated with leaving cohabitation to singlehood.

Table 10 continued

	Outcome			
	MDD		Dysthymia	
	Men (N=488)	Women (N=970)	Men (N=296)	Women (N=647)
Intercept	1.55 (0.31)***	1.87 (0.27)***	1.47 (0.37)***	2.2 (0.31)***
Married	-0.18 (0.37)	-0.64 (0.29)*	-0.42 (0.52)	-1.07 (0.32)***
Cohabiting	-0.92 (0.67)	-0.23 (0.42)	0.41 (0.66)	0.06 (0.57)
Age	-0.01 (0.01)*	-0.02 (0)***	0 (0.01)	-0.02 (0)***
Married*age	-0.01 (0.01)	0.01 (0.01)	0 (0.01)	0.01 (0.01)*
Cohabiting*age	0.02 (0.01)	0.02 (0.01)	0 (0.01)	0 (0.01)
Number of dependents	-0.06 (0.06)	0.01 (0.04)	0.02 (0.05)	0.01 (0.04)
Social support	-0.43 (0.05)***	-0.49 (0.03)***	-0.5 (0.06)***	-0.54 (0.04)***
Alcohol frequency	-0.1 (0.04)*	-0.06 (0.04)	-0.14 (0.06)*	-0.15 (0.04)***
Smoke	0.31 (0.11)**	0.5 (0.09)***	0.46 (0.14)**	0.66 (0.11)***
Use marijuana	0.33 (0.2)	0.46 (0.23)*	0.09 (0.27)	-0.56 (0.24)*
Abuse prescription drugs	0.99 (0.18)***	0.78 (0.19)***	0.94 (0.19)***	0.42 (0.21)*
Use other drugs	0.52 (0.38)	0.26 (0.39)	0.26 (0.44)	1.23 (0.58)*
Visited PCP in last year	0.61 (0.14)***	0.41 (0.11)***	0.11 (0.16)	0.29 (0.1)**
Insured	-0.48 (0.15)**	-0.06 (0.11)	-0.36 (0.18)*	-0.24 (0.13)
College graduate	-0.25 (0.14)	-0.13 (0.09)	-0.58 (0.22)**	-0.64 (0.15)***
Employed	-0.57 (0.14)***	-0.28 (0.09)**	-0.85 (0.16)***	-0.46 (0.11)***
Income	0 (0)	0 (0)	-0.01 (0.01)	-0.01 (0)
Married*income	0 (0)	0 (0)	0.01 (0.01)	0 (0)
Cohabiting*income	0 (0.01)	-0.01 (0)	-0.01 (0.01)	0 (0.01)

Unstandardized coefficients with standard errors in parentheses. *: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

† "Married" coefficient represents change in outcome associated with entering marriage from singlehood; inverse of coefficient represents change associated with leaving marriage to singlehood.

†† "Cohabiting" coefficient represents change in outcome associated with entering cohabitation from singlehood; inverse of coefficient represents change associated with leaving cohabitation to singlehood.

Table 10 continued

	Outcome			
	Panic		Alcohol problem	
	Men (N=146)	Women (N=402)	Men (N=233)	Women (N=125)
Intercept	-0.05 (0.49)	-0.36 (0.41)	-0.47 (0.44)	-1.78 (0.52)***
Married	0.22 (0.56)	-0.45 (0.3)	-0.42 (0.54)	-1.75 (0.77)*
Cohabiting	0.04 (0.94)	-0.41 (0.59)	-1.8 (0.59)**	-0.58 (0.6)
Age	-0.03 (0.01)***	-0.03 (0)***	-0.03 (0.01)***	-0.05 (0.01)***
Married*age	-0.01 (0.01)	0.01 (0.01)	0 (0.01)	0.01 (0.02)
Cohabiting*age	0.03 (0.02)	0.01 (0.01)	0.04 (0.01)**	0.02 (0.02)
Number of dependents	-0.16 (0.09)	-0.06 (0.06)	-0.2 (0.07)**	-0.03 (0.09)
Social support	-0.33 (0.07)***	-0.39 (0.05)***	-0.05 (0.06)	0 (0.07)
Alcohol frequency	0 (0.07)	-0.03 (0.06)	---	---
Smoke	0.48 (0.18)**	0.49 (0.13)***	0.83 (0.13)***	1.55 (0.2)***
Use marijuana	0.54 (0.24)*	0.11 (0.26)	0.79 (0.2)***	1.15 (0.26)***
Abuse prescription drugs	1.26 (0.25)***	0.69 (0.15)***	0.54 (0.18)**	0.69 (0.23)**
Use other drugs	0.21 (0.38)	0.27 (0.39)	---	---
Visited PCP in last year	0.63 (0.19)**	1.15 (0.17)***	0.06 (0.13)	-0.47 (0.2)*
Insured	-0.2 (0.23)	-0.06 (0.16)	-0.16 (0.17)	0.27 (0.23)
College graduate	-0.04 (0.27)	-0.12 (0.15)	-0.05 (0.17)	-0.04 (0.22)
Employed	-1.05 (0.24)***	-0.1 (0.13)	-0.21 (0.22)	-0.29 (0.18)
Income	-0.01 (0)**	-0.01 (0)	0 (0)	0 (0)
Married*income	0.01 (0.01)*	0 (0.01)	0.01 (0)	0.01 (0.01)
Cohabiting*income	-0.01 (0.01)	0.01 (0.01)	0 (0.01)	-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses. *: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

† "Married" coefficient represents change in outcome associated with entering marriage from singlehood; inverse of coefficient represents change associated with leaving marriage to singlehood.

†† "Cohabiting" coefficient represents change in outcome associated with entering cohabitation from singlehood; inverse of coefficient represents change associated with leaving cohabitation to singlehood.

Table 10 continued

	Outcome	
	Drug problem	
	Men (N=90)	Women (N=96)
Intercept	-0.27 (0.61)	-0.91 (0.61)
Married	-2.11 (0.76)**	-1.48 (0.69)*
Cohabiting	2.14 (1.11)	-0.15 (0.76)
Age	-0.06 (0.01)***	-0.06 (0.01)***
Married*age	0.04 (0.02)*	0.03 (0.01)
Cohabiting*age	-0.03 (0.03)	0.03 (0.02)
Number of dependents	-0.04 (0.16)	-0.12 (0.09)
Social support	-0.36 (0.09)***	-0.26 (0.1)**
Alcohol frequency	0.25 (0.1)*	0.29 (0.08)***
Smoke	0.95 (0.27)***	0.93 (0.24)***
Use marijuana	---	---
Abuse prescription drugs	---	---
Use other drugs	---	---
Visited PCP in last year	0.02 (0.26)	0.31 (0.27)
Insured	-0.18 (0.25)	-0.27 (0.26)
College graduate	0.11 (0.24)	0.03 (0.36)
Employed	-0.51 (0.29)	-0.57 (0.26)*
Income	0.01 (0)	0 (0)
Married*income	-0.01 (0.01)	0 (0.01)
Cohabiting*income	-0.01 (0.01)	-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses. *: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

† "Married" coefficient represents change in outcome associated with entering marriage from singlehood; inverse of coefficient represents change associated with leaving marriage to singlehood.

†† "Cohabiting" coefficient represents change in outcome associated with entering cohabitation from singlehood; inverse of coefficient represents change associated with leaving cohabitation to singlehood.

APPENDIX A

Table A-1. Items used to construct PCS-12 and MCS-12 scales.

Scale	Item number	Item wording	Response options
PCS-12	A1	In general, would you say your health is:	Excellent, Very good, Good, Fair, Poor
	A2b	Please tell me if your health now limits you a lot, limits you a little, or does not limit you at all in doing moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	Yes, limited a lot; Yes, limited a little; No, not limited at all
	A2c	Please tell me if your health now limits you a lot, limits you a little, or does not limit you at all in climbing several flights of stairs	
	A3a	During the past 4 weeks, have you accomplished less than you would like as a result of your physical health?	Yes, No
	A3b	During the past 4 weeks, were you limited in the kind of work or other activities as a result of your physical health?	
	A5	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	Not at all, A little bit, Moderately, Quite a lot, Extremely
MCS-12	A4a	During the past 4 weeks, have you accomplished less than you would like as a result of any emotional problems?	
	A4b	During the past 4 weeks, did you not do work or other activities as carefully as usual as a result of any emotional problems such as feeling depressed or anxious?	Yes, No
	A6c	How much of the time in the past four weeks have you felt calm and peaceful?	
	A6d	How much of the time in the past four weeks did you have a lot of energy?	All of the time, Most of the time, A good bit of the time, Some of the time, A little of the time, None of the time
	A6e	How much of the time in the past four weeks have you felt downhearted and blue?	
	A7	During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities like visiting with friends, relatives, etc.?	

APPENDIX B

Table B-1. Nested models for PCS-12, Wave 1

	PCS-12 – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	51.94 (0.39) ***	47.63 (0.66) ***	47.5 (0.7) ***	43.66 (0.72) ***
Single	-0.52 (0.48)	-0.03 (0.48)	0.1 (0.49)	0.57 (0.59)
Cohabiting	-2.25 (1.18)	-2.12 (1.18)	-1.56 (1.18)	-0.07 (1.19)
Age	-0.09 (0.01) ***	-0.09 (0.01) ***	-0.09 (0.01) ***	-0.05 (0.01) ***
Female	-0.8 (0.22) ***	-0.63 (0.21) **	-0.16 (0.23)	0.24 (0.23)
Age*single	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.01)
Age*cohabiting	0.05 (0.02) *	0.05 (0.02) *	0.04 (0.02)	0.02 (0.02)
Single*female	0.25 (0.35)	-0.12 (0.35)	-0.21 (0.37)	-0.31 (0.38)
Cohabiting*female	-1.04 (0.87)	-1 (0.87)	-1.25 (0.84)	-1.6 (0.81) *
Black	-1.38 (0.31) ***	-1.28 (0.31) ***	-1.09 (0.31) ***	-0.85 (0.27) **
Other race	-0.41 (0.41)	-0.3 (0.41)	-0.18 (0.41)	-0.17 (0.42)
Hispanic	-1.56 (0.55) **	-1.3 (0.53) *	-1.21 (0.55) *	-0.82 (0.51)
Number of dependents	0.09 (0.08)	0.12 (0.08)	0.14 (0.07) *	0.11 (0.07)
Social support		0.85 (0.1) ***	0.81 (0.1) ***	0.71 (0.1) ***
Alcohol frequency			0.66 (0.07) ***	0.41 (0.07) ***
Smoke			-1.5 (0.2) ***	-1.2 (0.21) ***
Use marijuana			-0.57 (0.43)	-0.41 (0.41)
Abuse prescription drugs			-1.18 (0.4) **	-1.23 (0.37) ***
Use other drugs			-0.95 (0.78)	-0.72 (0.78)
Visited PCP in last year			-0.82 (0.17) ***	-0.97 (0.16) ***
Insured			0.54 (0.25) *	0.01 (0.25)
College graduate				1.47 (0.2) ***
Employed				2.22 (0.2) ***
Income				0.02 (0) ***
Single*income				0.01 (0.01)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-2. Nested models for MCS-12, Wave 1

	MCS-12 – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	46.12 (0.43) ***	39.47 (0.72) ***	39.64 (0.72) ***	38.12 (0.81) ***
Single	-0.42 (0.51)	0.34 (0.5)	0.53 (0.5)	0.95 (0.61)
Cohabiting	1.45 (1.2)	1.66 (1.17)	2.17 (1.25)	2.72 (1.36) *
Age	0 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01) **
Female	-0.7 (0.2) ***	-0.44 (0.2) *	-0.28 (0.2)	-0.14 (0.2)
Age*single	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Age*cohabiting	-0.04 (0.03)	-0.04 (0.03)	-0.05 (0.03)	-0.06 (0.03) *
Single*female	0.12 (0.35)	-0.45 (0.35)	-0.6 (0.34)	-0.64 (0.35)
Cohabiting*female	-0.51 (0.81)	-0.44 (0.77)	-0.58 (0.78)	-0.64 (0.78)
Black	-0.43 (0.28)	-0.27 (0.29)	-0.37 (0.3)	-0.31 (0.3)
Other race	0.09 (0.36)	0.26 (0.38)	0.22 (0.38)	0.27 (0.37)
Hispanic	-0.29 (0.37)	0.11 (0.39)	0.13 (0.38)	0.2 (0.39)
Number of dependents	-0.01 (0.08)	0.04 (0.08)	0.03 (0.08)	0.01 (0.07)
Social support		1.31 (0.11) ***	1.29 (0.11) ***	1.26 (0.11) ***
Alcohol frequency			0.04 (0.08)	-0.01 (0.08)
Smoke			-0.5 (0.18) **	-0.49 (0.18) **
Use marijuana			-0.64 (0.39)	-0.61 (0.39)
Abuse prescription drugs			-1.01 (0.41) *	-1.02 (0.42) *
Use other drugs			0.99 (0.68)	1.08 (0.69)
Visited PCP in last year			-0.9 (0.22) ***	-0.93 (0.21) ***
Insured			0.91 (0.32) **	0.74 (0.32) *
College graduate				-0.31 (0.2)
Employed				0.89 (0.26) ***
Income				0.01 (0) ***
Single*income				0 (0.01)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-3. Nested models for Gateway Conditions, Wave 1

	Gateway Conditions – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-0.13 (0.22)	-0.21 (0.25)	-0.14 (0.27)	-0.09 (0.29)
Single	-0.35 (0.24)	-0.34 (0.23)	-0.27 (0.23)	-0.31 (0.25)
Cohabiting	-0.31 (0.51)	-0.31 (0.51)	-0.21 (0.53)	-0.2 (0.59)
Age	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***
Female	-0.61 (0.1) ***	-0.61 (0.1) ***	-0.78 (0.11) ***	-0.79 (0.11) ***
Age*single	0 (0)	0 (0)	0 (0)	0 (0)
Age*cohabiting	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Single*female	0.21 (0.16)	0.2 (0.15)	0.24 (0.16)	0.25 (0.16)
Cohabiting*female	-0.11 (0.28)	-0.11 (0.29)	-0.13 (0.29)	-0.07 (0.3)
Black	0.96 (0.11) ***	0.97 (0.11) ***	0.96 (0.12) ***	0.93 (0.12) ***
Other race	-0.03 (0.12)	-0.03 (0.12)	-0.05 (0.13)	-0.02 (0.13)
Hispanic	0.17 (0.14)	0.17 (0.15)	0.17 (0.16)	0.1 (0.16)
Number of dependents	0.02 (0.03)	0.02 (0.03)	0.01 (0.03)	0.01 (0.03)
Social support		0.01 (0.04)	0.01 (0.04)	0.01 (0.04)
Alcohol frequency			-0.14 (0.03) ***	-0.11 (0.03) ***
Smoke			-0.09 (0.07)	-0.17 (0.07) *
Use marijuana			-0.04 (0.15)	-0.07 (0.16)
Abuse prescription drugs			0.32 (0.15) *	0.33 (0.14) *
Use other drugs			-0.15 (0.27)	-0.14 (0.28)
Visited PCP in last year			0.39 (0.08) ***	0.42 (0.09) ***
Insured			0.01 (0.08)	0.07 (0.09)
College graduate				-0.51 (0.08) ***
Employed				0.06 (0.08)
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				0 (0)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-4. Nested models for Chronic Conditions, Wave 1

	Chronic Conditions – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-2 (0.16) ***	-0.62 (0.24) *	-0.82 (0.28) **	-0.25 (0.32)
Single	0.63 (0.2) **	0.46 (0.2) *	0.41 (0.21) *	0.49 (0.25) *
Cohabiting	0.95 (0.43) *	0.91 (0.44) *	0.84 (0.44)	0.49 (0.47)
Age	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***	0.01 (0) ***
Female	0.37 (0.09) ***	0.32 (0.09) ***	0.18 (0.08) *	0.12 (0.09)
Age*single	-0.01 (0) **	-0.01 (0) **	-0.01 (0) **	-0.01 (0) **
Age*cohabiting	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Single*female	0.11 (0.12)	0.24 (0.12) *	0.32 (0.12) **	0.33 (0.12) **
Cohabiting*female	0.18 (0.29)	0.16 (0.3)	0.24 (0.3)	0.29 (0.3)
Black	-0.29 (0.09) **	-0.33 (0.09) ***	-0.32 (0.1) ***	-0.36 (0.1) ***
Other race	0.04 (0.14)	0.01 (0.15)	-0.01 (0.15)	-0.02 (0.15)
Hispanic	0.16 (0.13)	0.08 (0.14)	0.11 (0.14)	0.07 (0.15)
Number of dependents	0.04 (0.03)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
Social support		-0.28 (0.04) ***	-0.28 (0.04) ***	-0.26 (0.04) ***
Alcohol frequency			-0.14 (0.03) ***	-0.11 (0.03) ***
Smoke			0.31 (0.07) ***	0.29 (0.07) ***
Use marijuana			0.34 (0.14) *	0.33 (0.14) *
Abuse prescription drugs			0.75 (0.13) ***	0.76 (0.13) ***
Use other drugs			-0.18 (0.26)	-0.21 (0.26)
Visited PCP in last year			0.61 (0.08) ***	0.63 (0.08) ***
Insured			-0.25 (0.1) **	-0.18 (0.1)
College graduate				-0.09 (0.08)
Employed				-0.36 (0.08) ***
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				0 (0)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-5. Nested models for Serious Conditions, Wave 1

	Serious Conditions – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-4.98 (0.37) ***	-4.16 (0.4) ***	-4.85 (0.49) ***	-3.13 (0.5) ***
Single	0.65 (0.42)	0.53 (0.41)	0.67 (0.44)	0.28 (0.51)
Cohabiting	-0.12 (0.92)	-0.14 (0.93)	-0.29 (0.96)	-0.82 (1.27)
Age	0.05 (0.01) ***	0.05 (0.01) ***	0.05 (0.01) ***	0.03 (0.01) ***
Female	-0.28 (0.13) *	-0.31 (0.13) *	-0.49 (0.14) ***	-0.69 (0.14) ***
Age*single	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Age*cohabiting	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)	0.02 (0.02)
Single*female	0.17 (0.21)	0.26 (0.22)	0.23 (0.22)	0.34 (0.22)
Cohabiting*female	0.34 (0.56)	0.34 (0.57)	0.32 (0.59)	0.48 (0.61)
Black	0.09 (0.16)	0.07 (0.16)	0.05 (0.17)	0.02 (0.17)
Other race	0.4 (0.16) *	0.38 (0.16) *	0.39 (0.16) *	0.36 (0.16) *
Hispanic	0.03 (0.21)	-0.03 (0.2)	0.02 (0.2)	0 (0.21)
Number of dependents	-0.2 (0.06) **	-0.2 (0.06) ***	-0.2 (0.06) **	-0.18 (0.06) **
Social support		-0.16 (0.05) **	-0.17 (0.05) **	-0.14 (0.05) **
Alcohol frequency			-0.23 (0.04) ***	-0.19 (0.05) ***
Smoke			0.43 (0.11) ***	0.4 (0.12) ***
Use marijuana			-0.31 (0.24)	-0.31 (0.23)
Abuse prescription drugs			0.12 (0.18)	0.15 (0.18)
Use other drugs			0.16 (0.49)	0.02 (0.46)
Visited PCP in last year			0.99 (0.15) ***	1.01 (0.15) ***
Insured			0.18 (0.19)	0.24 (0.2)
College graduate				-0.02 (0.15)
Employed				-1.15 (0.14) ***
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-6. Nested models for Anxiety, Wave 1

	Anxiety – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-2.01 (0.2) ***	0.19 (0.28)	-0.19 (0.29)	0.53 (0.31)
Single	1.02 (0.26) ***	0.79 (0.26) **	0.63 (0.26) *	0.37 (0.29)
Cohabiting	0.54 (0.5)	0.47 (0.51)	0.11 (0.57)	-0.31 (0.57)
Age	0 (0)	0 (0)	0 (0)	-0.01 (0) *
Female	0.16 (0.12)	0.08 (0.12)	-0.01 (0.11)	-0.08 (0.12)
Age*single	-0.01 (0)	-0.01 (0)	-0.01 (0)	-0.01 (0)
Age*cohabiting	-0.01 (0.01)	-0.01 (0.01)	0 (0.02)	0 (0.01)
Single*female	-0.44 (0.17) **	-0.25 (0.16)	-0.22 (0.17)	-0.21 (0.18)
Cohabiting*female	0.21 (0.3)	0.18 (0.31)	0.34 (0.33)	0.34 (0.33)
Black	0.3 (0.13) *	0.25 (0.13)	0.29 (0.14) *	0.26 (0.15)
Other race	-0.01 (0.16)	-0.08 (0.16)	-0.08 (0.16)	-0.1 (0.16)
Hispanic	0.2 (0.15)	0.04 (0.15)	0.11 (0.17)	0.07 (0.16)
Number of dependents	0.02 (0.03)	0.01 (0.03)	0 (0.03)	0.01 (0.03)
Social support		-0.44 (0.04) ***	-0.43 (0.04) ***	-0.42 (0.04) ***
Alcohol frequency			-0.06 (0.03)	-0.03 (0.03)
Smoke			0.55 (0.09) ***	0.54 (0.09) ***
Use marijuana			0.39 (0.14) **	0.38 (0.14) **
Abuse prescription drugs			0.67 (0.14) ***	0.68 (0.14) ***
Use other drugs			0.49 (0.28)	0.46 (0.28)
Visited PCP in last year			0.54 (0.11) ***	0.56 (0.1) ***
Insured			-0.31 (0.12) *	-0.22 (0.12)
College graduate				0.09 (0.11)
Employed				-0.36 (0.11) **
Income				-0.01 (0) ***
Single*income				0 (0)
Cohabiting*income				0 (0)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-7. Nested models for MDD, Wave 1

	MDD – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-1.85 (0.24) ***	0.58 (0.29) *	0.16 (0.3)	0.56 (0.29)
Single	1.27 (0.27) ***	1.02 (0.26) ***	0.88 (0.26) ***	0.74 (0.27) **
Cohabiting	1.13 (0.49) *	1.07 (0.49) *	0.79 (0.53)	0.72 (0.57)
Age	-0.01 (0)	-0.01 (0)	-0.01 (0)	-0.01 (0) **
Female	0.63 (0.1) ***	0.55 (0.1) ***	0.44 (0.1) ***	0.4 (0.1) ***
Age*single	-0.01 (0.01)	-0.01 (0.01) *	-0.01 (0.01)	-0.01 (0)
Age*cohabiting	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.02)	-0.01 (0.01)
Single*female	-0.45 (0.15) **	-0.25 (0.15)	-0.19 (0.15)	-0.17 (0.16)
Cohabiting*female	0.23 (0.27)	0.22 (0.28)	0.39 (0.31)	0.42 (0.31)
Black	0.12 (0.11)	0.06 (0.12)	0.13 (0.13)	0.11 (0.13)
Other race	-0.4 (0.14) **	-0.48 (0.14) ***	-0.48 (0.15) **	-0.48 (0.15) **
Hispanic	0.17 (0.13)	0 (0.15)	0.08 (0.14)	0.05 (0.14)
Number of dependents	-0.01 (0.05)	-0.03 (0.05)	-0.03 (0.05)	-0.03 (0.05)
Social support		-0.49 (0.04) ***	-0.49 (0.04) ***	-0.48 (0.04) ***
Alcohol frequency			-0.09 (0.03) *	-0.06 (0.03)
Smoke			0.49 (0.09) ***	0.47 (0.09) ***
Use marijuana			0.43 (0.14) **	0.42 (0.14) **
Abuse prescription drugs			0.83 (0.14) ***	0.84 (0.14) ***
Use other drugs			0.75 (0.39)	0.74 (0.39)
Visited PCP in last year			0.53 (0.11) ***	0.56 (0.11) ***
Insured			-0.14 (0.12)	-0.08 (0.12)
College graduate				-0.09 (0.1)
Employed				-0.23 (0.09) *
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-8. Nested models for Dysthymia, Wave 1

	Dysthymia – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-3.18 (0.27) ***	-0.07 (0.33)	0 (0.36)	1.12 (0.37) **
Single	1.25 (0.29) ***	0.91 (0.3) **	0.83 (0.3) **	0.43 (0.35)
Cohabiting	1.83 (0.51) ***	1.79 (0.53) ***	1.56 (0.5) **	1.26 (0.58) *
Age	0.01 (0)	0 (0)	0.01 (0)	-0.01 (0)
Female	0.44 (0.13) ***	0.34 (0.12) **	0.23 (0.13)	0.1 (0.13)
Age*single	-0.01 (0) *	-0.01 (0.01) **	-0.01 (0.01) **	-0.01 (0.01) *
Age*cohabiting	-0.03 (0.01) **	-0.03 (0.01) **	-0.03 (0.01) **	-0.03 (0.01) *
Single*female	-0.06 (0.17)	0.21 (0.17)	0.25 (0.16)	0.33 (0.17) *
Cohabiting*female	0.26 (0.34)	0.21 (0.33)	0.35 (0.33)	0.39 (0.32)
Black	0.73 (0.11) ***	0.68 (0.12) ***	0.65 (0.12) ***	0.6 (0.12) ***
Other race	0.06 (0.15)	-0.03 (0.15)	-0.06 (0.15)	-0.03 (0.15)
Hispanic	0.51 (0.27)	0.27 (0.27)	0.21 (0.31)	0.14 (0.29)
Number of dependents	0.01 (0.04)	-0.01 (0.04)	-0.02 (0.04)	-0.02 (0.04)
Social support		-0.64 (0.04) ***	-0.61 (0.05) ***	-0.59 (0.05) ***
Alcohol frequency			-0.19 (0.04) ***	-0.12 (0.04) **
Smoke			0.67 (0.09) ***	0.61 (0.09) ***
Use marijuana			-0.2 (0.19)	-0.23 (0.19)
Abuse prescription drugs			0.8 (0.16) ***	0.83 (0.16) ***
Use other drugs			0.5 (0.46)	0.47 (0.45)
Visited PCP in last year			0.05 (0.1)	0.12 (0.1)
Insured			-0.33 (0.14) *	-0.18 (0.15)
College graduate				-0.57 (0.16) ***
Employed				-0.56 (0.1) ***
Income				-0.01 (0) **
Single*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-9. Nested models for Panic, Wave 1

	Panic – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-2.53 (0.36) ***	-0.28 (0.46)	-0.76 (0.53)	-0.17 (0.51)
Single	0.54 (0.42)	0.27 (0.42)	0.08 (0.42)	0.15 (0.41)
Cohabiting	-1.11 (0.69)	-1.19 (0.7)	-1.53 (0.73) *	-1.79 (0.83) *
Age	-0.02 (0.01) ***	-0.02 (0.01) ***	-0.02 (0.01) ***	-0.03 (0.01) ***
Female	0.76 (0.16) ***	0.68 (0.16) ***	0.52 (0.17) **	0.46 (0.17) **
Age*single	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Age*cohabiting	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)	0.03 (0.01) *
Single*female	-0.34 (0.21)	-0.15 (0.21)	-0.08 (0.22)	-0.09 (0.22)
Cohabiting*female	0.95 (0.55)	0.94 (0.54)	1.09 (0.58)	1.07 (0.6)
Black	-0.1 (0.15)	-0.15 (0.16)	-0.07 (0.16)	-0.12 (0.16)
Other race	-0.06 (0.21)	-0.12 (0.21)	-0.09 (0.22)	-0.11 (0.22)
Hispanic	-0.51 (0.33)	-0.7 (0.32) *	-0.61 (0.37)	-0.63 (0.36)
Number of dependents	-0.01 (0.05)	-0.04 (0.05)	-0.04 (0.04)	-0.03 (0.04)
Social support		-0.45 (0.05) ***	-0.44 (0.06) ***	-0.43 (0.06) ***
Alcohol frequency			-0.1 (0.04) *	-0.07 (0.04)
Smoke			0.66 (0.1) ***	0.66 (0.1) ***
Use marijuana			0.21 (0.19)	0.22 (0.19)
Abuse prescription drugs			0.71 (0.17) ***	0.71 (0.17) ***
Use other drugs			0.56 (0.31)	0.53 (0.31)
Visited PCP in last year			0.74 (0.16) ***	0.75 (0.16) ***
Insured			-0.33 (0.19)	-0.24 (0.18)
College graduate				0.24 (0.15)
Employed				-0.39 (0.14) **
Income				-0.01 (0) *
Single*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-10. Nested models for Alcohol Problems, Wave 1

	Alcohol Problem – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-1.07 (0.29) ***	-0.39 (0.42)	-1.45 (0.47) **	-1.66 (0.53) **
Single	1.05 (0.35) **	1.01 (0.35) **	0.94 (0.37) *	1.12 (0.45) *
Cohabiting	-0.14 (0.57)	-0.16 (0.57)	-0.69 (0.58)	-0.25 (0.62)
Age	-0.03 (0.01) ***	-0.03 (0.01) ***	-0.02 (0.01) ***	-0.02 (0.01) **
Female	-2.11 (0.23) ***	-2.13 (0.23) ***	-2.09 (0.23) ***	-2.09 (0.23) ***
Age*single	-0.01 (0.01)	-0.02 (0.01) *	-0.02 (0.01) *	-0.02 (0.01)
Age*cohabiting	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.02 (0.01)
Single*female	0.64 (0.27) *	0.69 (0.27) *	0.7 (0.27) *	0.7 (0.27) **
Cohabiting*female	0.9 (0.38) *	0.9 (0.39) *	1.09 (0.39) **	1.07 (0.39) **
Black	-0.13 (0.17)	-0.14 (0.17)	-0.11 (0.18)	-0.09 (0.18)
Other race	-0.69 (0.28) *	-0.72 (0.27) **	-0.85 (0.28) **	-0.82 (0.28) **
Hispanic	0.01 (0.25)	-0.03 (0.25)	0.15 (0.25)	0.18 (0.24)
Number of dependents	-0.07 (0.05)	-0.07 (0.05)	-0.09 (0.05)	-0.09 (0.05)
Social support		-0.13 (0.06) *	-0.08 (0.06)	-0.09 (0.06)
Alcohol frequency				
Smoke			1 (0.12) ***	1 (0.13) ***
Use marijuana			0.95 (0.16) ***	0.94 (0.16) ***
Abuse prescription drugs			0.68 (0.17) ***	0.69 (0.17) ***
Use other drugs				
Visited PCP in last year			-0.14 (0.13)	-0.14 (0.12)
Insured			0.23 (0.15)	0.2 (0.15)
College graduate				-0.13 (0.13)
Employed				0.02 (0.17)
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-11. Nested models for Drug Problems, Wave 1

	Drug Problem – Wave 1			
	Model A	Model B	Model C	Model D
Intercept	-3.79 (0.66) ***	-2.61 (0.85) **	-3.57 (0.79) ***	-3.1 (0.82) ***
Single	2.66 (0.67) ***	2.58 (0.67) ***	2.65 (0.69) ***	2.22 (0.71) **
Cohabiting	2.78 (0.93) **	2.75 (0.93) **	2.3 (0.92) *	2.09 (0.89) *
Age	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Female	-0.46 (0.37)	-0.51 (0.37)	-0.39 (0.36)	-0.44 (0.35)
Age*single	-0.04 (0.01) **	-0.04 (0.01) ***	-0.05 (0.01) ***	-0.05 (0.01) ***
Age*cohabiting	-0.04 (0.02)	-0.04 (0.02)	-0.04 (0.02)	-0.04 (0.02)
Single*female	-0.2 (0.44)	-0.12 (0.43)	-0.06 (0.44)	0 (0.43)
Cohabiting*female	0.27 (0.57)	0.26 (0.57)	0.51 (0.6)	0.47 (0.6)
Black	0.13 (0.34)	0.1 (0.34)	0.3 (0.33)	0.31 (0.34)
Other race	-0.29 (0.52)	-0.32 (0.51)	-0.38 (0.49)	-0.44 (0.45)
Hispanic	-0.09 (0.32)	-0.18 (0.33)	-0.05 (0.31)	0 (0.31)
Number of dependents	-0.08 (0.13)	-0.1 (0.13)	-0.12 (0.14)	-0.1 (0.14)
Social support		-0.23 (0.09) **	-0.19 (0.1) *	-0.18 (0.09)
Alcohol frequency			0.24 (0.08) **	0.23 (0.08) **
Smoke			1.17 (0.17) ***	1.23 (0.18) ***
Use marijuana				
Abuse prescription drugs				
Use other drugs				
Visited PCP in last year			0.17 (0.22)	0.13 (0.22)
Insured			-0.53 (0.22) *	-0.57 (0.23) *
College graduate				0.35 (0.25)
Employed				-0.41 (0.22)
Income				0 (0)
Single*income				0.01 (0.01)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-12. Nested models for PCS-12, Wave 2

	PCS-12 – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	53.05 (0.59) ***	48.52 (0.73) ***	48.78 (0.79) ***	46.27 (0.95) ***
Single	-1.89 (0.75) *	-1.24 (0.7)	-0.97 (0.69)	-1.4 (0.82)
Cohabiting	-1 (1.29)	-0.66 (1.32)	-0.23 (1.29)	0.72 (1.33)
Age	-0.11 (0.01) ***	-0.11 (0.01) ***	-0.11 (0.01) ***	-0.08 (0.01) ***
Female	-0.66 (0.25) **	-0.65 (0.25) **	-0.45 (0.26)	-0.09 (0.27)
Age*single	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)
Age*cohabiting	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.05 (0.02)
Single*female	-0.2 (0.45)	-0.54 (0.45)	-0.5 (0.44)	-0.65 (0.44)
Cohabiting*female	0.08 (0.91)	0.32 (0.97)	-0.06 (0.92)	-0.62 (0.89)
Black	-1.59 (0.37) ***	-1.37 (0.38) ***	-1.29 (0.36) ***	-1.15 (0.33) ***
Other race	0.37 (0.55)	0.52 (0.55)	0.48 (0.53)	0.51 (0.55)
Hispanic	-1.39 (0.39) ***	-1.1 (0.38) **	-0.94 (0.41) *	-0.74 (0.39)
Number of dependents	0.09 (0.08)	0.16 (0.08)	0.18 (0.08) *	0.11 (0.08)
Social support		0.79 (0.09) ***	0.69 (0.1) ***	0.62 (0.1) ***
Alcohol frequency			0.5 (0.09) ***	0.3 (0.1) **
Smoke			-1.85 (0.29) ***	-1.49 (0.29) ***
Use marijuana			-0.8 (0.5)	-0.63 (0.51)
Abuse prescription drugs			-1.08 (0.44) *	-1.27 (0.42) **
Use other drugs			0.4 (0.77)	0.5 (0.75)
Visited PCP in last year			-1.08 (0.24) ***	-1.11 (0.22) ***
Insured			1.04 (0.32) **	0.41 (0.32)
College graduate				1.34 (0.24) ***
Employed				1.53 (0.29) ***
Income				0.01 (0) ***
Single*income				0.02 (0.01) **
Cohabiting*income				0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-13. Nested models for MCS-12, Wave 2

	MCS-12 – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	46.8 (0.51) ***	39.77 (0.68) ***	40.06 (0.88) ***	37.69 (0.98) ***
Single	-1.06 (0.67)	-0.06 (0.64)	0.08 (0.67)	0.64 (0.76)
Cohabiting	-0.58 (1.43)	-0.05 (1.46)	0.43 (1.51)	0.02 (1.6)
Age	-0.01 (0.01)	0 (0.01)	0 (0.01)	0.02 (0.01) *
Female	-0.2 (0.24)	-0.18 (0.23)	-0.07 (0.25)	0.2 (0.24)
Age*single	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Age*cohabiting	0.01 (0.04)	0 (0.04)	0 (0.04)	-0.03 (0.04)
Single*female	0.42 (0.54)	-0.11 (0.49)	-0.08 (0.49)	-0.22 (0.5)
Cohabiting*female	-2.06 (1.01) *	-1.69 (0.92)	-1.85 (0.95)	-2.1 (0.92) *
Black	0.02 (0.34)	0.36 (0.32)	0.39 (0.32)	0.36 (0.32)
Other race	0.4 (0.39)	0.64 (0.37)	0.75 (0.38) *	0.83 (0.36) *
Hispanic	-0.18 (0.38)	0.28 (0.37)	0.29 (0.4)	0.29 (0.38)
Number of dependents	-0.08 (0.09)	0.02 (0.09)	0.01 (0.09)	-0.05 (0.08)
Social support		1.23 (0.09) ***	1.21 (0.1) ***	1.16 (0.1) ***
Alcohol frequency			0.12 (0.09)	0.02 (0.09)
Smoke			-0.2 (0.26)	-0.14 (0.25)
Use marijuana			-1.02 (0.54)	-0.86 (0.51)
Abuse prescription drugs			-0.28 (0.85)	-0.38 (0.81)
Use other drugs			-0.26 (1.21)	-0.16 (1.2)
Visited PCP in last year			-0.79 (0.23) ***	-0.77 (0.23) ***
Insured			0.44 (0.37)	0.14 (0.36)
College graduate				-0.22 (0.2)
Employed				1.6 (0.24) ***
Income				0.01 (0) **
Single*income				0 (0.01)
Cohabiting*income				0.03 (0.01) *

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-14. Nested models for Gateway Conditions, Wave 2

	Gateway Conditions – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	0.12 (0.24)	0.34 (0.33)	0.29 (0.36)	0.25 (0.37)
Single	-0.31 (0.29)	-0.33 (0.29)	-0.06 (0.29)	0.22 (0.35)
Cohabiting	-0.1 (0.53)	-0.11 (0.53)	0.06 (0.54)	-0.32 (0.64)
Age	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***
Female	-0.7 (0.11) ***	-0.7 (0.11) ***	-0.92 (0.11) ***	-0.97 (0.11) ***
Age*single	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Age*cohabiting	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Single*female	0.26 (0.18)	0.28 (0.18)	0.22 (0.19)	0.26 (0.2)
Cohabiting*female	0.37 (0.39)	0.36 (0.39)	0.27 (0.4)	0.43 (0.4)
Black	1.05 (0.12) ***	1.04 (0.12) ***	0.97 (0.13) ***	0.92 (0.13) ***
Other race	-0.15 (0.17)	-0.16 (0.17)	-0.17 (0.17)	-0.14 (0.17)
Hispanic	0.39 (0.18) *	0.37 (0.18) *	0.37 (0.16) *	0.28 (0.16)
Number of dependents	0.02 (0.04)	0.02 (0.04)	0.02 (0.04)	0.02 (0.04)
Social support		-0.04 (0.04)	-0.03 (0.04)	-0.02 (0.04)
Alcohol frequency			-0.16 (0.03) ***	-0.13 (0.03) ***
Smoke			-0.19 (0.09) *	-0.32 (0.09) ***
Use marijuana			-0.44 (0.21) *	-0.44 (0.2) *
Abuse prescription drugs			0.41 (0.19) *	0.44 (0.19) *
Use other drugs			-0.15 (0.38)	-0.13 (0.36)
Visited PCP in last year			0.54 (0.09) ***	0.56 (0.1) ***
Insured			0.01 (0.13)	0.11 (0.13)
College graduate				-0.64 (0.11) ***
Employed				0.09 (0.11)
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-15. Nested models for Chronic Conditions, Wave 2

	Chronic Conditions – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-1.73 (0.26) ***	-0.07 (0.29)	-0.69 (0.34) *	-0.08 (0.35)
Single	0.45 (0.29)	0.18 (0.28)	0.04 (0.28)	0.03 (0.33)
Cohabiting	0.56 (0.56)	0.42 (0.58)	0.19 (0.55)	0.12 (0.56)
Age	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***	0.01 (0) *
Female	0.3 (0.1) **	0.3 (0.1) **	0.24 (0.1) *	0.16 (0.1)
Age*single	-0.01 (0)	-0.01 (0)	0 (0)	0 (0)
Age*cohabiting	0 (0.01)	0 (0.01)	0 (0.01)	0.01 (0.01)
Single*female	-0.01 (0.18)	0.12 (0.18)	0.12 (0.19)	0.17 (0.19)
Cohabiting*female	0.18 (0.36)	0.09 (0.39)	0.14 (0.37)	0.24 (0.36)
Black	-0.08 (0.11)	-0.17 (0.12)	-0.12 (0.13)	-0.13 (0.13)
Other race	-0.08 (0.19)	-0.12 (0.19)	-0.14 (0.19)	-0.15 (0.2)
Hispanic	-0.12 (0.22)	-0.24 (0.21)	-0.22 (0.18)	-0.24 (0.19)
Number of dependents	-0.04 (0.04)	-0.07 (0.04)	-0.05 (0.04)	-0.04 (0.04)
Social support		-0.29 (0.03) ***	-0.28 (0.03) ***	-0.27 (0.03) ***
Alcohol frequency			-0.04 (0.03)	-0.01 (0.04)
Smoke			0.27 (0.1) **	0.22 (0.1) *
Use marijuana			0.44 (0.24)	0.41 (0.24)
Abuse prescription drugs			0.64 (0.14) ***	0.68 (0.14) ***
Use other drugs			0.26 (0.44)	0.24 (0.43)
Visited PCP in last year			0.79 (0.12) ***	0.79 (0.12) ***
Insured			-0.26 (0.13)	-0.16 (0.14)
College graduate				-0.2 (0.1) *
Employed				-0.41 (0.1) ***
Income				0 (0)
Single*income				0 (0)
Cohabiting*income				0 (0)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-16. Nested models for Serious Conditions, Wave 2

	Serious Conditions – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-5.55 (0.41) ***	-4.49 (0.51) ***	-5.13 (0.56) ***	-3.69 (0.69) ***
Single	1.66 (0.5) ***	1.44 (0.51) **	1.69 (0.52) **	1.31 (0.65) *
Cohabiting	-0.97 (1)	-1.07 (1)	-0.75 (0.96)	-0.83 (1.12)
Age	0.06 (0.01) ***	0.06 (0.01) ***	0.06 (0.01) ***	0.04 (0.01) ***
Female	-0.28 (0.15)	-0.28 (0.15)	-0.46 (0.15) **	-0.64 (0.16) ***
Age*single	-0.03 (0.01) ***	-0.03 (0.01) ***	-0.03 (0.01) ***	-0.03 (0.01) **
Age*cohabiting	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)
Single*female	0.07 (0.26)	0.17 (0.27)	0.09 (0.27)	0.21 (0.26)
Cohabiting*female	0.85 (0.59)	0.8 (0.59)	0.79 (0.59)	1.02 (0.59)
Black	0.15 (0.17)	0.08 (0.17)	-0.05 (0.17)	-0.03 (0.17)
Other race	0.51 (0.23) *	0.46 (0.24)	0.45 (0.28)	0.41 (0.28)
Hispanic	-0.06 (0.25)	-0.14 (0.26)	-0.21 (0.26)	-0.21 (0.28)
Number of dependents	-0.11 (0.09)	-0.14 (0.09)	-0.11 (0.09)	-0.08 (0.08)
Social support		-0.19 (0.05) ***	-0.17 (0.05) ***	-0.16 (0.05) **
Alcohol frequency			-0.22 (0.05) ***	-0.19 (0.05) ***
Smoke			0.14 (0.14)	0.05 (0.14)
Use marijuana			-0.34 (0.32)	-0.39 (0.31)
Abuse prescription drugs			0.03 (0.26)	0.07 (0.27)
Use other drugs			0.73 (0.7)	0.78 (0.64)
Visited PCP in last year			1.1 (0.19) ***	1.08 (0.19) ***
Insured			-0.12 (0.22)	-0.02 (0.23)
College graduate				-0.16 (0.16)
Employed				-0.87 (0.18) ***
Income				0 (0)
Single*income				0 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-17. Nested models for Anxiety, Wave 2

	Anxiety – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-1.58 (0.39) ***	0.89 (0.41) *	0.7 (0.43)	1.27 (0.4) **
Single	1 (0.41) *	0.69 (0.4)	0.51 (0.4)	0.61 (0.4)
Cohabiting	-0.78 (0.61)	-1.1 (0.61)	-1.46 (0.6) *	-1.16 (0.62)
Age	-0.01 (0.01)	-0.02 (0.01) **	-0.01 (0.01) *	-0.02 (0.01) ***
Female	0.4 (0.14) **	0.4 (0.14) **	0.36 (0.15) *	0.28 (0.15)
Age*single	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Age*cohabiting	0.02 (0.01)	0.03 (0.01)	0.03 (0.01) *	0.04 (0.01) **
Single*female	-0.84 (0.28) **	-0.67 (0.25) **	-0.7 (0.27) **	-0.68 (0.28) *
Cohabiting*female	0.37 (0.37)	0.27 (0.37)	0.35 (0.38)	0.41 (0.37)
Black	-0.02 (0.16)	-0.14 (0.17)	-0.13 (0.18)	-0.15 (0.17)
Other race	-0.19 (0.25)	-0.26 (0.25)	-0.26 (0.26)	-0.27 (0.26)
Hispanic	0.15 (0.23)	-0.04 (0.21)	-0.08 (0.19)	-0.08 (0.2)
Number of dependents	-0.04 (0.05)	-0.09 (0.05)	-0.08 (0.05)	-0.06 (0.05)
Social support		-0.43 (0.04) ***	-0.41 (0.04) ***	-0.4 (0.04) ***
Alcohol frequency			-0.11 (0.05) *	-0.07 (0.05)
Smoke			0.39 (0.11) ***	0.35 (0.11) **
Use marijuana			0.51 (0.22) *	0.46 (0.21) *
Abuse prescription drugs			0.7 (0.17) ***	0.75 (0.17) ***
Use other drugs			0.21 (0.39)	0.18 (0.39)
Visited PCP in last year			0.48 (0.16) **	0.48 (0.16) **
Insured			-0.5 (0.13) ***	-0.38 (0.14) **
College graduate				-0.09 (0.13)
Employed				-0.43 (0.13) ***
Income				0 (0)
Single*income				-0.01 (0)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-18. Nested models for MDD, Wave 2

	MDD – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-1.5 (0.41) ***	1.31 (0.44) **	1.13 (0.49) *	1.72 (0.54) **
Single	0.92 (0.45) *	0.55 (0.43)	0.41 (0.42)	0.67 (0.47)
Cohabiting	-0.82 (0.63)	-1.2 (0.65)	-1.54 (0.62) *	-1.24 (0.65)
Age	-0.01 (0.01) *	-0.02 (0.01) **	-0.02 (0.01) **	-0.03 (0.01) ***
Female	0.46 (0.14) **	0.47 (0.14) **	0.41 (0.15) **	0.31 (0.16) *
Age*single	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Age*cohabiting	0.03 (0.01) **	0.04 (0.01) **	0.04 (0.01) ***	0.05 (0.01) ***
Single*female	-0.61 (0.2) **	-0.41 (0.19) *	-0.44 (0.21) *	-0.37 (0.22)
Cohabiting*female	-0.01 (0.5)	-0.15 (0.51)	-0.08 (0.5)	-0.01 (0.51)
Black	-0.07 (0.13)	-0.21 (0.14)	-0.22 (0.15)	-0.23 (0.15)
Other race	-0.36 (0.21)	-0.46 (0.21) *	-0.48 (0.22) *	-0.48 (0.22) *
Hispanic	0.01 (0.33)	-0.21 (0.32)	-0.27 (0.28)	-0.26 (0.29)
Number of dependents	0.04 (0.06)	-0.01 (0.06)	0 (0.05)	0.01 (0.06)
Social support		-0.49 (0.03) ***	-0.47 (0.03) ***	-0.47 (0.03) ***
Alcohol frequency			-0.13 (0.05) **	-0.11 (0.05) *
Smoke			0.41 (0.15) **	0.36 (0.15) *
Use marijuana			0.35 (0.22)	0.33 (0.22)
Abuse prescription drugs			0.91 (0.17) ***	0.96 (0.18) ***
Use other drugs			0.28 (0.39)	0.24 (0.39)
Visited PCP in last year			0.48 (0.15) **	0.47 (0.15) **
Insured			-0.52 (0.17) **	-0.44 (0.18) *
College graduate				-0.25 (0.13)
Employed				-0.56 (0.12) ***
Income				0 (0)
Single*income				-0.01 (0)
Cohabiting*income				-0.01 (0) *

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-19. Nested models for Dysthymia, Wave 2

	Dysthymia – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-3.3 (0.37) ***	-0.38 (0.37)	-0.44 (0.45)	0.53 (0.45)
Single	1.39 (0.49) **	0.9 (0.45) *	0.78 (0.45)	0.94 (0.56)
Cohabiting	0.68 (0.64)	0.29 (0.62)	0.21 (0.63)	0.23 (0.69)
Age	0.01 (0.01)	0 (0.01)	0 (0.01)	-0.01 (0.01)
Female	0.37 (0.18) *	0.39 (0.18) *	0.34 (0.19)	0.18 (0.2)
Age*single	0 (0.01)	-0.01 (0.01)	0 (0.01)	-0.01 (0.01)
Age*cohabiting	-0.01 (0.02)	0 (0.01)	0 (0.02)	0.01 (0.01)
Single*female	-0.5 (0.34)	-0.26 (0.32)	-0.31 (0.34)	-0.24 (0.34)
Cohabiting*female	0.57 (0.4)	0.46 (0.4)	0.48 (0.4)	0.6 (0.38)
Black	0.76 (0.12) ***	0.66 (0.14) ***	0.63 (0.15) ***	0.61 (0.14) ***
Other race	-0.26 (0.2)	-0.37 (0.21)	-0.46 (0.2) *	-0.46 (0.21) *
Hispanic	0.55 (0.27) *	0.33 (0.24)	0.29 (0.21)	0.26 (0.22)
Number of dependents	0.06 (0.05)	0.01 (0.04)	0.01 (0.04)	0.03 (0.05)
Social support		-0.52 (0.04) ***	-0.5 (0.04) ***	-0.49 (0.04) ***
Alcohol frequency			-0.19 (0.06) **	-0.13 (0.06) *
Smoke			0.68 (0.13) ***	0.56 (0.13) ***
Use marijuana			0 (0.34)	-0.05 (0.32)
Abuse prescription drugs			0.44 (0.31)	0.54 (0.3)
Use other drugs			0.6 (0.55)	0.56 (0.55)
Visited PCP in last year			0.41 (0.21)	0.43 (0.21) *
Insured			-0.47 (0.17) **	-0.27 (0.18)
College graduate				-0.58 (0.19) **
Employed				-0.65 (0.15) ***
Income				0 (0)
Single*income				-0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-20. Nested models for Panic, Wave 2

	Panic – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-2.37 (0.35) ***	-0.21 (0.43)	-1.34 (0.52) *	-1.03 (0.56)
Single	0.59 (0.42)	0.31 (0.43)	0.13 (0.49)	0.56 (0.55)
Cohabiting	0.95 (0.83)	0.74 (0.89)	0.5 (0.84)	0.86 (0.83)
Age	-0.02 (0) ***	-0.03 (0) ***	-0.02 (0.01) ***	-0.03 (0.01) ***
Female	0.82 (0.19) ***	0.82 (0.2) ***	0.79 (0.21) ***	0.7 (0.22) **
Age*single	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Age*cohabiting	0 (0.02)	0 (0.02)	0 (0.02)	0.01 (0.02)
Single*female	0.08 (0.31)	0.23 (0.32)	0.26 (0.33)	0.37 (0.34)
Cohabiting*female	-0.41 (0.46)	-0.48 (0.47)	-0.51 (0.47)	-0.33 (0.48)
Black	-0.22 (0.19)	-0.34 (0.2)	-0.29 (0.2)	-0.36 (0.21)
Other race	-0.91 (0.4) *	-0.96 (0.39) *	-0.92 (0.39) *	-0.91 (0.39) *
Hispanic	-0.22 (0.33)	-0.38 (0.33)	-0.33 (0.38)	-0.39 (0.37)
Number of dependents	-0.12 (0.07)	-0.16 (0.07) *	-0.15 (0.07) *	-0.15 (0.07) *
Social support		-0.38 (0.05) ***	-0.37 (0.06) ***	-0.36 (0.05) ***
Alcohol frequency			-0.02 (0.08)	0.02 (0.08)
Smoke			0.34 (0.14) *	0.24 (0.14)
Use marijuana			0.59 (0.27) *	0.62 (0.26) *
Abuse prescription drugs			0.92 (0.2) ***	1 (0.2) ***
Use other drugs			-0.02 (0.48)	-0.09 (0.48)
Visited PCP in last year			1.08 (0.2) ***	1.12 (0.2) ***
Insured			-0.16 (0.21)	-0.04 (0.21)
College graduate				-0.54 (0.22) *
Employed				-0.39 (0.18) *
Income				0 (0)
Single*income				-0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table B-21. Nested models for Alcohol Problems, Wave 2

	Alcohol Problem – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-0.4 (0.47)	-0.1 (0.6)	-0.66 (0.74)	-0.53 (0.82)
Single	0.53 (0.55)	0.52 (0.56)	-0.04 (0.62)	0.41 (0.71)
Cohabiting	-1.49 (0.71) *	-1.51 (0.71) *	-2.14 (0.76) **	-1.55 (0.86)
Age	-0.04 (0.01) ***	-0.04 (0.01) ***	-0.04 (0.01) ***	-0.04 (0.01) ***
Female	-2 (0.23) ***	-2 (0.23) ***	-1.97 (0.23) ***	-2 (0.24) ***
Age*single	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Age*cohabiting	0.04 (0.02) **	0.04 (0.02) **	0.05 (0.02) **	0.05 (0.02) **
Single*female	0.6 (0.32)	0.62 (0.32)	0.68 (0.33) *	0.71 (0.33) *
Cohabiting*female	0.41 (0.46)	0.4 (0.46)	0.66 (0.49)	0.61 (0.49)
Black	-0.63 (0.27) *	-0.64 (0.27) *	-0.58 (0.28) *	-0.59 (0.28) *
Other race	-1.58 (0.54) **	-1.58 (0.54) **	-1.53 (0.55) **	-1.55 (0.55) **
Hispanic	0.35 (0.33)	0.33 (0.32)	0.41 (0.38)	0.5 (0.39)
Number of dependents	-0.22 (0.11) *	-0.22 (0.11) *	-0.25 (0.11) *	-0.24 (0.11) *
Social support		-0.05 (0.07)	-0.01 (0.07)	-0.04 (0.07)
Alcohol frequency				
Smoke			0.99 (0.16) ***	1.04 (0.16) ***
Use marijuana			0.82 (0.3) **	0.79 (0.27) **
Abuse prescription drugs			0.47 (0.27)	0.51 (0.26)
Use other drugs				
Visited PCP in last year			0.19 (0.2)	0.13 (0.2)
Insured			-0.25 (0.22)	-0.3 (0.23)
College graduate				0.14 (0.21)
Employed				-0.49 (0.27)
Income				0.01 (0) ***
Single*income				-0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table B-22. Nested models for Drug Problems, Wave 2

	Drug Problem – Wave 2			
	Model A	Model B	Model C	Model D
Intercept	-3.62 (0.48) ***	-1.35 (0.76)	-2.32 (0.79) **	-1.7 (0.88)
Single	2.14 (0.61) ***	2.04 (0.64) **	1.76 (0.65) **	1.66 (0.77) *
Cohabiting	3.39 (1.16) **	3.08 (1.16) **	3.13 (1.2) **	3.77 (1.31) **
Age	-0.03 (0.01) *	-0.03 (0.01) **	-0.03 (0.01) **	-0.04 (0.01) **
Female	0.32 (0.43)	0.31 (0.43)	0.54 (0.47)	0.43 (0.44)
Age*single	-0.02 (0.01)	-0.03 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Age*cohabiting	-0.04 (0.03)	-0.03 (0.03)	-0.04 (0.03)	-0.02 (0.03)
Single*female	-1.15 (0.54) *	-1 (0.54)	-1.07 (0.54) *	-0.9 (0.53)
Cohabiting*female	-0.83 (0.61)	-0.91 (0.62)	-0.95 (0.63)	-0.94 (0.63)
Black	-0.12 (0.41)	-0.27 (0.41)	0.03 (0.41)	-0.01 (0.43)
Other race	-0.69 (0.6)	-0.63 (0.58)	-0.59 (0.62)	-0.55 (0.6)
Hispanic	-0.86 (0.5)	-1.05 (0.52) *	-0.86 (0.53)	-0.86 (0.52)
Number of dependents	0.01 (0.1)	-0.03 (0.1)	-0.03 (0.11)	-0.05 (0.11)
Social support		-0.4 (0.09) ***	-0.43 (0.09) ***	-0.43 (0.1) ***
Alcohol frequency			0.32 (0.1) ***	0.33 (0.11) **
Smoke			0.68 (0.29) *	0.67 (0.32) *
Use marijuana				
Abuse prescription drugs				
Use other drugs				
Visited PCP in last year			0.17 (0.27)	0.17 (0.27)
Insured			0.19 (0.28)	0.29 (0.28)
College graduate				-0.26 (0.39)
Employed				-0.71 (0.3) *
Income				0.01 (0.01)
Single*income				0 (0.01)
Cohabiting*income				-0.02 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

APPENDIX C

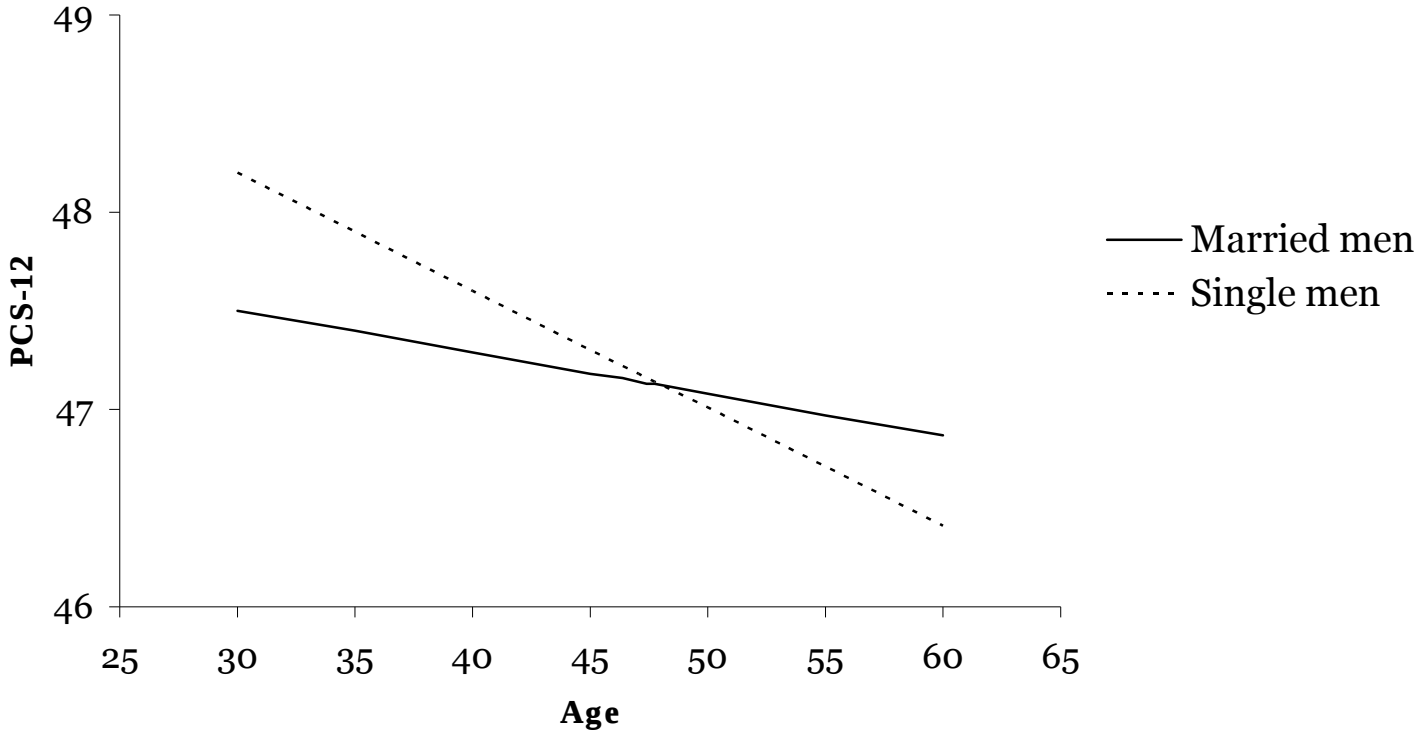

Figure C-1. Married*age interaction effect for PCS-12 among men

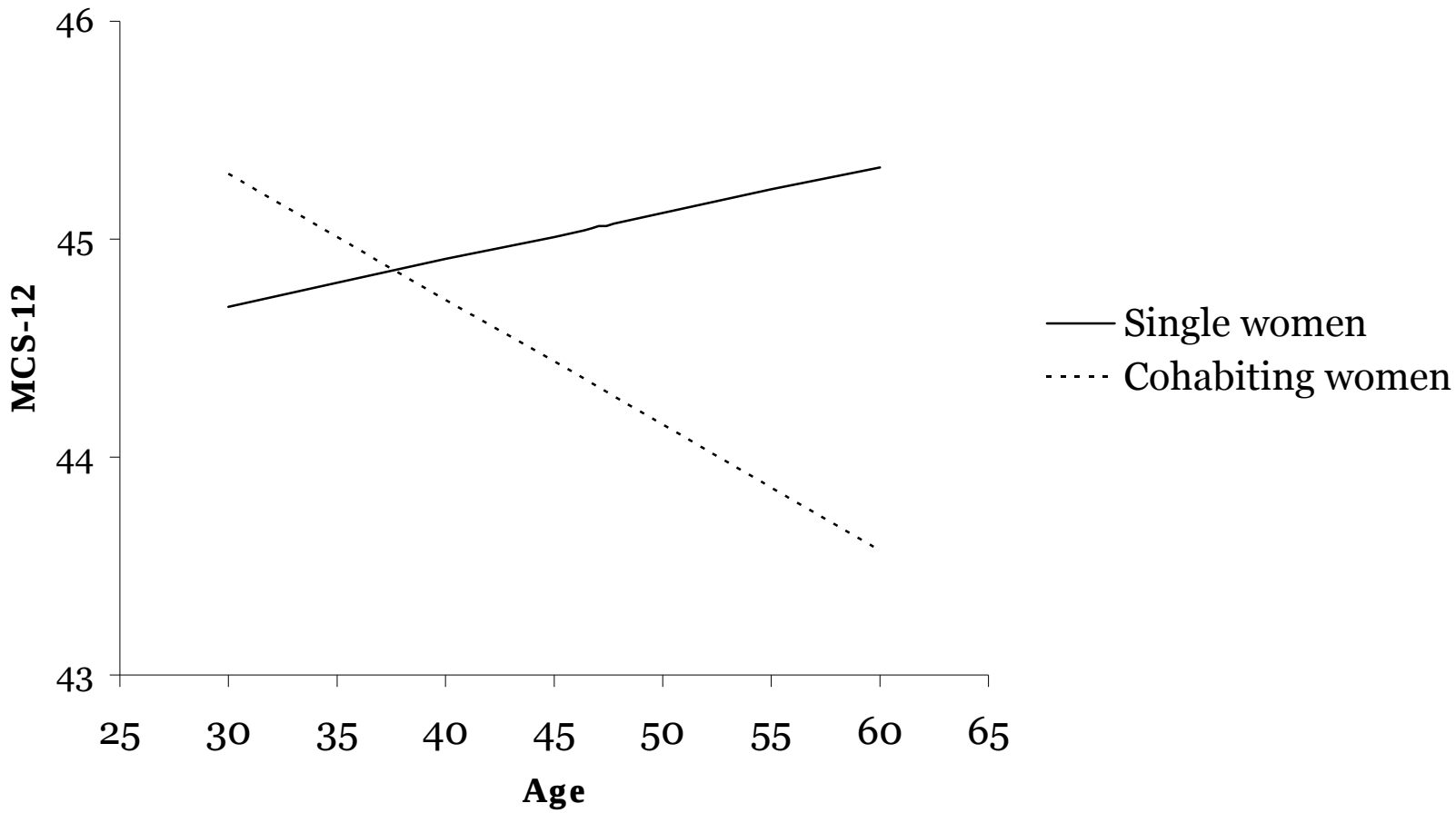

Figure C-2. Cohabiting*age interaction effect for MCS-12 among women

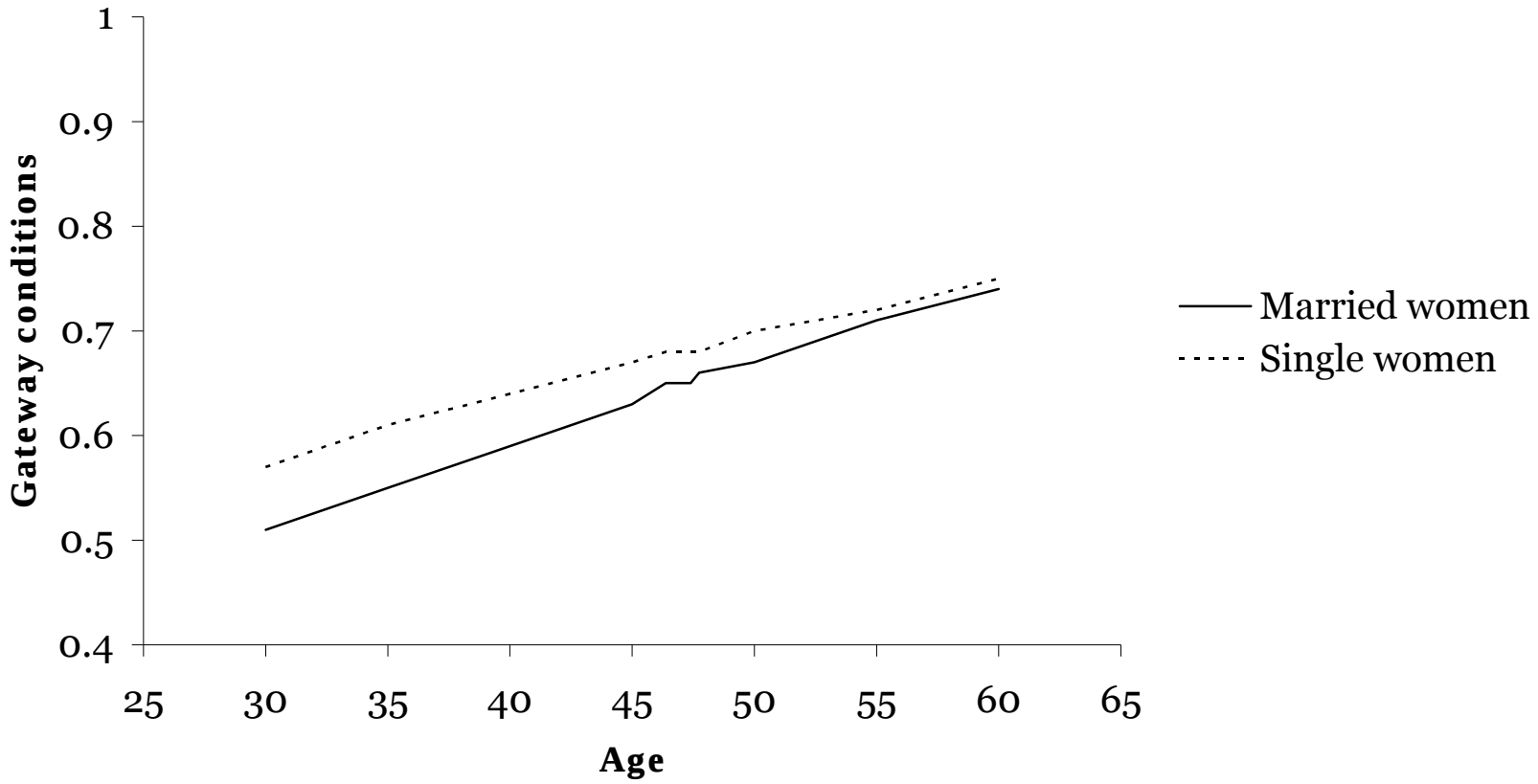

Figure C-3. Married*age interaction effect for gateway conditions among women

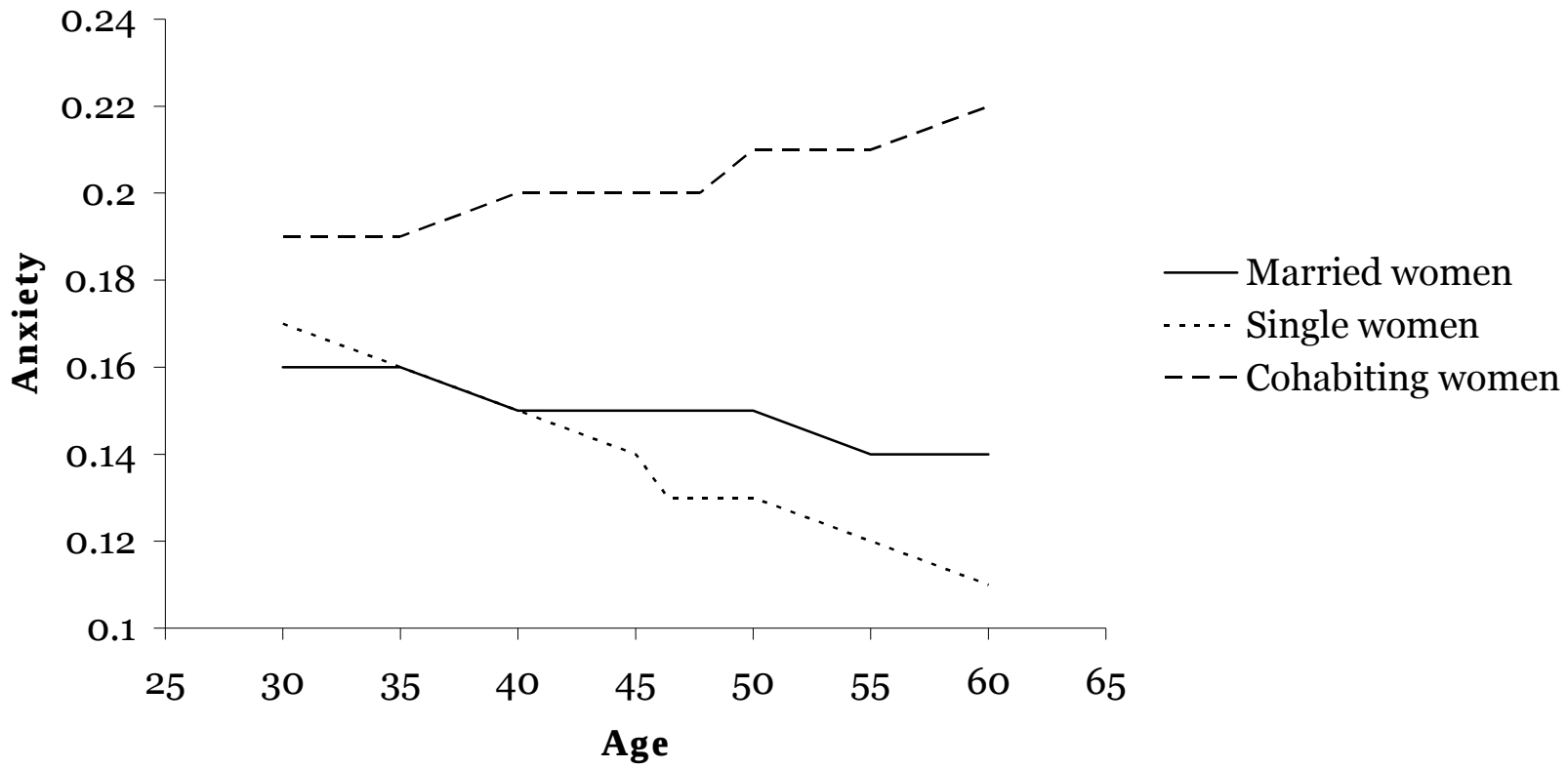

Figure C-4. Married*age and cohabiting*age interaction effects for anxiety among women

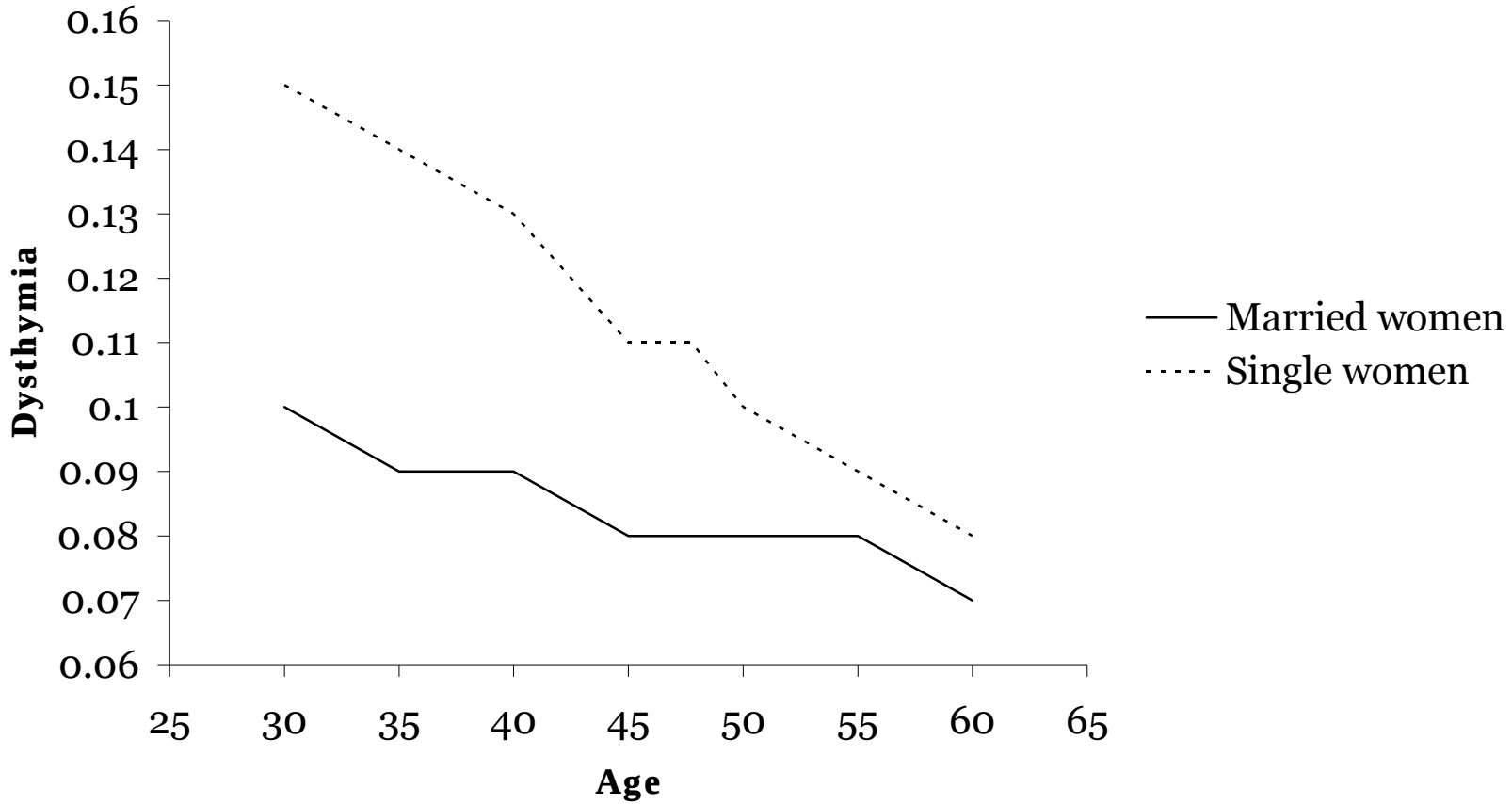

Figure C-5. Married*age interaction effect for dysthymia among women

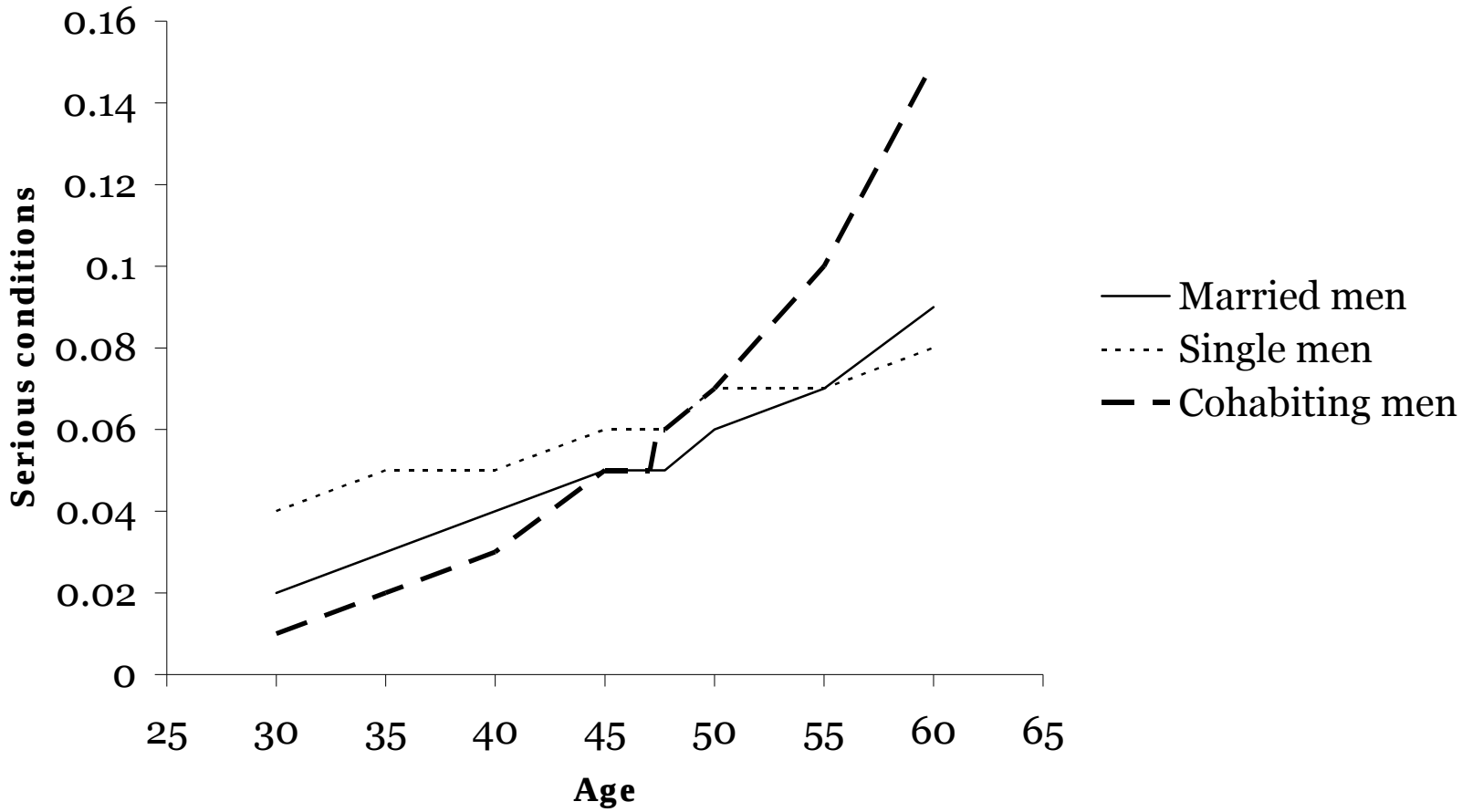

Figure C-6. Married*age and single*age interaction effects for serious conditions among men

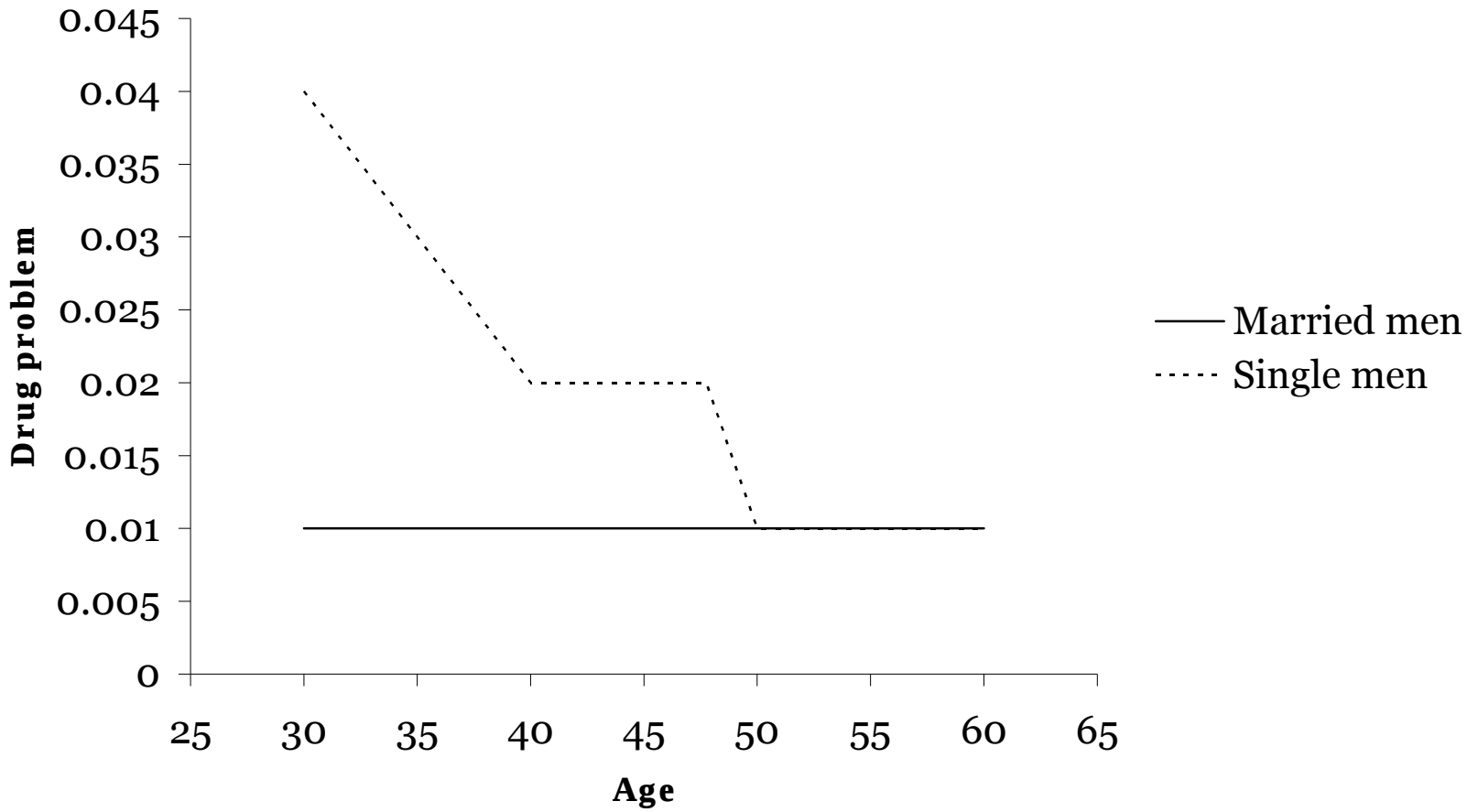

Figure C-7. Married*age interaction effect for drug problems among men

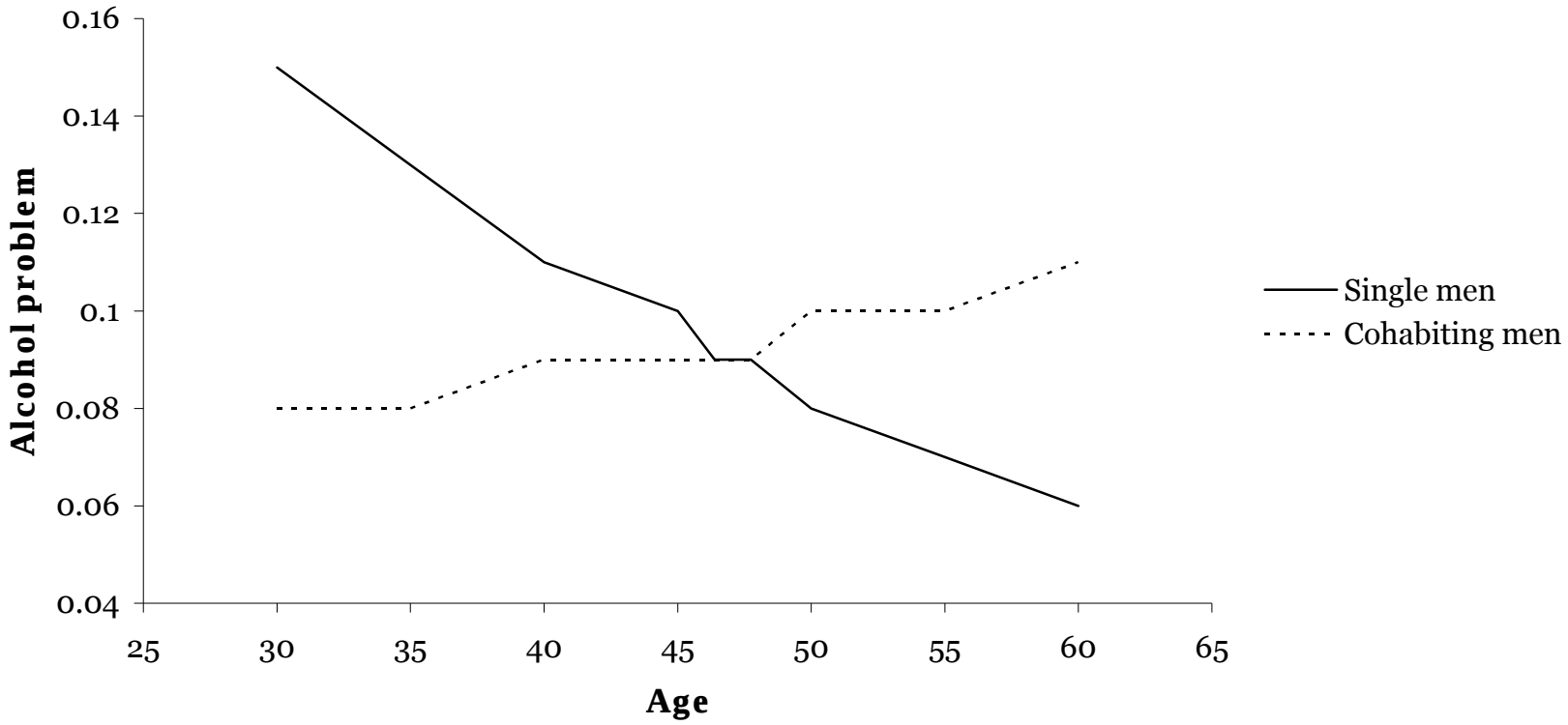

Figure C-8. Cohabiting*age interaction effect for alcohol problems among men

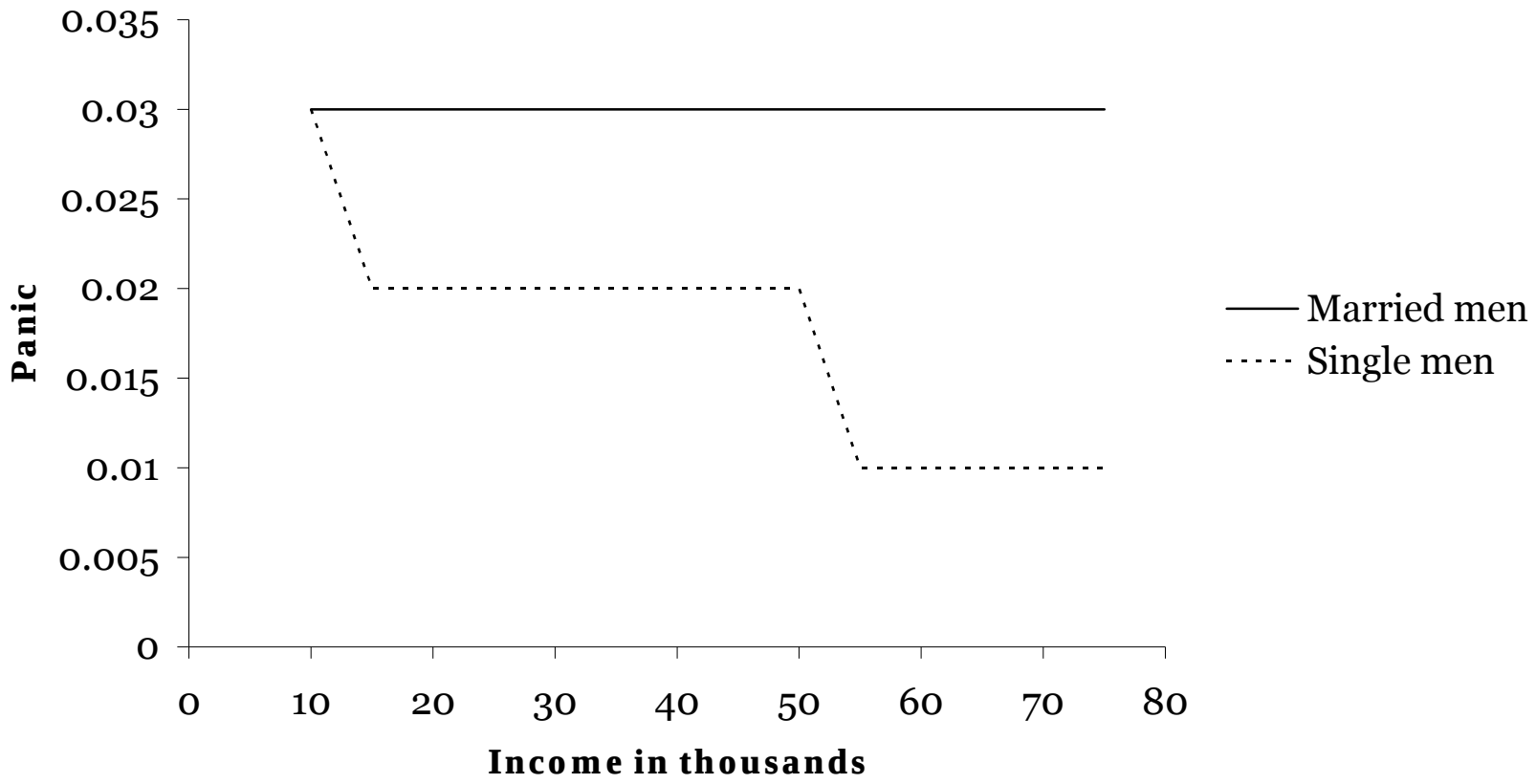

Figure C-9. Married*income interaction effect for panic problems among men

APPENDIX D

Table D-1. Nested fixed effects models for PCS-12, women.

	PCS-12 - Women			
	Model A	Model B	Model C	Model D
Intercept	50.47 (0.45) ***	44.7 (0.87) ***	43.95 (0.91) ***	41.52 (0.93) ***
Married	1.28 (0.77)	0.79 (0.72)	1.08 (0.71)	0.83 (0.74)
Cohabiting	-3.29 (1.42) *	-3.41 (1.42) *	-3.73 (1.47) *	-2.68 (1.55)
Age	-0.1 (0.01) ***	-0.1 (0.01) ***	-0.1 (0.01) ***	-0.06 (0.01) ***
Married*age	0 (0.02)	0 (0.02)	-0.01 (0.02)	-0.01 (0.01)
Cohabiting*age	0.08 (0.03) *	0.07 (0.03) *	0.08 (0.03) *	0.04 (0.04)
Number of dependents	-0.02 (0.11)	0.05 (0.12)	0.12 (0.12)	0.14 (0.11)
Social support		1.29 (0.15) ***	1.21 (0.14) ***	1.08 (0.14) ***
Alcohol frequency			1.02 (0.09) ***	0.73 (0.1) ***
Smoke			-1.23 (0.25) ***	-0.98 (0.26) ***
Use marijuana			0.8 (0.69)	0.64 (0.65)
Abuse prescription drugs			-1.44 (0.41) ***	-1.48 (0.41) ***
Use other drugs			-2.32 (1.15) *	-1.4 (1.1)
Visited PCP in last year			-0.67 (0.26) **	-0.88 (0.25) ***
Insured			1.1 (0.34) **	0.45 (0.34)
College graduate				1.18 (0.27) ***
Employed				1.75 (0.25) ***
Income				0.03 (0.01) ***
Married*income				-0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table D-2. Nested fixed effects models for PCS-12, men

	PCS-12 - Men			
	Model A	Model B	Model C	Model D
Intercept	50.53 (0.47) ***	48.14 (0.75) ***	45.48 (0.98) ***	45.48 (0.98) ***
Married	0.25 (0.8)	0.08 (0.79)	-1.47 (0.94)	-1.47 (0.94)
Cohabiting	-0.63 (1.59)	-0.77 (1.58)	0.52 (1.52)	0.52 (1.52)
Age	-0.09 (0.01) ***	-0.09 (0.01) ***	-0.06 (0.01) ***	-0.06 (0.01) ***
Married*age	0.02 (0.02)	0.02 (0.02)	0.04 (0.02) *	0.04 (0.02) *
Cohabiting*age	0.04 (0.04)	0.04 (0.03)	0.03 (0.03)	0.03 (0.03)
Number of dependents	0.05 (0.09)	0.07 (0.09)	0.03 (0.09)	0.03 (0.09)
Social support		0.52 (0.13) ***	0.4 (0.13) **	0.4 (0.13) **
Alcohol frequency			0.22 (0.09) *	0.22 (0.09) *
Smoke			-1.47 (0.3) ***	-1.47 (0.3) ***
Use marijuana			-0.68 (0.49)	-0.68 (0.49)
Abuse prescription drugs			-0.78 (0.56)	-0.78 (0.56)
Use other drugs			-0.75 (0.91)	-0.75 (0.91)
Visited PCP in last year			-1.06 (0.23) ***	-1.06 (0.23) ***
Insured			-0.16 (0.34)	-0.16 (0.34)
College graduate			1.67 (0.26) ***	1.67 (0.26) ***
Employed			2.77 (0.35) ***	2.77 (0.35) ***
Income			0.02 (0.01) **	0.02 (0.01) **
Married*income			-0.01 (0.01)	-0.01 (0.01)
Cohabiting*income			-0.03 (0.01)	-0.03 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table D-3. Nested fixed effects models for MCS-12, women

	MCS-12 - Women			
	Model A	Model B	Model C	Model D
Intercept	44.18 (0.44) ***	37.78 (0.82) ***	38.19 (0.87) ***	37.47 (0.99) ***
Married	0.67 (0.66)	0.14 (0.61)	0.21 (0.6)	0.17 (0.77)
Cohabiting	2.68 (1.71)	2.55 (1.55)	2.77 (1.66)	2.99 (1.96)
Age	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	0.02 (0.01) *
Married*age	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Cohabiting*age	-0.07 (0.04)	-0.07 (0.04)	-0.07 (0.04)	-0.08 (0.04) *
Number of dependents	0.03 (0.12)	0.11 (0.11)	0.09 (0.12)	0.09 (0.11)
Social support		1.43 (0.14) ***	1.41 (0.14) ***	1.38 (0.14) ***
Alcohol frequency			0.04 (0.1)	0.01 (0.1)
Smoke			-0.69 (0.24) **	-0.72 (0.25) **
Use marijuana			-0.41 (0.68)	-0.43 (0.69)
Abuse prescription drugs			-0.47 (0.5)	-0.49 (0.5)
Use other drugs			0.81 (1.06)	1.01 (1.09)
Visited PCP in last year			-0.87 (0.29) **	-0.9 (0.29) **
Insured			0.86 (0.51)	0.76 (0.5)
College graduate				-0.24 (0.24)
Employed				0.63 (0.23) **
Income				0.01 (0.01)
Married*income				0 (0.01)
Cohabiting*income				0 (0.02)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table D-4. Nested fixed effects models for MCS-12, men

	MCS-12 – Men			
	Model A	Model B	Model C	Model D
Intercept	46.54 (0.41) ***	41.17 (0.87) ***	41.32 (0.85) ***	39.77 (0.98) ***
Married	-0.06 (0.73)	-0.44 (0.72)	-0.67 (0.72)	-1.44 (0.84)
Cohabiting	0.42 (1.55)	0.1 (1.54)	0.62 (1.59)	0.33 (1.73)
Age	-0.03 (0.01) **	-0.01 (0.01)	-0.02 (0.01)	0 (0.01)
Married*age	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)
Cohabiting*age	0.01 (0.04)	0 (0.04)	-0.01 (0.04)	-0.01 (0.04)
Number of dependents	-0.07 (0.09)	-0.03 (0.09)	-0.03 (0.09)	-0.08 (0.09)
Social support		1.17 (0.15) ***	1.14 (0.15) ***	1.11 (0.15) ***
Alcohol frequency			0.06 (0.1)	-0.02 (0.1)
Smoke			-0.31 (0.32)	-0.25 (0.31)
Use marijuana			-0.77 (0.47)	-0.73 (0.46)
Abuse prescription drugs			-1.57 (0.54) **	-1.55 (0.54) **
Use other drugs			1.12 (0.8)	1.15 (0.8)
Visited PCP in last year			-0.82 (0.26) **	-0.86 (0.25) ***
Insured			0.95 (0.39) *	0.71 (0.4)
College graduate				-0.36 (0.29)
Employed				1.38 (0.52) **
Income				0.01 (0.01)
Married*income				0 (0.01)
Cohabiting*income				0 (0.02)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table D-5. Nested fixed effects models for Gateway Conditions, women

	Gateway Conditions – Women			
	Model A	Model B	Model C	Model D
Intercept	-0.59 (0.16) ***	-0.21 (0.21)	-0.07 (0.27)	0.01 (0.34)
Married	-0.52 (0.23) *	-0.48 (0.23) *	-0.69 (0.23) **	-0.69 (0.3) *
Cohabiting	-0.09 (0.47)	-0.09 (0.46)	-0.07 (0.51)	-0.22 (0.56)
Age	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***
Married*age	0.01 (0) *	0.01 (0) *	0.01 (0) **	0.01 (0) **
Cohabiting*age	0 (0.01)	0 (0.01)	0 (0.01)	0.01 (0.01)
Number of dependents	0.04 (0.04)	0.04 (0.04)	0.02 (0.04)	0.03 (0.04)
Social support		-0.08 (0.03) *	-0.06 (0.03)	-0.04 (0.03)
Alcohol frequency			-0.28 (0.03) ***	-0.21 (0.04) ***
Smoke			-0.01 (0.09)	-0.13 (0.1)
Use marijuana			-0.27 (0.19)	-0.25 (0.19)
Abuse prescription drugs			0.4 (0.14) **	0.44 (0.13) ***
Use other drugs			-0.2 (0.44)	-0.19 (0.4)
Visited PCP in last year			0.47 (0.08) ***	0.53 (0.09) ***
Insured			-0.25 (0.11) *	-0.11 (0.1)
College graduate				-0.58 (0.1) ***
Employed				0.05 (0.08)
Income				-0.01 (0) *
Married*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-6. Nested fixed effects models for Gateway Conditions, men

	Gateway Conditions - Men			
	Model A	Model B	Model C	Model D
Intercept	0.03 (0.2)	-0.18 (0.32)	-0.03 (0.4)	-0.11 (0.43)
Married	0.6 (0.35)	0.58 (0.35)	0.41 (0.36)	0.11 (0.4)
Cohabiting	-0.28 (0.53)	-0.28 (0.53)	-0.47 (0.54)	-0.91 (0.58)
Age	0.02 (0) ***	0.02 (0) ***	0.01 (0.01) *	0.02 (0.01) **
Married*age	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Cohabiting*age	0.01 (0.01)	0.01 (0.01)	0.02 (0.02)	0.01 (0.01)
Number of dependents	0.06 (0.05)	0.06 (0.05)	0.06 (0.05)	0.05 (0.05)
Social support		0.04 (0.05)	0.04 (0.06)	0.03 (0.06)
Alcohol frequency			-0.08 (0.03) *	-0.07 (0.03) *
Smoke			-0.26 (0.1) **	-0.33 (0.1) ***
Use marijuana			-0.33 (0.18)	-0.32 (0.17)
Abuse prescription drugs			0.27 (0.2)	0.28 (0.21)
Use other drugs			-0.06 (0.31)	-0.04 (0.3)
Visited PCP in last year			0.46 (0.1) ***	0.48 (0.09) ***
Insured			0.14 (0.13)	0.18 (0.14)
College graduate				-0.55 (0.12) ***
Employed				0.23 (0.15)
Income				0 (0)
Married*income				0 (0)
Cohabiting*income				0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-7. Nested fixed effects models for Chronic Conditions, women

	Chronic Conditions - Women			
	Model A	Model B	Model C	Model D
Intercept	-0.66 (0.17) ***	0.72 (0.21) ***	0.29 (0.24)	0.65 (0.26) *
Married	-0.54 (0.21) *	-0.39 (0.22)	-0.44 (0.22) *	-0.42 (0.25)
Cohabiting	-0.25 (0.37)	-0.26 (0.37)	-0.25 (0.39)	-0.45 (0.45)
Age	0.01 (0) *	0.01 (0)	0.01 (0) *	0 (0)
Married*age	0.01 (0)	0.01 (0)	0.01 (0)	0.01 (0)
Cohabiting*age	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)
Number of dependents	-0.02 (0.03)	-0.04 (0.03)	-0.04 (0.03)	-0.04 (0.03)
Social support		-0.3 (0.03) ***	-0.29 (0.03) ***	-0.28 (0.03) ***
Alcohol frequency			-0.16 (0.03) ***	-0.13 (0.04) ***
Smoke			0.18 (0.09) *	0.15 (0.09)
Use marijuana			0.28 (0.18)	0.28 (0.18)
Abuse prescription drugs			0.77 (0.13) ***	0.79 (0.13) ***
Use other drugs			0.17 (0.36)	0.11 (0.37)
Visited PCP in last year			0.75 (0.08) ***	0.78 (0.08) ***
Insured			-0.25 (0.11) *	-0.17 (0.12)
College graduate				-0.1 (0.08)
Employed				-0.26 (0.07) ***
Income				0 (0)
Married*income				0 (0)
Cohabiting*income				0 (0)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table D-8. Nested fixed effects models for Chronic Conditions, men

	Chronic Conditions, Men			
	Model A	Model B	Model C	Model D
Intercept	-1.9 (0.19) ***	-0.79 (0.24) **	-1.36 (0.29) ***	-0.5 (0.35)
Married	-0.27 (0.3)	-0.13 (0.3)	0 (0.32)	-0.02 (0.35)
Cohabiting	1.14 (0.49) *	1.24 (0.5) *	1.08 (0.47) *	0.95 (0.47) *
Age	0.02 (0) ***	0.02 (0) ***	0.02 (0) ***	0.02 (0.01) **
Married*age	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Cohabiting*age	-0.02 (0.01) *	-0.02 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Number of dependents	0 (0.04)	-0.01 (0.04)	0 (0.04)	0.02 (0.04)
Social support		-0.24 (0.04) ***	-0.23 (0.04) ***	-0.23 (0.04) ***
Alcohol frequency			-0.02 (0.03)	0.01 (0.03)
Smoke			0.4 (0.11) ***	0.36 (0.11) ***
Use marijuana			0.47 (0.21) *	0.44 (0.21) *
Abuse prescription drugs			0.64 (0.16) ***	0.67 (0.16) ***
Use other drugs			0.03 (0.38)	0.01 (0.37)
Visited PCP in last year			0.64 (0.11) ***	0.63 (0.11) ***
Insured			-0.26 (0.13) *	-0.18 (0.13)
College graduate				-0.19 (0.1)
Employed				-0.61 (0.13) ***
Income				-0.01 (0)
Married*income				0.01 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$

Table D-9. Nested fixed effects models for Serious Conditions, women

	Serious Conditions, Women			
	Model A	Model B	Model C	Model D
Intercept	-4.18 (0.3) ***	-3.45 (0.31) ***	-4 (0.38) ***	-2.74 (0.41) ***
Married	-0.55 (0.47)	-0.43 (0.47)	-0.62 (0.49)	-0.84 (0.52)
Cohabiting	0.15 (0.75)	0.18 (0.76)	0.14 (0.81)	-0.45 (1.06)
Age	0.04 (0) ***	0.04 (0) ***	0.04 (0.01) ***	0.02 (0.01) ***
Married*age	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Cohabiting*age	0 (0.01)	0 (0.01)	0 (0.02)	0.01 (0.02)
Number of dependents	-0.16 (0.08)	-0.17 (0.08) *	-0.16 (0.08)	-0.16 (0.08) *
Social support		-0.16 (0.05) ***	-0.16 (0.05) **	-0.13 (0.05) **
Alcohol frequency			-0.28 (0.06) ***	-0.24 (0.06) ***
Smoke			0.21 (0.11)	0.18 (0.12)
Use marijuana			-0.2 (0.34)	-0.17 (0.31)
Abuse prescription drugs			-0.14 (0.23)	-0.08 (0.24)
Use other drugs			0.87 (0.5)	0.67 (0.46)
Visited PCP in last year			0.83 (0.15) ***	0.86 (0.16) ***
Insured			0.11 (0.21)	0.19 (0.22)
College graduate				0.02 (0.17)
Employed				-0.95 (0.14) ***
Income				-0.01 (0.01)
Married*income				0.01 (0.01)
Cohabiting*income				0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-10. Nested fixed effects models for Serious Conditions, men

	Serious Conditions - Men			
	Model A	Model B	Model C	Model D
Intercept	-4.15 (0.29) ***	-3.29 (0.38) ***	-3.89 (0.46) ***	-2.92 (0.57) ***
Married	-1.8 (0.55) ***	-1.65 (0.55) **	-1.83 (0.59) **	-0.97 (0.74)
Cohabiting	-3.51 (1.39) *	-3.36 (1.39) *	-3.4 (1.33) *	-1.99 (1.34)
Age	0.04 (0.01) ***	0.04 (0.01) ***	0.04 (0.01) ***	0.02 (0.01) ***
Married*age	0.03 (0.01) **	0.03 (0.01) ***	0.03 (0.01) **	0.02 (0.01) *
Cohabiting*age	0.07 (0.02) **	0.07 (0.02) **	0.07 (0.02) **	0.06 (0.02) **
Number of dependents	-0.15 (0.08)	-0.17 (0.09)	-0.14 (0.09)	-0.1 (0.08)
Social support		-0.19 (0.06) **	-0.18 (0.06) **	-0.17 (0.06) **
Alcohol frequency			-0.2 (0.05) ***	-0.16 (0.06) **
Smoke			0.33 (0.15) *	0.26 (0.15)
Use marijuana			-0.29 (0.27)	-0.35 (0.27)
Abuse prescription drugs			0.25 (0.22)	0.29 (0.22)
Use other drugs			0.22 (0.62)	0.25 (0.56)
Visited PCP in last year			1.23 (0.19) ***	1.22 (0.2) ***
Insured			-0.1 (0.23)	-0.08 (0.23)
College graduate				-0.16 (0.18)
Employed				-1.03 (0.19) ***
Income				0 (0.01)
Married*income				-0.01 (0.01)
Cohabiting*income				-0.02 (0.01)

Unstandardized coefficients with standard errors in parentheses. *: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-11. Nested fixed effects models for Anxiety, women

	Anxiety - Women			
	Model A	Model B	Model C	Model D
Intercept	-0.98 (0.14) ***	1.14 (0.22) ***	0.59 (0.25) *	0.98 (0.3) ***
Married	-0.79 (0.32) *	-0.57 (0.31)	-0.53 (0.32)	-0.42 (0.31)
Cohabiting	-0.43 (0.42)	-0.49 (0.45)	-0.55 (0.47)	-0.75 (0.48)
Age	-0.01 (0) ***	-0.02 (0) ***	-0.01 (0) ***	-0.02 (0) ***
Married*age	0.01 (0.01)	0.01 (0.01) *	0.01 (0.01) *	0.01 (0.01) *
Cohabiting*age	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)	0.02 (0.01) *
Number of dependents	0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.01 (0.04)
Social support		-0.46 (0.03) ***	-0.45 (0.03) ***	-0.43 (0.03) ***
Alcohol frequency			-0.13 (0.04) **	-0.08 (0.04)
Smoke			0.55 (0.09) ***	0.51 (0.09) ***
Use marijuana			0.09 (0.21)	0.09 (0.21)
Abuse prescription drugs			0.62 (0.12) ***	0.64 (0.12) ***
Use other drugs			1.2 (0.38) **	1.15 (0.4) **
Visited PCP in last year			0.6 (0.13) ***	0.63 (0.14) ***
Insured			-0.28 (0.17)	-0.18 (0.16)
College graduate				-0.13 (0.1)
Employed				-0.3 (0.1) **
Income				-0.01 (0)
Married*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-12. Nested fixed effects models for Anxiety, men

	Anxiety - Men			
	Model A	Model B	Model C	Model D
Intercept	-0.9 (0.19) ***	0.96 (0.29) ***	0.53 (0.29)	1.25 (0.34) ***
Married	-0.57 (0.36)	-0.39 (0.35)	-0.12 (0.35)	-0.04 (0.37)
Cohabiting	-0.87 (0.61)	-0.82 (0.6)	-1.03 (0.64)	-0.64 (0.64)
Age	-0.01 (0.01)	-0.01 (0.01) *	-0.01 (0.01)	-0.01 (0.01) *
Married*age	-0.01 (0.01)	0 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Cohabiting*age	0 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.01)
Number of dependents	-0.02 (0.06)	-0.05 (0.06)	-0.05 (0.05)	-0.02 (0.05)
Social support		-0.39 (0.05) ***	-0.37 (0.05) ***	-0.37 (0.05) ***
Alcohol frequency			-0.05 (0.04)	-0.02 (0.04)
Smoke			0.4 (0.11) ***	0.39 (0.12) ***
Use marijuana			0.57 (0.19) **	0.53 (0.19) **
Abuse prescription drugs			0.77 (0.16) ***	0.79 (0.16) ***
Use other drugs			0 (0.31)	-0.01 (0.29)
Visited PCP in last year			0.47 (0.13) ***	0.46 (0.13) ***
Insured			-0.53 (0.13) ***	-0.46 (0.13) ***
College graduate				0.15 (0.13)
Employed				-0.54 (0.15) ***
Income				-0.01 (0) *
Married*income				0 (0)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-13. Nested fixed effects models for MDD, women

	MDD – Women			
	Model A	Model B	Model C	Model D
Intercept	-0.31 (0.16)	2.1 (0.25) ***	1.55 (0.26) ***	1.87 (0.27) ***
Married	-0.85 (0.25) ***	-0.64 (0.25) *	-0.62 (0.26) *	-0.64 (0.29) *
Cohabiting	-0.24 (0.35)	-0.29 (0.36)	-0.35 (0.39)	-0.23 (0.42)
Age	-0.02 (0) ***	-0.02 (0) ***	-0.02 (0) ***	-0.02 (0) ***
Married*age	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Cohabiting*age	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)
Number of dependents	0.05 (0.04)	0.01 (0.04)	0.01 (0.04)	0.01 (0.04)
Social support		-0.51 (0.03) ***	-0.5 (0.03) ***	-0.49 (0.03) ***
Alcohol frequency			-0.09 (0.03) *	-0.06 (0.04)
Smoke			0.53 (0.09) ***	0.5 (0.09) ***
Use marijuana			0.44 (0.23)	0.46 (0.23) *
Abuse prescription drugs			0.75 (0.19) ***	0.78 (0.19) ***
Use other drugs			0.29 (0.37)	0.26 (0.39)
Visited PCP in last year			0.39 (0.1) ***	0.41 (0.11) ***
Insured			-0.12 (0.11)	-0.06 (0.11)
College graduate				-0.13 (0.09)
Employed				-0.28 (0.09) **
Income				0 (0)
Married*income				0 (0)
Cohabiting*income				-0.01 (0)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-14. Nested fixed effects models for MDD, men

	MDD - Men			
	Model A	Model B	Model C	Model D
Intercept	-0.92 (0.17) ***	1.17 (0.31) ***	0.82 (0.29) **	1.55 (0.31) ***
Married	-0.63 (0.36)	-0.43 (0.37)	-0.18 (0.37)	-0.18 (0.37)
Cohabiting	-0.92 (0.54)	-0.85 (0.56)	-1.1 (0.56)	-0.92 (0.67)
Age	0 (0)	-0.01 (0.01) *	-0.01 (0.01)	-0.01 (0.01) *
Married*age	-0.01 (0.01)	0 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Cohabiting*age	0.01 (0.01)	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)
Number of dependents	-0.05 (0.06)	-0.09 (0.06)	-0.08 (0.06)	-0.06 (0.06)
Social support		-0.43 (0.05) ***	-0.42 (0.05) ***	-0.43 (0.05) ***
Alcohol frequency			-0.11 (0.04) **	-0.1 (0.04) *
Smoke			0.35 (0.11) ***	0.31 (0.11) **
Use marijuana			0.36 (0.19)	0.33 (0.2)
Abuse prescription drugs			0.96 (0.18) ***	0.99 (0.18) ***
Use other drugs			0.55 (0.4)	0.52 (0.38)
Visited PCP in last year			0.61 (0.14) ***	0.61 (0.14) ***
Insured			-0.53 (0.15) ***	-0.48 (0.15) **
College graduate				-0.25 (0.14)
Employed				-0.57 (0.14) ***
Income				0 (0)
Married*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-15. Nested fixed effects models for Dysthymia, women

	Dysthymia - Women			
	Model A	Model B	Model C	Model D
Intercept	-1.17 (0.17) ***	1.54 (0.23) ***	1.51 (0.28) ***	2.2 (0.31) ***
Married	-1.3 (0.25) ***	-1.04 (0.25) ***	-1.06 (0.25) ***	-1.07 (0.32) ***
Cohabiting	0.29 (0.52)	0.31 (0.51)	0.34 (0.52)	0.06 (0.57)
Age	-0.01 (0) **	-0.01 (0) ***	-0.01 (0) ***	-0.02 (0) ***
Married*age	0.01 (0) *	0.01 (0) *	0.01 (0) *	0.01 (0.01) *
Cohabiting*age	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0 (0.01)
Number of dependents	0.09 (0.04) *	0.04 (0.04)	0.02 (0.04)	0.01 (0.04)
Social support		-0.59 (0.04) ***	-0.57 (0.04) ***	-0.54 (0.04) ***
Alcohol frequency			-0.23 (0.05) ***	-0.15 (0.04) ***
Smoke			0.74 (0.12) ***	0.66 (0.11) ***
Use marijuana			-0.58 (0.24) *	-0.56 (0.24) *
Abuse prescription drugs			0.37 (0.21)	0.42 (0.21) *
Use other drugs			1.29 (0.47) **	1.23 (0.58) *
Visited PCP in last year			0.23 (0.1) *	0.29 (0.1) **
Insured			-0.4 (0.12) **	-0.24 (0.13)
College graduate				-0.64 (0.15) ***
Employed				-0.46 (0.11) ***
Income				-0.01 (0)
Married*income				0 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-16. Nested fixed effects models for Dysthymia, men

	Dysthymia - Men			
	Model A	Model B	Model C	Model D
Intercept	-2.14 (0.2) ***	0.36 (0.36)	0.27 (0.37)	1.47 (0.37) ***
Married	-1.17 (0.45) **	-0.86 (0.41) *	-0.64 (0.42)	-0.42 (0.52)
Cohabiting	-0.09 (0.67)	0.04 (0.66)	-0.04 (0.62)	0.41 (0.66)
Age	0.01 (0) *	0 (0.01)	0.01 (0.01)	0 (0.01)
Married*age	0 (0.01)	0.01 (0.01)	0 (0.01)	0 (0.01)
Cohabiting*age	-0.01 (0.02)	0 (0.02)	0 (0.02)	0 (0.01)
Number of dependents	0.03 (0.07)	-0.02 (0.06)	-0.01 (0.05)	0.02 (0.05)
Social support		-0.54 (0.06) ***	-0.5 (0.06) ***	-0.5 (0.06) ***
Alcohol frequency			-0.2 (0.06) ***	-0.14 (0.06) *
Smoke			0.54 (0.13) ***	0.46 (0.14) **
Use marijuana			0.16 (0.27)	0.09 (0.27)
Abuse prescription drugs			0.87 (0.19) ***	0.94 (0.19) ***
Use other drugs			0.26 (0.48)	0.26 (0.44)
Visited PCP in last year			0.09 (0.16)	0.11 (0.16)
Insured			-0.53 (0.16) **	-0.36 (0.18) *
College graduate				-0.58 (0.22) **
Employed				-0.85 (0.16) ***
Income				-0.01 (0.01)
Married*income				0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-17. Nested fixed effects models for Panic, women

	Panic - Women			
	Model A	Model B	Model C	Model D
Intercept	-1.32 (0.18) ***	0.47 (0.33)	-0.62 (0.36)	-0.36 (0.41)
Married	-0.46 (0.29)	-0.29 (0.29)	-0.27 (0.3)	-0.45 (0.3)
Cohabiting	-0.14 (0.48)	-0.17 (0.51)	-0.16 (0.56)	-0.41 (0.59)
Age	-0.02 (0) ***	-0.03 (0) ***	-0.03 (0) ***	-0.03 (0) ***
Married*age	0 (0.01)	0 (0.01)	0 (0.01)	0.01 (0.01)
Cohabiting*age	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Number of dependents	-0.03 (0.05)	-0.07 (0.06)	-0.06 (0.06)	-0.06 (0.06)
Social support		-0.38 (0.05) ***	-0.39 (0.05) ***	-0.39 (0.05) ***
Alcohol frequency			-0.05 (0.06)	-0.03 (0.06)
Smoke			0.52 (0.13) ***	0.49 (0.13) ***
Use marijuana			0.09 (0.27)	0.11 (0.26)
Abuse prescription drugs			0.68 (0.15) ***	0.69 (0.15) ***
Use other drugs			0.3 (0.4)	0.27 (0.39)
Visited PCP in last year			1.12 (0.17) ***	1.15 (0.17) ***
Insured			-0.11 (0.16)	-0.06 (0.16)
College graduate				-0.12 (0.15)
Employed				-0.1 (0.13)
Income				-0.01 (0)
Married*income				0 (0.01)
Cohabiting*income				0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-18. Nested fixed effects models for Panic, men

	Panic - Men			
	Model A	Model B	Model C	Model D
Intercept	-2.18 (0.24) ***	-0.44 (0.4)	-1.43 (0.47) **	-0.05 (0.49)
Married	-0.14 (0.44)	-0.02 (0.43)	0.32 (0.49)	0.22 (0.56)
Cohabiting	-0.33 (0.98)	-0.33 (0.96)	-0.57 (0.94)	0.04 (0.94)
Age	-0.02 (0.01) ***	-0.02 (0.01) ***	-0.02 (0.01) **	-0.03 (0.01) ***
Married*age	0 (0.01)	0 (0.01)	0 (0.01)	-0.01 (0.01)
Cohabiting*age	0.01 (0.03)	0.02 (0.02)	0.02 (0.02)	0.03 (0.02)
Number of dependents	-0.2 (0.09) *	-0.22 (0.09) *	-0.22 (0.09) *	-0.16 (0.09)
Social support		-0.36 (0.07) ***	-0.34 (0.07) ***	-0.33 (0.07) ***
Alcohol frequency			-0.05 (0.07)	0 (0.07)
Smoke			0.54 (0.2) **	0.48 (0.18) **
Use marijuana			0.62 (0.24) *	0.54 (0.24) *
Abuse prescription drugs			1.17 (0.25) ***	1.26 (0.25) ***
Use other drugs			0.23 (0.4)	0.21 (0.38)
Visited PCP in last year			0.64 (0.2) **	0.63 (0.19) **
Insured			-0.33 (0.23)	-0.2 (0.23)
College graduate				-0.04 (0.27)
Employed				-1.05 (0.24) ***
Income				-0.01 (0) **
Married*income				0.01 (0.01) *
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-19. Nested fixed effects models for Alcohol Problems, women

	Alcohol Problems - Women			
	Model A	Model B	Model C	Model D
Intercept	-1 (0.31) **	-0.58 (0.43)	-2.05 (0.51) ***	-1.78 (0.52) ***
Married	-1.61 (0.64) *	-1.58 (0.64) *	-1.36 (0.7)	-1.75 (0.77) *
Cohabiting	-0.83 (0.57)	-0.83 (0.58)	-0.88 (0.63)	-0.58 (0.6)
Age	-0.06 (0.01) ***	-0.06 (0.01) ***	-0.05 (0.01) ***	-0.05 (0.01) ***
Married*age	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Cohabiting*age	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Number of dependents	0.02 (0.09)	0.01 (0.09)	-0.01 (0.09)	-0.03 (0.09)
Social support		-0.08 (0.07)	0 (0.07)	0 (0.07)
Alcohol frequency				
Smoke			1.53 (0.19) ***	1.55 (0.2) ***
Use marijuana			1.14 (0.26) ***	1.15 (0.26) ***
Abuse prescription drugs			0.69 (0.23) **	0.69 (0.23) **
Use other drugs				
Visited PCP in last year			-0.45 (0.2) *	-0.47 (0.2) *
Insured			0.26 (0.23)	0.27 (0.23)
College graduate				-0.04 (0.22)
Employed				-0.29 (0.18)
Income				0 (0)
Married*income				0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-20. Nested fixed effects models for Alcohol Problems, men

	Alcohol Problems - Men			
	Model A	Model B	Model C	Model D
Intercept	-0.28 (0.22)	0.05 (0.38)	-0.76 (0.45)	-0.47 (0.44)
Married	-0.41 (0.42)	-0.39 (0.42)	-0.12 (0.44)	-0.42 (0.54)
Cohabiting	-1.63 (0.52) **	-1.63 (0.52) **	-2.01 (0.56) ***	-1.8 (0.59) **
Age	-0.03 (0.01) ***	-0.04 (0.01) ***	-0.03 (0.01) ***	-0.03 (0.01) ***
Married*age	0 (0.01)	0 (0.01)	0 (0.01)	0 (0.01)
Cohabiting*age	0.04 (0.01) **	0.04 (0.01) **	0.04 (0.01) **	0.04 (0.01) **
Number of dependents	-0.18 (0.07) *	-0.18 (0.07) **	-0.2 (0.07) **	-0.2 (0.07) **
Social support		-0.07 (0.06)	-0.04 (0.06)	-0.05 (0.06)
Alcohol frequency				
Smoke			0.82 (0.12) ***	0.83 (0.13) ***
Use marijuana			0.8 (0.21) ***	0.79 (0.2) ***
Abuse prescription drugs			0.53 (0.18) **	0.54 (0.18) **
Use other drugs				
Visited PCP in last year			0.09 (0.13)	0.06 (0.13)
Insured			-0.11 (0.17)	-0.16 (0.17)
College graduate				-0.05 (0.17)
Employed				-0.21 (0.22)
Income				0 (0)
Married*income				0.01 (0)
Cohabiting*income				0 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-21. Nested fixed effects models for Drug Problems, women

	Drug Problems - Women			
	Model A	Model B	Model C	Model D
Intercept	-1.87 (0.38) ***	-0.48 (0.48)	-1.38 (0.54) *	-0.91 (0.61)
Married	-1.51 (0.58) **	-1.42 (0.58) *	-1.33 (0.61) *	-1.48 (0.69) *
Cohabiting	-0.28 (0.73)	-0.32 (0.76)	-0.36 (0.82)	-0.15 (0.76)
Age	-0.05 (0.01) ***	-0.06 (0.01) ***	-0.05 (0.01) ***	-0.06 (0.01) ***
Married*age	0.03 (0.01) *	0.03 (0.01) *	0.03 (0.01)	0.03 (0.01)
Cohabiting*age	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Number of dependents	-0.08 (0.08)	-0.12 (0.08)	-0.1 (0.09)	-0.12 (0.09)
Social support		-0.28 (0.08) ***	-0.27 (0.1) **	-0.26 (0.1) **
Alcohol frequency			0.28 (0.08) ***	0.29 (0.08) ***
Smoke			0.92 (0.21) ***	0.93 (0.24) ***
Use marijuana				
Abuse prescription drugs				
Use other drugs				
Visited PCP in last year			0.31 (0.27)	0.31 (0.27)
Insured			-0.36 (0.26)	-0.27 (0.26)
College graduate				0.03 (0.36)
Employed				-0.57 (0.26) *
Income				0 (0)
Married*income				0 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: p ≤ .05, **: p ≤ .01, ***: p ≤ .001

Table D-22. Nested fixed effects models for Drug Problems, men

	Drug Problems - Men			
	Model A	Model B	Model C	Model D
Intercept	-1.35 (0.31) ***	0.37 (0.56)	-0.37 (0.6)	-0.27 (0.61)
Married	-2.88 (0.71) ***	-2.82 (0.7) ***	-2.69 (0.75) ***	-2.11 (0.76) **
Cohabiting	1.66 (1.04)	1.53 (1.03)	1.57 (1.1)	2.14 (1.11)
Age	-0.05 (0.01) ***	-0.06 (0.01) ***	-0.06 (0.01) ***	-0.06 (0.01) ***
Married*age	0.04 (0.02) **	0.05 (0.02) **	0.05 (0.02) **	0.04 (0.02) *
Cohabiting*age	-0.04 (0.03)	-0.03 (0.03)	-0.04 (0.04)	-0.03 (0.03)
Number of dependents	0 (0.15)	-0.03 (0.15)	-0.05 (0.16)	-0.04 (0.16)
Social support		-0.34 (0.09) ***	-0.36 (0.09) ***	-0.36 (0.09) ***
Alcohol frequency			0.26 (0.09) **	0.25 (0.1) *
Smoke			0.92 (0.25) ***	0.95 (0.27) ***
Use marijuana				
Abuse prescription drugs				
Use other drugs				
Visited PCP in last year			0.05 (0.26)	0.02 (0.26)
Insured			-0.15 (0.23)	-0.18 (0.25)
College graduate				0.11 (0.24)
Employed				-0.51 (0.29)
Income				0.01 (0)
Married*income				-0.01 (0.01)
Cohabiting*income				-0.01 (0.01)

Unstandardized coefficients with standard errors in parentheses.

*: $p \leq .05$, **: $p \leq .01$, ***: $p \leq .001$