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Dyadic Analyses of Chronic Conditions and Distress within Marriage: A Gendered Perspective

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Dyadic Analyses of Chronic Conditions and Distress within Marriage: A Gendered Perspective

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Dyadic Analyses of Chronic Conditions and Distress within Marriage: A Gendered Perspective

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Abstract: Chronic conditions negatively impact well-being, and the negative impact of a chronic condition can extend beyond the diagnosed person to his or her spouse. This association may be further influenced by gender, as gender can shape how individuals experience their own chronic conditions-- including what conditions they develop-- and how they react to the conditions and distress of their spouses. In my dissertation, I examine how one spouse's chronic conditions are related to the other spouse's psychological distress over time. I address this using quantitative analysis of the Health and Retirement Study and qualitative analysis of in-depth interviews. In my quantitative analysis, I find that the association between one spouse's chronic conditions and the other spouse's distress differs by gender, number of conditions, whether one or both spouses have chronic conditions, and type of condition. Regarding number of conditions, a husband's number of chronic conditions increases his wife's distress more so than a wife's number of chronic conditions increases her husband's. These associations are mitigated by the chronically ill spouse's own distress and functional limitations. Additionally, this gender difference is more pronounced if both spouses have chronic conditions compared to if only one has chronic conditions. Regarding type of condition, lung disease and stroke are the most negatively impactful for spouses' distress, whereas high blood pressure, cancer, and arthritis are not related to spouses' distress. All conditions, except for stroke, relate to husbands' and wives'

distress similarly, but a husband's stroke increases a wife's distress initially whereas the wife's stroke increases the husband's distress over time. In my qualitative analysis, I find that when women are chronically ill, they continue to emotionally care for their husbands, which likely protects their husbands from psychological distress but exacerbates women's own distress. My results point to the importance of promoting the psychological well-being of both spouses during periods of chronic conditions. This is especially critical for spouses of people with more than one condition, chronically ill women whose husbands are also chronically ill, and spouses of people experiencing stroke and lung disease.

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Chapter 1: Introduction

MOTIVATION

Chronic conditions are disorders characterized by long durations that affect people's ability to function (Anderson & Horvath 2004). A diagnosis with a chronic condition can be an important life transition, introducing or exacerbating acute and chronic stressors, including physical pain, functional limitations, and financial and social strains; in turn, these stressors may trigger additional stressors and increase levels of psychological distress (Fiest et al. 2011; Pudrovska 2010; Taylor & Aspinwall 1996). Chronic conditions are common-- about 80 percent of all adults over the age of 50 have at least one chronic condition (Crimmins & Saito 2000; Fiest et al. 2011; Freedman & Martin 2000; Taylor, McQuoid, & Rama Krishnan 2004), thus understanding their effects is an important research topic.

Because chronic conditions are often experienced in the presence of others, the influence of a chronic condition extends beyond the diagnosed person to his or her social ties (Berg & Upchurch 2007). An important tie to consider is the spouse, as many older adults face chronic conditions within the context of marriage (Hughes & Waite 2002), and, among the married, a spouse is the most likely source of assistance during chronic conditions (NFCA/AllSup 2011). Most studies of chronic conditions focus on individuals and consider the spouse only in terms how the spouse impacts the person with the chronic condition (Fiest et al. 2011; Huber 2010; Pudrovska 2010; Taylor & Aspinwall 1996). But a dyadic approach looks beyond the individual and seeks to understand the distress that the chronic conditions of one spouse introduce into the lives of *both* spouses, as well

as considering dynamics of couples in which both spouses have chronic conditions (Berg & Upchurch 2007).

Beyond being composed of two people, a heterosexual married couple is a distinct dyad to consider as it involves two genders with important norms, scripts, and structures distinguishing the two. Societal norms and structures around gender within marriage can constrain and facilitate psychosocial processes during chronic conditions (Bird & Rieker 2008). Gender can shape how individuals experience their own chronic conditions (including what conditions they develop), how they react to the conditions and distress of their spouses, how they experience distress, and how they do (or do not) support their spouses (Kessler et al. 2005; Pinquart & Sorensen 2006; Pudrovska 2010; Rosenfield, Lennon, & White 2005; Thomeer, Umberson, & Pudrovska 2013). Considering gender differences in how spouses' distress is affected by chronic conditions is important because it may be a key pathway in understanding why women experience higher rates of distress than men (Kessler et al. 2005).

In my dissertation, I address four key questions:

1. (How) is one person's chronic conditions associated with his or her spouse's psychological distress over time?

2. (How) is this association influenced by the gender of the spouse with the conditions, number of conditions, type of condition, and if one spouse has chronic conditions compared to both spouses with chronic conditions?

3. Do functional limitations and distress levels of the chronically ill spouse help explain the association between one spouse's chronic conditions and the other

spouse's psychological distress?

4. How do men and women react to the chronic conditions of their spouses? Specifically, how is emotion work provided and justified during periods of chronic conditions within marriage, and how is this different for husbands compared to wives?

I address elements of the first three questions in Chapters 2 and 3 and focus on the fourth question in Chapter 4. In the remainder of this introductory chapter, I discuss the two primary theoretical frameworks which undergird my analysis-- a stress and life course perspective and gender theory-- and provide an outline of each chapter.

THEORETICAL BACKGROUND

Stress and Life Course

Over the past two decades, sociologists have blended life course theory with the stress process model in order to hypothesize how stress impacts people throughout the life course (George & Lynch 2003; Pearlin & Skaff 1996; Pearlin et al. 2005; Umberson et al. 2006). A life course framework views individual lives as composed of life events and trajectories that unfold over time and are embedded within particular social contexts (Elder, Johnson, & Crosnoe 2003). According to the stress process model, life events lead to enduring strains that erode personal and social resources and contribute to psychological distress, though coping mechanisms (e.g., social support) can alter the course of psychological distress at any point in this process (Pearlin et al. 1981). A stress and life course perspective integrates these two frameworks by examining how stressful life events (negative changes in people's lives, e.g., diagnosis of a chronic condition,

death of a loved one) can lead to proliferation of stressors wherein stress from one area of life spreads to other areas (Pearlin & Skaff 1996; Pearlin et al. 2005). This proliferation of stressors includes the initiation and persistence of chronic stressors (ongoing demands, e.g., relationship strain, functional limitations) (Pearlin et al. 2005; Umberson et al. 2006). This occurs throughout the life course and contributes to a person's overall stress burden, which, in turn, fosters psychological distress-- an important dimension of overall health and well-being involving a range of symptoms including feelings of depression, sadness, and loneliness, restless sleep, and not enjoying life (Kessler et al. 2002; Mirowsky & Ross 2003).

Central to a life course framework is the idea of linked lives, which "underscores not only the ways individuals influence one another but the ways that lives are lived in tandem" (Moen 2001: 101). The stress process model also emphasizes the important role that social relationships play in the stress process, highlighting the benefits of social support and the costs of social strain (Pearlin et al. 1981). Yet most past empirical demonstrations of an integrated stress and life course perspective focus on individuals, rather than dyads, thus overlooking the ways in which stressors are shared by and spread within couples (see George & Lynch 2003; Umberson et al. 2006). Within marriage, stress is likely to proliferate across spouses, and one spouse's reaction to a stressful life event and the consequences of that stressful life event affect the other spouse's stress levels and psychological state. Therefore, "one cannot examine one partner's stress appraisals or coping efforts without considering the effects on the other partner and the marriage" (Bodenmann 2005: 36). A long legacy of research demonstrates that social ties

matter for stress (see Umberson & Montez 2010 for overview), but it is also important to consider how stress spreads across social ties.

In my dissertation, I draw on a stress and life course perspective to examine how one spouse's chronic conditions contribute to the psychological distress of the other spouse and how this association is shaped by gender. I will also explore in a qualitative chapter how chronic conditions impact marital processes in ways that likely contribute to spousal distress. A stress and life course perspective is ideal for addressing these topics for a number of reasons. First, psychological distress is central to a stress and life course perspective. Living with chronic conditions involves new and additional stressors, and these stressors can lead to psychological distress over time. Second, a stress and life course perspective highlights the notion of "linked lives," making it imperative to analyze the chronic conditions and psychological distress of both spouses within the marriage. Third, a stress and life course perspective emphasizes placing these distress trajectories within their social context, which I will do in two ways, examining (1) the context of marriage and (2) the context of gender.

Stress Proliferation

Development and diagnosis of a chronic condition initially impacts one area of life-- health-- and one person-- the person diagnosed. As the chronic condition continues to develop, stressors (e.g., difficulties with activities of daily living, doctor visits, pain management) often increase and the trajectory of psychological distress related to the condition builds (Morgan & Thomas 2009). For instance, a person diagnosed with a chronic condition may experience stress from hearing the news and prognosis. The

diagnosed person can feel pain and discomfort from these initial stages of the chronic condition, as well as fear and uncertainty surrounding the future, including risk of death and loss of independence. These factors combine to increase levels of psychological distress (Franks et al. 2010; Huber 2010; Pudrovska 2010). As the disease progresses, stressors can multiply and intensify or even become alleviated, with implications for psychological distress trajectories. Many chronic conditions lead to functional limitations (Verbrugge & Jette 1994), a source of chronic stress, as well as other sources of chronic stress, including multiple doctor visits, financial strain, relationship stress, and job loss (Decker, Schappert, & Sisk 2009). This may be intensified for multiple conditions or for particular types of conditions.

Linked Lives and Marriage

Stress proliferation does not just predict that stressors will spread from one area of life to another, but also from one person to another. The stress involved with chronic conditions is experienced not only by the diagnosed person, but also, if married, her or his spouse. Marriage is a social institution involving two people formally recognized by the state as a unit who often share a household, finances, and children. Marriage is imbued with important socially constructed symbolic meaning involving two intimate partners who are committed to each other in all circumstances including periods of chronic conditions (Waite & Gallagher 2000)-- a circumstance notably highlighted in most American wedding vows when partners pledge to support each another "in sickness." For a married person, psychological distress increases when married to a person with chronic conditions (Ben-Zur, Gilbar, & Lev 2001; Hagedoorn et al. 2001),

and this distress sometimes exceeds the distress levels of the chronically ill spouse (Gilbar & Ben-Zur 2002; Langer, Abrams, & Syrjala 2003). Psychological distress from a spouse's chronic conditions can increase initially and over time (Lambert et al. 2012).

Spouses often serve as caregivers during periods of chronic conditions (NFCA/AllSup 2011). Yet the relationship between spouses during periods of chronic conditions is more than just that of caregiver and care receiver. The primary relationship is that of husband and wife, albeit with a new chronic stressor introduced into the relationship (Revenson & DeLongis 2010; Yorgason et al. 2006). Dyadic approaches to chronic conditions note that spouses share stressors associated with chronic conditions in more ways than just exchanging care, though how these stressors are shared differs across couples and across conditions. Some couples appraise the chronic condition of one spouse as "ours" rather than "hers" or "mine" and they pool resources and cope as a unit (Berg & Upchurch 2007; Bodenmann 2005; Revenson, Kayser, & Bodenmann 2005). Other couples and instances of chronic conditions, though, are characterized by hostility and interpersonal strain, leading to isolation rather than cohesion (Kayser, Sormanti, & Strainschamps 1999; Manne 1999). The degree to which couples share stressors associated with chronic conditions and how these stressors are shared shape levels of psychological distress for both spouses (Kayser et al. 1999; Manne 1999; Martire et al. 2002). In this way, chronic conditions may also impact marital dynamics, including emotion work (i.e., activities done to promote another’s positive emotional state; Hochschild 1979), in ways that impact each spouse's own psychological well-being. A stress and life course perspective leads me to expect that this will be a process that

unfolds over long periods of time; however, most past dyadic studies of chronic conditions and psychological distress are cross-sectional (Ayotte, Yang, & Jones 2010; Berg & Upchurch 2007), as well as based on small convenience samples rather than large representative ones (Berg & Upchurch 2007; Martire et al. 2003; Ruthig, Trisko, & Stewart 2012). Thus we know little about how the connection between one spouse's chronic conditions and the other spouse's psychological distress operates over time using nationally-representative data.

Gender

As stated in a stress and life course perspective, experiences of stress throughout the life course occur within specific social contexts (Pearlin et al. 2005). In my dissertation, a context of key interest is gender, a socially constructed institution (Yancey Martin 2004). The extent to which stressors are shared within couples and psychological distress impacted likely depends on the gender of the spouse diagnosed with the chronic condition. However, most past studies with dyadic approaches to chronic conditions and psychological distress are restricted to samples of only men with chronic conditions, only women with chronic conditions, or do not compare across gender (see Berg & Upchurch 2007). Those that do consider gender often compare across conditions (e.g., comparing women with breast cancer and their spouses to men with prostate cancer and their spouses), rely on small sample sizes, and/or use cross-sectional data (Ayotte et al. 2010; Franks et al. 2010; Goldzweig et al. 2009; Northouse et al. 2000; Ruthig et al. 2012). These studies result in inconsistent findings, with some concluding that the well-being of husbands of women with chronic conditions is more negatively affected than the well-

being wives of men with chronic conditions (Baider & De-Nour 1999; Goldzweig et al. 2009), others finding the opposite (Ayotte et al. 2010; Hagedoorn et al. 2000; Hagedoorn et al. 2001; Valle et al. 2013), and others discovering no gender difference (Hagedoorn et al. 2008; Hannum et al. 1991; Kornblith et al. 1994; Northouse et al. 2000; Ruthig et al. 2012). These contradictions reflect the use of small non-representative samples as well as the different types of conditions considered. Additionally, many studies confound overall gender differences in psychological distress with gender differences in spousal psychological distress due to chronic illness (Hagedoorn et al. 2008). My dissertation uses a longitudinal and nationally representative data set and considers a range of chronic conditions. Further, I will complement this with a qualitative analysis, focusing on emotion work-- a key site of gender inequality within marriage-- and justifications for unequal care during periods of chronic conditions. I also draw on gender theory for my analyses and interpretations.

Gender Theory

By examining how processes of psychological distress around chronic conditions vary depending on gender, I contribute to broader understandings of gender differences in stress, morbidity, and mortality, as well as inequality within marriage. According to gender relations theory, gender involves relational, continual, and negotiated processes and is both an institution and a system of practices (Connell 2005; Ferree 2010). Gender relations and resulting power imbalances "hierarchically produce, organize, and evaluate masculinities and femininities through the contested but controlling practices of individuals, organizations, and societies" (Ferree 2010: 424). These gender relations and

practices are produced and reproduced by individual interactions and are influenced by and influence the entire social order (Connell 2005; Ferree 1990; Reczek & Umberson 2012). In my dissertation, I argue that gender is created and recreated through gender relation processes within marriage but that these gender processes are disrupted by illness. The influence of this disruption may be reflected in psychological distress.

One powerful discourse which organizes gender relations is that of hegemonic masculinity, the dominant culture's ideals of being a man, described in opposition to an emphasized femininity (Connell 2005; Connell & Messerschmidt 2005). Because gender is relational, patterns of masculinities and femininities are always defined in reference to each other (Connell & Messerschmidt 2005). Hegemonic masculinity and emphasized femininity represent widespread ideals, embodied in certain groups and in particular circumstances more than others (Connell & Messerschmidt 2005). In the contemporary United States, hegemonic masculinity involves financial success, power, confidence, invulnerability, and self-reliance and is most embodied in white, heterosexual, healthy men (Cheng 2008). Emphasized femininity involves compliance to patriarchy through women conforming to the needs and desires of men and is most embodied in in white, heterosexual, physically attractive women, especially married mothers (Connell 2005). Masculinities and femininities are enacted within marriage through the symbolic and structural divisions of labor (Ferree 1990).

Gender and Marriage

Heterosexual marriage is a gendered institution, composed of a man and a woman, and is a primary site for the production and reproduction of gender (Reczek &

Umberson 2012). Within marriage, men are often viewed as rational problem-solvers with high agency, as opposed to women who are construed as emotional nurturers adept at relationships (Duncombe & Marsden 1993; Gove 1984). For many couples, the organization of labor within the home is shaped by these constructions of masculinities and femininities with women being primarily responsible for care work and emotion work, which showcases emphasized femininity, and, I argue, becomes most displayed and contested during periods of chronic conditions. According to the nurturant role hypothesis, women are more likely to be nurturers (i.e., provide care work and emotion work) for their family members, both daily and during periods of chronic conditions (Gove 1984).

Gove and others posit that discrepancies in care work and emotion work contribute to women's higher levels of psychological distress (Gove 1984; Rosenfield et al. 2005; Thomeer et al. 2013; Yee & Schulz 2000). Further, interpersonal problems, perhaps including those created by chronic conditions, increase women's distress levels more than men, both in terms of intensity of distress and length of time distressed (Birditt & Fingerman 2003). Men, on the other hand, provide less spousal support, especially emotional support and emotion work, in daily life (Erickson 2005; Umberson et al. 1996), and I expect this continues to be true during periods when wives are chronically ill. This is partially due to the socially constructed expectation that men are emotionally incompetent and less influenced by interpersonal stress, including a spouse's chronic conditions (Birditt & Fingerman 2003; Duncombe & Marsden 1993; Thomeer et al. 2013). Men's perceived inability to provide care for wives during wives' chronic

conditions may be a source of distress for husbands. However, past studies find that men caregivers are less distressed than women caregivers, even when providing the same levels of care (Pinquart & Sorensen 2006; Yee & Schulz 2000). Given these findings, I expect these gender differences in provision of care and support within marriage will intensify during periods of chronic conditions and be reflected in psychological distress differences, a gendered outcome.

Gender and Distress

In this dissertation, I use depressive symptoms as my measure of psychological distress. There are key differences in depressive symptoms for women and men such that women have on average more depressive symptoms than men (Kessler et al. 2005). Scholars theorize that women's higher levels of depressive symptoms are linked to women's internalization, rather than externalization, of emotions and psychological distress (Rosenfield et al. 2005; Rosenfield, Vertefuille, & McAlpine 2000; Simon 2002). Self-schemas that prioritize others above the self are associated with the development of internalizing symptoms, including those of depression (Rosenfield et al. 2005; Rosenfield, Phillips, & White 2006; Rosenfield et al. 2000), and women's positions of lower social power, greater responsibility for the private sphere of family, and social construction as nurturers promote self-schemas that emphasize the collective and other-orientation (Rosenfield et al. 2000). Higher levels of femininity and lower levels of masculinity are associated with high levels of depressive symptoms (Barrett & White 2002). Men's psychological distress may manifest in more externalizing ways, including substance abuse; however, this is not to say that men do not have depressive symptoms. I

discuss limitations with using depressive symptoms as my measure of psychological distress in Chapter 5. However, I note that depressive symptoms are still a valid measure among men, especially when comparing men to each other (e.g., men married to women with chronic conditions compared to men married to women without chronic conditions).

Summary

Drawing on gender theory, discourses of masculinity and femininity shape marital processes and illness behaviors. Thus I expect that a wife's chronic condition will affect her husband's psychological distress differently than a husband's chronic condition will affect his wife's distress. I hypothesize that the pathways which connect men's distress to women's distress during periods of chronic condition are differ by gender. A key component of my dissertation will be testing those potential pathways. Potential pathways include the diagnosed person's psychological distress and functional limitations. Further, I will focus a qualitative analysis on emotion work, both how it is or is not provided and justifications for its provision. This in-depth analysis of emotion work processes during chronic conditions provides particular insight into how gender is intimately constructed within a marriage during.

OVERVIEW OF DISSERTATION

In my dissertation, using these theories, I argue that chronic conditions, which are rapidly increasing in the population (Crimmins & Saito 2000), create new stress within marriage and that the psychological distress produced by this stress differs by gender, number of conditions, and type of condition and unfolds over time. This project represents an important and understudied dimension of gender and health disparities

within marriage, and it indicates how gendered differences in spousal psychological distress processes around chronic conditions might exacerbate gender inequality in distress in old age.

In Chapter 2, I use quantitative methods to analyze how one person's number of chronic conditions is associated with the psychological distress of their spouse, focusing on how distress trajectories vary depending on the gender of the diagnosed person and on whether one or both spouses have chronic conditions. This chapter addresses the epidemiological reality that multimorbidity is increasingly common (Freid, Bernstein, & Bush 2012), yet we know little about how multiple conditions relate to spousal distress compared to having only one condition. To begin to understand the processes through which one person's chronic conditions influence their spouse's psychological distress, I also consider important mediating pathways from one spouse's chronic condition to the other spouse's psychological distress. These include the chronically ill person's psychological distress and functional limitations.

In Chapter 3, I separately analyze different types of chronic conditions and how they are related to spousal distress. Different types of chronic conditions possess different disease profiles, and an important component of this profile is the "gender" of the condition (Emslie, Hunt, & Watt 2001). Some conditions, like arthritis, are more prominent in women than men (Dunlop et al. 2002), while others, like lung disease, are more prominent in men (Carey et al. 2007; Preston & Wang 2006; Townsend, Miller, & Prakash 2012). The type of chronic condition encountered may be associated with different trajectories of distress for the spouse. As in Chapter 2, I will also examine how

this depends on the gender of the partner with the chronic condition and potential pathways which help to understand these associations.

In Chapter 4, using a qualitative analysis of in-depth interviews, I focus on emotion work as a process which highlights gendered reactions to a spouse's chronic conditions. I specifically examine the presence or absence of emotion work and justifications of emotion work during periods of chronic conditions, focusing on the use of gender scripts and stereotypes. Analyzing emotion work during chronic conditions provides insight into the ways in which chronic conditions can intensify gender inequality within marriage, perhaps contributing to gender inequalities in spousal distress around chronic conditions discussed in Chapters 2 and 3.

In Chapter 5, the conclusion of my dissertation, I summarize the key findings and outline important next steps to extend this research in the future. I discuss how my research questions are increasingly important given the shifting demography of the U.S.--namely the aging of the population, increasing life expectancies, declining marriage rates, increases in the number of chronic conditions, and gender inequalities in morbidity and mortality (Case & Paxson 2005; Cherlin 2009; Crimmins & Saito 2000).

Chapter 2: Number of Chronic Conditions and Psychological Distress within Marriage

ABSTRACT

Having multiple chronic conditions (i.e., multimorbidity) increases one's own psychological distress more so than having one chronic condition. Yet little is known regarding whether multimorbidity similarly increases the distress of one's spouse, whether this depends on gender, or whether this depends on if one or both spouses have chronic conditions. I examine how one spouse's number of chronic conditions relates to the other spouse's distress over time, paying attention to the importance of gender throughout the analysis. I analyze multiple waves of the Health and Retirement Survey (HRS) using autoregressive models and dyadic growth curve models. In general, I find that the number of a husband's chronic conditions increases his wife's future psychological distress more so than the number of a wife's chronic conditions increase her husband's distress, though this is mitigated by the wife's own psychological distress and functional limitations. This gender difference is stronger if both spouses have chronic conditions compared to if only one does. While marriage has been understood as an important resource for the chronically ill, this study demonstrates the cost of multiple chronic conditions for the spouses and that this cost is higher for women than men. By identifying key contexts where chronic conditions are connected to spousal psychological distress (e.g., women who are chronically ill and married to men with multiple chronic conditions), this chapter identifies important areas of vulnerability and thus potential areas for intervention.

Chronic conditions—defined as disorders with long durations that affect a person's ability to function (Anderson & Horvath 2004)—negatively impact mental and emotional well-being, including by increasing psychological distress (Fiest et al. 2011; Hollingshaus & Utz 2013; Pudrovska 2010; Taylor & Aspinwall 1996). The more chronic conditions a person has, the more distressed that person is on average (Barnett et al. 2012; Fortin et al. 2006a; Fortin et al. 2006b; Naessens et al. 2011), in part because having multiple chronic conditions (i.e., multimorbidity) requires more complex medical care, increases health care costs, and contributes to more functional limitations and pain than having one chronic condition (Bayliss et al. 2003; Fortin et al. 2007; Gijsen et al. 2001; Glynn et al. 2011; Marengoni et al. 2011; Morrissey, Viola, & Shi 2014). Older adults are increasingly likely to to experience multiple conditions simultaneously (Freid et al. 2012), making understanding the mental health consequences of multimorbidity especially important.

Past studies demonstrate that having a spouse with a chronic condition increases one's own psychological distress (see Berg & Upchurch 2007 for overview). However, these studies have largely overlooked multimorbidity, focusing instead on specific types of chronic conditions or the presence or absence of any chronic conditions (Ayotte et al. 2010; Berg & Upchurch 2007; Franks et al. 2010; Goldzweig et al. 2009; Northouse et al. 2000; Ruthig et al. 2012). I anticipate that the more chronic conditions a person has, the more distressed his or her spouse is, and that the number of chronic conditions relates to spousal distress through the distress and functional limitations of the chronically ill person. Further, studies often overlook the impact of both spouses having chronic

conditions compared to only one spouse having chronic conditions as well as the importance of gender. Gender shapes diagnoses and experiences of chronic conditions, psychological distress levels, and processes within marriage (Case & Paxson 2005; Ferree 2010; Kiecolt-Glaser & Newton 2001), and thus I anticipate gender also moderates the association between one spouse's number of chronic conditions and the other spouse's distress.

In this chapter, I consider how psychological distress is influenced by a spouse's number of chronic conditions, examining couples in which only one spouse has chronic conditions and couples in which both spouses have chronic conditions. I use couple-level longitudinal structural equation models to explore unfolding linkages between one spouse's number of chronic conditions and the other spouse's psychological distress in the Health and Retirement Study (HRS), a nationally representative sample of older adults. I address three specific questions in this chapter:

(1) Is a person's psychological distress at one point in time and the trajectory of change in that psychological distress over time related to the number of chronic conditions of his or her spouse?

(2) Are there gender differences in the impact of one spouse's number of chronic conditions on the other spouse's distress?

(3) Are these associations mediated by one's spouse's psychological distress or functional limitations?

I examine each of these questions using three analytic samples: couples in which only the husband has chronic conditions, couples in which only the wife has chronic conditions,

and couples in which both spouses have chronic conditions. In empirically testing these questions, I argue that chronic conditions, which are rapidly increasing in the population, create new stress within marriages and that the psychological distress produced by this stress differs by gender. This project represents an important and understudied dimension of gender and health disparities within marriage, specifically through considering how the physical and mental health of both spouses are importantly connected in the case of multimorbidity.

THEORETICAL BACKGROUND

Multimorbidity (i.e., having more than one chronic condition) contributes to longer hospital stays, more medical complications, higher healthcare costs, and higher mortality compared to only having one condition or no conditions (Bayliss et al. 2003; Fortin et al. 2007; Gijsen et al. 2001; Glynn et al. 2011; Marengoni et al. 2011; Morrissey et al. 2014). Additionally, multimorbidity lowers quality of life and increases psychological distress (Barnett et al. 2012; Fortin et al. 2006a; Fortin et al. 2006b; Naessens et al. 2011). Most past empirical studies of multimorbidity and mental health focus on individuals, rather than a dyadic approach (see Barnett et al. 2012; Fortin et al. 2006a; Fortin et al. 2006b; Naessens et al. 2011). Yet studies indicate that one spouse's chronic conditions affect the other spouse's distress levels (see Berg & Upchurch 2007 for overview). Thus just as psychological distress is higher for people with multimordibity compared to people with only one chronic condition, I hypothesize that psychological distress is higher for spouses of people with multiple chronic conditions

compared to spouses of people with only one chronic condition, increasing with each additional condition. This is likely also is a longitudinal process which unfolds over time.

Pathways

I propose that multimorbidity increases a spouse's distress through two key pathways—psychological distress of the chronically ill spouse and functional limitations of the chronically ill spouse. Regarding distress, multiple chronic conditions increase one's own level of psychological distress (Barnett et al. 2012; Fortin et al. 2006a; Fortin et al. 2006b; Naessens et al. 2011). Further, psychological distress levels of spouses are associated across time (Butterworth & Rodgers 2006; Holahan et al. 2007; Siegel et al. 2004; Thomeer, Umberson, & Pudrovska 2013). For these reasons, I hypothesize that psychological distress of the chronically ill spouse will be an important pathway through which the chronic conditions of one spouse exacerbates the psychological distress of the other. If the distress level of the chronically ill spouse is low, then I anticipate that the psychological distress level of the other spouse will be similarly low.

Regarding functional limitations, I expect functional limitations of the chronically ill spouse to also be a key pathway linking one spouse's number of chronic conditions to the other spouse's psychological distress. The association between chronic conditions and functional limitations is a key link in the disablement process, wherein chronic condition pathology leads to physical impairment which become functional limitations (Verbrugge & Jette 1994). Chronic conditions increase risk of functional limitations, including activities of daily living (ADL) difficulties and instrumental activities of daily living (I-ADL) difficulties (Federman et al. 2010). Having multiple conditions, compared to

having only one condition, further increases risk of developing functional limitations (Fortin et al. 2007; Gijsen et al. 2001; Marengoni et al. 2011). Additionally, one spouse's functional limitations decrease the well-being of the other spouse (Roper & Yorgason 2009; Ruthig et al. 2012). This association may be partially due to spousal caregiving (Blonder et al. 2007; Cannuscio et al. 2002; Korporaal, van Groenou, & van Tilburg 2008; Perz et al. 2011). In the case of multimorbidity, multiple chronic conditions complicates informal care needs (Fortin et al. 2007), and thus likely increases the spouse's burden of care above and beyond the functional limitations associated with only one chronic condition.

Key Contexts

In this chapter, I consider two key contexts which likely impact the association between one spouse's number of conditions and the other spouse's distress. The first context involves whether both spouses are chronically ill or only one spouse is chronically ill. For many couples, both spouses have multiple chronic conditions at the same time, yet past studies tend to focus on one spouse and do not consider the chronic conditions of the other (see Berg & Upchurch 2007 for overview). Multiple chronic conditions likely influence spouses' psychological distress differently depending on whether or not both spouses have chronic conditions. I suggest two possibilities for how the number of chronic conditions of one spouse may impact the distress of the other spouse differently depending on if only one spouse has chronic conditions or if both spouses have chronic conditions. When both spouses have chronic conditions, it may be that neither spouse is impacted by his or her spouse's conditions above and beyond his or

her own conditions. Thus I would not find a significant relationship between one spouse's number of chronic conditions and the other spouse's distress when both spouses are chronically ill, though I may find an association between one spouse's number of chronic conditions and the other spouse's distress when only one is chronically ill. Alternatively, when both spouses have chronic conditions, both spouses' distress may be exacerbated due to the added distress of dealing with their spouse's conditions as well as their own. Thus I would find a significant relationship between one spouse's number of chronic conditions and the other spouse's distress when both spouses are chronically ill, though I may not find this association between one spouse's number of chronic conditions and the other spouse's distress when only one is chronically ill.

This may further depend on gender, and a second key context involves the gender of the chronically ill spouse. Most past studies with dyadic approaches to chronic conditions and psychological distress are restricted to samples of only men with chronic conditions, only women with chronic conditions, or do not compare across gender (see Berg & Upchurch 2007). Those that do consider gender result in inconsistent findings, with some concluding that husbands of women with chronic conditions are more affected in terms of their mental health than wives of men with chronic conditions (Baider & De-Nour 1999; Goldzweig et al. 2009), others finding the opposite (Ayotte et al. 2010; Hagedoorn et al. 2000; Hagedoorn et al. 2001; Valle et al. 2013), and others discovering no gender difference (Hagedoorn et al. 2008; Hannum et al. 1991; Kornblith et al. 1994; Northouse et al. 2000; Ruthig et al. 2012). Further, these studies do not consider multimorbidity. Women have more chronic conditions on average than men (Anderson &

Horvath 2004). I hypothesize that a spouse's number of chronic conditions will increase women's chronic conditions more so than men's and that this may be exacerbated for multimorbidity, which requires even more intensive caregiving and is associated with greater distress . There may also be differences by gender in how impactful another spouse's chronic conditions are depending on whether both spouses are ill or only one spouse is. Women in particular may be less willing to adopt the "sick role" and care for themselves during illness (Gove 1984), leading to even greater distress for themselves when both spouses are ill as wives are attempting to care for their spouse and neglecting their own well-being. Additionally, caregiving women who are themselves chronically ill likely receive little care from their also ill husbands, though this has not been empirically examined.

Drawing on past literature, I anticipate that the more chronic conditions a person has, the more distressed his or her spouse will be. This association will be mediated by the chronically ill spouse's own psychological distress and functional limitations and will likely be stronger for women's distress than men's distress. Further, this association will differ depending on whether considering couples in which both spouses are chronically ill or couples in which only one spouse is chronically ill.

METHODS

Data

This study uses quantitative methods to analyze nationally-presentative couple-linked longitudinal data; these data allow me to assess patterns of multimorbidity, psychological distress, and gender within marriage. I analyze multiple waves of data from

the Health and Retirement Study (HRS), a sample of primary respondents aged 51 to 61 years in 1992 and their spouses (any age). For analysis, I use the RAND HRS data, provided by the RAND Center for the Study of Aging (RAND HRS Data 2010). This data set merges the HRS data with the Assets and Health Dynamics among the Oldest Old (AHEAD) data. AHEAD consists of adults born in 1923 or before, along with their spouses (any age). For both samples, response rates across waves range from 80 to 90 percent. I use data from 1994 to 2010.

This data is ideal for answering my research questions for three main reasons. First, it is a large and nationally representative data set. The HRS uses a multi-stage, clustered area probability frame in order to generate a representative sample, and it oversamples African Americans, Latinos, and married couples. Most prior studies of chronic conditions and psychological distress within marriage have depended on very small sample sizes, rarely including more than 100 couples, and are often restricted to a specific geographic location, to a specific type of chronic disease, or other non-representative samples (see Berg & Upchurch 2007 for overview). Using a large nationally-representative data set allows me to examine stratified samples and test models across and within groups-- possibilities that are limited with smaller samples. Second, the HRS is a longitudinal data set; respondents are re-interviewed approximately every two years (Juster & Suzman 1995). Because the stress and life course perspective, as well as the nature of chronic conditions, leads me to expect that psychological distress processes around chronic conditions will unfold over time, using longitudinal data is critical. Third, both respondents and their spouses are interviewed, making dyadic data analysis of this

data set possible. This point is critical, as this analysis hinges on examining the lived experiences of husbands and wives within marriage, requiring data that includes both perspectives.

I construct three analytic samples. All three samples are limited to married couples in which both spouses are interviewed in at least four waves with wave 2 (i.e., 1994) being the first eligible wave. I restrict the sample to couples interviewed for at least four waves in order to take advantage of the longitudinal aspect of this study and to use the same sample for the autoregressive cross-lagged models and the structural equation models. Further, I restrict the sample to wave 2 and later because the psychological distress questions in wave 1 differ from the questions in later years. The first subsample is composed of couples in which the wife has any chronic conditions for four consecutive waves but the husband does not have any chronic conditions during that period (n = 644). The second subsample is composed of couples in which the husband has any chronic conditions for four consecutive waves but the wife does not have any chronic conditions during that period (n = 740). The third subsample is composed of couples in which both the husband and the wife have any chronic conditions for four consecutive waves (n = 3,242).

Measures

Number of Chronic Conditions

In the respondents' first interview, they are asked: "Has the doctor ever told you that you have…?" They are asked whether they have ever been diagnosed with (1) high blood pressure or hypertension; (2) diabetes or high blood sugar; (3) cancer or a

malignant tumor of any kind except skin cancer; (4) chronic lung disease except asthma such as chronic bronchitis or emphysema; (5) heart attack, coronary heart disease, angina, congestive heart failure, or other heart problems; (6) stroke or transient ischemic attack (TIA); and (7) arthritis or rheumatism. In subsequent interviews, they are asked, "Since we last talked to you, that is since [last interview date], has a doctor told you that have have…?" followed by the same list of conditions. I sum these conditions for each wave, and number of chronic conditions ranges from 0 to 7.

Psychological Distress

I use depressive symptoms as an indicator of psychological distress. The mental health index provided by the HRS uses eight items from the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff 1977). These items measure whether the respondent experiences the following all or most of the time: feels depressed, feels everything is an effort, has restless sleep, feels alone, feels sad, cannot get going, feels happy, and enjoys life. The items are coded so that higher values reflect more distress and range from 0-8. This short version of the CES-D scale has predictive accuracy when compared to the full-length form, correlates well with poor mental health, and has good internal consistency with a Cronbach's alpha of 0.78 (Andreson et al. 1994; Grzywacz et al. 2006; Turvey, Wallace, & Herzog 1999).

Gender

Gender of the respondent and spouse is self-reported as male or female. For ease of discussion, I use male interchangeably with man and husband and female interchangeably with woman and wife.

Functional Limitations

Functional limitations of the respondent are a proposed pathway linking the chronic conditions of the respondent to the psychological distress of the spouse. Functional limitations are measured using self-reported activity of daily living (ADL) difficulties and instrumental activity of daily living (I-ADL) difficulties. The ADL difficulty score refers to the number of ADLs the respondent reports having some difficulties with, namely bathing, eating, dressing, walking across a room, and getting in or out of bed. This is a scale from 0 to 5. The I-ADL score is the number of I-ADLs the respondent reports having some difficulties with, including using a telephone, taking medication, and handling money. This is a scale from 0 to 3. I combine these measures into one ADL/I-ADL index, which has been shown to be less biased by age than either index separately (LaPlante 2010).

I also conduct supplementary analysis (not shown) examining whether helping a spouse with ADL/I-ADL difficulties—a proxy for caregiving-- mediates the relationship between number of conditions and psychological distress. The results demonstrate that including this measure does not improve the models or significantly change the coefficients, thus I do not include these results in this chapter.

Covariates

Covariates include age of respondents (in years, calculated using birth year and year of interview), age of spouses, length of current marital duration (in years), number of years of educational attainment, race/ethnicity (four mutually-exclusive categories: non-Hispanic White, non-Hispanic Black, Hispanic, and other), number of living

children, and log of household income. All are included as covariates because past research shows that each is associated with psychological distress and chronic health conditions (Keles et al. 2006; Mirowsky & Ross 2003).

Analysis

I use structural equation models, including autoregressive path models and dyadic growth curve models (Kashy & Donnellan 2012; Kline 2011). I first fit autoregressive path models, where past values of one variable predict future values of a different variable. This allows for estimation of simultaneously linear relationships among various combinations of observed variables, providing estimation of the influence of different pathways on the coefficients (Kashy & Donnellan 2012; Kline 2011). I fit two baseline models:

a. Model testing the influence of the *wife's* number of chronic conditions on the *husband's* distress
b. Model testing the influence of the *husband's* number of chronic conditions on the *wife's* distress

The first model is fit separately using the sample of couples in which only the wife has any chronic conditions and using the sample of couples in which both the husband and the wife have any chronic conditions, controlling for husband's number of chronic conditions at each wave. The second model is fit separately using the sample of couples in which only the husband has any chronic conditions and using the sample of couples in which both the husband and the wife have any chronic conditions, controlling for wife’s

number of chronic conditions at each wave. To test for mediators, I examine four additional models:

c. Model testing the influence of the *wife's* number of chronic conditions on the *husband's* distress, controlling for wife's psychological distress at each time point
d. Model testing the influence of the *wife's* number of chronic conditions on the *husband's* distress, controlling for wife's functional limitations at each time point
e. Model testing the influence of the *husband's* number of chronic conditions on the *wife's* distress, controlling for husband's psychological distress at each time point
f. Model testing the influence of the *husband's* number of chronic conditions on the *wife's* distress, controlling for husband's functional limitations at each time point

As with the baseline models, I fit these models both for couples in which only one spouse has chronic conditions and for couples in which both spouses have chronic conditions.

Additionally, I estimate linear growth curve models to estimate the association of chronic conditions of one spouse on initial level and change in the psychological distress of the other spouse (initial levels and change). Latent growth curve models provide a more thorough test of my hypotheses as they examine change over time. George and Lynch (2003) argue that growth curve models are the ideal method to examine the initial impact of stressful life events and the subsequent unique psychological distress trajectories. Growth curve models distinguish within-individual heterogeneity from between-individual heterogeneity in estimating psychological distress changes shaped by other variables, and dyadic growth curve models allow both members of the dyad (e.g., husband and wife) to have their own intercepts and slopes with these values allowed to

correlate across the dyad (Kashy & Donnellan 2012; Kashy et al. 2008; Kenny, Kashy, & Cook 2006; Little 2008). I estimate four models. First, I estimate how wife's number of chronic conditions (intercept and slope) is associated with the intercept and slope of the husband's psychological distress in couples in which only the wife has any chronic conditions. Second, I test the association between the husband's number of chronic conditions (intercept and slope) and the intercept and slope of the wife's psychological distress in couples in which only the wife has any chronic conditions. I then repeat these models with couples in which both the wife and husband have chronic conditions, controlling for both spouse's number of conditions in both models. To test for mediation in these models, I use a latent growth curve mediation model (MacKinnon 2012), estimating the two latent growth curves from the original models (one spouse's number of chronic conditions and the other spouse's distress) as well as a growth curve with the hypothesized mediator. I do this for each proposed mediator. I compare model coefficients using the Sobel-Goodman mediation test (Sobel 1982).

For both the autoregressive models and the latent growth curve models, I use multiple-group analysis, testing whether the association between one spouse's conditions and the other spouse's distress differs when looking at husbands compared to wives. I do this comparison by analyzing a model where the relationship between one spouse's conditions and the other spouse's distress score is constrained to be equal across gender groups and a model where the effects are estimated freely across gender groups. A significant improvement in the chi-square statistic from the restricted to the unrestricted model indicates significant differences across the groups. I also examine interactions

between gender and number of conditions. I only report the interactions, as the multiple group analysis confirmed these results. I evaluate goodness of fit measures with the Akaike information criterion (AIC) and the Bayesian information criterion (BIC).

All analyses are conducted in MPlus (Munthén & Munthén 2010). Mplus uses Full Information Maximum Likelihood (FIML) procedure to deal with missing data (Arbuckle 1996). FIML has been shown to minimize bias and maximize efficiency when dealing with missing data (Schafer & Graham 2002).

RESULTS

Table 2-1 presents descriptive statistics of variables, comparing men and women within each subsample (only wife with chronic conditions, only husband with chronic conditions, and both spouses with chronic conditions). Women are significantly more distressed than men in couples in which only the wife has chronic conditions and couples in which both spouses have chronic conditions ($p < .001$). There is no significant difference between men and women in psychological distress for the couples in which only the husband has chronic conditions. In the couples in which both spouses have chronic conditions, husbands have on average more conditions than wives, likely reflecting men's older average age. Couples in which both spouses have a chronic condition are on average older than couples in which only one spouse has a chronic condition.

Only One Spouse with Chronic Conditions

I analyze couples in which only one spouse has any chronic conditions during the study period using autoregressive models and dyadic latent growth curve models. The

autoregressive models are in Tables 2-2 and 2-3 which show the estimated effects of one spouse's number of chronic conditions on the other spouse's psychological distress across time and the associated goodness of fit statistics. In the sample of couples where only the wife has chronic conditions, wife's number of chronic conditions in time 1 is significantly and positively related to husband's distress in time 2, but there is no association in other time points (Table 2-2, Model A). In the sample of couples where only the husband has chronic conditions, the relationship between husband's number of chronic conditions and wife's distress is stronger, with husband's number of chronic conditions in time 1 significantly and positively associated with wife's distress in time 2 and husband's number of chronic conditions in time 2 significantly and positively predicting wife's distress in time 3 (Table 2-3, Model A). For these two time points, on average, a one unit increase in husband's number of chronic conditions contributes to a 0.18 increase in the wife's CES-D score.

I next fit dyadic growth curve models using the same two samples. These results are shown in Tables 2-4 and 2-5. Reflecting the stronger and more consistent relationship between husband's number of conditions and wife's distress seen in the autoregressive models, in the model estimating the association between husband's number of chronic conditions and wife's psychological distress in couples in which only the husband has any chronic conditions, initial levels of husband's chronic conditions are positively and significantly related to the initial levels of the wife's distress (Table 2-5, Model A). Similar to the autoregressive path models, a one unit increase in husband's number of chronic conditions initially contributes to about a 0.19 increase in the wife's distress.

Change in husband's number of conditions and change in wife's distress are not related, however. When looking at couples in which only the wife has any chronic conditions, the initial levels of wife's conditions and husband's distress are not correlated (Table 2-4, Model A). But the greater the increase in wife's number of chronic conditions over time, the greater the increase in husband's distress one time.

Both Spouses with Chronic Conditions

Next, I analyze couples in which both spouses have any chronic conditions during the study period using autoregressive models and latent growth curve models. The autoregressive models demonstrate no correlation between wife's number of conditions and husband's future distress in any waves (Table 2-6, Model A). There is, though, a positive significant relationship between husband's number of conditions in time 2 and wife's distress in time 3 such that a one unit increase in husband's number of conditions is correlated with a 0.09 unit increase in wife's distress (Table 2-7, Model A).

Growth curve models, shown in Tables 2-8 and 2-9, confirm that the association between husband's number of conditions and wife's distress (Table 2-9, Model A) is stronger than the relationship between wife's number of conditions and husband's distress (Table 2-8, Model A) for couples in which both spouses have chronic conditions. They also suggest this gender differences is stronger for couples in which both spouses have chronic conditions compared to couples in which only one spouse has chronic conditions. There are no significant associations between wife's conditions and husband's distress, either in terms of intercepts or slopes, in the model examining wife's chronic conditions and husband's distress (Table 2-8, Model A). In the model examining

husband's number of conditions as wife's distress, initial levels of husband's number of chronic conditions are positively and significantly related to the initial levels of wife's distress, and the change in the husband's number of chronic conditions over time is positively and significantly related to the change in the wife's psychological distress (Table 2-9, Model A). Further, the more conditions a husband has initially, the faster the rate of growth in wife's distress over time. I compare these two models using a multiple-group analysis, which tests whether the association between conditions and distress differs significantly when looking at husband's conditions compared to wife's conditions. There is a significant improvement ($p < .001$) in the chi-square statistic in the unrestricted model compared to the restricted model, demonstrating the association does differ by gender. The model with husband's number of conditions and wife's distress is the better fitting model.

Pathways

Next I examine the extent to which the distress of the spouse with chronic conditions mediates the relationship between that spouse's number of chronic conditions and the other spouse's distress, as well as the extent to which the functional limitations of the spouse with chronic conditions mediates the relationship between that spouse's number of chronic conditions and the other spouse's distress. I examined this for couples in which only the wife has chronic conditions, couples in which only the husband has chronic conditions, and couples in which both spouses have chronic conditions. In general, Sobel tests on the autoregressive models demonstrate that the first spouse's distress does not mediate the association between the first spouse's number of chronic

conditions and the second spouse's distress (Tables 2-2, 2-3, 2-6, and 2-7, Model B). This is the case whether looking at husband's number of conditions or wife's number of conditions and regardless of whether one or both spouses have chronic conditions. Sobel tests on the growth curve models, however, suggest that when only the husband has chronic conditions, husband's distress does explain about 39 percent of the association between the husband's initial number of chronic conditions and the wife's initial distress levels (Table 2-5, Model B). When both spouses have chronic conditions, about 81 percent of the association between the husband's initial number of conditions and the wife's initial distress, 28 percent of the association between the husband's change in number of conditions and wife's change in distress, and 44 percent of the association between husband's initial number of conditions and wife's change in distress is explained by husband's distress (Table 2-9, Model B). Sobel tests further indicate that when only the wife has chronic conditions, about 24 percent of the association between wife's rate of change of chronic conditions and husband's rate of change in distress is explained by wife's change in distress (Table 2-4, Model B). The chi-square difference test demonstrates that including the chronically ill spouse's distress level significantly improves these models.

Regarding functional limitations, for the autoregressive models, the Sobel-Goodman test demonstrates that husband's functional limitations do partially mediate the relationship between husband's number of chronic conditions and wife's distress in some of the waves, but only for couples in which only the husband has chronic conditions, explaining about 19 percent of the association (Table 2-3, Model C). The Sobel test

demonstrates that this is significant at $p < .05$. Growth curve models confirm this, demonstrating that husband's functional limitations partially mediate the association between husband's number of conditions and wife's distress. This is for couples in which only the husband has chronic conditions (about 46 percent of the association between intercepts; Table 2-5, Model C) and couples in which both spouses have chronic conditions (about 41 percent of the association between intercepts, 33 percent of the association between slopes, and 69 percent of association between intercept and slope; Table 2-9, Model C). Wife's functional limitations do not mediate the association between wife's number of conditions and husband's distress (which was only significant in couples in which only the husband had chronic conditions and only for the slopes).

DISCUSSION

Extensive evidence shows the importance of marriage for mental and physical health (Umberson et al. 2006; Waite & Gallagher 2000), and a separate body of work shows linkages between chronic conditions and psychological well-being (Fiest et al. 2011; Taylor et al. 2004). Despite these substantial literatures and the epidemiological reality that 80 percent of all adults over the age of 50 have at least one chronic condition (Fiest et al. 2011; Taylor et al. 2004), little is known about how one spouse's number of chronic conditions influence his or her spouse's psychological distress, whether this is moderated by gender, whether it differs if one or both partners have chronic conditions, and what accounts for this association. Because of the long duration of chronic conditions, the psychological consequences of these conditions reverberate and accumulate over time, yet most studies on this topic are cross-sectional and based on

small samples and only one type of condition (see Berg & Upchurch 2007 for overview). This study advances our knowledge of how psychological distress is distributed within marriages and by particular health statuses, specifically multimorbidity, in four key ways.

First, this study demonstrates that the number of chronic conditions of one spouse do influence the psychological distress of the other spouse. Few past studies examine multiple chronic conditions, instead choosing samples in which only one spouse is ill and only one chronic condition (such as arthritis or breast cancer) is present, not taking into account multimorbidity of chronic conditions (see Berg and Upchurch 2007 for overview). This does not reflect the epidemiological reality that for most older couples, spouses are often chronically ill with more than one chronic condition and often more than one spouse is chronically ill. By looking at number of chronic conditions, rather than just treating the presence or absence of chronic conditions as dichotomous, this study demonstrates that *more* chronic conditions of one spouse is associated with *more* psychological distress in the other spouse. Dichotomizing chronic conditions misses this point, which is particularly relevant in an aging population with high levels of multimorbidity of chronic conditions (Freid et al. 2012). Further, the growth curve models demonstrate that one spouse's chronic conditions and the other spouse's psychological distress are not just associated within waves and across waves, but that, in some circumstances, *changes* in one spouse's chronic conditions contribute to *changes* in the other spouse's psychological distress. This demonstrates that the connection between one spouse's multiple conditions and the other spouse's mental health is a dynamic process, unfolding over time. This supports the stress and life course framework

discussed in Chapter 1 wherein stress proliferates over time, not just within person but across people (George & Lynch 2003; Pearlin et al. 2005; Umberson et al. 2006).

Second, this analysis indicates that the association between number of chronic conditions and spousal distress is importantly moderated by gender. I find that, in regard to number of chronic conditions, the more conditions a husband has, the more distressed his wife is, both initially and over time, but this relationship is weaker when looking at wife's number of conditions and husband's distress. This supports a recent study by Valle and colleagues (2013) which finds that a spouse's chronic condition diagnosis impacts women's mental health more than men's. Many studies find that women provide more caregiving for chronically ill spouses and are more negatively affected by this caregiving than men (Pinquart & Sorensen 2006), and thus it may be that the gender differences in these analyses are driven by caregiving differences. This should be examined in future research. My findings further support other empirical and theoretical understandings of how illness disrupts gender constructions thus affecting psychological distress. Chronic conditions are found to be more distressing for men than women, due to masculine understandings of strength and virility contested by illness (Pudrovska 2010). These differences in how men react to their own illness compared to women, alongside studies which conclude that women are more affected by the distress of their spouse than men (Kiecolt-Glaser & Newton 2001; Larson & Almeida 1999), point to a second reason in addition to caregiving for why women are more distressed by their spouse's chronic conditions than men. My results support this by indicating that husband's distress is a key mediator in the association between husband's number of conditions and wife's distress.

Third, I find that gender differences in how men and women's psychological distress is associated with their spouse's chronic conditions are starker when both spouses have chronic conditions than when just one spouse has a chronic condition. When only one spouse has a chronic condition, spouses are more similar in how their psychological distress is associated with each additional chronic condition, regardless of gender. But when both spouses have chronic conditions, a husband's psychological distress is not associated with his wife's number of chronic conditions, though the association between husband's number of chronic conditions and wife's distress is strong and robust. This demonstrates the importance of modeling these couples separately. In most older couples, both spouses have chronic conditions, meaning that this gender inequality is pervasive in this demographic group, likely contributing to broader population patterns of gender inequality in distress. Further, this has implications for wives' physical health, as they experience distress from both their own chronic conditions and their husband's which likely worsens their own well-being.

Fourth, the association between one spouse's number of chronic conditions and the other spouse's psychological distress appears to be partially mediated by the first spouse's own psychological distress and functional limitations. Chronic conditions increase one's own psychological distress (Pudrovska 2010), and spouse's psychological distress is associated over time (Thomeer et al. 2013). Additionally, more functional limitations likely indicate a greater caregiving burden, and this caregiving burden may help us understand why a spouse's number of chronic conditions increase wife's distress more than men's, as women tend to provide more caregiving than men (Pinquart &

Sorensen 2006). Identifying that psychological distress and functional limitations are indeed key mediators of this relationship demonstrates an important area for interventions and further research. They serve as mediators whether only one spouse is chronically ill or both spouses are chronically ill and seem most important in understanding wife's distress. Future research should investigate other important mediators, including health behaviors and amount of money spent on health care, as well as more explicitly test the caregiving pathway. Understanding how chronic conditions influence spousal distress and creating interventions for these processes would benefit mental (and physical) health for both partners.

Despite the contributions of this study, there are also limitations. I do not include a measure of severity of conditions, nor do I consider timing or duration of conditions. More severe conditions likely impact distress more than less severe conditions. Regarding duration, distress from conditions may accumulate over time, such that the longer a couple has dealt experiences a condition, the more distressed the spouse will be. Alternatively, couples may adapt to conditions over time. The latent growth curve models give some indication that the accumulation model is more accurate for women's distress when husbands are chronically ill. As a related point, the development of chronic conditions may be more or less distressing for spouses at certain points in the life course. This is especially relevant when considering multimorbidity. If the diagnoses of multiple conditions occurs within a short-time frame, this may lead to more initial distress than if the conditions were diagnosed over a lengthy period with time to adapt to each.

This study has important policy implications. In 2005, approximately 133 million Americans had a chronic condition, a number projected to steadily increase due to the rapid aging of the population, the greater life expectancies of people with chronic conditions, and the increase in disease-specific risk factors like obesity (Anderson & Horvath 2004; Bodenheimer, Chen, & Bennett 2009; Crimmins & Saito 2000; Wagner et al. 2001). Many studies address what multimorbidity means for the chronically ill person, but critical to policy is understanding what multimorbidity means for those in their social networks, most centrally the spouse. Further, policy should understand what spouses are more at risk for psychological distress in the presence of chronic illnesses. While marriage has been understood as an important resource for the chronically ill (DeLongis et al. 2010; Revenson & DeLongis 2010), this study demonstrates the cost of chronic conditions for the spouse and that this cost is higher for women than men. By identifying key contexts where chronic conditions are connected to spousal psychological distress (e.g., women who are chronically ill and married to men with multiple chronic conditions), this chapter identifies important areas of vulnerability and thus potential areas for intervention. Thus this research has important policy interventions for an aging population, facing more and more chronic conditions increasingly at home and in the presence of others.

Table 2-1: Means and Standard Deviations of Variables

	Only Wife with Chronic Conditions		Only Husband with Chronic Conditions		Both Spouses with Chronic Conditions	
	n = 644		*n* = 740		*n* = 3,242	
	Men	Women	Men	Women	Men	Women
CES-D						
Time 1	0.71	1.47	0.94	0.82	1.03	1.44
	(1.31)	(1.91)	(1.56)	(1.47)	(1.59)	(1.96)
Time 2	0.68	1.44	0.96	0.80	1.09	1.43
	(1.16)	(1.96)	(1.58)	(1.42)	(1.61)	(1.92)
Time 3	0.82	1.58	1.16	1.00	1.20	1.58
	(1.30)	(2.01)	(1.67)	(1.58)	(1.67)	(1.96)
Time 4	0.76	1.51	1.13	0.95	1.21	1.60
	(1.31)	(1.97)	(1.73)	(1.63)	(1.69)	(2.01)
Number of chronic conditions						
Time 1	--	1.45	1.46	--	1.70	1.51
		(0.70)	(0.70)		(0.88)	(0.87)
Time 2	--	1.60	1.64	--	1.93	1.72
		(0.80)	(0.81)		(0.98)	(0.91)
Time 3	--	1.76	1.84	--	2.14	1.91
		(0.90)	(0.91)		(1.06)	(0.98)
Time 4	--	1.92	2.03	--	2.37	2.10
		(0.98)	(0.98)		(1.13)	(1.06)
Age (years) (Time 1)	59.18	56.86	59.99	55.17	64.18	60.77
	(8.45)	(8.76)	(7.84)	(8.79)	(8.85)	(9.08)
Marital duration (years) (Time 1)	29.01 (13.83)		28.32 (13.02)		33.72 (14.25)	
Years of education (Time 1)	12.56	12.36	13.11	12.98	12.18	12.24
	(3.56)	(3.16)	(3.18)	(2.55)	(3.41)	(2.91)
Number of living children (Time 1)	3.34 (2.16)		3.34 (1.98)		3.43 (2.14)	
Non-Hispanic White (Time 1)	0.75	0.75	0.83	0.82	0.80	0.80
	(0.43)	(0.43)	(0.38)	(0.38)	(0.40)	(0.40)
Non-Hispanic Black (Time 1)	0.11	0.11	0.07	0.07	0.11	0.11
	(0.31)	(0.31)	(0.26)	(0.25)	(0.32)	(0.32)
Hispanic (Time 1)	0.11	0.11	0.08	0.09	0.07	0.07
	(0.31)	(0.32)	(0.27)	(0.28)	(0.26)	(0.26)
Other Race/Ethnicity (Time 1)	0.03	0.03	0.02	0.02	0.02	0.02
	(0.15)	(0.16)	(0.14)	(0.14)	(0.12)	(0.12)
Household income ($) (Time 1)	46,170 (2.69)		51,530 (3.62)		38,084 (3.30)	

Note: Cells contain standard errors in parentheses. *Data: Health and Retirement Study.*

Table 2-2: Summary of Fitted Model Coefficients for the Associations between Wife's Number of Chronic Conditions and Husband's Distress (Only Wife with Chronic Conditions) (N = 644)

	Model A	Model B	Model C
	B (s.e.)	*B* (s.e.)	*B* (s.e.)
Wife's number of chronic conditions (time 1) on Husband's distress (time 2)	0.157* (0.068)	0.131 (0.070)	0.132 (0.068)
Wife's distress (time 1) on Husband's distress (time 2)	--	0.039 (0.025)	--
Wife's functional limitations (time 1) on Husband's distress (time 2)	--	--	0.187** (0.059)
Wife's number of chronic conditions (time 2) on Husband's distress (time 3)	0.112 (0.063)	0.075 (0.064)	0.109 (0.063)
Wife's distress (time 2) on Husband's distress (time 3)	--	0.041 (0.026)	--
Wife's functional limitations (time 2) on Husband's distress (time 3)	--	--	0.084 (0.058)
Wife's number of chronic conditions (time 3) on Husband's distress (time 4)	0.175 (0.129)	0.217 (0.134)	0.090 (0.132)
Wife's distress (time 3) on Husband's distress (time 4)	--	0.062* (0.026)	--
Wife's functional limitations (time 3) on Husband's distress (time 4)	--	--	0.181** (0.058)
Model Fit:			
χ^2 (df)[a]	$\chi 2(140)= 1375.249$	$\chi 2(161)= 1399.230$	$\chi 2(161)= 1435.237$
AIC[b]	11448.32	10809.21	11383.73
BIC[c]	11697.63	11068.43	11646.12

Data: Health and Retirement Study. Notes: All models adjust for husband's and wife's age at interview, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001, **p < .01, *p < .05. Cells contain standard errors in parentheses.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-3: Summary of Fitted Model Coefficients for the Associations between Husband's Number of Chronic Conditions and Wife's Distress (Only Husband with Chronic Conditions) (N = 740)

	Model A	Model B	Model C
	B (s.e.)	*B* (s.e.)	*B* (s.e.)
Husband's number of chronic conditions (time 1) on Wife's distress (time 2)	0.172* (0.069)	0.146* (0.073)	0.152* (0.070)
Husband's distress (time 1) on Wife's distress (time 2)	--	0.028 (0.034)	--
Husband's functional limitations (time 1) on Wife's distress (time 2)	--	--	0.124 (0.081)
Husband 's number of chronic conditions (time 2) on Wife's distress (time 3)	0.188** (0.070)	0.214** (0.079)	0.152* (0.071)
Husband 's distress (time 2) on Wife's distress (time 3)	--	-0.021 (0.039)	--
Husband's functional limitations (time 2) on Wife's distress (time 3)	--	--	0.188* (0.079)
Husband 's number of chronic conditions (time 3) on Wife's distress (time 4)	0.132 (0.128)	0.121 (0.141)	0.128 (0.129)
Husband 's distress (time 3) on Wife's distress (time 4)	--	0.028 (0.037)	--
Husband 's functional limitations (time 3) on Wife's distress (time 4)	--	--	0.052 (0.076)
Model Fit:			
χ^2 (df)[a]	χ2(140)= 1477.656	χ2(161)= 1288.954	χ2(161)= 1570.322
AIC[b]	15279.86	12471.46	15278.96
BIC[c]	15537.07	12731.27	15549.95

Data: Health and Retirement Study. Notes: All models adjust for husband's and wife's age at interview, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001, **p < .01, *p < .05. Cells contain standard errors in parentheses.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-4: Couple-Level Growth Curve Models Predicting Influence of Wife's Number of Chronic Conditions on Husband's Distress (Only Wife with Chronic Conditions) (N = 644)

	Model A		Model B		Model C	
	Husband's Distress (Intercept)	Husband's Distress (Slope)	Husband's Distress (Intercept)	Husband's Distress (Slope)	Husband's Distress (Intercept)	Husband's Distress (Slope)
Wife's Number of Conditions (Intercept)	0.095	0.004	0.061	0.002	0.056	-0.002
	(0.057)	(0.017)	(0.056)	(0.017)	(0.057)	(0.016)
Wife's Number of Conditions (Slope)	--	0.210**	--	0.160*	--	0.148*
		(0.073)		(0.071)		(0.071)
Means						
(Variance)						
Intercept, Husband's Distress		2.569***		1.940**		2.460***
		(0.417)		(0.373)		(0.393)
Slope, Husband's Distress		-0.664**		-0.658**		-0.536**
		(0.009)		(0.005)		(0.008)
Intercept, Wife's Number of Conditions		2.638***		2.638***		2.638***
		(0.485)		(0.485)		(0.485)
Slope, Wife's Number of Conditions		0.144		0.143		0.144
		(0.020)		(0.020)		(0.020)
Model fit:						
χ^2 (df)[a]		1202.563 (257)		1729.135 (529)		2079.296 (529)
AIC[b]		15959.750		32530.917		26803.467
BIC[c]		16254.618		32897.268		27169.819

Note: Cells contain standard errors or variance in parentheses. All models adjust for husband's and wife's age at interview, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001,
**p < .01, *p < .05.
[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-5: Couple-Level Growth Curve Models Predicting Influence of Husband's Number of Chronic Conditions on Wife's Distress (Only Husband with Chronic Condition)s (N = 740)

	Model A		Model B		Model C	
	Wife's Distress (Intercept)	Wife 's Distress (Slope)	Wife 's Distress (Intercept)	Wife 's Distress (Slope)	Wife's Distress (Intercept)	Wife's Distress (Slope)
Husband's Number of conditions (Intercept)	0.186**	-0.019	0.113	-0.019	0.127	-0.018
	(0.066)	(0.014)	(0.066)	(0.013)	(0.067)	(0.014)
Husband 's Number of Conditions (Slope)	--	0.103	--	0.058	--	0.104
		(0.059)		(0.325)		(0.060)
Means (Variance)						
Intercept, Wife's Distress	2.988***		2.437***		2.608***	
	(0.848)		(0.764)		(0.348)	
Slope, Wife's Distress	-0.175		-0.176		-0.162	
	(0.017)		(0.015)		(0.015)	
Intercept, Husband's Number of Conditions	1.424***		1.424***		1.424***	
	(0.495)		(0.495)		(0.495)	
Slope, Husband 's Number of Conditions	0.032		0.032		0.032	
	(0.025)		(0.025)		(0.025)	
Model fit:						
χ^2 (df)[a]	1263.746 (257)		1799.342 (529)		2099.355 (529)	
AIC[b]	23437.906		38507.446		34049.679	
BIC[c]	23741.944		38885.191		34427.424	

Note: Cells contain standard errors or variance in parentheses. All models adjust for husband's and wife's age at interview, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001,
**p < .01, *p < .05.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-6: Summary of Fitted Model Coefficients for the Associations between Wife's Number of Chronic Conditions and Husband's Distress (Both Spouses with Chronic Conditions) (N = 3,242)

	Model A	Model B	Model C
	B (s.e.)	*B* (s.e.)	*B* (s.e.)
Wife's number of chronic conditions (time 1) on Husband's distress (time 2)	0.043 (0.032)	0.021 (0.033)	0.022 (0.032)
Wife's distress (time 1) on Husband's distress (time 2)	--	0.061*** (0.014)	--
Wife's functional limitations (time 1) on Husband's distress (time 2)	--	--	0.170***(0.036)
Wife's number of chronic conditions (time 2) on Husband's distress (time 3)	0.054 (0.032)	0.032 (0.034)	0.033 (0.033)
Wife's distress (time 2) on Husband's distress (time 3)	--	0.045** (0.015)	--
Wife's functional limitations (time 2) on Husband's distress (time 3)	--	--	0.110*** (0.030)
Wife's number of chronic conditions (time 3) on Husband's distress (time 4)	-0.085 (0.066)	-0.102 (0.068)	-0.102 (0.066)
Wife's distress (time 3) on Husband's distress (time 4)	--	0.040** (0.015)	--
Wife's functional limitations (time 3) on Husband's distress (time 4)	--	--	0.128*** (0.028)
Model fit:			
χ^2 (df)[a]	χ2(161)= 7123.266	χ2(182)= 6912.735	χ2(182)= 7353.22
AIC[b]	64439.42	59891.19	64357.57
BIC[c]	64797.12	60263.40	64733.42

Data: Health and Retirement Study. Notes: All models adjust for husband's number of conditions, husband's and wife's age at interview, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001, **p < .01, *p < .05. Cells contain standard errors in parentheses.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-7: Summary of Fitted Model Coefficients for the Associations between Husband's Number of Chronic Conditions and Wife's Distress (Both Spouses with Chronic Conditions) (N = 3,242)

	Model A	Model B	Model C
	B (s.e.)	*B* (s.e.)	*B* (s.e.)
Husband's number of chronic conditions (time 1) on Wife's distress (time 2)	0.058 (0.034)	0.038 (0.037)	0.043 (0.034)
Husband's distress (time 1) on Wife's distress (time 2)	--	0.098*** (0.022)	--
Husband's functional limitations (time 1) on Wife's distress (time 2)	--	--	0.140*** (0.038)
Husband's number of chronic conditions (time 2) on Wife's distress (time 3)	0.090** (0.033)	0.113** (0.037)	0.077* (0.034)
Husband's distress (time 2) on Wife's distress (time 3)	--	0.034 (0.022)	--
Husband's functional limitations (time 2) on Wife's distress (time 3)	--	--	0.092** (0.032)
Husband's number of chronic conditions (time 3) on Wife's distress (time 4)	0.033 (0.066)	0.030 (0.073)	0.012 (0.066)
Husband's distress (time 3) on Wife's distress (time 4)	--	0.024 (0.022)	--
Husband's functional limitations (time 3) on Wife's distress (time 4)	--	--	0.111*** (0.030)
Model fit:			
χ^2 (df)[a]	χ2(161)= 7135.208	χ2(182) = 6095.932	χ2(182)= 7324.102
AIC[b]	76002.122	59945.87	75928.90
BIC[c]	76360.324	60308.31	76305.28

Data: Health and Retirement Study. *Notes:* All models adjust for wife's number of conditions, husband's and wife's age at interview, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001, **p < .01, *p < .05. Cells contain standard errors in parentheses.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-8. Couple-Level Growth Curve Models Predicting Influence of Wife's Number of Chronic Conditions on Husband's Distress (Both Spouses with Chronic Conditions) (N = 3,242)

	Model A		Model B		Model C	
	Husband's Distress (Intercept)	Husband's Distress (Slope)	Husband's Distress (Intercept)	Husband's Distress (Slope)	Husband's Distress (Intercept)	Husband's Distress (Slope)
Wife's Number of conditions	0.057	0.007	-0.026	0.007	0.004	0.001
(Intercept)	(0.031)	(0.007)	(0.031)	(0.007)	(0.031)	(0.007)
Wife's Number of Conditions (Slope)	--	0.074	--	0.028	--	0.029
		(0.039)		(0.038)		(0.038)
Means (Variances)						
Intercept, Husband's Distress	3.870***		2.857***		3.566***	
	(1.210)		(1.079)		(1.152)	
Slope, Husband's Distress	-0.384***		-0.380***		-0.330***	
	(0.014)		(0.011)		(0.013)	
Intercept, Wife's Number of Conditions	1.894***		1.894***		1.894***	
	(0.717)		(0.717)		(0.717)	
Slope, Wife's Number of Conditions	0.174***		0.174***		0.174***	
	(0.024)		(0.024)		(0.024)	
Model fit:						
χ^2 (df)[a]	3925.889 (270)		5200.007 (551)		6638.770 (551)	
AIC[b]	85380.614		167096.191		143823.354	
BIC[c]	85805.796		167618.557		144345.720	

Note: Cells contain standard errors in parentheses. All models adjust for husband's number of chronic conditions, marital duration, educational attainment, self-reported health, race/ethnicity, number of living children, log of household income, and employment status. Statistically significant inter-spousal effects are denoted: ***p < .001, **p < .01, *p < .05.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Table 2-9. Couple-Level Growth Curve Models Predicting Influence of Husband's Number Chronic Conditions on Wife's Distress (Both Spouses with Chronic Conditions) (N = 3,242)

	Model A		Model B		Model C	
	Wife's Distress (Intercept)	Wife 's Distress (Slope)	Wife 's Distress (Intercept)	Wife 's Distress (Slope)	Wife's Distress (Intercept)	Wife's Distress (Slope)
Husband's Number of conditions	0.101**	0.016*	0.018	0.009	0.060	0.005
(Intercept)	(0.033)	(0.008)	(0.033)	(0.008)	(0.033)	(0.008)
Husband 's Number of Conditions	--	0.223***	--	0.160***	--	0.149***
(Slope)		(0.042)		(0.042)		(0.042)
Means (Variance)						
Intercept, Wife's Distress		5.216***		4.144***		4.930***
		(1.711)		(1.546)		(1.664)
Slope, Wife's Distress		-0.332**		-0.318**		-0.224*
		(0.034)		(0.029)		(0.032)
Intercept, Husband's Number of		1.380***		1.380***		1.380***
Conditions		(0.834)		(0.835)		(0.835)
Slope, Husband 's Number of		0.173**		0.173**		0.173**
Conditions		(0.032)		(0.032)		(0.032)
Model fit:						
χ^2 (df)[a]		3570.573 (270)		4860.384 (551)		5809.627 (551)
AIC[b]		99947.634		163524.005		156987.061
BIC[c]		100373.511		164047.225		157510.280

Note: Cells contain standard errors in parentheses. All models adjust for wife's number of chronic conditions, marital duration, educational attainment, self-reported health, race/ethnicity, number of living children, log of household income, and employment status. Statistically significant inter-spousal effects are denoted: ***p < .001, **p < .01, *p < .05.

[a] Degrees of freedom; [b] AIC = Akaike Information Criterion; [c] BIC = Bayesian Information Criterion.

Chapter 3: Type of Chronic Conditions and Psychological Distress within Marriage

ABSTRACT

Being married to someone with chronic conditions increases psychological distress. The magnitude of this distress likely depends on the type of chronic condition encountered, as some conditions may have more impact on spouses than others, requiring more care or promoting more worry. Further, a spouse's distress may depend on whether the husband or wife has the chronic condition, as how chronic conditions, distress, and marriage are experienced are gendered. In this chapter, I analyze longitudinal data from 8,690 couples in the Health and Retirement Study to examine how different types of chronic conditions are associated with spousal distress, both initially and over time, and whether this depends on the gender of the spouse with the chronic condition. I find that lung disease and stroke are the most impactful for spouses, while arthritis, cancer, and high blood pressure are not related to spouse's distress. Lung disease, heart disease, and diabetes impact spouse's distress similarly regardless of whether the husband or wife has the condition. But a husband's stroke increases a wife's distress initially whereas the wife's stroke increases the husband's distress over time. This chapter highlights key ways in which type of condition matters, beyond just the presence or absence of any conditions.

There are multiple types of chronic conditions-- disorders that affect a person's ability to function and are characterized by long duration (Anderson & Horvath 2004)-- with a wide diversity of symptoms and characteristics. Studies find that chronic conditions increase levels of psychological distress (Fiest et al. 2011; Hollingshaus & Utz 2013; Pudrovska 2010; Taylor & Aspinwall 1996), an important dimension of overall well-being referring to a range of symptoms including feelings of depression, sadness, and loneliness, restless sleep, and not enjoying life (Kessler et al. 2002; Mirowsky & Ross 2003). The type of chronic condition encountered may be associated with different trajectories of distress, reflecting epidemiologic differences in who gets these conditions, how severe these conditions are, and the lifestyle changes and health care related to these conditions. A diagnosis of heart disease could be more distressing than a diagnosis of arthritis as heart disease may lead to more worry about death, but daily life with arthritis and its related stressors may be more disruptive than some types of heart disease that do not require lifestyle changes. Distress from a chronic condition occurs both for the person with the chronic condition (Fiest et al. 2011; Hollingshaus & Utz 2013; Pudrovska 2010; Taylor & Aspinwall 1996), as well as for those in his or her social networks, especially the spouse (Berg & Upchurch 2007). Some conditions may have more psychological impact on spouses than others, requiring more care or promoting more worry. Yet most studies of chronic conditions and the negative psychological effects on spouses either do not distinguish between type of condition or only consider one type of condition, not comparing spousal distress across types of conditions (Ayotte et al. 2010; Berg & Upchurch 2007; Franks et al. 2010; Goldzweig et al. 2009; Northouse et al. 2000; Ruthig et al. 2012). Thus we know little about how different types of chronic conditions influence spouses. Examining multiple types of chronic conditions separately but within the same study, specifically high blood pressure, diabetes, cancer, lung disease, heart

disease, stroke, and arthritis, enables me to examine the unique character of these conditions and what this does to the psychological distress dynamics within marriage.

Chronic conditions are not randomly distributed, but rather some types of conditions are more common and/or serious among men and others among women. This occurs for biological, social, and psychological reasons (Emslie et al. 2001). Consequently the impact of different types of chronic conditions, both for the person with the condition and their spouse, likely differs according to the gender of the person with the condition and the type of condition considered--whether it is more or less common among men or women. Less common conditions for certain genders may actually be more distressing for those marriages due to the condition being less normative. Additionally, different chronic conditions disrupt daily lives in different ways (e.g., different severity by gender, different timing by gender), and thus may have different consequences for men and women. One key pathway which I will test involves the functional limitations associated with the chronic condition. Women provide more caregiving than men and are more distressed from that caregiving than men (Pinquart & Sorensen 2006); thus for women, having a spouse with a chronic condition with high levels of associated functional limitations may be more distressing than it is for men. Alternatively, women's functional limitations associated with certain types of chronic conditions may be more disruptive to a marriage than men's due to the greater amount of unpaid work women do in the home (Bianchi et al. 2000), and thus men may experience more stress from being married to a spouse with these types of chronic conditions than women. Women may also be more sensitive to the psychological distress of their spouses than men (Thomeer et al. 2013), making psychological distress of the chronically ill spouse another potential pathway.

In this present chapter, I analyze how psychological distress is influenced by a spouse's chronic conditions and how this distress unfolds over time for couples. I specifically look at how different types of chronic conditions influence spousal distress trajectories, considering the gender of the chronically ill person. I use couple-level latent growth curve models to explore unfolding linkages between chronic conditions and psychological distress of husbands and wives (N = 8,690 couples) in the Health and Retirement Study (HRS), a nationally representative sample of older adults. I address three specific questions:

(1) How does the association between a person's chronic condition and his or her spouse's psychological distress at one point in time and the trajectory of change in that psychological distress over time differ by type of chronic conditions?

(2) Do these patterns depend on the gender of the chronically ill spouse?

(3) Are these patterns mediated by the chronically ill spouse's psychological distress and/or functional limitations?

TYPES OF CONDITIONS

In this chapter, I consider seven different types of chronic conditions: high blood pressure, diabetes, cancer, lung disease, heart disease, arthritis, and stroke. Below I outline how I expect each to be associated with spousal distress and why this might be gendered.

High Blood Pressure

High blood pressure, or hypertension, is a chronic condition in which the blood pressure in the arteries is elevated, putting strain on the heart (Bakris & Baliga 2012). About 34 percent of American adults have high blood pressure, making it the most common chronic condition, and rates of high blood pressure increase with age (Lloyd-Jones et al. 2010). High blood pressure is due to both genetic and environmental factors, and high blood pressure is a risk factor for heart

disease, stroke, kidney failure, and aneurisms (Bakris & Baliga 2012; Vasan et al. 2002). Further, deaths due to high blood pressure are on the rise (Lloyd-Jones et al. 2010). Health behavior changes, especially healthier diets, less alcohol consumption, and blood pressure medications, can decrease the risk of these health conditions (Bakris & Baliga 2012; Vasan et al. 2002). Sixty-eight percent of Americans with hypertension take drugs to control it (Lloyd-Jones et al. 2010). High blood pressure has few symptoms, though some do report headaches and feeling light headed (Bakris & Baliga 2012). Those with high blood pressure have more distress than those without high blood pressure, though most studies posit that high distress causes high blood pressure rather than the other way around (Jonas, Franks, & Ingram 1997; Scalco et al. 2005). From ages 45 to 64, the percentages of men and women with hypertension is similar, but for those 65 and older, more women than men have hypertension (Lloyd-Jones et al. 2010). Further, the risk of death is higher for women with high blood pressure than men (Lloyd-Jones et al. 2010). In general, few studies consider gender differences in hypertension.

Studies on spouses of people with high blood pressure find that being married to someone with high blood pressure gives someone twice the risk of high blood pressure than having a spouse without high blood pressure (DiCastelnuovo et al. 2009; Hippisley-Cox & Pringle 1998). This is especially true for men, for whom having a spouse with high blood pressure increases their own risk of high blood pressure more so than age, BMI, or having diabetes (Hippisley-Cox & Pringle 1998). However, there are no studies of whether spouses of people with high blood pressure have increased distress. This absence of studies likely reflects the absence of studies on whether high blood pressure contributes to distress in the patients themselves. This analysis requires longitudinal data in order to disentangle time ordering. High blood pressure does require health behavior changes for treatment, and because health behavior changes within marriage are

often orchestrated by wives rather than husbands (Reczek & Umberson 2012; Umberson 1992), I anticipate that having a spouse with high blood pressure will be more distressing for women than men.

Diabetes

Diabetes is characterized by high blood glucose concentrations and a deficiency of insulin, the hormone which regulates blood glucose (Matthews et al. 2008). It is the seventh leading cause of death in the U.S. (Center for Disease Control and Prevention 2013). About 8 percent of Americans have type II diabetes, the most common type of diabetes (Matthews et al. 2008). Diabetes often requires health behavior changes, such as healthy diets and exercise, and vigilant and sustained adherence to a treatment regimen, such as taking insulin (Beverly, Miller, & Wray 2008; Matthews et al. 2008). This adherence often proves difficult and stressful (Beverly et al. 2008). Diabetes is associated with increased functional limitations, some caused indirectly by increased weight and others due to vascular issues related to excess glucose (e.g., loss of sensation in limbs, amputation, eye problems) (Matthews et al. 2008). Further, studies find that people with diabetes have higher psychological distress levels than people without diabetes (Delahanty et al. 2007; Fisher et al. 2002).

Though a similar percentage of men and women are diagnosed with type II diabetes, men's diabetes causes greater weight gain and is correlated with lower physical activity than women's (Gale & Gillespie 2001) and women's diabetes contributes to more heart disease and deaths than men's (Gregg et al. 2007; Roche & Wang 2013), pointing to gender differences in severity of diabetes, though it is not clear whether diabetes is on average worse for men or women. Differences between men and women are due to sex differences in insulin sensitivity

and where fat is stored, disparities in how men and women are treated by doctors, and differences in men and women's health behaviors (Gale & Gillespie 2001; Gregg et al. 2007).

Several studies have considered how diabetes in one spouse influences the other spouse, demonstrating that diabetes increases financial strain within a marriage, leads to increased worrying, and promotes relationship strain (Fisher et al. 2002; Jørgensen et al. 2003; Rosa, Sunvisson, & Ahlström 2007). Thus not surprisingly, studies find that spouses of diabetes patients have elevated levels of psychological distress compared to community levels, though these studies do not directly compare spouses of diabetic people to spouses of non-diabetic people (Fisher et al. 2002; Franks et al. 2010). Diabetes is associated with health behavior changes for both partners (Franks et al. 2012; Lister, Fox, & Wilson 2013), and higher involvement with a diabetic spouse's health behaviors increases one's own distress levels (Delahanty et al. 2007; Franks et al. 2012). Though most studies that consider how diabetes impacts a spouse do not consider gender differences (Khan et al. 2013; Lister et al. 2013; Schokker et al. 2010), one study demonstrated that spousal distress levels are higher for women with a diabetic spouse than men with a diabetic spouse (Fisher et al. 2002) and another study found no difference by gender (Franks et al. 2010). Both studies had small sample sizes and did not have a comparison group of couples without diabetes. Because studies on marriage find that wives tend to exert more work into improving their spouse's health behaviors and alleviate their spouse’s distress than husbands (Reczek & Umberson 2012; Umberson 1992), I hypothesize that having a spouse with diabetes influences women more so than men.

Cancer

Cancer is a category of chronic conditions characterized by unregulated cell growth wherein cells divide and grow, forming tumors (Bradbury 2007). Cancer is the second leading

cause of death in the U.S. (Murphy, Xu, & Kochanek 2012). There are five broad classifications of cancer, divided by the presumed origin of the tumor: epithelial cells, connective tissues, hematopoietic cells, pluripotent cells, and embryonic tissue (Bradbury 2007). The causes of cancer are complex, involving health behaviors, environmental factors, and genetics (Anand et al. 2008; Bradbury 2007), and treatment of cancer is similarly complex, relying mostly on medical procedures, such as chemotherapy, radiation treatment, and surgeries (Anand et al. 2008; Bradbury 2007). People with cancer often have functional limitations, both because of the cancer itself and its treatment, though the extent of these limitations depends on the type and severity of the cancer (Braithwaite et al. 2010; Yabroff et al. 2004). Not all studies find associations between cancer and functional limitations, which could be partially due to a mortality selection effect (Guccione et al. 1994). People with cancer have higher levels of distress than people without cancer (Massie 2004; Spiegel & Giese-Davis 2003), with the highest levels among those with oropharyngeal, pancreatic, break, and lung cancers (Massie 2004), and with increases in distress over time due to disease severity and progression (Spiegel & Giese-Davis 2003). People with cancer generally have less control over their disease progression than people with diabetes or high blood pressure, and this lack of perceived control may contribute to more distress for cancer patients than diabetic or hypertensive patients (Berg & Upchurch 2007; Felton & Revenson 1987).

The association between cancer and gender is complex, as different types of cancer are more common and more severe in men while others are more common and more severe in women. The most common types of cancer for men are prostate, lung, and colon cancer with prostate cancer accounting for one-third of cancers in men (Jemal et al. 2005). For women the most common forms are breast and lung cancer (Jemal et al. 2005). Some of the differences

between men and women in cancer are due to biological sex differences, whereas others are due to health behaviors and lifestyles (Bradbury 2007). Because of this, few studies consider overall differences between men and women in cancer, focusing instead on specific types of cancer.

In general, studies find that being married to a person with cancer increases one's own distress (Fang, Manne, & Pape 2001; Hagedoorn et al. 2008; Northouse et al. 2000). Many of these studies focus on either prostate cancer or breast cancer and thus rarely consider men and women with cancer in the same study, reflecting the focus on sex-specific cancers like breast and prostate cancer (Ben-Zur et al. 2001; Butler et al. 1999; Yun et al. 2005). The association between one spouse's cancer and the other spouse's distress is partially mediated by the cancer patient's psychological distress and functional limitations (Fang et al. 2001). A meta-analysis found that only women, not men, experience distress when their spouse has cancer, though the authors suggest that this difference may reflect community-level differences in men's and women's distress, not the cancer itself, as few studies include a comparison group (Hagedoorn et al. 2000). I hypothesize that, due to the large variety of cancers likely present in my sample, there will be no gender differences in how men and women's distress responds to a spouse with cancer.

Lung Disease

Chronic lung disease includes chronic bronchitis, lung cancer, emphysema, chronic obstructive pulmonary disease (COPD), and other conditions which primarily affect the lungs and negatively impact airways, air sacs, the interstitium, blood vessels, the pleura, and/or the chest wall (Lewis, Clegg, & Johnson 2010). Lung disease is currently the third leading cause of death in the United States (Murphy et al. 2012). Symptoms of lung disease include chronic coughs, shortness of breath, and chronic chest pain (Lewis, Clegg, & Johnson 2010). These

symptoms can contribute to functional limitations and disability around paid work, household work, and activities of daily living (ADLs) (Sood & Beckett 1997). People with lung disease have higher rates of psychological distress than those without (Karadag et al. 2008; Kühl, Schürmann, & Rief 2008; Wagena et al. 2005), even adjusting for sociodemographic, clinical, and lifestyle factors (Spitzer et al. 2011).

Lung disease is more common and more serious among men than women-- this reflects sex differences in incidence, prevalence, severity, and mortality of lung disease (Carey et al. 2007; Townsend et al. 2012), which themselves reflect rates of smoking (Preston & Wang 2006), occupational exposures (Blanc et al. 2009), and biological propensities, including hormones and lung development (Carey et al. 2007; Townsend et al. 2012). Declines in the lung's functioning, and subsequently the onset of lung disease, tend to occur earlier in the life course for men compared to women (Townsend et al. 2012). Gender differences in prevalence and severity can lead to gender bias in diagnosis and treatment. One study found that physicians are less likely to diagnose women with lung disease compared to men, even when presented with identical symptoms (Chapman, Tashkin, & Pye 2001). This is despite the fact that the prevalence of women with lung disease is rapidly increasing (Han et al. 2007). Thus lung disease for women is less normative than lung disease for men and may be overlooked. Further, controlling for severity of condition, women with lung disease have more functional limitations than men with lung disease (Laurin et al. 2007). Regarding distress, one study of 202 lung disease patients and 114 sex- and age-matched healthy adults found that lung disease is associated with more increased distress among women than men (DiMarco et al. 2006).

Having a spouse with lung disease contributes to greater distress than having a spouse without lung disease (Kühl et al. 2008; Meier et al. 2012). This increased distress is partially

explained by the distress of the spouse with lung disease and the amount of caregiving provided (Kühl et al. 2008; Pinto et al. 2007). Past studies have not considered how having a spouse with lung disease may impact men and women's distress differently. As the amount of caregiving provided is associated with increased distress (Pinto et al. 2007) and women provide more caregiving in general than men (Pinquart & Sorensen 2006), I expect women married to spouses with lung disease to have more distress than men. As an alternative hypothesis, women experience more distress and functional limitations from lung disease than men (DiMarco et al. 2006; Laurin et al. 2007), and this could lead to more distress for men married to women with lung disease than women married to men with lung disease.

Heart Disease

Heart disease is a class of conditions that affect the cardiovascular system (i.e., heart, blood vessels), including coronary artery disease, cardiomyopathy, heart failure, cardiac dysrthmias, and inflammatory heart disease (Skala, Freedland, & Carney 2005). Heart disease is the leading cause of death in the U.S. (Murphy et al. 2012). In addition to medication, physicians often also recommend health behavior changes, like healthier diets, reduced smoking and alcohol consumption, and moderate exercise, in order to cope with heart disease (Ornish et al. 1998). Symptoms of chronic heart disease vary depending on type of disease, but in general they include feeling weak and without energy, shortness of breath, chest discomfort, weight gain, and swelling (Skala et al. 2005). Heart disease is also associated with increased functional limitations (Pinsky et al. 1990) and increased psychological distress (Ruo et al. 2003; Wulsin & Singal 2003).

More men experience heart disease than women until women begin menopause, at which point the gender difference lessens (Lloyd-Jones et al. 2010). Further, experiences of heart

disease look different for woman than men, with women developing heart disease later in life, women more likely to die after their first heart attack, and men and women developing different symptoms and responding differently to tests like EKGs (Mieres et al. 2011; Vaccarino et al. 2011). Some of these differences are attributable to hormones, differences in heart and artery sizes, and health behaviors (Mieres et al. 2011; Vaccarino et al. 2011). Recent campaigns have highlighted these differences, seeking to educate clinicians and the public on how to spot signs of heart disease in women (Christian et al. 2007). Yet despite this, research still finds important disparities in how physicians treat men with heart disease compared to women (Galvao et al. 2006; Gold & Krumholz 2006); for instance, physicians are less likely to order tests and medications appropriate for an urgent cardiac condition when experienced by women than men (Welch et al. 2012), and women report worse quality of care for heart disease than men (Bird et al. 2007).

Compared to other conditions considered in this chapter, few studies consider the effects of having a spouse with heart disease, with most studies focusing only on the patient. Those that do consider spouses tend to not include a comparison group, analyze small samples, and are cross-sectional, but do find that having a spouse with heart disease is associated with higher levels of distress (Bakas et al. 2006; Dracup et al. 2004). A study of 20 spouses of patients with heart disease found that spouses are stressed because of the burden of performing household tasks, managing patient behaviors, and as a result, their emotional and financial well-being, time for social activities, and general health were negatively impacted (Bakas et al. 2006). Further, the more serious the heart disease is, measured by physical signs and symptoms and psychological well-being, the more psychological distress the spouse experiences (Schulz et al. 2009). Most studies find no gender differences-- men and women are both negatively affected by having a

spouse with heart disease (Luttik et al. 2007; Luttik, Lesman-Leegte, & Jaarsma 2009; Schulz et al. 2009), and I expect that I will replicate this no difference finding using nationally-representative data.

Stroke

A stroke is the rapid loss of brain function due to disturbance in the brain's blood supply (Hennerici, Binder, & Szabo 2012), and it is the fourth leading cause of death in the U.S. (Center for Disease Control and Prevention 2013) and a leading cause of disability (Lloyd-Jones et al. 2010). Though stroke is an acute event, it has chronic consequences including muscle weakness, numbness, speech loss, vision loss, pain, incontinence, cognitive impairments, and difficulty doing daily activities; thus, it often requires intensive physical therapy and caregiving (Guccione et al. 1994; Hennerici et al. 2012). Stroke also contributes to psychological and emotional difficulties, including anxiety, panic attacks, irritability, depression, and overall distress (Hennerici et al. 2012). In general, stroke is more common among men, and women experience stroke at older ages than men (Appelros, Stegmayr, & Terént 2009). When women experience stroke, it tends to be more severe than when men experience stroke and more often results in fatality (Appelros et al. 2009). Further, post-stroke depression and high psychological distress are more common in women than men (Appelros, Stegmayr, & Terént 2010), perhaps reflecting the greater stroke severity experienced by women.

Stroke introduces stress into a marriage, especially when the stroke contributes to functional limitations and communication difficulties (Draper & Brocklehurst 2007). Spouses of stroke patients have higher levels of psychological distress than other married adults (Berg et al. 2005; Dennis et al. 1998; Forsberg-Wärleby, Möller, & Blomstrand 2001), and longitudinal studies find that initial levels of distress and change in distress over time is associated with stroke

severity and patient's condition (e.g., speech and memory difficulties, functional limitations, patient's own distress) (Berg et al. 2005; Forsberg-Wärleby, Möller, & Blomstrand 2004). There is mixed evidence on whether this depends on gender, with one study finding that distress is greater for wives than husbands (Dennis et al. 1998) and another finding no gender differences (Forsberg-Wärleby et al. 2001). In general, gender is rarely considered. As stroke is associated with functional limitations and women are more negatively affected by a spouse's functional limitations than men (Blonder et al. 2007; Cannuscio et al. 2002; Korporaal et al. 2008; Perz et al. 2011), I expect wives of stroke patients to be more negatively affected than husbands. Alternatively, because women are more negatively affected by stroke themselves in terms of distress (Appelros et al. 2010), this may in turn contribute to more distress among husbands with spouses with stroke than wives.

Arthritis

One in five U.S. adults report doctor-diagnosed arthritis, a number that is expected to rise sharply with the aging of the population (Center for Disease Control and Prevention 2012). Arthritis, a joint disorder that involves inflammation of one or more joints or elsewhere in the musculoskeletal system, is the most common cause of functional limitations in the United States and often leads to inability to use one's hands, tiredness, poor sleep, muscle aches and pains, and difficulty moving the affected joint (Center for Disease Control and Prevention 2012). In addition, adults with arthritis report more psychological distress than adults without arthritis (Dickens et al. 2002; Shih et al. 2006).

Arthritis is more prevalent in women than men at all age groups, and this gender gap grows with age, such that for those ages 65 to 74, 52 percent of women have arthritis compared to only 40 percent of men (Barbour et al. 2010; Theis, Helmick, & Hootman 2007). Further,

arthritis is more severe among women than men. Women with arthritis report more joint pain and higher activity and work limitations than men with arthritis (Godfrey & Felson 2008; Theis et al. 2007). An analysis of the National Health Interview Survey found that women with arthritis are 70 percent more likely to experience severe psychological distress than men with arthritis (Shih et al. 2006; see also Theis et al. 2007), though other studies find no gender difference (Tsai 2005; Tsai et al. 2003). Some have linked women's greater prevalence and severity of arthritis to genetic inclinations, hormonal changes around pregnancy and menopause, and low levels of testosterone (Gerosa et al. 2008; Godfrey & Felson 2008). Perhaps because of the gender gap in arthritis diagnosis and symptoms, as well as the cultural construction of arthritis as a "woman's disorder," most studies of arthritis use samples composed only of women (see Coty & Wallston 2008; Gerosa et al. 2008). Consequently, men's experiences with arthritis may be largely invisible and minimized.

Several studies of arthritis and distress within marriage examine women with arthritis and their husbands, but do not include men with arthritis (Bediako & Friend 2004; Martire et al. 2002). Just as the experiences of men with arthritis are largely ignored, the experiences of women married to men with arthritis are similarly unexamined, and any conclusions about the importance of gender are conflated with patient- or spouse-role. Studies that do include married women *and* men with arthritis do not consider gender differences in spousal psychological distress (Martire et al. 2003; Martire et al. 2006). I expect that husbands of women with arthritis will be more distressed than wives of men with arthritis, as women’s arthritis is more severe (Godfrey & Felson 2008; Theis et al. 2007) and thus likely more negatively impacts the marriage.

Summary

In summary, while many studies have considered how specific types of chronic conditions influence a spouse's psychological distress, with a few exceptions, these studies do not compare across types of conditions, consider how this may unfold over time using longitudinal data, compare marriages in which the husband has the condition to marriages in which the wife has the condition, or include a comparison group of couples without these conditions. I address these gaps in this chapter, thus expanding our understanding of the consequences of chronic conditions within marriage by highlighting what chronic conditions are more detrimental to spouses' mental health and whether this depends on gender.

METHODS

Data

In this chapter, I assess patterns of gender, chronic conditions, and psychological distress within marriage using multiple waves (1994-2010) of the Health and Retirement Study (HRS), a nationally representative sample of primary respondents aged 51 to 61 years in 1992 and their spouse (any age). I use the RAND HRS data, provided by the RAND Center for the Study of Aging, which merges the HRS data with the Assets and Health Dynamics Among the Oldest Old (AHEAD) data (RAND HRS Data 2010). AHEAD consists of adults born in 1923 or before, along with their spouses. For both samples, response rates across waves range from 80 to 90 percent.

The HRS is well-suited for this chapter because it is a large, nationally representative, longitudinal, and dyadic data set. The HRS uses a multi-stage, clustered area probability frame in order to generate a representative sample. Most prior studies of chronic conditions and psychological distress within marriage have depended on very small sample sizes, rarely

including more than 100 couples, and are often restricted to a specific geographic location, a specific type of chronic disease, or other non-representative samples (see Berg & Upchurch 2007 for overview). With a large nationally representative data set, I am able to consider stratified samples and test models across and within groups, asking questions about gender and types of conditions -- possibilities that are limited with smaller samples. Because respondents are re-interviewed approximately every two years (Juster & Suzman 1995), I am able to address key research questions regarding how psychological distress processes unfold over time and will unfold differently for different types of chronic conditions. Finally, the HRS uniquely allows me to analyze respondents and their spouses. This point is critical, as my analysis hinges on examining the lived experiences of husbands and wives within marriage, requiring data that includes both perspectives.

I construct three analytic samples. All samples are limited to married couples in which both spouses are interviewed in at least three waves, with wave 2 (i.e., 1994) being the first eligible wave. I restrict the sample to couples interviewed for at least three waves as this is the minimal number of waves required for latent growth curve analysis. I restrict the sample to wave 2 and later because the psychological distress questions in wave 1 differs from the questions in later years. The primary analytic sample is composed of couples in which both spouses are interviewed for at least three waves, with no other restrictions (n = 8,690). Baseline for each couple is defined as the first wave in which both spouses are interviewed. Results from the primary analytic sample are presented in this chapter; however, I construct two other analytic samples in order to test for robustness of results. In analysis of these samples, a person's distress when married to a spouse with only one chronic condition is compared to a person's distress when married to a spouse with no chronic conditions-- respondents with spouses with two or

more chronic conditions are excluded. One of these analytic samples is composed of couples in which the husband has only one chronic condition or zero chronic conditions at baseline, and the other analytic sample is composed of couples in which the wife has only one chronic condition or zero chronic conditions at baseline. Results for these two analytic samples are similar to results from the primary analytic sample and thus not discussed in this chapter.

Measures

Types of Chronic Conditions

Respondents and their spouses are asked at baseline: "Has the doctor ever told you that you have (1) high blood pressure or hypertension; (2) diabetes or high blood sugar; (3) cancer or a malignant tumor of any kind except skin cancer; (4) chronic lung disease except asthma such as chronic bronchitis or emphysema; (5) heart attack, coronary heart disease, angina, congestive heart failure, or other heart problems; (6) stroke or transient ischemic attack (TIA); and (7) arthritis or rheumatism? In subsequent interviews, they are asked, "Since we last talked to you, that is since [last interview date], has a doctor told you that have have…?" followed by the same list of conditions. In this chapter, chronic conditions are treated categorically (1= high blood pressure; 2= diabetes; 3= cancer; 4= chronic lung disease; 5= heart disease; 6= stroke; and 7= arthritis), and these categories are not mutually exclusive. Respondents are also asked about psychological disorders, but I exclude psychological disorders as this is collinear with psychological distress.

Psychological Distress

I use depressive symptoms as an indicator of psychological distress. The mental health index provided by the HRS uses eight items from the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff 1977). These items measure whether the respondent

experiences the following all or most of the time: feels depressed, feels everything is an effort, has restless sleep, feels alone, feels sad, cannot get going, feels happy, and enjoys life. The items are coded so that higher values reflect more distress, and responses range from 0-8. This short form of the CES-D scale has predictive accuracy when compared to the full-length version and strong correlation with poor mental health, as well as good internal consistency with a Cronbach's alpha of 0.78 (Andreson et al. 1994; Grzywacz et al. 2006; Turvey et al. 1999).

Gender

Gender is self-reported as male or female. For ease of discussion, I use male interchangeably with man and husband and female interchangeably with woman and wife.

Functional Limitations

I propose that functional limitations of the respondent are a key pathway linking the chronic conditions of the respondent to the psychological distress of the spouse. Functional limitations are measured using self-reported activity of daily living (ADL) difficulties and instrumental activity of daily living (I-ADL) difficulties. The ADL difficulty score refers to the number of ADLs the respondent reports having some difficulties with, namely bathing, eating, dressing, walking across a room, and getting in or out of bed. This is a scale from 0 to 5. The I-ADL score is the number of I-ADLs the respondent reports having some difficulties with, specifically using a telephone, taking medication, and handling money. This is a scale from 0 to 3. I combine these measures into one ADL/I-ADL index, which is less biased by age than each index separately (LaPlante 2010).

Covariates

Covariates include age of respondents (in years, calculated using birth year and year of interview), length of current marital duration at each wave (in years), number of years of

educational attainment, race/ethnicity (dummy variables with four mutually exclusive categories: non-Hispanic White, non-Hispanic Black, Hispanic, and other), number of living children, and log of household income. Each is included as a covariate because past research shows that each is associated with psychological distress and chronic health conditions (Keles et al. 2006; Mirowsky & Ross 2003).

Analysis

I use latent growth curve models to estimate the relationships between each type of chronic condition of one spouse and initial level and change in the psychological distress levels of the other spouse over time and whether these associations differ by gender (Kashy & Donnellan 2012; Kline 2011). George and Lynch (2003) argue that growth curve models are the ideal method to examine the initial impact of these stressful life events and subsequent psychological distress trajectories. Growth curve models distinguish within-individual heterogeneity from between-individual heterogeneity in estimating psychological distress changes shaped by other variables (Kashy & Donnellan 2012; Kashy et al. 2008; Keny et al. 2006; Little 2008).

Using my primary analytic sample, I examine how each type of chronic condition is related to the initial levels and change our time of spouse's distress, net of each other type of chronic condition and number of chronic conditions. I control for both spouse's other conditions (number and type) along with the other covariates. In other words, all chronic conditions are entered into the model at the same time. In one model, the focus is the husband's distress, controlling for wife's type of conditions (as well as husband's type of conditions, husband's and wife's number of conditions, and other covariates), whereas in the other model, the focus is wife's distress with the same controls. As an additional test of these associations, I fit separate

models for each condition, not controlling for other types of conditions but still controlling for number of conditions for both husbands and wives. For instance, in one model I consider how one spouse's diabetes is related to the other spouse's distress compared to not having diabetes. As with the earlier models, in one model the focus is husband's distress and wife's type of condition and in the other model the focus is wife's distress and husband's type of condition. I conduct similar analysis using the subsample of couples in which the husband has only zero or one condition and the wife has only zero or one condition. These models generally confirm the results in the previous models and thus are not presented or discussed in this chapter.

To test for mediation in these models (specifically whether functional limitations and distress of the chronically ill spouse help to understand associations between one spouse's chronic condition and the other spouse's distress), I use a latent growth curve mediation model (MacKinnon 2012), estimating the latent growth curve and predictors from the original models (respondent's type of condition and spouse's distress) as well as a growth curve with the hypothesized mediator (the respondent's distress or the respondent's functional limitations). I compare model coefficients using the Sobel-Goodman mediation test to test for significance of mediation effects (Sobel 1982).

To test for significant differences between models considering wife's conditions and models considering husband's conditions, I do two tests. First, I construct interactions between gender and each type of condition and examine the significance of these interactions in both the intercept and slope for predicting the other spouse's distress. Second, I compare models using multiple-group analysis. I analyze a model where the relationship between one spouse's conditions and the other spouse's CES-D score is constrained to be equal across gender groupsand a model where the effects are estimated freely for each group. A significant

improvement in the chi-square statistic from the restricted to the unrestricted model indicates significant differences across the groups. This multiple group analysis supports the results from the interactions. I also evaluate goodness of fit measures with the Akaike information criterion (AIC) and the Bayesian information criterion (BIC).

RESULTS

Tables 3-1 (for women) and 3-2 (for men) present descriptive statistics of variables from the primary analytic sample used in this chapter. Each column describes descriptive statistics (mean and standard deviation) for respondents with each chronic condition at baseline; columns are not mutually exclusive as respondents can have multiple chronic conditions at baseline. In general, women are more distressed than men, regardless of chronic conditions. Women with stroke are significantly more distressed than women with other conditions, whereas among men, men with lung disease are the most distressed. There are few significant differences between husbands of women by chronic condition, though men married to women with lung disease, heart diease, or stroke are the most distressed. Wives of men with stroke are the most distressed. Men and women with stroke also have the most functional limitations and the most other conditions, whereas men and women with high blood pressure, caner, and arthritis have the fewest functional limitations and the least distress.

In the following sections, I discuss each type of chronic condition separately, comparing how husband's conditions relate to wife's distress and how wife's conditions relate to husband's distress. In Table 3-3, I include all chronic conditions in the model, each as separate categories, considering how each is related to spouse's distress net of other chronic conditions (number and type). Table 3-3 shows the baseline model (Model 1), interaction models (gender*each chronic condition) (Model 2), and the two mediation models (chronically ill spouse's functional limitations—Model 3 and distress—Model 4). I do not discuss high blood pressure or cancer, as

there was no relationship between one spouse's high blood pressure or cancer and the other spouse's distress in any of the models.

Diabetes

When one spouse has diabetes, the other spouse's initial distress is about 0.12 units higher than when that spouse does not have diabetes (Model 1). Model 2 indicates that this is similar for men and women. Supplementary analysis indicates that, when a spouse has diabetes, his or her distress level is about 0.31 units higher ($p<.001$) than when he or she does not have diabetes, and he or she has about 0.20 more functional limitations ($p<.001$). Sobel tests show that about 50 percent of the association between one spouse's diabetes and the other spouse's initial levels of distress is explained by the diabetic spouse's distress level ($p<.001$; Model 4) and about 45 percent by the diabetic spouse's functional limitations ($p<.001$; Model 3).

Lung Disease

When one spouse has lung disease, the other spouse's distress is about 0.34 units higher than when that spouse does not have lung disease (Model 1). The interaction term demonstrates that this does not depend on gender of the spouse (Model 2). Supplementary analysis indicates that, when a person's has lung disease, that person's distress levels are about 0.69 units higher ($p<.001$) than when he or she does not have lung disease and that person has about 0.29 more functional limitations ($p<.001$). Sobel tests show that about 34 percent of the association between one spouse's lung disease and the other spouse's initial levels of distress is explained by the spouse with lung disease's distress level ($p<.001$; Model 4) and 15 percent by functional limitations ($p<.001$; Model 3).

Heart Disease

Regarding heart disease, when one spouse has heart disease, the other spouse's initial distress level is about 0.12 units higher than when that spouse does not have heart disease (Model 1). Over time, though, the other spouse's distress decreases at a rate faster than if his or her spouse did not have heart disease, about 0.03 units per unit of time. There is no significant difference between husbands and wives (Model 2). Supplementary analysis indicates that when one spouse has heart disease, that spouse's functional limitations are 0.17 units higher initially ($p<.001$) and increase at a rate of about 0.02 units per unit of time faster ($p<.01$) than when he or she does not have heart disease, though that spouse's heart disease is not related to the rate of change of his or her functional limitations. Further, when one spouse has heart disease, her or his distress level is 0.41 units higher than when she or he does not have heart disease ($p<.001$), but that spouse's heart disease is not related to the rate of change of her or his distress. Sobel tests demonstrate that, regarding one spouse's heart disease and the other spouse's initial distress levels, about 69 percent is explained by the functional limitations of the spouse with heart disease ($p<.001$; Model 3) and 33 percent by the distress level of the spouse with heart disease ($p<.001$; Model 3). Regarding one spouse's heart disease and the other spouse's change in distress levels over times, only about 3 percent is explained by the change in functional limitations of the spouse with heart disease ($p<.01$; Model 3), and the coefficient remains significant and negative even when controlling for functional limitations.

Stroke

When one spouse has a stroke, the other spouse's distress is about 0.28 units higher than when the other spouse does not have a stroke (Model 1). There is a statistically significant difference in spousal distress when the wife has a stroke compared to when the husband has a

stroke (Model 2). When the wife has a stroke, the husband's distress increases at a faster rate (about 0.06 units per wave) than when the wife has not had a stroke. When the husband has a stroke, his wife's initial distress level is about 0.36 units higher than when the husband has not had a stroke. Neither wife's functional limitations nor distress mitigates the distress slope of her husband. However, supplementary analysis demonstrates that husband's stroke increases husband's functional limitations about 0.98 units initially (p<.001) and husband's distress about 0.30 units initially (p<01). Sobel test demonstrates that the relationship between husband's stroke and wife's initial distress level is mediated about 58 percent by husband's functional limitations (p<.001; Model 3) and 11 percent by husband's distress levels (p<.05; Model 4).

Arthritis

When one spouse has arthritis, over time, the other spouse's initial distress level decreases about 0.01 units per time point compared to when the first spouse does not have arthritis (p<.05). This is similar for men and women, and the Sobel test indicates that this is not mediated by functional limitations or distress of the arthritic spouse. This is, however, a substantively small decrease in distress over time.

DISCUSSION

Past studies demonstrate that having a spouse with chronic conditions increases one's own distress, with some studies looking separately at different types of conditions (e.g., cancer, diabetes) and other studies not differentiating between types of conditions (Ayotte et al. 2010; Berg & Upchurch 2007; Franks et al. 2010; Goldzweig et al. 2009; Northouse et al. 2000; Ruthig et al. 2012), thus studies have not compared across types of conditions within the same sample. Different types of chronic conditions may influence a spouse's distress in different ways, reflecting epidemiologic differences in who gets these conditions, how severe these conditions

are, and the lifestyle changes and health care related to these conditions. Thus some conditions may have more impact on spouses than others, requiring more care or promoting more worry, and may impact husbands differently than wives. In this chapter, I examined chronic conditions separately but within the same models in order to compare how each condition may uniquely impact spouses and how this may further depend on the gender of the spouse with the condition. This approach acknowledges differences across types of chronic conditions as well as the possibility of co-morbidity of conditions. I also considered whether respondent's own distress and functional limitations mediated the association between respondent's type of condition and spouse's distress. I used longitudinal data, anticipating that these distress processes unfold over time. This chapter advances knowledge of how psychological distress is distributed within marriages and across different types of chronic conditions, moving beyond a dichotomous understanding of either having chronic conditions or not having chronic conditions and beyond an individualistic perspective of chronic conditions only influencing the person with the chronic condition.

I found that lung disease, heart disease, stroke, and diabetes are all more distressing for spouses than high blood pressure, arthritis, and cancer. Further, regarding lung disease, heart disease, and diabetes, respondent's distress levels do not depend on the gender of the spouse with the chronic condition. For stroke, men's and women's distress is impacted by their spouse's distress in very different ways; for men, the rate of change of distress increases over time if their wife has a stroke but initial levels of distress are not impacted, whereas for women, the initial distress level is higher if their husband has a stroke but not the rate of change. I discuss possible reasons for these patterns below.

Regarding why lung disease, heart disease, stroke, and diabetes are all more distressing for spouses than high blood pressure, arthritis, and cancer, this may be in part because men and women with high blood pressure, arthritis, and cancer exhibit generally lower levels of distress and fewer functional limitations than respondents with the other four types of conditions. High blood pressure is very common within this sample, and as it is often managed easily with medication and has few symptoms which may affect a marriage, it makes sense that it does not increase spouses' distress. At the same time, high blood pressure is an important risk factor for heart disease (Skala et al. 2005), thus continued study of spousal experiences of high blood pressure is important for understanding distress among couples with heart disease. Similarly, arthritis is almost as prevalent as high blood pressure in this sample and is associated with few functional limitations and little distress, suggesting that most respondents with arthritis in this sample have a very manageable form of arthritis. Additionally, many respondents with arthritis have other types of chronic conditions. Studies which have examined distress from a spouse's arthritis have not controlled for other conditions and do not use nationally-representative samples (Bediako & Friend 2004; Martire et al. 2002).

The lack of association between cancer and spousal distress is more surprising. It is likely that multiple types of cancer were represented. This diversity likely contributed to the lack of significant findings regarding the association between one spouse's cancer and the other spouse's distress as well as even the weak association between having cancer and one’s own distress. Cancer is likely more distressing when first diagnosed, and for some in this sample, the cancer may be in remission and thus less impactful for mental health. Future analysis should pay more attention to these time processes.

Of the conditions which did have an impact on spouse's distress, lung disease was the most consequential, followed by stroke. Heart disease and diabetes were the least impactful. Regarding lung disease, about one-third of the association was explained by the spouse with lung disease's own distress. This means that most of the association between lung disease and spouse's distress is unexplained. There may also be important moderators in the relationship between lung disease and spousal distress which are not accounted for in this analysis. For instance, spousal distress may depend on cause of lung disease (e.g., smoking or other environmental factors) as well as responses to the lung disease (e.g., quit smoking or continue smoking). Both men and women have higher levels of distress when their spouse has lung disease than when their spouse does not. This is interesting, given that more men than women are diagnosed with lung disease every year (Carey et al. 2007; Townsend et al. 2012). Yet the impact of lung disease goes beyond just men to negatively impact their wives as well and similarly spreads from women with lung disease to their husband. This is also the case for heart disease, which, like lung disease, is often overlooked and understudied among women.

Stroke is the second most impactful condition. Also interestingly, stroke is the only condition in which gender served as a moderator. A spouse's stroke impacts husbands and wives differently, with husband's stroke increasing wife's stress *initially* and wife's stroke increasing husband's distress *over time*. This points to different processes around stroke for husbands and wives. The association between husband's stroke and wife's distress is mostly explained by the husband's functional limitations and husband's distress levels, suggesting that when men have a stroke, their wives are negatively impacted by how distressed and functionally limited husbands are, perhaps through caregiving and worrying pathways. This distress impact seems to stay consistent over time with little changes. Wives' distress and functional limitations do not help in

explaining the association between wives' stroke and husbands' distress over time. Rather, the increase in husband's distress over time as his wife's condition progresses may be due to unmeasured variables which build over time, like daily burdens of medications or doctor visits. These gender differences point to important considerations when designing clinical interventions for spouses of stroke patients and may reflect differences in how stroke progresses for men and women. Women married to husbands with stroke may need more mental health support early during the stroke, whereas men married to wives with stroke may need more on-going support even if they do not seem impacted earlier in the disease progression. It is unclear whether these differences reflect differences in how men and women experience their own stroke or how men and women respond to their spouse's stroke.

Heart disease and diabetes both increase a spouse's distress initially, with this association partially mitigated by distress and functional limitations of the spouse with these conditions. Gender was surprisingly not a significant moderator for either of these conditions. Further, the consequences for having a spouse with heart disease seem most pronounced early in the disease and dissipate over time. This points to the importance of couple-level care for married adults with these conditions, especially in the initial stages of the disease. These couple-level therapies could include both partners, or they may target improving the chronically ill spouse's mental and emotional health and targeting her or his functional limitations with rehabilitation therapies as this chapter demonstrates that this should have an influence as well on their spouse's mental health.

This chapter has several limitations. I could not distinguish between sub-categories of conditions. This was especially problematic when considering cancer, though likely also influenced the heart disease and lung disease results. Distinguishing between these sub-

categories may have revealed important gender patterns, especially for cancer as many types of cancer are much more prominent among one gender than the other (e.g., breast cancer, prostate cancer) and treatments for and consequences of these conditions vary widely (Bradbury 2007). As an additional limitation and area for future research, it is likely that certain types of conditions group together; for instance, it may be that someone who had a stroke also has heart disease. I considered each condition separately, controlling for number and type of other conditions, but in future research will consider different latent classes of conditions. I do not include measures of severity or duration of conditions, but this is an important avenue for future study. Finally, in future studies, I will more carefully consider timing, including diagnosis of the condition, progression of the condition, and initiation and cessation of treatment.

In this chapter, I demonstrate that different types of chronic conditions impact spouses' distress differently and that, with the exception of stroke, this does not seem to depend on gender of the spouse with the chronic condition. My analysis points to two different pathways which help in understanding these associations, but also demonstrates the need for future research to explore other pathways which may be unique to specific conditions and gender experiences. For instance, worry and anxiety are likely important pathways for heart disease, which is often recurrent (Fisher et al. 2002; Franks et al. 2010). Additionally, health behaviors and functional limitations, as well as other factors, may moderate the relationship between these conditions and spousal distress. Having a husband with heart disease who refuses to improve his diet may impact a wife differently than having a husband with heart disease who does improve his diet. This chapter, thus, points to important future research opportunities while also highlighting key ways in which type of condition matters, beyond just the presence or absence of any conditions. This builds on my findings from Chapter 2 which highlighted how number of conditions matter.

Table 3-1: Means and Standard Deviations of Variables (Wife's Conditions)

	High Blood Pressure	Diabetes	Cancer	Lung Disease	Heart Disease	Stroke	Arthritis
	n=2,832	*n*=722	*n*=654	*n*=363	*n*=858	*n*=496	*n*=2,614
Distress (W[a])	1.70	2.13	1.53	2.29	2.10	2.43	1.77
	(2.12)	(2.27)	(1.97)	(2.37)	(2.28)	(2.37)	(2.14)
Distress (H[b])	1.17	1.35	0.96	1.45	1.34	1.42	1.18
	(1.70)	(1.81)	(1.51)	(1.87)	(1.88)	(1.75)	(1.74)
Number of functional limitations (W)	0.47	0.71	0.36	0.78	0.72	1.31	0.48
	(1.22)	(1.43)	(1.04)	(1.39)	(1.48)	(2.09)	(1.16)
Number of chronic conditions (W)	2.02	2.59	2.14	2.65	2.64	2.96	1.92
	(0.98)	(1.11)	(1.06)	(1.20)	(1.13)	(1.22)	(0.99)
Number of chronic conditions (H)	1.34	1.41	1.32	1.54	1.45	1.44	1.42
	(1.20)	(1.28)	(1.20)	(1.31)	(1.26)	(1.21)	(1.25)
Age (years) (W)	62.49	61.48	62.59	61.70	65.17	67.14	60.33
	(10.38)	(10.21)	(10.40)	(10.47)	(11.04)	(11.46)	(9.60)
Age (years) (H)	65.44	64.67	65.06	64.90	67.64	69.37	63.23
	(10.67)	(10.62)	(10.45)	(10.33)	(11.29)	(11.30)	(9.76)
Marital duration (years)	34.36	33.56	33.62	32.03	36.24	39.59	31.82
	(15.91)	(15.25)	(16.15)	(16.35)	(16.92)	(16.66)	(15.26)
Years of education (W)	11.43	10.44	12.29	11.43	11.28	10.96	11.74
	(3.76)	(4.09)	(3.39)	(3.52)	(3.59)	(3.85)	(3.63)
Number of living children	3.49	3.83	3.26	3.49	3.42	3.36	3.53
	(2.34)	(2.68)	(2.01)	(2.44)	(2.33)	(2.48)	(2.29)
Non-Hispanic White (W)	0.73	0.61	0.88	0.87	0.82	0.78	0.77
	(0.44)	(0.49)	(0.32)	(0.33)	(0.38)	(0.41)	(0.42)
Non-Hispanic Black (W)	0.18	0.23	0.06	0.08	0.12	0.15	0.14
	(0.38)	(0.42)	(0.24)	(0.27)	(0.32)	(0.36)	(0.34)
Hispanic (W)	0.08	0.14	0.05	0.04	0.05	0.06	0.08
	(0.27)	(0.35)	(0.21)	(0.18)	(0.21)	(0.23)	(0.27)
Other Race (W)	0.01	0.02	0.01	0.01	0.01	0.01	0.01
	(0.11)	(0.13)	(0.09)	(0.11)	(0.12)	(0.09)	(0.11)
Household income ($)	30,031	23,389	36,316	27,723	26,108	23,156	32,860
	(3.71)	(4.18)	(3.32)	(2.92)	(3.82)	(4.26)	(3.74)

Data: Health and Retirement Study. Note: Cells contain standard errors in parentheses. [a]W=Wife; [b]H=Husband

Table 3-2: Means and Standard Deviations of Variables (Husband's Conditions)

	High Blood Pressure	Diabetes	Cancer	Lung Disease	Heart Disease	Stroke	Arthritis
	n=3,422	*n*=1,146	*n*=630	*n*=567	*n*=1,775	*n*=241	*n*=2,864
Distress (H[a])	1.22	1.54	1.30	1.87	1.45	1.73	1.36
	(1.76)	(1.95)	(1.88)	(2.02)	(1.89)	(2.03)	(1.82)
Distress (W[b])	1.45	1.62	1.28	1.78	1.53	1.92	1.54
	(1.99)	(2.07)	(1.83)	(2.19)	(2.04)	(2.18)	(2.03)
Number of functional limitations (H)	0.44	0.63	0.51	0.78	0.63	1.43	0.53
	(1.22)	(1.42)	(1.31)	(1.58)	(1.47)	(2.32)	(1.27)
Number of chronic conditions (H)	2.09	2.60	2.45	2.67	2.49	2.96	2.14
	(1.06)	(1.17)	(1.23)	(1.33)	(1.16)	(1.23)	(1.10)
Number of chronic conditions (W)	1.16	1.21	1.23	1.40	1.28	1.45	1.27
	(1.10)	(1.13)	(1.15)	(1.16)	(1.14)	(1.20)	(1.14)
Age (years) (H)	64.11	64.55	70.25	67.67	67.73	69.50	63.45
	(9.89)	(9.63)	(9.86)	(9.66)	(10.12)	(9.98)	(9.19)
Age (years) (W)	60.31	60.67	66.05	63.32	63.61	65.52	59.23
	(10.41)	(10.36)	(10.89)	(10.73)	(10.94)	(11.05)	(9.64)
Marital duration (years)	32.23	32.85	36.67	34.72	35.62	37.37	30.79
	(15.74)	(15.68)	(17.77)	(16.59)	(16.65)	(17.17)	(15.32)
Years of education (H)	12.11	11.88	12.21	11.64	11.91	11.29	12.02
	(3.00)	(3.12)	(2.79)	(2.71)	(2.91)	(3.35)	(2.99)
Number of living children	3.45	3.61	3.42	3.67	3.41	3.73	3.53
	(2.28)	(2.37)	(2.24)	(2.42)	(2.26)	(2.71)	(2.36)
Non-Hispanic White (H)	0.73	0.61	0.88	0.87	0.82	0.78	0.77
	(0.44)	(0.49)	(0.32)	(0.33)	(0.38)	(0.41)	(0.42)
Non-Hispanic Black (H)	0.18	0.23	0.06	0.08	0.12	0.15	0.14
	(0.38)	(0.42)	(0.24)	(0.27)	(0.32)	(0.36)	(0.34)
Hispanic (H)	0.08	0.14	0.05	0.04	0.05	0.06	0.08
	(0.27)	(0.35)	(0.21)	(0.18)	(0.21)	(0.23)	(0.27)
Other Race (H)	0.01	0.02	0.01	0.01	0.01	0.01	0.01
	(0.11)	(0.13)	(0.09)	(0.11)	(0.12)	(0.09)	(0.11)
Household income ($)	30,031	23,389	36,316	27,723	26,108	23,156	32,860
	(3.71)	(4.18)	(3.32)	(2.92)	(3.82)	(4.26)	(3.74)

Data: Health and Retirement Study. Note: Cells contain standard errors in parentheses.
[a]H=Husband; [b]W=Wife

Table 3-3: Couple-Level Growth Curve Models Predicting Influence of Spouse's Types of Chronic Conditions on Respondent's Distress (N = 8,690)

	Model 1		Model 2		Model 3		Model 4	
	S[a]'s Condition on R[b]'s Distress (Intercept)	S's Condition on R's Distress (Slope)	S's Condition on R's Distress (Intercept)	S's Condition on R's Distress (Slope)	S's Condition on R's Distress (Intercept)	S's Condition on R's Distress (Slope)	S's Condition on R's Distress (Intercept)	S's Condition on R's Distress (Slope)
High blood pressure (S)	0.007	-0.004	-0.042	0.011	-0.022	-0.007	0.001	-0.005
	(0.026)	(0.007)	(0.039)	(0.010)	(0.026)	(0.278)	(0.026)	(0.007)
Diabetes (S)	0.119**	0.008	0.068	0.011	0.060	0.005	0.066	0.003
	(0.040)	(0.010)	(0.065)	(0.018)	(0.039)	(0.010)	(0.040)	(0.010)
Cancer (S)	-0.027	0.000	-0.058	0.025	-0.052	0.001	-0.025	0.000
	(0.046)	(0.012)	(0.065)	(0.017)	(0.046)	(0.012)	(0.046)	(0.012)
Lung disease (S)	0.344***	-0.013	0.412***	-0.032	0.228***	-0.012	0.291***	-0.010
	(0.054)	(0.014)	(0.087)	(0.024)	(0.053)	(0.014)	(0.054)	(0.014)
Heart disease (S)	0.116**	-0.030**	0.137*	-0.017	0.036	-0.032***	0.078*	-0.029**
	(0.035)	(0.009)	(0.061)	(0.017)	(0.035)	(0.009)	(0.035)	(0.009)
Stroke (S)	0.275***	0.005	0.013	0.070*	0.237***	0.006	0.078	0.013
	(0.061)	(0.016)	(0.107)	(0.029)	(0.060)	(0.016)	(0.061)	(0.016)
Arthritis (S)	0.046	-0.014*	0.021	-0.016	-0.027	-0.018**	0.001	-0.010
	(0.027)	(0.007)	(0.038)	(0.010)	(0.026)	(0.007)	(0.026)	(0.007)
High blood pressure* Female (S)	--	--	0.088	-0.026	--	--	--	--
			(0.052)	(0.013)				
Diabetes* Female (S)	--	--	0.081	-0.005	--	--	--	--
			(0.082)	(0.022)				
Cancer*Female (S)	--	--	0.053	-0.046	--	--	--	--
			(0.092)	(0.024)				

Lung disease*	--	--	-0.104	0.028	--	--	--	--
Female (S)			(0.111)	(0.029)				
Heart disease*	--	--	-0.036	-0.017	--	--	--	--
Female (S)			(0.074)	(0.020)				
Stroke*Female	--	--	0.378**	-0.090*	--	--	--	--
(S)			(0.130)	(0.035)				
Arthritis*	--	--	0.052	0.003	--	--	--	--
Female (S)			(0.052)	(0.013)				
Functional	--	--	--	--	0.301***	0.002	--	--
limitations:					(0.012)	(0.003)		
Intercept (S)								
Functional	--	--	--	--	--	0.462***	--	--
limitations:						(0.036)		
Slope (S)								
Distress:	--	--	--	--	--	--	0.303***	-0.027***
Intercept (S)							(0.017)	(0.004)
Distress: Slope	--	--	--	--	--	--	--	0.200***
(S)								(0.015)
Model Fit:								
χ^2 (df[c])	806.114 (143)		842.767 (178)		4506.216 (380)		6526.863 (380)	
AIC[d]	290689.541		290690.007		533347.216		483319.907	
BIC[e]	291155.322		291264.471		533933.312		483905.978	

Note: All models adjust for number of conditions, spouse's conditions (number and type), gender, both spouse's age, marital duration, educational attainment, race/ethnicity, number of living children, and log of household income. Statistically significant inter-spousal effects are denoted: ***p < .001, **p<.01, *p<.05

[a]S=Spouse; [b]R=Respondent; [c]df= Degrees of freedom;[; d] AIC = Akaike Information Criterion; [e] BIC = Bayesian Information Criterion.

Chapter 4: Gendered Emotion Work around Chronic Conditions in Mid- and Later-life Marriages

ABSTRACT

Chronic conditions in mid- to later-life are shown to sustain, exacerbate, and disrupt gender inequalities in marriage. One unexplored dimension of chronic conditions in marriage is the provision and receipt of emotion work. Examining emotion work during chronic conditions is a fruitful and important endeavor in understanding how and why chronic conditions in marriage increase spousal distress, perhaps more so for women than men. Both emotion work and chronic conditions are central dynamics in mid- to later-life marriage and are demonstrated sites of gender inequality. I examine the gendered ways chronically ill people and their spouses in mid- to later-life provide, interpret, and justify emotion work and the absence of emotion work. I use dyadic data to compare the perspectives of husbands and wives within the same marriages. I find that wives provide emotion work regardless of their own health status. Husbands' emotion work is provided less consistently, occurring only when their wives have chronic conditions and only when men see themselves as their wives' primary source of stability or when men understand the marriage as balanced. Moreover, findings suggest that some men view emotion work as contradictory to their work as rational and protective caregivers; thus, notions of traditional masculinity preclude some men from providing emotion work even when their wives have chronic conditions.

Emotion work—activities done to promote another's positive emotional state—is a central dimension of the unequal division of unpaid work in marriage (Eichler & Albanese 2007; Erickson 2005; Hochschild 2003; Pfeffer 2010). Gendered marital dynamics, most notably the binary understanding of women as emotional and men as rational, produce and reinforce gender inequality in emotion work (Ferree 2010; Pfeffer 2010). Chronic conditions faced by one or both spouses create a unique context for the examination of the dynamics of emotion work within marriage, as chronic conditions have been shown to both disrupt and exacerbate gender inequality in other types of unpaid work (Allen & Webster 2001; Russell 2007). Further, emotion work during periods of chronic conditions, especially the unequal distribution of this work, may provide insight into why and under what circumstances chronic conditions do or do not impact spousal distress. Emotion work dynamics may be especially important among mid-life and later-life adults in long-term marriages, as these individuals are both more likely to experience chronic conditions and to have traditional gender ideologies compared to early-life adults (Brewster & Padavic 2000; Davis & Greenstein 2009; Ward & Schiller 2013).

In addition to advancing research by exploring emotion work in the context of chronic conditions, my study extends previous research on emotion work in marriage by moving beyond individual-level data and analyzing couple-level data. Past studies on gender dynamics, marriage, and chronic conditions often focus on either chronically ill people or spouses of chronically ill people rather than the experiences and perspectives of both spouses simultaneously and relationally (Allen & Webster 2001; Hepburn et al. 2002; Kirsi, Hervonen, & Jylhä 2000; Pudrovska 2010). Studies on chronically ill people identify how chronic conditions challenge the masculine and feminine identities of the chronically ill persons (Pudrovska 2010; Sulik 2007; Wall & Kristjanson 2005), while studies on people with a chronically ill spouse identify how

gender inequalities are often (re)produced through care work (Calasanti & Bowen 2006; Gerstel & Gallagher 2001; Russell 2007). We know little about whether these gender processes are interactive or contested or how emotion work is interpreted by each spouse in gendered ways. Because gender and marital practices are co-constructed, negotiated, and enacted relationally by both husbands and wives (Seymour-Smith & Wetherell 2006), it is critical to use dyadic methods to examine the gendered ways spouses provide and justify their (lack of) emotion work in the context of chronic conditions, as well as the degree to which husbands and wives agree on these accounts.

In this chapter, I use dyadic qualitative methods to examine how mid-life (i.e., 30-60 years) and later-life (i.e., 61-90 years) husbands and wives in long-term heterosexual marriage conceptualize and justify their own—and their spouses'—emotion work during their own—or their spouses'—chronic conditions. Understanding the presence or absence of emotion work and justifications of emotion work during periods of chronic conditions using dyadic data can shed light onto the production of gender within marriage and how and why one spouse's chronic conditions influence the other spouse's well-being. I situate my analysis within a theoretical understanding of gender as both performative and relational. Specifically, I ask:

(1) Who is described as doing or not doing emotion work in response to chronic conditions?

(2) How do spouses explain the provision or lack of provision of emotion work?

(3) How are these explanations different for husbands compared to wives and for mid-life couples compared to later-life couples?

THEORETICAL BACKGROUND

A "doing gender" approach suggests that gender is not fixed but is actively constructed and performed through interactions that are embedded in and created by institutions and social structures (Messerschmidt 2009). One key site of the construction of gender is heterosexual marriage, wherein the symbolic and structural division of labor is produced by—and in turn produces—gender hierarchies (Ferree 1990). A gender relations framework further suggests that masculinities and femininities must be understood in relation to one another (Connell 2005; Schippers 2007). Hegemonic masculinity, the temporal culturally defined ideal of how men should behave, is defined in opposition to emphasized femininity, the expectation of women accommodating to men's interests and desires (Connell & Messerschmidt 2005). In heterosexual marriage, masculinities and femininities are typically seen as exclusive and oppositional, borne out of a strict gender binary imbued with essentializing personality attributes specific to each gender (Ferree 2010). The dualistic structure of gender within marriage contrasts men as highly agentic and rational problem-solvers with women who are passive and emotional nurturers adept at relationships and emotions. This dynamic enables a false dichotomy between the emotional and the rational while devaluing the emotional (Calasanti 2004; Cheng 2008). These socially constructed gender differences within marriage are related to disparities in unpaid work, including emotion work (Erickson 2005; Pfeffer 2010).

Previous research demonstrates that wives are more likely to provide emotion work than husbands (Eichler & Albanese 2007; Erickson 2005; Pfeffer 2010). Studies show that spouses attribute this difference to the social understanding that women are more "naturally" adept at reading and tending to emotions (Thomeer et al. 2013; Ussher & Sandoval 2008). The expectation of emotion work as a natural component of wifehood is linked to constructions of

“intensive mothering” and "self-silencing," which dictate that women should emotionally support others by obscuring their own emotional distress (Beauboeuf-Lafontant 2007; Hays 1996; Jack 1993).

Gender inequality around emotion work likely extends to caregiving during chronic conditions. Notions of hegemonic masculinity and meanings of being a husband include the belief that it is not in men’s natural disposition to be caregivers (Gerstel & Gallagher 2001). At the same time, studies find that men do caregive for chronically ill spouses, perhaps as much as wives (Hepburn et al. 2002; Pinquart & Sorensen 2006). Yet most previous research does not examine men’s provision of emotion work in the context of caregiving, though studies do report that caregiving men are rarely understood as nurturing (Calasanti 2004; Calasanti & Bowen 2006). Thus, while men provide physical care for spouses, previous research has not examined whether—and, if so, how— emotion work is part of men's caregiving. These studies are also largely from the perspective of the men themselves, with little or no discussion of wives' perceptions.

Important to the chapter at hand, performative and relational aspects of gender may vary across life stages. On the one hand, later-life adults, compared to early- and mid-life adults, generally have more traditional ideas about gender and see starker gender differences (Brewster & Padavic 2000; Davis & Greenstein 2009). On the other hand, the intrusion of chronic conditions into a marriage, which is more common among later-life couples (Ward & Schiller 2013), may weaken these traditional gender dynamics and promote egalitarianism. This may be especially true among men, as older men do more care work than younger men (King & Calasanti 2013) and because older men with chronic conditions are less likely than men without chronic conditions to conform to traditional masculinity scripts (Pudrovska 2010).

Taken together, previous research suggests that emotion work in general is gendered, both in terms of the division of emotion work and justifications for emotion work provisions. Yet research has yet to determine whether these gendered dimensions of emotion work occur during periods of chronic conditions, how they are understood by husbands and wives themselves, and whether they differ across mid- and later-life stages. Drawing on past literature and gender theory, I use an analysis of emotion work during periods of chronic conditions to reveal how gender dynamics within marriage sustain and/or exacerbate unequal division of emotion work within heterosexual marriages. I argue that this may help us to understand why it is that having a spouse with multiple chronic conditions impacts women more negatively than men, as shown in Chapter 2.

METHODS

The sample for this analysis was drawn from the Marital Quality over the Life Course study which involved in-depth interviews with 30 married couples (60 individuals) who had been together 7 years or longer. Respondents were recruited in a large southwestern city. Most respondents were recruited through a local newspaper article written about the research study. Additional respondents were recruited through referrals from participants. All respondents were screened by phone prior to enrollment in the study in order to obtain income and marital quality diversity. Of the initial 30 married couples interviewed, at least one spouse in 19 couples discussed having a chronic condition; these 19 couples (38 individuals) comprise the sub-sample used for the present study.

Interview Protocol

Interviews were conducted from 2003 to 2004. Interviews were tape recorded and transcribed. Pseudonyms were assigned to protect confidentiality. Each spouse was interviewed

separately to preserve individual perspectives and provide a comfortable environment to discuss sensitive topics (e.g., feelings around health problems, marital conflict). The interviews lasted 1.5 to 2.5 hours and typically occurred in respondents' homes. Interviews were semi-structured and retrospective, consisting of questions on a number of topics related to marital dynamics, emotions, and health throughout the relationship. Interviewees were asked to describe major life events that occurred during their marriage including chronic conditions. Interviewees were specifically asked, “Have you or your spouse ever had a significant period of health problems?” Interviewees gave a complete narrative of the health problem in response to the question, "How did the [specific physical health problem] affect you, how did it affect your spouse, and how did it affect your relationship?" Interviewees who did not discuss their or their spouses’ emotional response to the physical health problem were prompted to discuss this. Additionally, interviewees were asked, "Do you ever try to affect your spouse's emotions or feeling about herself/himself?" and "Does your spouse ever try to affect your emotions?" A range of health problems were discussed, though in this chapter I only include discussions of chronic conditions. I define chronic conditions as physical health problems with long durations, generally accompanied by physical impairments (Anderson and Horvath 2004). This included cancer, arthritis, diabetes, and lung conditions (see a full list in Table 4-1) but excluded broken bones or mental health problems.

Sub-Sample Composition

The majority of respondents analyzed in this subsample self-identified as white (32), four as Black, one as Asian-American, and one as multiracial. The average years of education were about 15, and the average household income was $55,900. The average marital duration was 27.0 years (range: 8-51), and the average age was 56.7 years (range: 30-87). I divided the sample into

mid-life respondents (ages 30-60; 23 respondents) and later-life respondents (ages 61-87; 19 respondents). These categories are based on general developmental classifications (Moen & Wethington 1999). Of the 19 couples who reported a chronic condition, 2 mentioned the husband's chronic conditions, 5 mentioned the wife's, and 14 mentioned both the husband's and wife's. By comparison, the 12 couples who did not mention any health problems were 47.2 years on average (range: 30-69) and married for 24.2 years (range: 8-46). Socio-demographic information and pseudonyms for each of the 21 couples included in the analytic sample are shown in Table 4-1.

Data Analysis

I analyze and code interview data using Charmaz's (2006) qualitative analysis approach. This approach emphasizes the construction of codes for the development of analytical, theoretical, and abstractive interpretations of the data. Coding categories emerge from the participants' interviews; they are not predetermined. I use a multi-staged standardized approach, primarily guided by inductive reasoning. Because this analysis focuses on emotion work processes, I use a theoretical understanding of emotion work developed from previous literature to guide my coding of emotion work. I define emotion work as intentional activities perceived by respondents as requiring effort and done to promote another's positive emotional state (Eichler & Albanese 2007; Erickson 2005; Hochschild 2003; Pfeffer 2010).

In the first stage of analysis, I carefully read through the transcripts and field notes several times to become familiar with the content of each interview. I extract passages that discussed chronic conditions and emotion work (or the mentioned absence of emotion work) around those chronic conditions. I then develop a standardized codebook from this initial coding and use this codebook for subsequent data analysis. In the second stage, I examine how the codes

previously identified related to one another on a conceptual level. This involves evaluating how interviewees understood their chronic conditions as affecting, or not affecting, their own and their spouses' emotion work and how respondents justified their and their spouses' emotion work or lack of emotion work. I examine patterns in the data across the full sample with the aid of QSR International's NVivo 9. In the final stage of analysis, I identify gender differences in the codes, as well as any differences based on age. I also examine overlap and contradictions between spouses' understandings of emotion work, paying attention to these dyadic patterns. The dyadic interview design allows me to focus on the contrasts and overlaps between spouses' versions of and ascribed meanings to similar events (Eisikovits & Koren 2010). Themes and subthemes are developed from the codes. I provide quotes below which are illustrative of each recurring theme. Theoretical saturation was achieved once no new themes regarding emotion work and chronic conditions emerge and when existing themes have sufficient data (Charmaz 2006).

RESULTS

In this chapter I examine gendered emotion work in response to chronic conditions in heterosexual marriage. Analyses reveal that both men and women describe themselves, and are described by their spouses, as providing emotion work; both men and women further offer justification for their performances of emotion work. In addition, analyses reveal that men, but not women, also explicitly describe times when they did not perform emotion work, and they justify this lack of emotion work.

Men's Emotion Work and Lack of Emotion Work

Men's Emotion Work for Chronically Ill Wives

Both men and women describe men's emotion work; however, men's emotion work only occurred for men with chronically ill wives. Men's emotion work is not described when men had chronic conditions. Emotion work done by men married to chronically ill women is described for 10 of the 19 men married to chronically ill women. Similar numbers of mid-life and later-life men provided emotion work when their wives had chronic conditions. During Gwen's (age 52, married 8 years) brain cancer, her husband Hal (age 50) noticed that she was distressed after treatments. Hal says he worked to alleviate this distress:

> When she was going through those bouts of depression or when she was fresh out of the hospital, I tended to do more in terms of flowers. She loves flowers… And supporting her in doing the things that she loves to do.

Gwen also discusses the mental energy Hal put into observing and caring for her emotions during this time.

Changes in Men's Emotion Work

While about half of men and women described men providing emotion work at some point for chronically ill women, the majority of men and women also (or only) mentioned times in which the husband *did not* provide emotion work when his wife had chronic conditions. For four of the couples, including three later-life couples, this apparent contradiction occurred because wives experienced chronic conditions at different points in time; at some points husbands did provide emotion work and at other points they noticeably did not provide emotion work. Katherine (age 72, married 50 years) had two mastectomies. After the first, Bill (age 73) was frustrated because he did not feel he was emotionally caring for her like she wanted: "I was

really in agony because I felt like I couldn't really give her the kind of support that I needed to be able to." Katherine echoes these frustrations, explaining that Bill was shut down emotionally and not helping her during this time. But after her second mastectomy, Bill and Katherine both felt that Bill provided emotion work, largely due to active coaching on Katherine's part. Bill explains that he provided emotion work by "mainly trying to keep the stress off of her. And things that I know are stressing her."

Discrepancies in Accounts of Men's Emotion Work

In three couples, the husband and wife recount the same period of her having chronic conditions but provide very different accounts of men's emotion work provision. Rick (age 64), whose wife Janna (age 54) had Parkinson's disease, explains, "On the one hand, I take care of her, but on the other hand, I don't do as good a job of adjusting to her emotional needs." Janna interprets the situation differently, describing how Rick comforted her when she was emotionally distressed because of her Parkinson's disease:

> I have cried on his pillow and in his arms many nights. Because by nighttime I would be so frustrated, so tired… He doesn't have magic words to say, but I don't require magic words.

Similarly, Joel (age 31) notes that he felt incapable of understanding Sasha's (age 30) emotional needs in relation to her heart problems. Yet Sasha reports that Joel did in fact provide emotion work: "He just comforts me...he says, 'You are going to be fine.' …He is very good for me…. he calms me greatly." Contradictory accounts indicate that these husbands and wives are not drawing on analogous gendered discourse to understand husbands' (lack of) emotion work.

Men's Lack of Emotion Work for Chronically Ill Wives

Seven husbands are described by their wives (or describe themselves) as never providing emotion work for their chronically ill wives. The majority of these men are in the later-life group. Some of these men describe themselves (or are described by their wives) as failing to control their emotions around their wives and consequently causing their wives stress around these chronic conditions. Controlling and even concealing negative emotions is a key element of emotion work, as originally identified by Hochschild (1979). Many of these men still provided important physical caregiving, but neglected to do emotion work. Bruce's (age 41, married 12 years) wife Carrie (age 39) had a chronic condition which required brain surgery. Although he tried to control Carrie's physical environment to protect her during this complicated procedure, he did this without regard for her emotional well-being:

> When I was down at the hospital, I griped everybody out. I was in a tirade… She later said to me that I did a crummy job. (laughs) I was crying with frustration…So, I raised quite a storm. She didn't like that…She told me I should have just stayed in there with her. I was just so mad. I was mad at the whole world.

Bruce and other men exhibited worry, a common emotion for caregivers (Cheung & Hocking 2004). Yet, by failing to conceal their worry and negative emotions like anger, these men did not provide emotion work for their chronically ill wives and instead contributed to their distress. Carrie cries during her interview when discussing Bruce's disruptive behavior at the hospital and indicates the harm from Bruce's actions:

> It made me feel very bad because the doctor did come out and say, 'You should tell your husband I'm here to do everything for your good and he shouldn't be doing this.'… And

I had an older woman in the same room and she was saying, you know, ‘Bruce, you shouldn’t do this to her.’

The absence of emotion work also occurred when men did not attempt to improve their wives' emotional state. Bruce says when his wife was worried about her surgery, he thought, "She just has to snap out of. Just get over it," and he did not try to help her. Nina (age 50) was asthmatic and attributes the 100 pounds she gained during her marriage to Lloyd (age 75) to the steroids she had to take to control her asthma. But she says that rather than helping her feel okay about her weight gain, Lloyd said statements like, "'Boy you are big'" and "'You are really fat.'" She says of these statements, "Well, sometimes I feel pretty bad. And sometimes I feel pretty angry." She believes his statements (and lack of emotion work around this area) contributed to her depression and distress.

Justifications for Men's Emotion Work

Above I describe accounts of how men did or did not do emotion work for chronically ill women. Women and men further offer explanations for why husbands provided or did not provide emotion work in these circumstances. Gender scholars suggest that men and women in heterosexual marriage co-construct and articulate "gender strategies" and "family myths" to justify unequal divisions of unpaid work, including emotion work (Hochschild & Machung 1989; Sullivan 2004). These explanations serve to maintain current arrangements of who does and does not provide unpaid work in the home while avoiding conflict over unfairness. In my analysis, wives' and husbands' explanations are rarely explicitly linked to discussions of gender. However, these explanations nevertheless operate as gender strategies and family myths that draw on socially constructed understandings of the meaning of man/husband and woman/wife (Hochschild & Machung 1989; Pfeffer 2010). Analyses of justifications for why men did or did

not provide emotion work provide insight into the unequal division of emotion work within marriage, highlighted during periods of chronic conditions.

Justifications for Men Doing Emotion Work

Men justify the emotion work they provided for their chronically ill wives by drawing on one primary explanation: *marriage as balanced*. Men who use this explanation say that they did emotion work for their chronically ill wives because their wives did emotion work when they had chronic conditions. These men view their wives as teaching them how to provide emotion work, largely through modeling this emotion work, but saw emotion work as only important to provide during periods of their wives' chronic conditions. During Gwen and Hal's marriage, both were diagnosed with cancer and each underwent chemotherapy at different points during the marriage. Both spouses discuss that when Hal had cancer, Gwen provided emotion work for him; during Gwen's cancer, Hal provided emotion work for her. Notably, though, he struggled with providing emotion work early in her illness. Hal says his emotion work was necessary for balance in their marriage:

> It's very much a give and take, even keel, shared experience…Because we've taken turns being patient and caregiver, it's been a real challenge to maintain that balance at times because we have each had to, in turn, heavily lean on the other person. But, in that, we have found a better understanding about what the balance means, that it's not about being independent and together, it's more a sense of, I guess, interdependence is the word that fits our understanding of what that balance is about.

Yet, despite the explicit discussion of balance, according to both of their accounts, the provision of emotion work was not balanced. Gwen provided emotion work at all times, even when chronically ill (discussed below), but Hal did this emotion work for Gwen only when she had

cancer. In this way, Gwen and other chronically ill women's emotion work during their own chronic conditions is ignored, and the idea of marriage as balanced operates as a family myth, obscuring the gender inequality around emotion work occurring during chronic conditions.

Other men explain that they provided emotion work for their spouses because their spouses would *hypothetically* do the same for them if they were chronically ill. Malcolm (age 72) explains why he did emotion work for his wife, Doris (age 68), as she dealt with her many chronic conditions:

> Her mobility is impaired. And that makes one short tempered. And I take some of the brunt of that and take it philosophically and say it is probably what I would do if our roles were reversed.

Malcolm has not yet experienced a serious chronic conditions, yet because he believes his wife would care for him emotionally if this occurred, he did emotion work for her when she was ill. At the same time, as discussed below, Malcolm struggled with doing this emotion work and thought he was often unsuccessful. By drawing on a discourse of balance as intrinsic to their marriage and thus understanding their job as husbands as achieving this balance, men protected their own masculine identities while simultaneously providing emotion work.

Justifications for Men Not Doing Emotion Work

Men (and some of their wives) utilized three main discourses to explain why they as husbands did not provide emotion work when their wives were chronically ill: *husbands do not perceive their wife's emotions*, *husbands are the protectors*, and *husbands are the problem-solvers.*

Just as studies of unpaid work find that men justify not doing housework by saying they do not notice whether it is done or not (Dempsey 1999; Miller & Sassler 2012), I find that six

men in this analysis explain that they did not do emotion work for their wives because they did not see (or understand) their wives' emotions. Malcolm explains that he did not know how to pay attention to his wife's emotions, “I think it is the Mars, Venus thing where I tend to view things rationally… I don’t know how to deal really with emotional problems.” Malcolm’s quote emphasizes that he was the rational one, *distinct* from his wife, by explicitly linking his marriage to the popular discourse that “Men are from Mars and women are from Venus” (Gray et al. 1993). Rick draws on this same popular discourse, saying, "I guess I am too much on Mars…And a lot of times I probably overlook the way she is feeling." This discourse emphasizes that men are rational and women emotional and that these categories are mutually exclusive. This understanding is not shared by women with chronically ill husbands, however, who saw themselves as both solving men’s health-related physical problems and emotionally caring for their husbands.

Eight men in my analysis describe themselves (and/or are described by their wives) as protectors and six men describe themselves as problem-solvers in relation to their wives' chronic conditions. These discourses are in line with traditional gendered beliefs that position husbands as breadwinners, family leaders, and physical and financial protectors of the home and family (Rosin 2012). Just as men in previous studies justify not doing housework by explaining that their position as breadwinner is not in line with most unpaid work around the home (Dempsey 1999; Hochschild & Machung 1989), I find that these men justify their lack of emotion work by emphasizing their protecting and problem-solving attributes in the stead of and mutually exclusive of emotions. Strength and rationality as components of hegemonic masculinity are viewed by these men as helpful for physical caregiving (e.g., managing medications, helping with daily activities) but as preventing emotion work. Husbands who did not provide emotion

work use a language of *difference* to construct who husbands are and who wives are even during periods of chronic conditions and to juxtapose emotionality and rationality.

Several husbands see themselves as protectors of their wife's physical health, yet this does not extend to doing emotion work to protect women's emotional well-being. Malcolm says of his Doris who had arthritis, "Since she is physically failing, I have a very strongly protective role now." He does not see this protective role as contributing to helping with her emotions and instead sees it as only extending to providing physical care. This physical care could be overbearing for wives because husbands who saw themselves as protectors framed their wives as needing protection in line with cultural discourses of women as the weaker gender (Bullough, Shelton, & Slavin 2004). Bruce, who understands himself as incompetent to provide emotion work and only able to respond to physical needs, describes his wife as "real strong all the time" but after her brain surgery "she was very, very fragile." Yet I find that women and men often oppose each other in this construction. Many wives who are seen by their husbands as needing a protector do not share this view; these women experienced unanticipated tension because of this unwanted protector/protected dynamic. Doris says she was frustrated with how Malcolm tried to care for her because "his solicitation was overbearing" and caused her more stress. Barbara (age 78, married 51 years) was partially paralyzed and says, "I am so independent that it has been real hard on me to be dependent on [my husband], because I have never been dependent on him before." Her husband, Lou (age 81), sees this as a positive and as drawing them closer to each other. By viewing their own care work as protective and focusing on the physical aspects of caregiving, these eight husbands overlooked the emotional discomfort this brought their wife—in turn exacerbating their wife's emotional distress.

A third way men justify not providing emotion work is by saying they are problem-solvers. Previous research finds that many men married to chronically ill women conceptualize caregiving as a series of problems to master (Skaff & Pearlin 1992; Ussher & Sandoval 2008); yet I add an important caveat that wives' emotional distress is rarely included by men as a problem to solve. Men in my analysis draw on a discourse of men as inept at understanding or fixing emotional problems, and thus as men they are unable to do emotion work. Key to this discourse is the construction of two dichotomies—emotional problems and physical problems as opposite and exclusionary and problem-solving and emotion work as distinct and mutually exclusive. These binary understandings are embedded within a gender binary within marriage involving the dichotomies of husbands as rational and wives as emotional (England 2010). Joel explains why he was incapable of understanding his wife's emotional needs: "I'm an engineer so I fix things. So I just got to say, 'Well, you need to do this. You need to do this and fix these things.' And she doesn't want anybody to fix it." Rick said that when he tried to help his wife:

> I focus on taking care of, you know doing what I can, to get her well. To get her to the doctor. To take care of things that would make her feel better physically and so forth… So immediately I start, okay here is the problem. Okay, one way we can get around this is this. You know. And I am focused on how to overcome the impediment. She stops me and says, "You are not hearing me."

These men view themselves as rational and their wives as emotional. Chronic conditions and emotion work processes make the (re)production of difference within heterosexual marriage particularly visible.

Part of how power is maintained via hegemonic masculinity is by the use of discourses that characterize men and women as opposite. Women, on the other hand, do not as strongly

acknowledge the dichotomy of emotionality and rationality and are more likely to see the two as compatible. Some wives reject a strict emotion work binary and expect husbands to provide emotion work. Sasha and Janna, for example, do not view their husbands as problem-solvers at the exclusion of providing emotion work. Instead, they interpret their husband's behavior as emotion work. However, Rick, Joel, and other men draw on the belief that problem-solving and emotion work are in opposition, wherein men are only capable of problem-solving at the expense of emotion work.

Women's Emotion Work

In contrast to men's emotion work, which is only discussed when wives had chronic conditions, women's emotion work is discussed both when husbands had chronic conditions and wives had chronic conditions. Emotion work by chronically ill wives thus represents an important dimension of gender inequality around emotion work in the context of chronic conditions. Husbands and wives are also in general agreement about the emotion work provided by wives. Mid-life women are more likely than later-life women to provide emotion work when chronically ill and when their spouse were chronically ill. Harold (age 61, married 32 years) describes how his wife Mary (age 60) helped him stay calm while he dealt with his diabetes: “The stress level is down because you know [the diabetes], yeah it is bad, but it is not as bad as it could be. You get reminded of things that are more to the positive, at least I do, from Mary. Things are more positive.” Mary says that one way she looked after her husband's emotions was by trying to make the diabetes require less of an adjustment. She says, "Well first they told him his diet would have to change and obviously and I said, 'Well I found a recipe for a pie crust that can be made – he liked desserts with every meal – a pie crust that can be made with coconut instead of flour.'" This helped Harold cope with his diabetes.

Women such as Mary found that providing emotion work for their husbands when their husbands were chronically ill was especially difficult because the men themselves failed to do emotion work during that period. Harold says when he was hospitalized for his diabetes, "I had a really negative and bad attitude. People come to visit me in the hospital and then they wondered why they came…I wasn't being nice." Both Mary and Harold discuss the stress this caused for Mary. Nina similarly says that providing emotion work for her husband was especially difficult because, "He gets more angry now that he is sicker. And the sicker he gets, the more angry he gets."

In contrast, many of the chronically ill women worked to provide emotion work for their husbands to ease men's caregiving tasks. Seven women are described (or describe themselves) as providing emotion work when they were chronically ill. While Hal provided emotion work for Gwen during her brain cancer treatment, Gwen also engaged in emotion work when she noticed Hal was stressed from caring for her. Gwen says when Hal "got weary and he needed a break," she encouraged him to "take [a break] and he went away for two weeks" while Gwen was cared for by her sister. Hal notes that Gwen gave him emotional breaks and reliefs regularly when she was chronically ill, explaining:

> There are times when I just need time out, I just need space. Like I mentioned, when I come home from work all day…sometimes I just don't want to talk for a little while. So, uh, and she's very good at saying, 'Well, if you don't want to talk, can I just rub your feet for you?' 'Oh, okay!'

Justifications for Women's Emotion Work

Women and men draw on one dominant discourse to explain why wives provided emotion work continually: emotion work flowed from women's natural propensity to care for

others and was an extension of wives' own typical caring behavior. The idea that women's emotion work is natural was described by five wives and three husbands. Other men and women do not offer any explanation for why women provide emotion work. This discourse is consistent with gendered expectations of women as emotion experts and in contrast to men's own understandings of themselves as not emotionally adept. During Robert's (age 51, married 19 years) surgery, Kinsey (age 43) says she worked to "meet his needs and make sure that his nursing care was good, that he wasn't in any pain." She describes her active monitoring of Robert's emotions as well as her actions to improve his emotions and alleviate his pain as routine: "you know, just typical of me." Nina is married to Lloyd, who is considerably older than her and has a number of chronic conditions. Nina cared for Lloyd in a number of ways, including doing household chores, reminding him to take his medicine, and helping him with his physical therapy. She also identifies that part of her work was caring for him emotionally. She says she did this partly because it was "what Lloyd expects of me. He expects of me to be his leaning post." This expectation was reasonable, she says, because, "I am good at it." The provision of emotion work by Nina and other women in this sample is viewed as typical and natural and thus expected and not seen as particularly noteworthy. This discourse is in line with notions of femininity that frame women as other-oriented and self-sacrificing (Jack 1993; Rosenfield et al. 2005).

Benjamin Gray (2009) identifies this construction of women as "natural carers" as an explanation for why emotion work by women nurses is often unacknowledged. As an extension of Gray's research, I find that women who provided emotion work for their chronically ill husbands are themselves labeled nurses because they are seen as acting like a nurse or having nurse-like characteristics or skills; none of the women in this study who are described as nurse-

like worked in the medical field. Wendell (age 78, married 52 years) describes the emotion work Helen (age 77) did for him: “She turned out to be a nurse.” In contrast, these are labels that men avoid, as Malcolm says that though he looked after Doris because of her arthritis, he did not “mean to imply that I was her nursemaid.” This highlights that a key part of the enactment of hegemonic masculinity within marriage involves relationally contrasting it to emphasized femininity and wifehood (Connell & Messerschmidt 2005).

The "natural" provision of emotion work by women is further linked to the relationship between womanhood and motherhood. Lou (age 81, married 51 years) describes Barbara (age 78) as “like an old mother hen.” When Jake was in the hospital due to a lung condition, Louise felt strongly about helping him by providing emotion work, in part because this responsibility of emotionally caring for Jake was passed from Jake’s mother to Louise at his mother’s death. Louise notes that in their final conversation she told Jake’s mother, “’I will take care of Jake. And you don’t have to worry about him’” and says in her interview that "the responsibility of looking after [Jake] was passed from [Jake's mother] to me.” Motherhood and wifehood mutually involve the socially constructed broader (emotion) work of women.

As a related subtheme, four women in this study explain that they did emotion work around chronic conditions (their own or their husbands') for their husbands because their husbands needed it. This drew on notions of empathy, and, in contrast to "it is natural for me," emphasizes characteristics of the husband rather than characteristics of the wife. As seen above, Jake and other men are cast as the person in need of emotion work in all circumstances—chronically ill or not. Just as it is seen as natural for women to continually provide emotion work, women see it as natural for men to receive it continually. Kinsey describes a series of her chronic health problems, including a mastectomy and two instances of heart trouble which eventually

necessitated a pace maker. During that time she viewed her husband as emotionally weak and felt he needed her to hide the extent of her illness from him: " I heard from my sister that he was really worried and you know he kind of…I could see that if I was sick, he would kind of come unglued." She decided to convince him, no matter how she was feeling, that she was, "On top and healthy," saying, "It makes me adore him also that I am so important to him that if something happened to me he would just-- I don't know that he could make it, you know."

Consequences of Women's Emotion Work

Constructing women as natural carers is often limiting and detrimental for women (Brown & Smith 1993). This is especially the case around chronic conditions. Kinsey says she found the emotion work she did for him, "Exhausting sometimes. And then ever so often I will snap like I did the other day. Like, 'I can't do this anymore. You are asking me something I can't do.' You know, because I do it all the time." Emotion work also felt harmful for women when this construction of caring as natural did not align with women's self-perceptions. When Jake was in the hospital, Louise felt responsible, albeit inadequate, to help Jake cope:

> I had to take care of him. He was in the hospital so we had medical people taking care of him, but I needed to be sort of a caregiving person… And I don't know how to make people feel comfortable and better and I felt sort of stressed... And it made me uncomfortable.

Louise demonstrates the "dark side" of caregiving and emotion work, where women's emotional and physical well-being is often overlooked (Pinquart & Sorensen 2006; Vitaliano, Zhang, & Scanlan 2003). This dynamic is heightened when coupled with the finding that husbands did not seem to provide emotion work when chronically ill themselves. Even though Louise feels she

failed at providing an adequate amount of emotion work for Jake while he was hospitalized, in general, she did monitor his emotions and attempted daily to improve his moods:

> I know by the way he is breathing in the morning if he is going to wake up and have good day or a bad day. I can tell from whether he has called me or not if he is stressed and having a stressful day or not. I can tell from the way he talks to somebody else if he is normal, if he is having a good time or a bad time.

Even amidst a regular effort to provide emotion work, Louise's discomfort at her perceived failure when at the hospital demonstrates women's high standard of emotion work; this standard appears to be at the detriment to women's own emotional well-being.

DISCUSSION

Erickson (2005) argues that emotion work is key to understanding gender differences in unpaid work. The central contribution of the present chapter is to show that men's and women's chronic conditions in marriage reinforce gender inequality in emotion work in ways that may contribute to greater distress in women compared to men when spouses are chronically ill. I show that gender appears to be constructed relationally within couples, with women's supposed and accepted natural tendency and ability to perform emotion work juxtaposed with men's supposed and accepted incompetence in the realm of emotions. I highlight three findings that advance understanding of gender dynamics during periods of chronic conditions in marriage.

First, I extend past research to show that women provide emotion work even when experiencing chronic conditions themselves. Past studies show that while chronically ill men adopt the "sick" role—wherein they require care from others and do not perform their typical daily duties—chronically ill women tend to avoid the sick role and continue to do their everyday unpaid work (Gove 1984; Thomeer et al. 2013). By examining emotion work provided in

response to chronic conditions, my analysis highlights the persistent emotion work done by wives, even when wives themselves are chronically ill. Importantly, many husbands do provide emotion work for their chronically ill wives, but, concurrently, the chronically ill wives are still actively monitoring their husbands' emotions and alleviating stress that comes as a result of men's emotion work and caregiving. The danger, as Gove (1984) and others speculate (Rosenfield et al. 2005; Thomeer et al. 2013), is that health-impaired women's emphasis on men's well-being increases women's risk of poor physical and mental health. In Chapter 2 of this dissertation, I find that men's chronic conditions impact their wives more negatively than women's chronic conditions impact their spouses. These gender differences in emotion work during chronic conditions may explain why this is the case.

Second, my study moves significantly beyond previous research by focusing on times when men provide emotion work around chronic conditions. I demonstrate that men's provision of emotion work changes over time due to the progression of chronic conditions. Men's provision of emotion work provides additional insight into the division of labor, suggesting that in some cases men challenge gendered norms of the division of emotion work. However, men's justification for why they provide emotion work is indicative of adherence to strict gendered norms. When men do provide emotion work, they may understand this work as a reciprocal process, provided by the non-chronically ill spouse for the chronically ill spouse. For husbands, this "balanced" view of emotion work allows men to perform emotion work as part of their construction of themselves as husbands, a strategy past studies also find men use to more broadly justify care work (Milne & Hatzidimitriadou 2003; Ribeiro, Paúl, & Nogueira 2007). Not only does this give men room to provide emotion work for women within the frame of a hegemonically masculine identity, it also limits men from needing to explain why they do not

perform emotion work in other circumstances. This limited scope of men's emotion work around chronic conditions ultimately reinforces strict gender norms in mid-life to later-life marriages.

The constant provision of "natural" emotion work by women despite women's own health status, coupled with the general lack of provision of emotion work by men, demonstrates an important element of gender inequality. These gendered patterns and justifications have important consequences for women's well-being in line with previous research demonstrating that women with a chronically ill husband experience more negative mental health consequences than men with a chronically ill wife (Pinquart & Sorensen 2006; Vitaliano et al. 2003). This dissertation chapter coupled with Chapter 2 suggests that this may be due to unequal provision and recognition of emotion work within marriage. Spouses' concern for each another's emotional state could lead to more negative outcomes for women, as men are not as invested in doing emotion work for their spouses. Additionally, men receive the constant benefit of emotion work from their wives, even when wives have chronic conditions, likely making men's caregiving experiences less distressing than women's.

Third, my dyadic data allows me to make further significant contributions to the literature. While past studies focus on how either wives or husbands describe their own emotion work (Hepburn et al. 2002; Kirsi et al. 2000), my analysis is novel in that it focuses on how men and women discuss not only their own but also their spouses' emotion work. For women's emotion work, husbands and wives generally agree on when and why women do emotion work around chronic conditions. There is, however, discordance in the perceptions and conceptualizations of men's emotion work. This dyadic approach complicates the idea that most men are not providing emotion work for their chronically ill wives and demonstrates the importance of using multiple perspectives in order to examine gender relations within marriage.

The dyadic approach further demonstrates that it is not only provisions of emotion work but also the perceptions of these provisions which are influenced by gender scripts of who is, and is not, equipped to do emotion work. These scripts appear to be upheld more by men than by women.

Limitations and Conclusion

Despite the unique contributions provided by examining emotion work in the context of chronic conditions using a dyadic qualitative design, several limitations should be discussed. This study is limited by the homogeneity of the sample in terms of race and ethnicity. Gender differences in giving, receiving, and interpreting emotion work may vary by race and ethnicity, though this has not been studied. Moreover, the analysis examines couples in which one or both spouses label themselves as having a chronic condition. Results may have differed if I utilized a different operationalization of physical health, such as an official diagnosis or a period of hospitalization, or if I had looked at mental health problems. Also, I am not able to compare couples with chronic conditions to couples without chronic conditions because only couples with health problems were asked questions about how emotion work was performed in the context of illness. Future studies should compare emotion work in marriages where one spouse does, or does not, have a physical illness or use longitudinal data following couples before and during chronic conditions to examine emotion work and gendered dynamics. I also do not have a large enough sample to distinguish between types of chronic conditions or number of chronic conditions, as I did in Chapters 2 and 3 of this dissertation.

This analysis focuses on men and women in mid- to later-life who are more likely to have confronted chronic conditions and have traditional gender dynamics than younger adults (Brewster & Padavic 2000; Davis & Greenstein 2009). It is likely that the dynamics of emotion work around chronic conditions will be different at younger ages and for more recent cohorts.

First, the nature of chronic conditions and their care is changing. Certain chronic conditions, like diabetes, are on the rise and diagnoses of these conditions are occurring at earlier ages (Hung et al. 2011; Ward & Schiller 2013), meaning that individuals are more likely to enter marriage with these conditions preexisting, rather than receive the diagnosis during the marriage. At the same time, people are entering marriage at older ages than in previous cohorts. Both of these trends likely contribute to more independence in physical and emotional care for chronic conditions, perhaps leading to less emotion work in general regardless of gender. Additionally, more egalitarian gender norms in cohabiting and marital relationships may also lead to fewer gender disparities in emotion work around chronic conditions. Future studies should examine this.

In sum, my analysis provides significant advances in research on gender, marriage, emotion work, and chronic illness and helps to inform the major findings from Chapter 2 of this dissertation. I demonstrate that men's emotion work is provided less consistently than women's, occurring only when their wives have chronic conditions and when men understand the marriage as balanced. Importantly, men clearly construct emotion work as distinct from their primary positions as rational and protective caregivers, wherein notions of traditional masculinity preclude men from providing emotion work even when their wives are chronically ill and request emotion work. In future research, scholars should continue to highlight circumstances that upset constructions of gender and divisions of unpaid work. As my results show, such an examination help in understanding factors that sustain and exacerbate gender inequalities within marriage while also introducing possibilities for disrupting these dynamics and introducing greater gender equality.

Table 4-1: Description of Sample

Wife's Name Husband's Name	Age at interview (years)	Number of years married	Chronic conditions	Education level	Race/ ethnicity	Household income (thousands)	Employment status
Jane	63	36	Cancer	High school	White	Did not know	Homemaker
Richard	64		High blood pressure	College	White	30-39	Retired
Kinsey	43	51	Heart disease, breast cancer	College	White	80 or more	Full time
Robert	51		Chronic knee pain	Some college	White	80 or more	Full time
Katherine	72	50	Breast cancer; heart disease	Advanced degree	White	40-59	Retired
Bill	73		Heart disease	College	White	30-39	Retired
Helen	77	36	Heart disease	College	White	25-29	Retired
Wendell	78		Cancer; heart disease	Some high school	White	15-19	Retired
Mary	60	32	Sleep apnea	Advanced degree	Black	80 or more	Full time
Harold	61		Diabetes	College	Black	60-79	Part time
Valerie	42	12	--	College	White	60-79	Homemaker
Keith	38		Migraines	Some college	white	40-59	Full time
Doris	68	36	Arthritis; cancer; heart disease	College	White	40-59	Homemaker
Malcolm	72		--	Advanced degree	White	60-79	Part time

Table 4-1: Description of Sample (continued)

Angie	34	10	High cholesterol, high triglycerides; anemia	College	White	80 or more	Full time
Brett	35		Diabetes; heart disease	College	White	80 or more	Full time
Sasha	30	11	Heart disease; ovarian cancer	Associate degree	White	80 or more	Homemaker
Joel	31		--	College	White	60-79	Full time
Judy	70	47	--	College	White	Not reported	Homemaker
Ron	72		Cancer; heart disease	College	White	10-14	Retired
Carrie	39	12	Epilepsy; chronic brain condition	Advanced degree	Asian	25-29	Full time
Bruce	41		--	Some college	White	30-39	Self employed
Barbara	78	51	Partial paralysis	High school	White	60-79	Retired
Lou	81		Prostate cancer; heart disease	High school	White	60-79	Retired
Janna	54	9	Parkinson's disease; Lyme disease	Advanced degree	White	40-59	Full time
Rick	64		Spinal injury	Advanced degree	White	40-59	Full time

Table 4-1: Description of Sample (continued)

Tonya	34	9	Asthma	Some college	Black	40-59	Self employed
Aubrey	35		--	Advanced degree	Black	40-59	Part time
Pam	60	41	Arthritis	Some college	White	30-39	Part time
Steven	67		--	Advanced degree	White	40-59	Retired
Gwen	52	8	Cancer; osteoporosis	Not reported	White	40-59	Full time
Hal	50		Cancer	Advanced degree	White	40-59	Unemployed
Nina	50	8	Asthma	Some college	Multiracial	10-14	Disabled
Lloyd	75		Heart disease; stroke	High school	White	Not reported	Unemployed
Louise	35	18	Cancer	College	White	60-79	Full time
Jake	39		Lung disease	College	White	60-79	Full time
Jean	77	40	Osteoporosis	Advanced degree	White	40-59	Retired
Howard	87		Alzheimers'; heart disease; anemia; cancer	Some college	White	10-14	Retired

Chapter 5: Conclusion

Chronic conditions are increasing in the population (Crimmins & Saito 2000; Freedman & Martin 2000), and, in part because of longer life expectancies and better medical treatment, people with chronic conditions are living longer with those conditions (Crimmins 2004). Many older adults with chronic conditions experience those conditions within marriage, with implications not only for their own well-being but also for their spouses' (Berg & Upchurch 2007). Past research finds that marriage benefits those with chronic conditions, both in terms of their physical health and mental health (Idler, Boulifard, & Contrada 2012; Zhang & Hayward 2006), but it is also the case that these benefits may come with a cost, namely psychological distress for spouses married to people with chronic conditions (Valle et al. 2013; Yorgason et al. 2006). This cost may be higher for wives than husbands, due in part to women's greater caregiving burden (Pinquart & Sorensen 2006).

Past studies have considered how having a spouse with chronic conditions increases one's own distress, but these studies tend to consider the presence or absence of chronic conditions as a dichotomous measure without regard for co-morbidity of conditions, only look at one type of condition (e.g., diabetes), and/or only focus on one spouse (see Berg & Upchurch 2007 for overview). This ignores the epidemiological realities that people often experience multiple chronic conditions at once, chronic conditions differ importantly by type in their severity and consequences, and spouses often have chronic conditions at the same time (Freid et al. 2012; Naessens et al. 2011). Further, these studies are commonly cross-sectional, use small non-representative

samples, and do not consider the gender of each spouse (see Berg & Upchurch 2007 for overview). A longitudinal analysis is imperative because chronic conditions, by their definition, unfold over time (Anderson & Horvath 2004), and cross-sectional data is not sufficient to address this. Gender is important to consider as marriage involves very gendered processes especially around illness and caregiving, distress is unequally distributed by gender with women more distressed than men, and type and severity of chronic conditions differ systematically by gender (Case & Paxson 2005; Ferree 2010; Kessler et al. 2002; Pinquart & Sorensen 2006). As an additional limitation to past studies, those that do consider the association between one's spouse's chronic conditions and the other spouse's distress rarely evaluate pathways that may help us understand these relationships. The identification of pathways and mechanisms is critical to developing interventions to strengthen physical and mental health for both the patient and the spouse during periods of chronic conditions.

To address these limitations and advance understandings of chronic conditions in marriage, I addressed four key questions in my dissertation:

1. (How) is one person's chronic conditions associated with his or her spouse's psychological distress over time?

2. (How) is this association influenced by the gender of the spouse with the conditions, number of conditions, type of condition, and if one spouse has chronic conditions compared to both spouses with chronic conditions?

3. Do functional limitations and distress levels of the chronically ill spouse help explain the association between one spouse's chronic conditions and the other

spouse's psychological distress?

4. How do men and women react to the chronic conditions of their spouses? Specifically, how is emotion work provided and justified during periods of chronic conditions within marriage, and how is this different for husbands compared to wives?

My dissertation used both quantitative and qualitative dyadic methods. Dyadic data allowed me to consider the perspectives and experiences of both spouses within a marriage. I used the quantitative methods and nationally-representative data to examine patterns using nationally representative data, and the qualitative data to analyze the in-depth daily experiences of couples with chronic conditions and the meanings they ascribed to these experiences. Both methods considered how processes and associations developed over time.

KEY FINDINGS

In summary, I found that chronic conditions of one spouse increases the psychological distress of the other spouse, though this association differs by gender, number of conditions, and type of condition. I also found that psychological distress and functional limitations of the chronically ill spouse as well as emotion work by both spouses help in understanding these gendered associations. In Chapter 2, I found that the more conditions a person has, the more distressed his or her spouse is. A husband's number of chronic conditions increases his wife's future psychological distress more so than a wife's number of chronic conditions increases her husband's. This is mitigated by the husband's own psychological distress and functional limitations and occurs whether

both partners have chronic conditions or only one does, though the gender difference is starker when both spouses have chronic conditions compared to when only one spouse does.

In Chapter 3, I found key differences in how chronic conditions impact the other spouse's distress by type of condition and gender of the spouse with the condition. Lung disease and stroke are the most negatively impactful for spouses, while arthritis, cancer, and high blood pressure are not related to spouse's distress. Though lung disease, heart disease, and diabetes impact spouse's distress similarly regardless of whether the husband or wife ha the condition, I found for stroke that a husband's stroke increases his wife's distress initially whereas the wife's stroke increases her husband's distress over time. Distress and functional limitations of the chronically ill spouse help explain these associations across types of conditions.

In Chapter 4, using a qualitative analysis of in-depth interviews, I focused on psychosocial processes within marriage during chronic conditions and found that women provide emotion work for their husbands even when they themselves are chronically ill, likely producing more distress for themselves and possibly alleviating stress for their husbands. Husbands' emotion work is provided less consistently, occurring only when their wives have chronic conditions and only when men understand the marriage as balanced. Moreover, my findings suggested that some men view emotion work as contradictory to their work as rational and protective caregivers; thus, notions of traditional masculinity preclude some men from providing emotion work even when their wives are chronically ill. These gender differences in emotion work during chronic

conditions may help explain why I found in Chapter 2 that men's chronic conditions impact their wives more negatively than women's chronic conditions impact their spouses.

FUTURE DIRECTIONS

My dissertation and its findings point to several important future directions for research on intimate relationships, chronic conditions, and spousal distress. First, researchers should consider mechanisms that explain the association between one spouse's chronic conditions and the other spouse's distress, recognizing that these mechanisms likely vary according to the gender of the chronically ill spouse, whether one or both spouses are chronically ill, and co-morbidity and type of conditions. How is it that one spouse's chronic conditions influence the other spouse's distress, and why is it that this differs across various contexts? I considered functional limitations and distress of the chronically ill spouse in my quantitative models and proposed emotion work as an important factor in my qualitative analysis. However, future research should analyze the importance of other psychosocial factors (e.g., worry, anxiety, self-efficacy), socioeconomic factors (e.g., cost of medical care, loss of job due to chronic conditions), and types of unpaid work (e.g., caregiving, housework). More exploration of mechanisms will also provide more opportunities for intervening and improving the mental and physical health of both spouses during chronic conditions. As a next step for my research, I plan on using the Wisconsin Longitudinal Survey, which includes spousal-linked data, to explore additional mechanisms.

A second future direction involves accounting for selection, a key limitation of this dissertation. This limitation is two-fold, involving mortality selection and marital selection. My sample is limited to couples who are still married in later-life, thus couples in which one spouse has died of a chronic condition and couples who have become divorced (perhaps even because of chronic conditions) are excluded. To some extent, this issue can be addressed in future research using the HRS. In future studies, I can analyze hazard models and examine whether having a chronic condition increases the risk of divorce. Future studies can also compare couples who have divorced during periods of chronic conditions to those who have not and examine differences in associations between chronic conditions and spousal distress. This analysis could also be done regarding widowhood. A younger sample of adults than available in the HRS would be needed to examine the circumstances and consequences of early widowhood and divorce due to chronic conditions.

As a third area for future research, I plan to examine additional outcomes. In this analysis, I focused on how psychological distress, measured using a short-item CES-D index, is related to a spouse's chronic conditions. Past studies indicate that women in general have higher CES-D scores than men (Kessler et al. 2002), and it may be that distress from having a spouse with chronic conditions is more reflected in women's CES-D scores than men's whereas distress for men is reflected in different outcomes, like substance use or anger (Rosenfield et al. 2005). Beyond mental health measures, there may also be gender differences when comparing how chronic conditions impact a spouse's physical health. Valle and colleagues (2013) found that while a new incident of a

chronic condition in spouses increases women's CES-D score, it does not affect men's CES-D score, but did worsen men's self-rated health. Additionally, different types of chronic conditions may impact different outcomes differently. Thus future studies should consider how chronic conditions influence spouses across an array of outcomes, including worry, anger, anxiety, substance use, physical health, and even stress-related biomarkers like cortisol and blood pressure. A recent laboratory study measured caregiving spouse's blood pressure and heart rate while the caregiver discussed the suffering of his or her spouse (Monin et al. 2010). Similar laboratory studies, especially including a longitudinal or daily diary component as discussed below, would be useful for exploring gender differences and investigating pathways which can lead to worse mental and physical health outcomes for spouses of chronically ill people.

Fourth, in this dissertation I used quantitative and qualitative methods which provided different perspectives and insights into the ways in which chronic conditions influence spouses and marriages. In my quantitative chapters, I was able to use longitudinal data, but each wave was two years apart and provided only a snapshot of each spouse's chronic conditions, distress, and functional limitations during that period. In the qualitative chapter, respondents recounted their experiences with chronic conditions, but this was done retrospectively and thus was likely biased. An important future method to better understand chronic conditions and spousal distress would be the use of daily diaries (Bolger, Davis, & Rafaeli 2003). This method allows researchers to gather a more reliable estimate of psychosocial variables like distress as well as daily fluctuations in marital dynamics like emotion work and symptoms like pain and

functional limitations. A daily diary study would complement analyses of in-depth interviews and large-scale quantitative data and provide important insight into the nuanced ways chronic conditions influence spousal distress. This would be especially helpful in identifying key pathways.

Fifth, future research should more carefully consider timing, duration, and severity of conditions. Regarding timing, chronic conditions likely influence life course processes, though this depends on the gender of the person with the chronic condition and when the chronic condition develops. For instance, chronic conditions may increase the likelihood of early retirement for adults if the chronic condition occurs before the age of 65. Early retirement may in turn contribute to more spousal distress than "on-time" retirement, perhaps more so for men than women. Considering timing also would involve examining how initiations and conclusions of treatments for chronic conditions impact spousal distress especially depending on whether or not the treatment is successful (Berg & Upchurch 2007). Regarding duration and severity, chronic conditions likely impact spousal distress more when they are longer in duration and/or worse in severity. Functional limitations served as a proxy for severity in my analysis, but future research should consider this more carefully using other measures, such as amount of pain associated with condition, number of medications required, and a physician's assessment.

And finally, in this dissertation, I considered how chronic conditions influence a spouse's distress in heterosexual marriages. The patterns, I found, especially the gender disparities, may be specific to heterosexual marriages, and thus it is important to duplicate this analysis examining other couple types, including same-sex marriages and

cohabitations and heterosexual cohabitations. Chronic conditions have been largely overlooked in these populations, in part because most research on these groups has focused on early-life and mid-life couples, not later-life couples where chronic conditions are more prevalent. Yet these more "non-traditional" couples have been increasing among those over the age of 65, and it is important to understand how these couples are impacted by chronic conditions (Lin & Brown 2012; Umberson et al. 2014). Recent calls by the National Institute of Health have asked for more consideration of aging among LGBT adults, and in the future, I plan to consider how same-sex couples in particular are affected by chronic conditions.

IMPLICATIONS

My dissertation has important implications for policy and clinical practice. I suggest that it is important to introduce and support more couple-level therapies during chronic conditions (Martire et al. 2010). This is especially critical for spouses of people with more than one condition, women whose husbands are also chronically ill, spouses of people experiencing stroke and lung disease, and spouses of people with high levels of distress and functional limitations. Care of chronic conditions should include mental health care for both spouses rather than just focusing on the physical health of one spouse. Chronic conditions have important mental health consequences, and my dissertation suggests that alleviating the distress of both partners will likely also improve the mental and physical health of both partners. Health care for people with chronic conditions should take a more coordinated approach, considering how many chronic conditions a person has, whether or not one's spouse is chronically ill, what type of

chronic condition a person has, and distress levels and functional limitations of the chronically ill spouse, incorporating this knowledge into care of both spouses. Because of the specialization of health care, chronic conditions are often treated separately, but my dissertation indicates that they should be considered holistically when designing couple-level therapies. And finally, my dissertation indicates that the association between chronic conditions and spousal distress unfolds over time; thus, any couple-level therapies should not be one-time events but should consider the long-term needs of the couple, though this varies depending on type of condition

Ultimately, my dissertation indicates that studies of chronic conditions and spousal distress should reflect the epidemiologic realities of chronic conditions in the United States. The shifting demography of the U.S.-- namely the aging of the population, increasing life expectancies, declining marriage rates, increases in the number of chronic conditions, and gender inequalities in morbidity and mortality (Case & Paxson 2005; Cherlin 2009; Crimmins & Saito 2000)-- make this especially important. Chronic conditions often co-occur within individuals, they are often experienced by both spouses at the same time, they differ importantly by type, and they impact men and women differently (Case & Paxson 2005; Pudrovska 2010; Ward & Schiller 2013). These differences in how one spouse's chronic conditions impact the other spouse's distress levels are likely reflected in broader population disparities in distress. These disparities will continue to grow as chronic conditions continue to increases, especially among certain groups (e.g., women, low socioeconomic status adults, older adults). By incorporating these demographic changes into a study of chronic conditions and spousal

distress, I highlight the ways in which multiple chronic conditions and different types of chronic conditions are related to spousal distress differently by gender. My findings underscore that chronic conditions are not a problem for individuals only but have reverberations within marriages for spouses as well and that this especially negatively impacts women.

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