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CHAPTER

9 Work and Family: Pathways to Health

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Abstract

Combining work and family is an ongoing challenge for many adults. Research attention on the health-related implications of this challenge has increased substantially over the past 20 years. Inquiries fueled by the Midlife in the United States (MIDUS) study contributed to this growth, but explanations for “why” meeting the everyday responsibilities of work and family could influence health remain underdeveloped. This chapter elucidates the dominant “pathways” by which day-to-day responsibilities in the worlds of work and family may affect adult health. After defining key concepts and establishing a brief sociohistorical context for work, family, and health research, four pathways and associated metaphors are described for linking everyday work and family life with human health. These pathways are illustrated using the corpus of MIDUS-related research; the chapter concludes with suggestions for studies that could further expand and positively impact the existing work, family, and health literature.

Keywords: [work and family](#), [MIDUS study](#), [adult health](#), [work](#), [family life](#), [human health](#)

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Introduction

The challenge of combining family responsibilities with those of full-time employment is a fundamental contemporary issue. The US Department of Labor (1999) projected that balancing work and family responsibilities would be a challenge confronting every worker in the twenty-first century. In her presidential address to the American Psychological Association, Halpern (2005) commented that policy reform was essential to sustain an increasingly female workforce. A few years later, the Whitehouse Forum on Workplace Flexibility pressed for policy changes to help working adults meet the simultaneous responsibilities at home and in the workplace. The Government Accounting Office report underlying the Whitehouse Forum on Workplace Flexibility (Office of the President, Council of Economic Advisors, 2010) contended that workplace flexibility is both a public health and a social issue. Notions of “work–family balance” are now a standard feature of political discussions around the globe, including the 2016 presidential election. These and other calls have been accompanied by growing research examining the health-related consequences of “balancing” work and family, a literature that has matured with several meta-analyses (Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Byron, 2005; McNall, Nicklin, & Masuda, 2010; Mesmer-Magnus & Viswesvaran, 2005); qualitative reviews (Grzywacz, 2016; King et al., 2012); and emerging results from randomized trials resulting from the Work, Family and Health Network funded by the National Institutes of Health (NIH).

Explanations for “why” combining work and family responsibilities may affect health, however, are noticeably absent in this rapidly growing literature. The premise underlying most research and practice is the idea that combining work and family is stressful, such that repeated exposure to stressors accompanying daily work and family life brings about poor health. This basic premise demands greater scrutiny, given that adults have had to “balance” work and family responsibilities throughout history. Activities needed to balance work and family may look different in an agrarian economy built on the family farm relative to external employment in an industrial economy and today’s global information and technological economy, but the requirements of caring for family while also ensuring a financial livelihood remain central tasks of adult life. Further, the assumption that combining work and family is “stressful” and thereby undermines health overlooks human adaptability, the health advantages employment offers (see Longley et al., this volume), and the social and psychological resources often tied to occupancy of different roles across distinct life domains (Marks, 1977; Sieber, 1974).

Understanding why, and under what circumstances, combining work and family affects health is fundamentally important. The primary scientific goal of research is to build “understanding,” which is conceived as making common phenomena intelligible, if not predictable. Such understanding is the first step to finding solutions that effectively support working families, with *effective* partially defined as minimizing health threats. Consequently, the goal of this chapter is to elucidate the processes or “pathways” by which day-to-day responsibilities in the worlds of work and family may affect adult health, a domain in which the Midlife in the United States (MIDUS) research has been instrumental.

The chapter begins with definitions of key concepts and an overview of the historical and social trends that have brought work and family into sharp contrast. Next, the chapter provides an overview of four broad pathways that link everyday work and family life with human health, followed by a detailed illustration of each pathway using empirical contributions provided by the MIDUS and other studies. We conclude with suggestions for further studies needed to expand understanding, particularly the positive impacts on the health and well-being of working adults with family responsibilities.

Basic Background

Defining the Core Concepts

Work refers primarily to paid employment, or engaging in activities for purposes of financial remuneration. Early work and family research focused almost exclusively on employment status (employed/not employed), largely from the point of view of potential concerns for children considering the rapid growth in women's labor force participation (Marshall, Chadwick, & Marshall, 1991). As research matured, work took on additional features, including its temporal structure (e.g., how many hours per week spent working, whether the work is performed outside of the normative hours of Monday–Friday from 8 to 5); specific features of the work itself (e.g., job characteristics like decision-making, time demands, production expectations); and features of the employer or organization (e.g., family-supportive benefits), including its ability to socialize workers (Perry-Jenkins, Repetti, & Crouter, 2000). In this chapter, *work* is defined as performing activities for purposes of financial remuneration, as well as the temporal, social, interpersonal, and psychological imperatives of how those activities are performed.

Similarly, *family* has a dual meaning in work and family research. *Family* refers to specific social niches like “spouse,” “parent,” or “caregiver” that are frequently tied to two or more people who are related by common ancestry or legal agreements, such as marriage, adoption, or legal unions. The work–family literature also refers to a wide variety of family-based phenomena specific to different roles (e.g., parental monitoring, supporting spouses or children); interaction patterns (e.g., parent–child conflict, marital conflict); and family or household maintenance (e.g., allocation of child care, decisions to relocate). Consequently, we borrow from previous definitions of family as “responsibilities and activities that arise from shared goals, values, and long-term commitments among two or more people who are related by common ancestry, adoption, marriage, and other legal or socially recognized unions” (Grzywacz & Butler, 2007, p. 868).

Health is conceived in a manner consistent with the classic World Health Organization definition, which is a “state of complete well-being, and not merely the absence of disease or infirmity” (WHO, 1948). The goal is to capture each domain of well-being (i.e., physical and mental) across multiple distinct dimensions, including clinical status or morbidity (e.g., presence of diabetes, clinical depression); functioning or impairment (e.g., ability to perform activities of daily living, difficulty concentrating); and health perceptions (Stewart & Ware, 1992).

Sociohistorical Context of Work and Family

Notable changes in employment participation rates for women have occurred over the past 30 years. There was a drastic and constant increase of workforce participation for women between 1950 and 2000, while the workforce participation for men has consistently decreased over the years (Figure 9.1). In addition, as compared to the fairly recent past, the majority of women with young children under the age of 6 are now employed outside the home. The increase in female and maternal employment has led to an increase in the share of households where all adults in the household are engaged in paid employment.

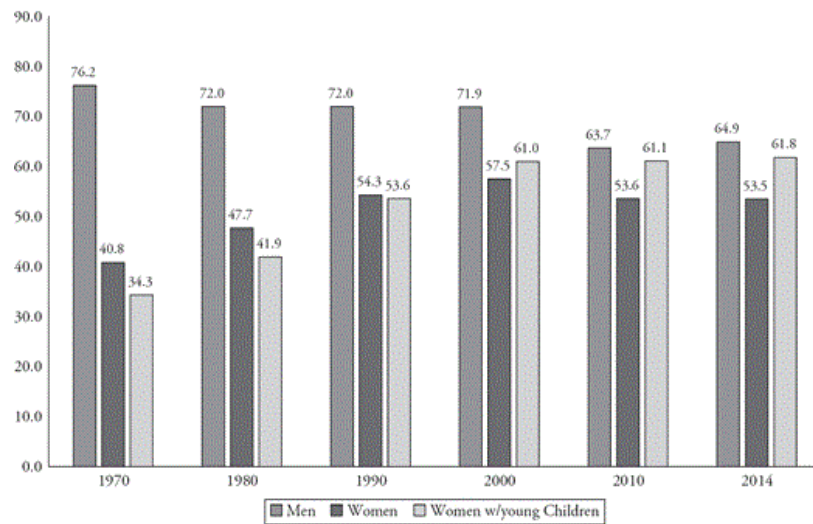


Figure 9.1 Labor force participation among men and women over time.

Rapid growth of women's, especially mothers', labor force participation shifted the fundamental mathematics of daily life in how time was spent. Cogently stated by the Alfred P. Sloan Foundation's Workplace, Workforce, and Working Families program, the dramatic increase in the number of working mothers shifted daily life from two adults performing two major "jobs" (i.e., external employment and household management), to two adults performing three major jobs (i.e., external employment for each person and household management). What has become labeled the "family workday" (Nock & Kingston, 1984), the total number of hours worked in two-parent households with children increased by 16% between 1967 and 2009, and the total number of hours worked in one-parent households with children increased by 34% (Fox, Han, Ruhm, & Waldfogel, 2012). Indeed, whereas nearly two thirds of children in 1967 reported having one full-time parent at home, less than one third of children in 2009 had a full-time parent at home.

Pathways to Health

The centerpiece of this chapter is consideration of the possible pathways by which everyday work and family life may contribute to health outcomes among working adults. Based on our earlier ideas summarizing the work, family, and employee health (Grzywacz, 2016), we propose four major pathways through which meeting the responsibilities of both work and family may contribute to health. Each pathway has a corresponding metaphor that captures the fundamental essence of the pathway, while also intimating strategies for (re)shaping the health-damaging or -enhancing potential of each pathway.

The first pathway uses a *strain* metaphor and captures the fundamental idea that the world of work has not yet realigned to the dominant pattern of dual-earner households, thereby creating structurally based demands that place strains on individuals and families. The next metaphor and corresponding pathway is *enhancement*; it captures the fundamental idea that work and family can complement each other and create synergies for success and adaptation, including improved health. Whereas the first two pathways and metaphors emphasize the extent to which the worlds of work and family are complementary, the last two metaphors and corresponding pathways capture distinct notions of how adults "do" their work and family lives. The *benign neglect* metaphor and pathway suggests that adults are able to meet their daily work and family responsibilities by eliminating or cutting back on various self-care activities, ranging from simply staying up a few extra hours to finish some task to "time-saving" meal-planning strategies or bypassing preventive exams. The benign neglect pathway essentially argues that, by cutting back on self-care, adults have more time (and possibly other resources) to meet their work and family responsibilities. In the short

term, cutting back on self-care may have few health consequences, but over time this can contribute to complex disease states. Finally, the *opportunity cost* metaphor and pathway draws attention to lost possibilities resulting from behavioral, psychological, and social trade-offs made in pursuit of a balanced work and family life. The stereotypical example of opportunity cost is the parent (typically the mother) who gives up a promising career to be a stay-at-home parent. In making a decision like this, an individual is giving up potential wages, social status, and other opportunities that can shape health outcomes in the short or long terms.

Each of the proposed pathways and associated metaphors linking everyday work and family to adult health are conceptually distinct (Figure 9.2). The proposed strain pathway is characterized by demands or perhaps mutually incompatible role expectations in the work and family domains, creating strain and a psychological, biological, and behavioral cascade that can impede health (Figure 9.2, Panel a). By contrast, the enhancement pathway is characterized by some type of synergy resulting from resource accumulation across multiple roles that initiates salutary psychological, biological, and behavioral responses that can promote health (Figure 9.2, Panel b). Both the strain and enhancement pathways are conceived as relatively continuous over time, signified by the infinity symbol embedded in the timeline, suggesting that health effects are likely accumulative. The benign neglect pathway and the opportunity cost pathway argue that work and family responsibilities are prioritized by adults over basic self-care, which can affect health (Figure 9.2, Panel c), or that strategies taken to achieve some semblance of balance in work and family result in lost potential resource gains that can affect health (Figure 9.2, Panel d). Both the benign neglect and opportunity cost pathways are conceived as discontinuous in nature, signified by the diagonal slashes through the timeline, suggesting that health effects emerge from distinct combinations of experiences that may occur at different points in time.

Strain Pathway

The essence of the strain pathway is demand, stress, and fatigue. The theoretical underpinnings of the metaphor and corresponding processes are based in role theory and the idea that occupying a role like “employee,” “supervisor,” or “mother” has associated expectations and obligations that demand and potentially deplete limited time, energy, and material resources. As roles accumulate, such as that illustrated by a working parent, limited resources will become increasingly stretched, resulting in strain (Goode, 1960). A large body of research (Grzywacz, 2016) has followed the “scarcity of resources” hypothesis and predicted that role strain that inevitably arises from combining work and family roles produces psychological and physiologic stress responses.

The strain metaphor and pathway is the backbone of the work, family, and health literature, and work-family conflict is the chief topic of study (Grzywacz, 2016). Greenhaus and Beutell (1985) formally defined work-family conflict as a form of interrole conflict wherein an individual is confronted with simultaneous demands from both the work and family domains. Work-family conflict is widely believed to be a bidirectional construct such that work responsibilities can conflict (or interfere) with family life (work-to-family conflict/work-to-family interference), and family responsibilities can conflict (or interfere) with work life (i.e., family-to-work conflict/family-to-work interference) (Frone, Yardley, & Markel, 1997). Work-to-family conflict and family-to-work conflict are presumed to be distinct, but the average correlation among these concepts is .48, suggesting approximately 23% of the variance in one is shared by the other (Mesmer-Magnus & Viswesvaran, 2005).

MIDUS evidence and beyond.

p. 117 The MIDUS study played an instrumental role in advancing understanding of the putative health effects of work–family conflict. Using data from the original MIDUS random-digit-dialing subsample, Grzywacz (2000) reported that work-to-family and family-to-work conflict were independently associated with poorer self-rated health, greater odds of reporting multiple morbidities, and greater risk for obesity. Although some of these associations were documented in previous cross-sectional and longitudinal studies of regional samples (Frone, Russell, & Cooper, 1992, 1997; Grant-Vallone & Donaldson, 2001), these were the first nationally representative findings suggesting the strain resulting from an interrole conflict, like work–family conflict, may impair adult health. Two other articles used cross-sectional data from the National Comorbidity Study (Frone, 2000) and the MIDUS study (Grzywacz & Bass, 2003) to link work-to-family and family-to-work conflict to psychiatric disorders like depression, anxiety, and substance use. These results were featured in a conference convened by the National Institute for Child Health and Development to mobilize the scientific community around the public health potential of targeting work–family conflict as it prepared the groundwork for building the Work, Family, and Health Network.

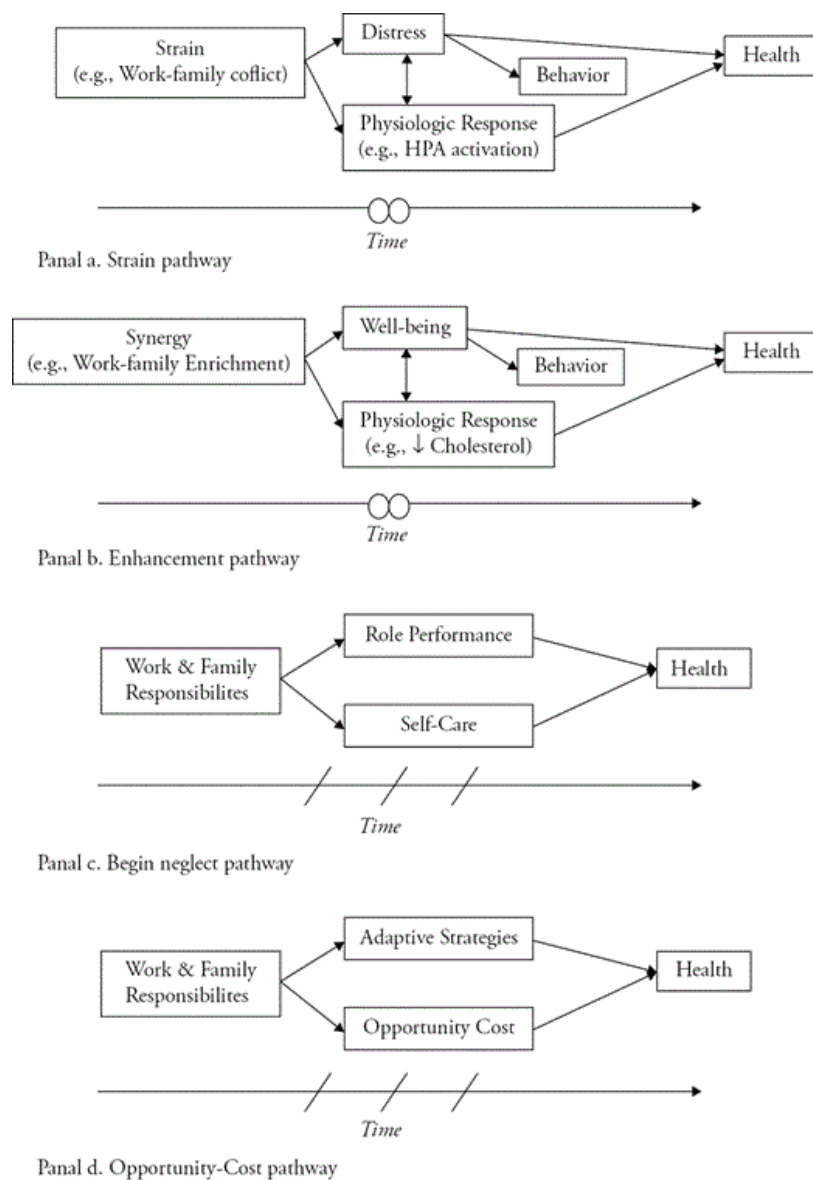


Figure 9.2 Conceptual pathways linking work and family responsibilities to adult health.

In the 15 years following these initial studies, a substantial body of research has linked work–family conflict to physical and mental health based on a strain or stress theoretical foundation. In the first meta-analysis of the health effects of work–family conflict, Mesmer-Magnus and Viswesvaran (2005) reported significant, albeit small, average correlations of both work-to-family conflict and family-to-work conflict with measures of predominantly mental health ($\rho = -.26$ and $-.27$, respectively). More recently, Amstad et al. (2011) examined a more diverse array of health outcomes and found significant negative correlations between work-to-family conflict and self-reported health, somatic symptoms, and depressive symptoms. They also reported that greater family-to-work conflict was associated with poorer self-reported health, as well as more somatic, and depressive symptoms.

Investigators have used discrete data elements from across the MIDUS projects to add specificity to studies informed by the strain pathway. Consistent with the fundamental premise that work–family conflict produces strain and subsequent stress responses, investigators used the original MIDUS and National Study of Daily Experiences (NSDE) to document a linkage between work–family conflict and daily stressor configurations reflective of work–family conflict. Work-to-family conflict and family-to-work conflict predicted subsequent stressor configurations, such as experiencing a family stressor the day following a work stressor and experiencing a work stressor the day following a family stressor (Grzywacz, Almeida, & McDonald, 2002). Recently, measures of work–family conflict from the MIDUS 2 survey were combined with daily cortisol assessments obtained as part of the NSDE II (Zilioli, Imami, & Slatcher, 2016; also see Zilioli, Slatcher, & Imami, Chapter 31, in this volume). Accounting for the shared variance between work-to-family and family-to-work conflict, Zilioli and colleagues found that greater family-to-work conflict was associated with more blunted waking cortisol and a flatter diurnal cortisol slope, both indicators of a stress-impaired hypothalamic–pituitary–adrenal (HPA) axis. These findings represent one of the first direct links of work–family conflict to a biologically based stress response in a general US population, despite the nearly 30-year-old contention that work–family conflict may impair adult health through stress-related processes. Further, Zilioli and colleagues' finding that greater family-to-work, but not work-to-family, conflict predicted evidence of cortisol dysregulation is consistent with previous longitudinal results indicating greater salience of family-to-work conflict when predicting incident hypertension (Frone, Russell, et al., 1997). The potentially elevated salience of family-to-work conflict (*vis-à-vis* work-to-family conflict) in shaping physical health is an important direction for continuing future research.

Additional studies combined data from the MIDUS and the NSDE to delineate potential health consequences of work- and family-based stressors. One study focused on nonstandard work schedules, specifically schedules that require night or weekend work, and found that these schedules resulted in greater work and family stressors (Davis et al., 2008), thereby offering insight to health disadvantages experienced by shift workers. Serido and colleagues (2004) used measures of chronic work and family stressors from the MIDUS survey, along with daily experiences of stress in the work and family domains, to understand the combined effects of both daily and chronic stressors on psychological distress. This inquiry showed clear evidence that intermittent work stressors exaggerated the mental health consequences of chronic home stressors, while intermittent family stressors exaggerated the mental health consequences of chronic work stressors, thus highlighting for the first time the independent and interactive effects of chronic and daily work and family stressors for human health.

Behaviors closely linked to health outcomes have also been studied as manifestations of work and family stressors, including work–family conflict. Results from the baseline MIDUS subsample of working adults found that a higher level of both work pressure and marital conflict were independently associated with greater odds of reporting problem drinking behavior (Grzywacz & Marks, 2000a). These results led to subsequent research focused on smoking behavior. In one study, researchers found that greater work-to-family conflict was associated with more intense smoking (i.e., more cigarettes smoked/day), and that family-to-work conflict predicted more harmful smoking behavior among women (Macy, Chassin, &

Presson, 2013). In a separate study based on cross-sectional analyses, both types of work-family conflict nearly tripled the odds of smoking, compared to experiencing no work-family conflict, with family-to-work conflict being particularly salient (Nelson, Li, Sorensen, & Berkman, 2012). Results from the MIDUS follow-up survey indicated that greater work- and family-related stressors (among others) at baseline and follow-up were associated with greater odds of continuous smoking across the 9- to 10-year observation period (Slopen et al., 2013). Collectively, these results support the strain pathway, suggesting that behavioral coping mechanisms, like alcohol use and smoking, may link work and family stressors with health outcomes.

p. 119 Comparative work across cultural contexts has also emerged. Studies of the health-related effects of work-family conflict and other strain-related work and family experiences have been conducted across the globe, on every continent, and in both developed and developing countries (Cooklin et al., 2016; du Prel & Peter, 2015; Griep et al., 2016; Jensen & Rundmo, 2015; Makola, Mashegoane, & Debusho, 2015). Results from a Korean study that used parallel measures of work-family conflict to those used in the MIDUS study found that greater family-to-work conflict was associated with poorer mental health among men, and that this association was stronger for Korean than American men (Song, Marks, & Han, 2007).

Other specialized contexts, such as caring for a disabled family member, have also been studied. Using the first two waves of MIDUS, A. Li and colleagues studied the development of depressive symptoms over time among employed disability caregivers (A. Li, Shaffer, & Bagger, 2015). They found that strain within families compounded the extent to which caregiving contributes to family-to-work conflict, although supervisor support buffered the effects of family-to-work conflict on subsequent depressive symptoms. Data from the NSDE II provided comparative data to a study of work stressors among mothers of adolescents or adults with autism or fragile X syndrome (Wong, Mailick, Greenberg, Hong, & Coe, 2014). These investigators reported that experiencing a work stress predicted subsequent spikes of awakening cortisol among mothers of individuals with developmental disabilities, but not among comparison mothers with typically developing children. Each of these studies demonstrated the strain pathway of work, family, and health via work and family stressors.

Taken together, the strain pathway is now firmly entrenched in health research. The strains associated with work-family conflict have been implicated in major indicators of morbidity such as blood pressure in prospective research (Frone, Russell, et al., 1997) and blood pressure and heart rate in daily diary data (Shockley & Allen, 2013), as well as niche fields ranging from occupational safety and health (Baur et al., 2018; Wu, Duan, Zuo, Yang, & Wen, 2016) to periodontal disease (Brennan, Spencer, & Roberts-Thomson, 2017). A recent review of the literature highlighted compelling neuroscience approaches to understanding the health effects of work-family conflict (Grzywacz & Smith, 2016), recognizing that appraisals of external threats and subsequent strain and stress are processed in the brain. Finally, there is evidence that work-family conflict is responsive to workplace interventions (Kelly et al., 2014), and that reductions in work-family conflict contribute to health enhancements through a variety of health-related behaviors or outcomes consistent with the strain pathway (Berkman et al., 2015; Buxton et al., 2016; Hurtado et al., 2016).

Enhancement Pathway

Overview.

The essence of the enhancement pathway is synergy and resource accumulation, as opposed to strain and resource depletion. The theoretical underpinnings of the metaphor and corresponding processes are from a competing interpretation of role theory (Sieber, 1974), which acknowledged that role occupancy not only carries expectations and obligations but also provides valued and health-promoting social resources. Marks (1977) expanded this thinking to point out that multiple-role occupancy can yield synergies in activities, either by identifying overlapping efficiencies in obligations across different role positions or by using resources from one role to meet the obligations of another role. These and other ideas were ultimately formalized in the expansion hypothesis (Barnett & Hyde, 2001) that a well-fitted work and family arrangement can result in improvements to health and well-being despite experiences of stress.

MIDUS evidence and beyond.

An analysis of baseline survey data from MIDUS showed that positive experiences at the interface of work and family were distinct from experiences of work-family conflict, and further that positive experiences were also bidirectional, such that family experiences could benefit work and work experiences could benefit family (Grzywacz & Marks, 2000b). These findings have been highly cited. Along the way, the positive experiences at the work-family interface have been studied under different conceptual labels, including “positive spillover” (Grzywacz, 2000); “work-family facilitation” (Grzywacz & Bass, 2003); and “work-family enrichment” (Grzywacz, Butler, & Almeida, 2008). Work-to-family enrichment and family-to-work enrichment are the terms viewed as most appropriate in this summary of findings.

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Work-family enrichment was originally studied as a resource for health. Specifically, greater work-to-family and family-to-work enrichment were independently associated with better self-rated physical health, self-rated mental health, and eudaimonic well-being, while greater family-to-work enrichment was associated with lower odds of reporting multiple comorbid conditions and high levels of negative affect (Grzywacz, 2000). Subsequent research reported consistent links between work-family enrichment and risk for psychiatric disorder, but the nature of these links depended on the outcome (Grzywacz & Bass, 2003). Specifically, in the case of major depressive disorder and problem drinking, both work-to-family and family-to-work enrichment appeared to operate as protective factors. By contrast, in the case of anxiety disorder, work-to-family and family-to-work enrichment served primarily as a buffer against the deleterious effects of work-family conflict. Further consideration of “softer” outcomes like self-rated mental health and life satisfaction indicated that work-family enrichment serves both a protective and a buffering role in working adults well-being (Gareis, Barnett, Ertel, & Berkman, 2009). Other research extended these findings by indicating that work-family enrichment seems to enable better cholesterol profiles, perhaps through weight management, as indicated by assessments of body mass index (BMI; van Steenbergen & Ellemers, 2009).

Work-family enrichment may contribute to better physical and mental health through additional health-promoting resources, a possibility considered by two MIDUS studies. Greater work-to-family enrichment was associated with more regular vigorous physical activity (Grzywacz & Marks, 2001), with such results partially explaining differences in vigorous physical activity between white and minority women. The second study, based on MIDUS 2 data (Russo, 2015), concluded that work-family enrichment’s health-protective effects were mediated by differences in psychological resources, specifically by reducing vulnerability to stress and by supporting persistence in goal striving.

Relatively few studies have used the diverse array of data from across the MIDUS enterprise to consider the enhancement pathway of work, family, and health. One study combined data from the baseline survey and

later-collected diary data to show that individuals classified as having a balanced work and family arrangement (high levels of work–family enrichment and low levels of work–family conflict) reported fewer physical symptoms and less psychological distress 1 year later (Grzywacz et al., 2008). In addition, the association of stressor exposure with self-reported mental and physical health symptoms was modified by work–family balance such that those in an “unbalanced” work and family arrangements (high levels of work–family conflict and low levels of work–family enrichment) appeared to be more reactive to (or had elevated adverse reaction to) stressors.

A second study considered changes in self-rated health, number of reported chronic conditions, and BMI between MIDUS 1 and MIDUS 2 (Lee et al., 2015). Lee and colleagues found that greater increases in work-to-family enrichment were associated with greater improvements in self-rated physical health, but only under conditions of frequent moderate-intensity leisure time physical activity. They also reported that greater increases in family-to-work enrichment were associated with greater decreases in the number of chronic conditions under conditions of more frequent moderate-intensity leisure time physical activity. Collectively, these longitudinal findings strengthen the cross-sectional results focused on mental health in suggesting that work–family enrichment is a protective factor for better health, perhaps because it enables health-enhancing psychological resources and because it is supported in generating health by physical activity.

Benign Neglect Pathway

Overview.

The imperatives of daily work and family life shape behavior patterns that ultimately influence health (Grzywacz, 2016). Building on the idea that individuals and families create strategies for meeting their work and family responsibilities (Moen & Wethington, 1992), working adults may prioritize their work- and family-related responsibilities over basic elements of self-care or health self-management. Because the challenges of combining work and family encompass most of early and middle adulthood (Grzywacz et al., 2002), neglecting self-care relative to other responsibilities over multiple years can result in poorer health outcomes.

MIDUS evidence and beyond.

Most findings reflecting the benign neglect pathway come from studies outside the MIDUS enterprise. A first direct observation from Backett (1992) documented that middle-class parents held strong beliefs that basic health self-management and lifestyle activities like physical activity and monitoring diet were less important than meeting responsibilities in work and family life. Similar themes of work and family taking priority over personal care emerged from midlife women expressing limited interest and concern over osteoporosis prevention (Backett-Milburn, Parry, & Mauthner, 2000).

p. 121 Most of the evidence for the benign neglect pathway is indirect. Results obtained from American Time Use Survey data indicated that employed mothers spent comparable amounts of time with their children than nonemployed mothers, but employed mothers spent less time sleeping (Bianchi, 2000), thus highlighting the possibility that working mothers may prioritize time and activities with children over self-care. Interestingly, Bianchi's analysis yielded different results from the first NSDE indicating that employed mothers spent less time with their children than nonemployed mothers (Almeida & McDonald, 2005). Perhaps the detailed time reporting in the American Time Use Survey relative to time estimates used in the end-of-day diaries for the NSDE explains the conflicting results. Several researchers have documented declines in regular physical activity across early adulthood (Frech, 2014; Kern et al., 2010; Kwan et al., 2012; Nomaguchi & Bianchi, 2004). Recognizing that early adulthood is the period in the life course when many

adults are launching careers and creating a family and time is in limited supply, declines in physical activity may reflect greater priority given to work and family over personal self-care.

Opportunity Cost Pathway

The essence of the opportunity cost pathway is that decisions implemented by an individual or family to achieve some semblance of work–family balance may involve a cost in the form of a potential lost gain. The opportunity cost pathway differs from the benign neglect pathway in that it features major life decisions (as opposed to more mundane, frequently invisible microdecisions) like delaying marriage or childbearing to pursue a career or couples “taking turns” in building their career. Decisions like these fundamentally change the trajectory the lives of individuals and families in both the short and long term. Given that the challenge of combining work and family transcends much of adult life (Grzywacz et al., 2002), opportunity costs resulting from different strategies to achieve work–family balance can occur at multiple points in family development or career progression, leading to potentially unique health pathways, and they can accumulate over time.

MIDUS evidence and beyond.

Findings from the MIDUS baseline study showed that work and family trade-offs may affect well-being and long-term career development in ways that vary by one’s age cohort (Carr, 2002). Specifically, making work adjustments for purposes of family was associated with poor employment opportunities for women from the baby boom cohort and men from the baby bust cohort. Further analyses indicated that the implications of work and family trade-offs for well-being differed for women and men and across different birth cohorts. Women born between 1931 and 1944 had highest self-acceptance if they stopped work for family, whereas those who made no trade-off had the poorest self-acceptance. By contrast, self-acceptance was highest among baby boom (born between 1944 and 1959) and baby bust (born between 1960 and 1970) women. For men, self-acceptance was higher for men in the older two cohorts for those who did not make a work and family trade-off, whereas for men in the baby bust cohort, self-acceptance was higher for those who made a work and family trade-off. Although this study did not focus on health per se, the results suggest that opportunity costs in terms of potentially lost employment opportunities (and associated income) or behavior to socially and culturally constructed meanings of appropriate behavior may affect health over time.

Substantial research outside the MIDUS enterprise points to potential opportunity costs around nutrition, diet, and eating. Food acquisition strategies and the types of food used for family meals reflect the challenges working parents had combining work and family (Devine et al., 2006). When work and family do not fit well together, there is greater reliance on takeout or preprepared foods, which are often of lower nutritional quality, or meals may even be skipped or “done on the run” (Devine et al., 2009). Many of these “adaptive” strategies appear to compromise short-term well-being because parents express dissatisfaction in how food and family meals seem to crumble in chaos of daily work and family life (Blake et al., 2009). Working mothers appear to rely on prepackaged and potentially unhealthy foods for their infants as a way of “making time” (Grzywacz, Tucker, Clinch, & Arcury, 2010), and other results suggest that working adults may emphasize how quickly they can feed their children over the nutritional quality of the foods provided (Jabs et al., 2007). If they persist over time, reliance on prepackaged or other subquality commercially prepared foods for meals has the potential to undermine long-term health through increases in BMI and obesity (Altman et al., 2015; Bhutani, Schoeller, Walsh, & McWilliams, 2018).

Other hidden opportunity costs may result from basic work and family trade-offs. Decisions to delay childbearing, one strategy to achieve balance in work and family, have been linked with modest risk elevation for diabetes and hypertension (Alonzo, 2002), although delayed childbearing has also been

linked to fewer depressive symptoms (Mirowsky & Ross, 2002) and lower mortality risk (Grundy & Tomassini, 2005). The well-described gender wage gap that is frequently attributed to greater continuity of employment for men than women because of childbearing and childrearing (Magnusson, 2010) has been linked to mortality (Kawachi, Kennedy, Gupta, & Prothrow-Stith, 1999) and more discrete individual health outcomes like mood disorders (Platt, Prins, Bates, & Keyes, 2016) and domestic violence (Aizer, 2010). Thus, decisions surrounding the timing and number of children may create downstream health consequences through lost earnings and potentially compromised economic autonomy. Decisions to “tag team,” such that one parent works the day shift while the other works the night shift, can compromise the quality of the marital relationship (Hattery, 2001), which has several implications for health (Carr & Mouzon, Chapter 10, this volume; Choi, Yorgason, & Johnson, 2016; Donoho, Seeman, Sloan, & Crimmins, 2015). Although only a few were covered here, many decisions made about balancing work and family, whether it is accepting or declining a new job opportunity, marriage and divorce, parenting, or formal caregiving for an aging parent may have opportunity costs that matter for health.

Summary

We suggest there are four primary pathways that link everyday work and family life to adult health. Each of these pathways and associated metaphors are conceptually distinct, but that does not rule out the possibility for multiple pathways to work simultaneously, perhaps in integrated fashion (e.g., cutting back on sleep may make individuals more vulnerable to job- or family-related strain). As highlighted in the review, the first two pathways (i.e., the strain and enhancement pathways) are comparatively well researched, whereas the benign neglect and opportunity cost pathways are relatively new and have been subjected to less research. Just as the “social determinants” of health were revolutionary in part because they made visible the previously “invisible” sociostructural forces that affected health (often through individual behavior); likewise, the benign neglect and opportunity cost pathways have the potential to make visible previously invisible forces that produced poor health outcomes by requiring individuals to adapt to outdated conceptions of work and family. Time will ultimately discern the scientific and practical utility of the benign neglect and opportunity cost pathways, but we maintain they offer substantial promise.

High-Priority Future Research on Work, Family, and Health

The pathways linking experiences at the interface of work and family to health outcomes remain underdeveloped because the literature has focused primarily on stress and strain. Although stress undoubtedly plays a role, enhancement, benign neglect, and opportunity costs provide plausible competing explanations that require empirical consideration. It is time to move beyond the strain pathway, even though MIDUS affords numerous possibilities via its rich longitudinal, diary, and biological data to study potential disease processes.

A first reason to move beyond the stress-and-strain pathway is that it has become the driving worldview in work, family, and health research. Although strain and its psychobiological milieu are undoubtedly involved in health, other models are important to consider for capturing other pathways. Indeed, early conceptual discussions explicitly encouraged work and family researchers to *avoid* the trap of using theories of stress and strain to understand a well-fitting or “balanced” work and family life (Frone, 2003). Frone conceded that work-family conflict and other stressors involved in combining work and family are salient, but he cogently emphasized that stress theories are incapable of capturing the myriad benefits that accompany individuals’ active engagement in their work and family lives.

Second, the relative dearth of evidence linking experiences of work-family conflict (and other explicit measures of strain specific to combining work and family) to biological manifestations of stress raises

questions about the viability of the strain pathway. More research is needed that links experience of work- and family-related stressors with biological outcomes. The relatively myopic focus on work-family conflict potentially stands in the way of scientific discoveries that may fundamentally alter everyday work and family life and its health implications. Indeed, work-family researchers have lamented the voluminous research relative to creation of clear evidence-based solutions to help working families (Kossek, Baltes, & Matthews, 2011). Deeper forays into the other possible explanations for how successful management of work and family responsibilities may shape adult health using the MIDUS study undoubtedly will bring new insight into potential workplace and policy solutions for protecting and promoting human health.

The MIDUS study offers at least two strategies for advancing research on the enhancement pathway. The first strategy is to use a wider array of the survey data available in MIDUS to create alternative ways of thinking about work-family enhancement. Researchers could use survey-reported assessments of satisfaction with job, marriage, and the parent-child relationship along with survey-reported assessments of effort put into job, marriage, and parent-child relationships to identify individuals with meaningful jobs, marriages, and parent-child relations (i.e., high satisfaction and high effort in all three life domains). Once identified, these individuals could be differentiated from those with meaningful jobs, marriages, or parent-child relationships (i.e., high satisfaction and high effort in only one life domain) or those with high satisfaction and effort in two, but not three, domains. The operationalization of cross-domain life success could then be placed against self-reported measures of health and vitality at one cross section or over time, and changes in cross-domain life success could be linked to health change. Each of these analyses would advance understanding of whether synergies across life domains produce resources useful to health.

A second strategy for advancing research on the enhancement pathway is to broaden the outcomes to which enhancement might be linked. Researchers could replicate van Steenbergen and Ellemers's (2009) results obtained from a nonrepresentative sample suggesting that work-family enrichment predicts healthier changes in cholesterol and BMI. Here, researchers could use survey assessments of work-family enrichment from either MIDUS 2 or MIDUS 3 and associated biological data collected 12-14 months later. Work-family enrichment as well as self-reported cholesterol, height, and weight can be operationalized from the survey data and matched with cholesterol and assessed height and weight obtained at the laboratory visit, thereby allowing direct replication. Similarly, data from MIDUS 1, 2, and 3 can be matched with the corresponding waves of the NSDE to determine if work-family enrichment predicts healthier lifestyle habits, specifically hours of sleep/night and physical activity.

Further, researchers could exploit a broader array of objective health assessments across the MIDUS enterprise. Cross-sectional (Gareis et al., 2009; Grzywacz & Bass, 2003) and longitudinal (Grzywacz et al., 2008; Lee et al., 2015) evidence suggests that work-family enrichment may buffer or enhance the health effects of other social and behavioral experiences in daily life. To the extent that individuals are actively engaged in locating or creating synergies between work and family, this goal striving has the potential to create cognitive reserve and protect against age-related declines in executive functioning and memory that are assessed in the MIDUS Cognition data. Further, cognitive reserve may manifest in alternative neural processing of stressful stimuli, which can be evaluated through data in the neurologic project of the MIDUS enterprise. Similarly, researchers could determine if work-family enrichment buffers the effects of chronic work- or family-related stressors such as job insecurity or poor marital quality on indicators of inflammatory or metabolic dysfunction or allostatic load.

An alternative way to consider both the enhancement and the strain hypothesis is to exploit the sibling and twin data to isolate the health-related consequences of work-family conflict and enrichment using strategies informed by behavioral genetics. As highlighted in another chapter (Longley et al., Chapter 8, this volume), evidence from the MIDUS indicated the two thirds (65%) of the variability in workers' reports of job control were attributed to genetic influence, and the majority (80%) of the association of job control with self-rated physical health was attributed to genetics (W.-D. Li, Zhang, Song, & Arvey, 2016). W.-D. Li

and colleagues surmised that such strong genetic effects may reflect both genetic influences on how individuals appraise their work environment (and possibly genetic self-selection into occupations and jobs) and genetic influences on health. If appraisals of work–family conflict and work–family enrichment have similarly high levels of variance attributed to common genetics, the accumulated body of evidence linking work–family experiences to health outcomes will require reconsideration because the role of potential genetic effects has been overlooked in this literature. Future research could modify the basic behavioral genetics model underlying W.-D. Li and colleagues' approach to disaggregate variability in experiences of work–family conflict and work–family enrichment attributed to genetics vis-à-vis unshared environmental influences and to decompose the genetic and unshared environmental sources of variability in correlations between work–family experiences with health outcomes. Likewise, behavioral genetics models like those used by Hamdi and colleagues (Hamdi, South, & Krueger, 2016) to evaluate socioeconomic differences in allostatic load using MIDUS twins' data could be used to explore environmental correlates like experiences of work–family conflict or enrichment as potential mediators of health differences among twins. Each of these models allows work, family, and health researchers to consider the role of both gene (nature) and environmental (nurture) contributions of work–family experiences in health outcomes.

One strength of the MIDUS Refresher data is that it can be used with MIDUS 1 to begin differentiating period and cohort effects. As suggested by Carr's (2002) cross-sectional analysis of MIDUS 1 data, the social and psychological meaning of "work" and "family" has undoubtedly shifted over time. Research disentangling the complex effects of developmental, historical, and generational time on work and family experiences is sorely needed. In the wake of the Great Recession and in light of the fact that over 85% of studies of the work–family interface are based on cross-sectional data (Casper, Eby, Bordeaux, Lockwood, & Lambert, 2007), it is time for work, family, and health researchers to give attention to age, period, and cohort effects acting on work–family experiences and their putative health effects. MIDUS 1, 2, and 3 data can now be exploited to differentiate how aging and age-related experiences in the work (e.g., job/career cumulative experience) and family (e.g., childbirth, launching adult children) shape work–family experiences and whether variation in work–family experiences over time explain age-related changes in health outcomes. Further, because MIDUS 2 and 3 bracket the Great Recession, researchers can differentiate age-related from period effects

Exploitation of the longitudinal and Refresher cohort data offers a unique opportunity to advance understanding of how opportunity costs contribute to health outcomes. The longitudinal data can be used to expand Carr's (2002) cross-sectional analysis to determine if work–family trade-offs at one point in time predict changes in health outcomes across time. If Carr's results replicate across time, researchers could then begin to explore more specific hypotheses reflecting distinct opportunity costs following from specific trade-offs. For example, if similarly aged individuals who reported stopping work for purposes of family in MIDUS 1 have a different health profile in MIDUS 3 than those who did not stop work, researchers could determine if observed differences are mediated by specific opportunity costs such as lost wages, variation in purpose in life, or strength of social ties (among others). Similarly, the MIDUS Refresher data could be used to determine if Carr's observations of cohort variation in the effects of work and family trade-offs differ under periods of economic affluence (such as those observed in MIDUS 1) relative to periods of economic hardship (such as those observed in the MIDUS Refresher collected during the Great Recession).

Conclusion

The work, family, and health literature has matured substantially over the last two to three decades, and MIDUS has played a meaningful role in that maturation. Nevertheless, more research is needed, particularly research focused on understanding “why” combining work and family responsibilities may affect adult health. Answers to the why question are the key ingredient to promoting successful midlife development and aging. Although there are at least four plausible answers to the why question, we urge researchers to exploit the rich MIDUS data to devote concentrated attention to the enhancement pathway, and we offer several suggestions for doing so. We also encourage researchers to study the benign neglect and opportunity costs pathways using the siblings and twin data as well as emerging data from the MIDUS Refresher cohort. Although much has been accomplished, the scientific insights that will yield the greatest practical benefit for protecting and promoting the health of working adults are still forthcoming. Undoubtedly some of those insights await discovery in the MIDUS study.

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