

## Health behavior among men with multiple family roles: The moderating effects of perceived partner relationship quality

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### **Abstract:**

Men in the United States are increasingly involved in their children's lives and currently represent 40% of informal caregivers to dependent relatives or friends aged 18 years and older. Yet much more is known about the health effects of varying family role occupancies for women relative to men. The present research sought to fill this empirical gap by first comparing the health behavior (sleep duration, cigarette smoking, alcohol consumption, exercise, fast food consumption) of men who only occupy partner roles and partnered men who also fill father, informal caregiver, or both father and informal caregiver (i.e., sandwiched) roles. The moderating effects of perceived partner relationship quality, conceptualized here as partner support and strain, on direct family role–health behavior linkages were also examined. A secondary analysis of survey data from 366 cohabiting and married men in the Work, Family and Health Study indicated that men's multiple family role occupancies were generally not associated with health behavior. With men continuing to take on more family responsibilities, as well as the serious health consequences of unhealthy behavior, the implications of these null effects are encouraging - additional family roles can be integrated into cohabiting and married men's role repertoires with minimal health behavior risks. Moderation analysis revealed, however, that men's perceived partner relationship quality constituted a significant factor in determining whether multiple family role occupancies had positive or negative consequences for sleep duration, alcohol consumption, and fast food consumption. These findings are discussed in terms of their empirical and practical implications for partnered men and their families.

**Keywords:** fathers | caregiving men | sandwiched men | health behavior | partner support and strain

### **Article:**

Life expectancy, major disease morbidity, and mortality trends significantly differ between men and women in the United States (Pinkhasov et al., 2010). Compared to women, men live shorter

lives, suffer from more severe chronic diseases, and have higher death rates for 12 of the 15 leading causes of death (Pinkhasov et al., 2010). In studying these gender disparities, researchers have identified high-risk or unhealthy behavior (e.g., heavy alcohol consumption) as one of the most salient factors contributing to men's negative health outcomes (Pinkhasov et al., 2010). Consequently, several predictors of or influences on men's health behavior have been examined, such as masculinity ideology (Courtenay, 2000), marriage (Allen, Griffith, & Gaines, 2013), perceived normative health behavior (Mahalik, Burns, & Syzdek, 2007), receipt of health information (Griffith, Ellis, & Allen, 2012), and peer influence (Griffith, King, & Allen, 2013).

One potential predictor of men's health behavior that has received scant empirical attention is family role occupancy. There are currently 70.1 million fathers nationwide, 24.7 million of whom are part of married-couple families raising children younger than 18 (U.S. Census Bureau, 2014). Over the past four decades, paternal presence and involvement in all family configurations have increased (Garfield, 2015). Men's presence as informal caregivers, in which unpaid assistance is provided to those who are unable to care for themselves, has also risen steadily. Men now fill 40% of caregiving roles for dependent relatives or friends aged 18 years and older (National Alliance for Caregiving & AARP, 2015). The interplay of several social and demographic patterns, including delayed family formation, extended life expectancy, women's increased workforce participation, decreased fertility rates, and rising health care costs, has also sandwiched men between their children's and parents' needs (Hammer & Neal, 2008). A recent study using pooled data from the American Time Use Survey 2003-2012 reported that men aged 18 to 24 who engaged in any interactive (e.g., physical care) or supervisory (i.e., responsible for looking after children) child care and interactive adult care devoted 6.5 mean daily hours to these activities; those ages 25 to 44, 8.2 hours; 45 to 64, 6.7 hours; and 65 and older, 4.9 hours (Suh, 2016). However, men are still absent from most research on family role occupancy and its implications for various health behaviors.

The present study addressed this empirical gap with a secondary analysis of survey data from men in the Work, Family and Health Study (WFHS). All men were in cohabiting or marital relationships with women and therefore occupied partner roles. The majority of these partnered men held additional family roles, specifically *father* (for a dependent child), *informal caregiver* (for adult relatives other than spouses), and both father and caregiver (i.e., *sandwiched*). Fathers, caregivers, and sandwiched men *occupied multiple family roles* in contrast to *partners-only*. These family role occupancies were used to achieve two objectives. First, the health behavior (sleep duration, cigarette smoking, alcohol consumption, exercise, and fast food consumption) of partners-only and multiple family role occupants was compared. Second, the extent to which perceived partner relationship quality (PPRQ), a contextual factor common to all men in the WFHS, moderated family role–health behavior associations was examined.

### **Empirical Background on the Health Behavior Implications of Men's Family Roles**

In the parenthood literature, the effects of the parent role on children's developmental outcomes have far outweighed any focus on parental outcomes (Settersten & Cancel-Tirado, 2010). Of the few studies that have examined such effects, the mother role has been emphasized more than the father role (Settersten & Cancel-Tirado, 2010). Likewise, men are seldom mentioned in adult

caregiving literature published in the past 30 years (Russell, 2007). When included in studies, men traditionally serve as a contrast for women's caregiving experiences instead of being studied as the primary unit of examination. Relatively few studies have assessed how caregiving role occupancy affects caregivers' health behavior, regardless of caregiver gender. Psychological well-being outcomes, such as depression and stress, are the most frequently studied consequences of caregiving (Schulz & Sherwood, 2008).

Understandably, then, studies on the health behavior of men with varying family roles, compared to men without such roles, are limited. Within this fledgling literature, the majority of studies have focused on fathers' health behavior. This research has produced inconclusive evidence, however. Some studies based on young adult men suggest, for example, that fathers spend less time engaged in physical activity each week than childfree men (Hull et al., 2010). Other studies indicate that total weekly hours of physical activity does not differ by parental status (Berge, Larson, Bauer, & Neumark-Sztainer, 2011) or that parental status does not affect the likelihood of meeting a 30-minute threshold for time spent in sports, nonteam sports, active transportation, or overall physical activity (Zick, Smith, Brown, Fan, & Kowaleski-Jones, 2007).

Caregiving researchers have theorized that adult care obligations limit opportunities (e.g., lack of time) for healthy behavior while promoting reliance on unhealthy behavior (e.g., stress-related cigarette smoking), ultimately leading to poor health outcomes (Connell & Gallant, 2001). Given that health habits signify a potential pathway to adverse health effects linked to the caregiving role, the empirical oversight of caregivers' health behavior is all the more surprising. To the authors' knowledge, only Trivedi et al. (2014) have examined caregiving men's health behavior relative to male controls. Drawing on nationally representative survey data, the authors used propensity score matching to identify sociodemographically similar caregiving and noncaregiving men and compare their sleep outcomes. Relative to noncaregiving men, men informally caring for friends or family members with health problems, long-term illnesses, or disabilities were 19% less likely to get adequate sleep and 18% more likely to unintentionally fall asleep during the day for 1 or more days in the past month. Nevertheless, the Trivedi et al. study did not consider men's multiple family role occupancy as a predictor of health behavior.

Collectively, mixed evidence regarding fathers' health behavior as well as the paucity of studies on caregiving and sandwiched men's health behavior precludes strong conclusions about the family role–health behavior relationship. By exploring the health behavior of partnered men who occupy multiple family roles in relation to men who are partners-only, the present study serves as an essential first step toward understanding whether father, caregiver, and sandwiched roles are generally linked to poorer or better health behavior for cohabiting and married men.

### **Theoretical Perspectives on the Consequences of Multiple Role Occupancy**

Extant research on the consequences of multiple role occupancy has generally been informed by role scarcity and expansion hypotheses (Nordenmark, 2004; Stephens, Franks, Martire, Norton, & Atienza, 2009). These hypotheses provide competing rationales regarding how multiple family role occupancy may affect men's health behavior such that the role scarcity hypothesis predicts detrimental effects whereas the role expansion hypothesis predicts null or beneficial effects. In the role scarcity hypothesis (Goode, 1960), multiple roles compete for individuals' finite sum of

role resources such as time, energy, emotions, and goods; resource expenditure for participation in one role therefore limits resources for other activities, including health behavior. Because every role requires resource expenditure, total role demands proliferate as individuals expand their role sets. If total role demands exceed total resource availability, multiple family role occupancy becomes an unmanageable, stressful endeavor and role strain (i.e., difficulty addressing role demands), overload (i.e., time constraints), and/or conflict (i.e., competing role demands) occurs. Based on the role scarcity hypothesis, then, men with multiple family roles may engage in unhealthy behavior relative to partners-only because they are more vulnerable to excessive role demands and subsequent resource depletion (e.g., less or no time for exercise).

Conversely, role expansion enthusiasts argue that multiple role occupancy generates rewarding experiences and resources that outweigh or buffer experiences of strain (Marks, 1977; Sieber, 1974). Multiple family roles can therefore be occupied without resource loss or even lead to resource accumulation. Resource accumulation, in turn, facilitates positive outcomes. In applying these assumptions to the present study, partners-only and men with multiple family roles may engage in similar health behavior because men can perform their family roles without any resource loss that would hinder health behavior engagement (e.g., loss of energy for exercise). For example, sandwiched men may derive rewards from their father role (e.g., satisfaction) that compensate for resource deficits (e.g., cognitive energy used managing parents' finances) or buffer negative experiences (e.g., stress) in their caregiver role, thereby preserving health behavior. Alternatively, men with multiple family roles may engage in healthier behavior than partners-only because they accumulate resources from their additional roles that facilitate such behavior (e.g., enhanced self-efficacy from caregiving leads to more frequent exercise).

Therefore, the first objective of this study is to deductively test whether the role scarcity or expansion hypothesis is generally applicable to family role–health behavior linkages with the following research question:

Are the family roles that men occupy in addition to the partner role (father, caregiver, or both) generally detrimental (in accordance with the role scarcity hypothesis) or beneficial (in accordance with the role expansion hypothesis) for their health behavior?

### **Perceived Partner Relationship Quality as a Moderator**

Role scarcity and expansion hypotheses predict the detrimental and beneficial impacts of multiple family role occupancy, respectively, based solely on role quantity (Stephens et al., 2009). Whether multiple family role occupancy affects men's health behavior in a manner consistent with the role scarcity or expansion hypothesis may depend, however, on contextual factors. Family role occupancy does not occur in a vacuum; rather, it is embedded in influential personal and social relationships (Thompson, 2002). Such social ties have a "double-edged nature" in that they can be sources of either support or strain, both of which are key mechanisms whereby relationships affect health behavior (Umberson, Crosnoe, & Reczek, 2010, p. 143). To illustrate, social support may provide men with resources (e.g., tangible support) that buffer or facilitate effects hypothesized in role scarcity and expansion perspectives, respectively, thereby protecting or improving health behavior. In contrast, partner strain may cost resources (e.g.,

emotional energy) that exacerbate or impede the effects predicted in role scarcity and expansion hypotheses, respectively, ultimately resulting in poorer health behavior.

In this study, all men lived with partners or spouses (referred to as partners hereafter) and were embedded within the context of couple relationships. Although cohabitation and marriage are linked to better health and lower mortality risk compared to being single (Drefahl, 2012), having a partner does not guarantee health benefits. Instead, the quality of partner relationships is a more salient indicator of its protective health effects because of the positive and negative aspects of partner ties (Kiecolt-Glaser & Newton, 2001; Robles, Slatcher, Trombello, & McGinn, 2014; Umberson et al., 2010; Walen & Lachman, 2000). The quality of the partner relationship may also be particularly critical for men given that they, on average, have smaller, less diverse social networks from which to receive instrumental and emotional support than women (Walen & Lachman, 2000) and underuse formal supports and services (e.g., Bayley, Wallace, & Choudhry, 2009; Isacco, Hofscher, & Molloy, 2015). The second study objective, then, is to examine whether *perceived partner relationship quality* (PPRQ), conceptualized here as *partner support* and *strain*, conditions direct family role–health behavior linkages. Consistent with calls to disaggregate positive and negative PPRQ processes, partner support and strain were treated as distinct moderators to account for different mechanisms through which partner relationships can affect health behavior (Bookwala, 2005; Kiecolt-Glaser & Newton, 2001; Robles et al., 2014; Umberson et al., 2010; Walen & Lachman, 2000).

To the authors' knowledge, researchers have not yet investigated whether PPRQ conditions family role–health behavior associations among men, though some research has demonstrated the importance of PPRQ for fathers' and caregiving men's health and well-being. In a study on fathers with preschool-aged children, for instance, men who perceived more partner support for their father role reported more enjoyment in this role (Bouchard & Lee, 2000). Fathers have also identified partner support as a facilitator of more frequent physical activity (Hamilton & White, 2010). Additionally, in a recent study by Kang and Marks (2014), men caring for their parents reported poorer self-rated health, greater functional limitations, more physical symptoms, and increased chronic health conditions in the context of high partner strain. Conversely, low partner strain mitigated these physical health risks. Health behavior, however, may have constituted an unexplored mechanism by which partner strain increased caregiving men's physical health risks in their study. Therefore, in the absence of prior research, this study explores the potential moderating effects of PPRQ with a second research question:

Does men's PPRQ condition family role–health behavior associations?

## **Method**

This study draws on survey data from the WFHS, an investigation of long-term care employees' work, family life, and health outcomes. Details regarding employee recruitment and eligibility have been described elsewhere (see Bray et al., 2013). If employees had lived with a partner or spouse (referred to as partner henceforth) for at least 1 year, their partner was eligible to participate in a substudy of the WFHS. Partners were recruited through contact information provided by employees and recruitment communication given to employees for distribution to partners. Trained field interviewers then conducted telephone interviews with partners about

their health behavior and family relationships using computer-assisted technology. Interviews, conducted in either English or Spanish, averaged 32 minutes, and participants received \$20 compensation. The WFHS was approved by several internal review boards.

Of the 904 eligible partners of long-term care employees, 404 (45%) partners agreed to participate in the substudy. Thirty women were excluded from this subsample to maintain a focus on partnered men. Four homosexual men were also excluded because this group was too small for meaningful statistical comparisons between men in same-sex and heterosexual relationships. Men in the employee sample were not added to the partner subsample in order to hold heterogeneity in women's work conditions constant; these men may not have been partners to women employed in long-term care. These criteria resulted in a sample of 370 men cohabiting with or married to women long-term care employees. Overall sample characteristics for men are provided in Table 1, and suggest that the average man in this study was middle-aged, White, and of lower socioeconomic status.

**Table 1.** Sample Characteristics by Men's Family Role Occupancy.

Characteristic	Overall, <i>n</i> = 370	Partners-only, <i>n</i> = 201 (28%)	Fathers, <i>n</i> = 140 (38%)	Caregivers, <i>n</i> = 57 (16%)	Sandwiched, <i>n</i> = 67 (18%)
Age, years, <i>M</i> ( <i>SD</i> )	42 (13.14)	46 (16.11)	39 (9.04)***	45 (15.84)	38 (9.79)***
White	.74	.87	.71*	.79	.57***
Bachelor's degree or higher	.16	.20	.17	.09	.12
Personal gross yearly income, \$					
≤19,999	.24	.21	.24	.30	.25
20,000–39,999	.39	.39	.36	.42	.40
40,000–54,999	.19	.17	.21	.18	.18
≥55,000	.18	.23	.19	.11	.17
Employed	.76	.70	.81	.72	.79
No. of hours worked per week	43 (10.17)	45 (10.72)	42 (10.79)	41 (8.20)	42 (9.32)
Married (vs. cohabiting)	.67	.65	.71	.65	.61
Partner relationship duration, years	12 (11.38)	14 (13.71)	10 (7.56)**	15 (15.08)	9 (8.37) <sup>†</sup>
No. of hours partner works	37 (7.51)	38 (7.58)	36 (6.76)	37 (6.09)	37 (9.56)
Disabled dependent children	.13	—	.23	—	.22
Nonresidential children	.38	.56	.20***	.61	.24***

*Note.* Means (and standard deviations) or proportions are reported. Analyses of variance with post hoc tests were conducted to compare the background characteristics of partners-only and men occupying multiple family roles. Four men were excluded from family role occupancy assignment to the partners-only group because they had a disabled, residential child older than 18. Personal gross income is based on quartiles from the sample distribution. Mean replacement was used for missing personal gross income data (*n* = 25).

<sup>†</sup>*p* ≤ .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

## Measures

### *Family Roles*

Using self-reported information, mutually exclusive family role occupancies were constructed in accordance with prior research (DePasquale et al., 2015; 2016). *Fathers* lived with at least one child aged 18 or younger for 4 or more days per week. *Caregivers* informally helped an adult relative with shopping, medical care, or financial/budget planning for at least 3 hours per week in the past 6 months regardless of residential proximity. *Sandwiched* men fulfilled both father and

caregiver role criteria. The remaining men were *partners-only*; four of these men had disabled, residential children older than 18 and were excluded, reducing the analytic sample to 366 men.

Overall, 72% of men occupied multiple family roles. Thirty-eight percent were fathers ( $n = 140$ ), 16%, caregivers ( $n = 57$ ); and 18%, sandwiched men ( $n = 67$ ). On average, fathers and sandwiched men had 2.04 and 1.82 dependent children aged 7.51 and 7.33 living with them, respectively. Although caregiving men's relation to care recipients was unspecified, they likely cared for parents or other adult relatives (e.g., siblings) for two reasons. First, men's partners were healthy enough for employment; therefore, women were nondependent and did not require spousal care. Second, qualitative data obtained from WFHS participants suggests that families were frequently involved in caring for parents or parents-in-law (DePasquale et al., 2016).

### *Health Behavior*

Men provided information about five health behaviors linked to long-term health outcomes and all-cause mortality risk (Ford, Bergmann, Boeing, Li, & Capewell, 2012; Mallon, Broman, & Hetta, 2005; Mokdad, Marks, Stroup, & Gerberding 2004). *Sleep duration* referred to the number of hours slept per day in the past 4 weeks ( $M = 6.08$ ,  $SD = 1.30$ ). *Cigarette smoking* ( $M = 32.49$ ,  $SD = 60.71$ ) and *alcohol consumption* ( $M = 4.32$ ,  $SD = 9.01$ ) were based on the number of tobacco cigarettes smoked and alcoholic drinks consumed in the past week, respectively. *Exercise* was measured by the number of times men broke a sweat exercising for at least 20 minutes in the past 4 weeks ( $M = 10.04$ ,  $SD = 10.40$ ). *Fast food consumption* pertained to the number of times meals from fast-food restaurants were consumed in the past 4 weeks and was measured on an ordinal scale ranging from 0 = *never* to 6 = *two or more times per day* (modal response: "1 to 3 times over the past four weeks").

### *Perceived Partner Relationship Quality*

PPRQ was examined with an adapted measure from Schuster, Kessler, and Aseltine (1990) that included partner support (e.g., partner appreciates you) and strain (e.g., partner criticizes you) subscales. These subscales each comprised five items pertaining to the past month. Responses ranged from *not at all* (1) to *a lot* (4). Items for each subscale were summed to create partner support and strain scores, with higher values translating to more support and strain. Mean scores were 18.24 ( $SD = 2.50$ ,  $\alpha = .76$ ) and 9.75 ( $SD = 3.51$ ,  $\alpha = .81$ ) for partner support and strain, respectively.

### *Covariates*

Factors known to influence or theorized to impact men's health behavior guided covariate selection. Potential covariates included age, race, educational attainment, gross personal income, employment status, number of hours worked per week, and marital status (e.g., Carpenter & Miller, 2002; Fuller-Jonap & Haley, 1995; Kang & Marks, 2014). To account for factors that may affect men's multiple family role management or PPRQ, partner relationship duration, number of hours partners worked per week, the presence of dependent children at home with health problems or developmental disabilities, and whether men had children that did not regularly reside with them (i.e., nonresidential children) were also considered.

## Analytic Plan

Standard analysis of variance methods were first used to compare partners-only and multiple family role occupants on potential covariates. Any variables on which these groups differed were included in subsequent analyses. Health behavior data were also descriptively compared against national health behavior norms. Statistical models were then selected based on the type and distribution of dependent variables. Sleep duration was normally distributed and therefore modeled using ordinary least squares. Fast food consumption was an ordinal variable and consequently modeled with ordered logistic regression; odds ratio (OR) estimates were reported for these models to demonstrate the probability of fast food consumption. The remaining dependent variables had nonnormal distributions (i.e., skewed and clustered at zero) and resembled nonnegative integer count outcomes. Count outcomes were analyzed with negative binomial regressions to account for overdispersion and excess zero responses. Each negative binomial regression model yielded an overdispersion parameter (or alpha) with a 95% confidence interval (CI) that did not include zero, thereby confirming the appropriateness of this statistical procedure; incident rate ratios (IRRs) were reported for these models.

Multivariate models were estimated in two distinct model specifications per health behavior outcome. Specification 1 pertained to the first research question, or direct family role–health behavior associations, and included binary indicators for each family role (with partners-only constituting the reference group), a PPRQ measure (support or strain), covariates (denoted by a  $\beta_5$  placeholder in the event of multiple covariates), and a random error term:

$$\begin{aligned} \text{Health behavior}_i &= \beta_0 + \beta_1(\text{Father}) + \beta_2(\text{Caregiver}) + \beta_3(\text{Sandwiched}) + \beta_4(\text{PPRQ measure}) \\ &+ \beta_5(\text{Covariates}) + e \end{aligned}$$

Specification 2 addressed the second research question with a moderation analysis in which each family role was interacted with a PPRQ measure. Partner support and strain interactions were added to models separately following the appropriate main effects model (e.g., family role \* partner support interactions were only in models with a partner support main effect):

$$\begin{aligned} \text{Health behavior}_i &= \beta_0 + \beta_1(\text{Father}) + \beta_2(\text{Caregiver}) + \beta_3(\text{Sandwiched}) + \beta_4(\text{PPRQ measure}) \\ &+ \beta_5(\text{Covariates}) + \beta_6(\text{Father} * \text{PPRQ measure}) + \beta_7(\text{Caregiver} \\ &* \text{PPRQ measure}) + \beta_8(\text{Sandwiched} * \text{PPRQ measure}) + e \end{aligned}$$

In Specification 2, a joint hypothesis test of  $\beta_6$ ,  $\beta_7$ , and  $\beta_8$  was used to assess the overall difference in PPRQ slopes between partners-only and partners with additional family roles. Next, point estimates for the slope of the PPRQ line were computed for each family role using a linear combination of the parameters estimated in Specification 2. These estimates provided additional insight regarding the moderating effects of PPRQ on partnered men's health behavior.

## Results



## Descriptive Analyses

Men's background characteristics are displayed by family role occupancy in Table 1. Compared to the partners-only group, the father and sandwiched groups were significantly younger, were more racially diverse, and included a lower proportion of nonresidential children, on average; by default, these groups also had a higher proportion of disabled children. Furthermore, the father group reported shorter average partner relationship duration. Therefore, age, race, partner relationship duration, child disability, and nonresidential children were designated as covariates. Partner relationship duration and nonresidential children were not predictive of any health behaviors during subsequent model testing, however, and thus removed in favor of parsimony. Child disability was only a marginally significant predictor but retained to account for potential health behavior effects specific to the likely higher care needs of disabled children.

In comparing the health behavior of partnered men in the WFHS to national health behavior norms, the average male partner engaged in fairly healthy behavior. Men's average sleep duration ( $M = 6.08$ ,  $SD = 1.30$ ) fell on the low end of the "possibly acceptable" range of 6 to 10 hours (Hirshkowitz et al., 2015). Their prevalence of cigarette smoking (34%) and inactivity (28%, no exercise in the past month) was high relative to other men (19%) and all adults (25%) in national surveys, respectively (Centers for Disease Control and Prevention [CDC], 2014, 2015b). However, average alcohol consumption in the WFHS ( $M = 4.32$ ,  $SD = 9.01$ ) was well below established criterion for heavy drinking (i.e., 15 or more drinks per week; CDC, 2015a), and WFHS men consumed less fast food per week than other men (WFHS: 41%, Gallup: 53%; Dugan, 2013). Health behavior averages by family role occupancy were consistent with all comparisons with one exception. Specifically, fathers' average sleep duration ( $M = 5.85$ ,  $SD = 1.34$ ) fell below the previously mentioned range of 6 to 10 hours.

## Primary Analyses

### *Specification 1: Direct Associations*

One main effect for family role–health behavior associations emerged in Model 1, such that fathers reported shorter sleep duration relative to partners-only (support model:  $B = -.41$ ,  $SE = .18$ ,  $p < .05$ ; strain model:  $B = -.46$ ,  $SE = .18$ ,  $p < .05$ ). With regard to covariates, a 1-year increase in age was associated with shorter sleep duration (support model:  $B = -.01$ ,  $SE = .01$ ,  $p < .05$ ; strain model:  $B = -.01$ ,  $SE = .01$ ,  $p < .05$ ) and a lower likelihood of fast food consumption (support model:  $OR = 0.97$ , 95% CI [0.95, 0.98],  $p < .001$ ; strain model:  $OR = 0.97$ , 95% CI [0.96, 0.99],  $p < .001$ ). Additionally, White men reported longer sleep duration (support model:  $B = .49$ ,  $SE = .16$ ,  $p < .01$ ; strain model:  $B = .46$ ,  $SE = .16$ ,  $p < .01$ ) and higher alcohol consumption rates than non-White men (support model:  $IRR = 1.71$ , 95% CI [1.05, 2.80],  $p < .05$ ; strain model:  $IRR = 1.81$ , 95% CI [1.10, 2.97],  $p < .05$ ). Given the mostly null direct family role–health behavior associations, and in the interest of brevity, all significant findings from Specification 1 testing are reported here; the remaining results are not tabled.

### *Specification 2: Moderation Analyses*

Results from Specification 2 are reported in Table 2. Joint hypothesis tests revealed that partner support moderated family role–alcohol ( $\chi^2 = 7.89, p < .01$ ) and –fast food consumption ( $\chi^2 = 10.40, p < .05$ ) associations. Additionally, partner strain conditioned relationships between family role occupancy and sleep duration ( $F = 2.88, p < .05$ ), alcohol consumption ( $\chi^2 = 14.88, p < .01$ ), and fast food consumption ( $\chi^2 = 8.32, p < .05$ ). These tests provided no evidence that PPRQ moderated family role–smoking and –exercise associations or that partner support conditioned family role–sleep duration associations. Follow-up point estimate calculations revealed several significant nonzero effects of PPRQ. When partner support scores were above average, fathers and sandwiched men reported longer sleep duration, sandwiched men had higher alcohol consumption rates, and partners-only were less likely to consume fast food. When partner strain scores were above average, sandwiched men reported shorter sleep duration and caregiving men had higher alcohol consumption rates. Partners-only, fathers, and sandwiched men with higher than average partner strain scores also exercised less often, and partners-only and fathers were more likely to consume fast food.

**Table 2.** Point Estimates for the Moderated Effects of Partner Relationship Quality on Men’s Family Role Occupancies.

Family roles within PPRQ contexts	Sleep duration, B [95% CI]	Cigarette smoking, IRR [95% CI]	Alcohol consumption, IRR [95% CI] <sup>a</sup>	Exercise, IRR [95% CI]	Fast food consumption, OR [95% CI] <sup>a</sup>
Partner support					
Partners-only	0.05 [–0.08, 0.18]	0.92 [0.66, 1.29]	1.07 [0.83, 1.38]	1.07 [0.90, 1.27]	0.67 [0.55, 0.80] <sup>***</sup>
Fathers	0.08 [0.001, 0.16] <sup>*</sup>	0.98 [0.72, 1.33]	0.91 [0.79, 1.05]	1.02 [0.93, 1.12]	0.95 [0.84, 1.06]
Caregivers	0.004 [–0.16, 0.17]	1.44 [0.78, 2.68]	0.86 [0.69, 1.07]	0.94 [0.78, 1.14]	0.87 [0.68, 1.10]
Sandwiched	0.14 [0.04, 0.24] <sup>**</sup>	0.76 [0.55, 1.05] <sup>†</sup>	1.20 [1.02, 1.42] <sup>*</sup>	1.08 [0.96, 1.22]	0.92 [0.80, 1.05]
Partner strain					
Partners-only	–0.01 [–0.09, 0.07]	1.01 [0.80, 1.28]	1.03 [0.88, 1.21]	0.96 [0.94, 0.98] <sup>***</sup>	1.30 [1.16, 1.46] <sup>***</sup>
Fathers	–0.02 [–0.08, 0.04]	1.00 [0.84, 1.19]	1.01 [0.92, 1.11]	0.97 [0.96, .99] <sup>**</sup>	1.11 [1.02, 1.21] <sup>*</sup>
Caregivers	0.07 [–0.03, 0.18]	1.08 [0.82, 1.41]	1.32 [1.14, 1.53] <sup>***</sup>	0.98 [0.96, 1.01]	1.13 [0.98, 1.32] <sup>†</sup>
Sandwiched	–0.12 [–.019, –0.04] <sup>**</sup>	1.03 [0.83, 1.28]	0.90 [0.78, 1.04]	0.97 [0.95, 0.99] <sup>**</sup>	1.03 [0.92, 1.15]

Note. PPRQ = perceived partner relationship quality. All models adjust for age, race, and child disability. Unstandardized coefficients are reported for ordinary least squares, incident rate ratios (IRRs) for negative binomial regression, and odds ratios (ORs) for ordered logistic regression with 95% lower and upper confidence intervals (CIs). All continuous variables were mean-centered.

<sup>a</sup> Partner support was a significant moderator in joint hypothesis testing for Specification 2 ( $p < .05$ ). b Partner strain was a significant moderator in joint hypothesis testing for Specification 2 ( $p < .05$ ).

<sup>†</sup> $p \leq .10$ . <sup>\*</sup> $p < .05$ . <sup>\*\*</sup> $p < .01$ . <sup>\*\*\*</sup> $p < .001$ .

## Discussion

The first objective of this study was to identify whether men’s multiple family role occupancy was generally associated with poorer (consistent with the role scarcity hypothesis; Goode, 1960) or better (consistent with the role expansion hypothesis; Marks, 1977; Sieber, 1974) health behavior compared to partners-only. With the exception of fathers reporting less sleep than partners-only, direct family role–health behavior associations were not detected. These results suggest that partnered men can integrate additional family roles into their role repertoire with minimal health behavior risks relative to partners-only, a conclusion consistent with the role expansion hypothesis. According to the role expansion hypothesis, multiple roles can be performed without resource loss. That is, resources accumulated from more diverse family role

sets (e.g., mastery) may buffer or outweigh the negative effects of multiple family role occupancy hypothesized in the role scarcity hypothesis (e.g., strain). For example, personal resources gained from the father role, such as a greater sense of purpose or meaning in life, desire to be a role model, motivation to fulfill role expectations, and incentive to remain healthy to provide for children, may negate aspects of the role (e.g., stress) that hinder healthy behavior (Eggebeen, Knoester, & McDaniel, 2012; Settersten & Cancel-Tirado, 2010). Relatedly, prior research indicates that fatherhood strengthens men's intergenerational relationships (Eggebeen et al., 2012). Fathers in this study may have acquired contextual resources from their own parents, such as instrumental and emotional support, that neutralized resource deficits with potentially adverse effects for health behavior.

Caregiving men may have also possessed or acquired resources that protected their health behavior by counteracting resource loss. One way in which caregiving men may conserve resources is through their caregiving style. Evidence suggests that men are inclined to adopt managerial caregiving styles that blend workplace characteristics such as rational, task-oriented problem-solving; technical, planning, and evaluation skills; proactivity and innovativeness; leadership; authority; autonomy; control; and self-efficacy with nurturing, affective care provision (Russell, 2007; Thompson, 2002). This approach allows men to psychologically compartmentalize their social roles, which prevents mental anguish or caregiver burnout, reduces role conflict, enhances resilience and adaptability, and helps sustain personal interests outside of caregiving with less guilt or difficulty (Thompson, 2002). If men did in fact emulate a managerial caregiving style, results from this study suggest that its protective effects extend to health behavior. Additionally, the null caregiving role–health behavior associations reported here complement null caregiving role–physical health associations among men in the Kang and Marks (2014) investigation. With men increasingly occupying family roles, as well as the serious health consequences of unhealthy behavior, the implications of null associations are encouraging—family role occupancy per se may not improve men's health behavior but it does not compromise it either.

The second study objective was to explore the moderating effects of PPRQ. Results suggest that PPRQ constituted a significant factor in determining whether multiple family role occupancy affected men's health behavior. In other words, positive and negative aspects of men's PPRQ may be influential factors in conditioning family role–health behavior linkages. These findings also complement evidence from the Kang and Marks (2014) study, in which caregiving men's physical health risks were exacerbated and mitigated in the context of high and low partner strain, respectively. The remainder of this section elaborates on the moderating effects and accompanying point estimates of PPRQ from the present study, by health behavior.

### Sleep Duration

Results indicated that sandwiched men with higher than average partner strain slept less. In the face of higher partner strain, sandwiched men may simply have more care responsibilities and less personal resources. Given that care recipients may reside with men, it is also possible that these responsibilities entail subjugating personal sleep needs or sleep time preferences for infants' sleep and feeding schedules or adolescents' academic and extracurricular demands. Relatedly, sandwiched men with higher than average partner strain may ruminate or worry at

night about their partner relationship (e.g., mull over a recent conflict), care responsibilities (e.g., anticipating care tasks without help from their partner), and/or care recipients (e.g., thinking about the safety of children who stay out late at night). Rumination or worry, in turn, could interfere with sleep initiation and maintenance or create difficulty down-regulating vigilance and, consequently, lead to sleep loss (Troxel, Robles, Hall, & Buysse, 2007).

### Alcohol Consumption

Moderation analyses also revealed that sandwiched men consumed more alcohol when their partner support scores were above average. Although counterintuitive, this finding may reflect partners' empathy. Because men's partners worked in long-term care, sandwiched men and their partners were both involved in care for older adults—men in their personal lives and women on the job—and likely shared parenting responsibilities. If supportive partners view sandwiched men's alcohol consumption as coping behavior, they may not attempt to control or change this behavior. Seen through this lens, these findings are not unexpected. Still, additional research is warranted to evaluate whether this finding is an artifact of the present study or can indeed be replicated.

Furthermore, caregiving men with higher than average partner strain had greater alcohol consumption rates. One potential explanation for this finding is that partner strain exacerbates hardships or demands experienced in the caregiving role because the partner relationship yields little resources or does not provide a needed buffer. Similarly, men who expend many resources in the caregiver role may be ill-equipped to manage a partner role characterized by high strain. Such a partner relationship may require emotional energy, for example, when such resources have been depleted in the caregiving role. Men who are content with the caregiving role but experience strain in the partner role, as well as men who perceive strain in both their caregiver and partner roles, likely experience poorer well-being or quality of life relative to men occupying two satisfactory or rewarding roles. As a result, these caregiving men may engage in less self-care or in riskier behavior, such as alcohol consumption. Alternatively, caregiving men with higher levels of partner strain may invest more resources in their friendships, such as time, which could conceivably entail more frequent social drinking at a bar, restaurant, or other venue.

### Fast Food Consumption

Partners-only with above-average partner support scores were less likely to consume fast food, while partners-only and fathers with above-average partner strain scores were more likely to consume fast food. These partners-only effects complement those in prior work in which men with greater partner support and strain engage in healthy and unhealthy behavior, respectively (Kiecolt-Glaser & Newton, 2001). The effect for fathers is newer to the literature. Food consumption is time-centric, meaning that Americans consume fast food to save time (Hamrick & Okrent, 2014). Purchasing fast food may constitute a time-saving strategy for fathers who perceive family role-related time constraints and do not have supportive partners that offset their family role demands. Time may also signify a particularly salient barrier to family meals in this study given that women's work roles are characterized by high demands, long hours, shift work, and work-family conflict (Yildirim & Aycan, 2008). Women's work roles, then, could create

relationship strains that increase family responsibilities for men, such as providing family meals, especially if men are concurrently managing their own work demands.

### Limitations and Strengths

Several study limitations warrant mention. First, this study was cross-sectional. Longitudinal inquiries into the dynamic qualities of the constructs examined here would further extend the literature. Second, the WFHS subsample is not representative of all partnered men. Men were partners to women long-term care employees and lived in the New England region of the United States, thereby restricting generalizability. Replication efforts with more representative samples are encouraged. Third, the WFHS health behavior measures served as brief screens for health behavior frequency. These measures were also based on self-reports, which may not accurately reflect behavioral patterns. It would be useful to include more detailed, objective measures (e.g., actigraphy-based sleep measures) in future research. Finally, the present research is based on a secondary analysis of data not specifically designed to study family care. Therefore, similar to prior research (DePasquale et al., 2015, 2016), this study lacked ideal data regarding men's care demands or activities and information about their care recipients. Researchers should build on the family role occupancy approach used here by constructing roles based on the intensity of role demands. Focusing only on men with extensive care demands (e.g., dementia care), for instance, may lead to different conclusions about caregiving men's health behavior.

Still, the present study contributes new, timely knowledge to the literature on men with multiple family roles. Unlike the majority of past research, this study did not adopt a gender-comparative approach. Rather, an entirely male sample was drawn on to compare the health behavior of partnered men with and without multiple family roles. Using men as a reference group, rather than women, enables the assessment of within-group variables and may provide a more accurate context for understanding the potential health implications of multiple family role occupancy for men (Carpenter & Miller, 2002). Additional study strengths include homogeneity in women's work conditions, the sample's average midlife age, lower socioeconomic status, and diverse family role experiences. Prior research has typically focused on men who are from either end of the life span, have middle to high socioeconomic status, parent children within a narrow age range, and/or care for cognitively impaired spouses (e.g., Berge et al., 2011; Fuller-Jonap & Haley, 1995; Hull et al., 2010; Robinson, Bottorff, Pesut, Oliffe, & Tomlinson, 2014; Russell, 2007; Zick et al., 2007).

### Future Research

It is hoped that other researchers will expand on the research presented here. Men's partnerships with long-term care employees may have facilitated their access to health care resources (e.g., timely appointments) or information (e.g., self-care tips) that they may not have obtained or accessed otherwise so that differences between men with and without multiple family roles were minimized. Accordingly, researchers should replicate this study with men whose partners work in different industries. This approach would enable a comparison of how men's health behavior varies when their partners hold certain work roles within certain industries. Moreover, it was beyond the scope of this study to examine fathers' perceptions of their family roles. Men may be likely to evaluate partner and child relationships similarly, such that husbands who report low

marital quality spend less time with their children and feel detached from the father role (Blairr, Wenk, & Hardesty, 1994). Measures that disentangle interconnections between fathers' partner and parent-child relationships will enhance understanding of how multiple family role occupancy affects health behavior. Similarly, this study did not examine how caregiving men's partner relationship relates to their care recipient relationship; measures that assess perceptions of these different relationships would be informative with respect to family role-health behavior associations. Future research would also do well to consider qualitative methodology. This particular method would enable exploration of men's perceived barriers to and facilitators of health behavior as well as the meaning of health behaviors (e.g., alcohol consumption as a coping mechanism) in the context of partner support and strain. Studies examining the moderating effects of other contextual resources, such as perceived support and strain in the work environment, are also needed.

### Practical Implications

Study findings underscore the need for health practitioners to emphasize adequate sleep duration among men, particularly partnered fathers. Average sleep durations for partners-only, caregivers, and sandwiched men fell on the lower endpoint of the "possibly acceptable" range (Hirshkowitz et al., 2015) whereas fathers were below this range. Short sleep duration among healthy men is concerning given its link to adverse health effects like the onset of diabetes (Mallon et al., 2005). Furthermore, adults who obtain 6 or fewer hours of sleep are more likely to drive drowsy, which could lead to injurious or fatal crashes (Maia, Grandner, Findley, & Gurubhagavatula, 2013), an alarming notion for men and the dependents they transport. Similarly, health practitioners should encourage physical activity and smoking cessation, when appropriate. Physically active adults generally live longer and have a lower risk for heart disease, stroke, type 2 diabetes, depression, some cancers, and obesity (CDC, 2014); tobacco use is also the leading cause of preventable disease and death in the United States (CDC, 2015b). The health benefits derived from increased exercise and decreased cigarette smoking could, in turn, facilitate partnered men's multiple role functioning (e.g., improved mental health or mood from exercise).

Furthermore, there needs to be greater recognition of PPRQ as a pathway to health behavior in initiatives intended to counsel men in and provide support for their family roles. Because men underuse health services as well as formal supports and are difficult to recruit into voluntary programs (e.g., Bayley et al., 2009; Isacco et al., 2015), efforts that specifically target men or rely on their volitional participation will likely be unsuccessful. A focus on PPRQ, though, presents an opportunity for engaging men through couple-based initiatives. Couple-based efforts are advantageous in that they enable simultaneous targeting of men's partners and emphasize couple-based processes, interactions, and behavior (Snyder, Heyman, & Haynes, 2005) as opposed to targeting only men and their individual behavior. For example, prior research has demonstrated the utility of couple-based communication skills training interventions (e.g., teaching couples constructive, supportive, and mutually respectful communication patterns that increase their self-efficacy to engage in healthy behavior) for fathers who smoke (Khaddouma et al., 2015; Pollak et al., 2015). The benefits of couple-based counseling initiatives could also extend beyond men and their partners by reducing child and adult care recipients' exposure to negative family interactions and unhealthy behavior.

## Conclusion

Study findings suggest that PPRQ, rather than multiple family role occupancy per se, may be a critical factor in determining whether familial roles affect men's health behavior, thereby highlighting the importance of contextual factors when pursuing this important line of inquiry. Given men's increasingly complex family role sets but continued empirical oversight, there is an obvious need for additional research on the long-term implications of PPRQ for the health behavior of men occupying additional family roles.

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## References

- Allen, J. O., Griffith, D. M., Gaines, H. C. (2013). "She looks out for the meals, period": African American men's perceptions of how their wives influence their eating behavior and dietary health. *Health Psychology, 32*, 447-455. doi:10.1037/a0028361
- Bayley, J., Wallace, L. M., Choudhry, K. (2009). Fathers and parenting programmes: Barriers and best practice. *Community Practitioner, 82*, 28-31.
- Berge, J. M., Larson, N., Bauer, K. W., Neumark-Sztainer, D. (2011). Are parents of young children practicing healthy nutrition and physical activity behaviors? *Pediatrics, 127*, 881-887. doi:10.1542/peds.2010-3218d
- Blairr, S. L., Wenk, D., Hardesty, C. (1994). Marital quality and parental involvement: Interconnections of men's spousal and parental roles. *Journal of Men's Studies, 2*, 221-237. doi:10.3149/jms.0203.221

- Bookwala, J. (2005). The role of marital quality in physical health during the mature years. *Journal of Aging and Health*, 17, 85-104. doi:10.1177/0898264304272794
- Bouchard, G., Lee, C. M. (2000). The marital context for father involvement with their preschool children: The role of partner support. *Journal of Prevention & Intervention in the Community*, 20, 37-53. doi:10.1300/J005v20n01\_04
- Bray, J. W., Kelly, E. L., Hammer, L. B., Almeida, D. M., Dearing, J. W., King, R. B., Buxton, O. M. (2013). An integrative, multilevel, and transdisciplinary research approach to challenges of work, family, and health (Methods Report No. MR-0024-1303). Research Triangle, NC: RTI International. doi:10.3768/rtipress.2013.mr.0024.1303
- Carpenter, E. H., Miller, B. H. (2002). Psychosocial challenges and rewards experienced by caregiving men: A review of the literature and an empirical case example. In Kramer, B. J., Thompson, E. H. (Eds.), *Men as caregivers* (pp. 99-126). New York, NY: Springer.
- Centers for Disease Control and Prevention . (2014). State Indicator Report on Physical Activity, 2014. Retrieved from [http://www.cdc.gov/physicalactivity/downloads/pa\\_state\\_indicator\\_report\\_2014.pdf](http://www.cdc.gov/physicalactivity/downloads/pa_state_indicator_report_2014.pdf)
- Centers for Disease Control and Prevention . (2015a). Alcohol and public health: Fact sheets—Alcohol use and your health. Retrieved from <http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>
- Centers for Disease Control and Prevention . (2015b). Current cigarette smoking among adults—United States, 2005–2014. *Morbidity and Mortality Weekly Report*, 64, 1233-1240.
- Connell, C. M., Gallant, M. P. (2001). Caregiver health behavior: Review, analysis, and recommendations for research. *Activities, Adaptation & Aging*, 24, 1-16. doi:10.1300/J016v24n02\_01
- Courtenay, W. H . (2000). Constructions of masculinity and their influence on men's well-being: A theory of gender and health. *Social Science & Medicine*, 50, 1385-1401. doi:10.1016/S0277-9536(99)00390-1
- DePasquale, N., Davis, K. D., Zarit, S. H., Moen, P., Hammer, L. B., Almeida, D. M. (2016). Combining formal and informal caregiving roles: The psychosocial stressors of double- and triple-duty caregiving. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 71, 201-211. doi:10.1093/geronb/gbu139
- DePasquale, N., Polenick, C. A., Davis, K. D., Moen, P., Hammer, L. B., Almeida, D. M. (2015). The psychosocial implications of managing work and family caregiving roles: Gender differences among information technology professionals. *Journal of Family Issues*. Advance online publication. doi:10.1177/0192513X15584680
- Drefahl, S. (2012). Do the married really live longer? The role of cohabitation and socioeconomic status. *Journal of Marriage and Family*, 74, 462-475. doi:10.1111/j.1741-3737.2012.00968.x
- Dugan, A. (2013). Fast food still major part of U.S. diet. Retrieved from <http://www.gallup.com/poll/163868/fast-food-major-part-diet.aspx>



- Eggebeen, D. J., Knoester, C., McDaniel, B. (2012). The implications of fatherhood for men. In Cabrera, N., Tamis-LeMonda, C.S. (Eds.), *Handbook of father involvement: Multidisciplinary perspectives* (pp.338-57). Mahwah, NJ: Lawrence Erlbaum. doi:10.4324/9780203101414.ch19
- Ford, E. S., Bergmann, M. M., Boeing, H., Li, C., Capewell, S. (2012). Healthy lifestyle behaviors and all-cause mortality among adults in the United States. *Preventive Medicine*, 55, 23-27. doi:10.1016/j.ypmed.2012.04.016
- Fuller-Jonap, F., Haley, W. E. (1995). Mental and physical health of male caregivers of a spouse with Alzheimer's disease. *Journal of Aging and Health*, 7, 99-118. doi:10.1177/089826439500700105
- Garfield, C. F. (2015). Supporting fatherhood before and after it happens. *Pediatrics*, 135, e528-e530. doi:10.1542/peds.2014-3747
- Goode, W. J. (1960). A theory of role strain. *American Sociological Review*, 25, 483-496. doi:10.2307/2092933
- Griffith, D. M., Ellis, K. R., Allen, J. O. (2012). How does health information influence African American men's health behavior? *American Journal of Men's Health*, 6, 156-163. doi:10.1177/1557988311426910
- Griffith, D. M., King, A., Allen, J. O. (2013). Male peer influence on African American men's motivation for physical activity: Men's and women's perspectives. *American Journal of Men's Health*, 7, 169-178. doi:10.1177/1557988312465887
- Hamilton, K., White, K. M. (2010). Parental physical activity: Exploring the role of social support. *American Journal of Health Behavior*, 34, 573-584. doi:10.5993/AJHB.34.5.7
- Hammer, L. B., Neal, M. B. (2008). Working sandwiched-generation caregivers: Prevalence, characteristics, and outcomes. *The Psychologist-Manager Journal*, 11, 93-112. doi:10.1080/10887150801967324
- Hamrick, K. S., Okrent, A. M. (2014). The role of time in fast-food purchasing behavior in the United States (USDA-ERS Economic Research Report No. 178). Washington, DC: U.S. Department of Agriculture. doi:10.2139/ssrn.2677707
- Hirshkowitz, M., Whiton, K., Albert, S. M., Alessi, C., Bruni, O., DonCarlos, L., . . . Hillard, P. J. A. (2015). National Sleep Foundation's sleep time duration recommendations: Methodology and results summary. *Sleep Health*, 1, 40-43. doi:10.1016/j.sleh.2014.12.010
- Hull, E. E., Rofey, D. L., Robertson, R. J., Nagle, E. F., Otto, A. D., Aaron, D. J. (2010). Influence of marriage and parenthood on physical activity: A two-year prospective analysis. *Journal of Physical Activity & Health*, 7, 577-583. doi:10.1249/101.mss.0000274270.23980.56
- Isacco, A., Hofschler, R., Molloy, S. (2015). An examination of fathers' mental health help seeking: A brief report. *American Journal of Men's Health*. Advance online publication. doi:10.1177/1557988315581395

- Kang, S., Marks, N. F. (2014). Marital strain exacerbates health risks of filial caregiving: Evidence from the 2005 National Survey of Midlife in the United States. *Journal of Family Issues*, 37, 1123-1150. doi:10.1177/0192513X14526392
- Khaddouma, A., Gordon, K. C., Fish, L. J., Bilheimer, A., Gonzalez, A., Pollak, K. I. (2015). Relationships among spousal communication, self-efficacy, and motivation among expectant Latino fathers who smoke. *Health Psychology*, 34, 1038-1042. doi:10.1037/hea0000224
- Kiecolt-Glaser, J. K., Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin*, 127, 472-503. doi:10.1037/0033-2909.127.4.472
- Mahalik, J. R., Burns, S. M., Syzdek, M. (2007). Masculinity and perceived normative health behaviors as predictors of men's health behaviors. *Social Science & Medicine*, 64, 2201-2209. doi:10.1016/j.socscimed.2007.02.035
- Maia, Q., Grandner, M. A., Findley, J., Gurubhagavatula, I. (2013). Short and long sleep duration and risk of drowsy driving and the role of subjective sleep insufficiency. *Accident Analysis & Prevention*, 59, 618-622. doi:10.1016/j.aap.2013.07.028
- Mallon, L., Broman, J. E., Hetta, J. (2005). High incidence of diabetes in men with sleep complaints or short sleep duration: A 12-year follow-up study of a middle-aged population. *Diabetes Care*, 28, 2762-67. doi:10.2337/diacare.28.11.2762
- Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review*, 42, 921-36. doi:10.2307/2094577
- Mokdad, A. H., Marks, J. S., Stroup, D. F., Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *Journal of the American Medical Association*, 291, 1238-1245. doi:10.1001/jama.291.10.1238
- National Alliance for Caregiving & AARP . (2015). Caregiving in the U.S. 2015. Retrieved from <http://www.caregiving.org/caregiving2015/>
- Nordenmark, M. (2004). Multiple social roles and well-being: A longitudinal test of the role stress theory and the role expansion theory. *Acta Sociologica*, 47, 115-126. doi:10.1177/0001699304043823
- Pinkhasov, R. M., Wong, J., Kashanian, J., Lee, M., Samadi, D. B., Pinkhasov, M. M., Shabsigh, R. (2010). Are men shortchanged on health? Perspective on health care utilization and health risk behavior in men and women in the United States. *International Journal of Clinical Practice*, 64, 475-487. doi:10.1111/j.1742-1241.2009.02290.x
- Pollak, K. I., Lyna, P., Bilheimer, A. K., Gordon, K. C., Peterson, B. L., Gao, X., . . . Fish, L. J. (2015). Efficacy of a couple-based randomized controlled trial to help Latino fathers quit smoking during pregnancy and postpartum: The Parejas Trial. *Cancer Epidemiology, Biomarkers & Prevention*, 24, 379-385. doi:10.1158/1055-9965.EPI-14-0841
- Robinson, C. A., Bottorff, J. L., Pesut, B., Oliffe, J.L., Tomlinson, J. (2014). The male face of caregiving: A scoping review of men caring for a person with dementia. *American Journal of Men's Health*, 8, 409-426. doi:10.1177/1557988313519671

- Robles, T. F., Slatcher, R. B., Trombello, J. M., McGinn, M. M. (2014). Marital quality and health: A meta-analytic review. *Psychological Bulletin*, 140, 140-187. doi:10.1037/a0031859
- Russell, R. (2007). The work of elderly men caregivers: From public careers to an unseen world. *Men and Masculinities*, 9, 298-314. doi:10.1177/1097184X05277712
- Schulz, R., Sherwood, P. R. (2008). Physical and mental health effects of family caregiving. *American Journal of Nursing*, 108, 23-27. doi:10.1097/01.NAJ.0000336406.45248.4c
- Schuster, T. L., Kessler, R. C., Aseltine, R. H. (1990). Supportive interactions, negative interactions, and depressive mood. *American Journal of Community Psychology*, 18, 423-438. doi:10.1007/BF00938116
- Settersten, R. A., Cancel-Tirado, D. (2010). Fatherhood as a hidden variable in men's development and life courses. *Research in Human Development*, 7, 83-102. doi:10.1080/15427609.2010.481520
- Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review*, 39, 556-578. doi: 10.2307/2094422
- Snyder, D. K., Heyman, R. E., Haynes, S. N. (2005). Evidence-based approaches to assessing couple distress. *Psychological Assessment*, 17, 288-307. doi:10.1037/1040-3590.17.3.288
- Stephens, M. A. P., Franks, M. M., Martire, L. M., Norton, T. R., Atienza, A. A. (2009). Women at mid-life: Stress and rewards of balancing parent care with employment and other family roles. In Shifren, K. (Ed.), *How caregiving affects development: Psychological implications for child, adolescent, and adult caregivers* (pp. 147-167). Washington, DC: American Psychological Association. doi:10.1037/11849-005
- Suh, J. (2016). Measuring the "sandwich": Care for children and adults in the American Time Use Survey 2003–2012. *Journal of Family and Economic Issues*, 37, 197-211. doi:10.1007/s10834-016-9483-6
- Thompson, E. H. (2002). What's unique about men's caregiving? In Kramer, B. J., Thompson, E. H. (Eds.), *Men as caregivers* (pp. 20-47). New York, NY: Springer.
- Trivedi, R., Beaver, K., Bouldin, E. D., Eugenio, E., Zeliadt, S. B., Nelson, K., . . . Piette, J. D. (2014). Characteristics and well-being of informal caregivers: Results from a nationally-representative US survey. *Chronic Illness*, 10, 167-79. doi:10.1177/1742395313506947
- Troxel, W. M., Robles, T. F., Hall, M., Buysse, D. J. (2007). Marital quality and the marital bed: Examining the covariation between relationship quality and sleep. *Sleep Medicine Reviews*, 11, 389-404. doi:10.1016/j.smr.2007.05.002
- Umberson, D., Crosnoe, R., Reczek, C. (2010). Social relationships and health behavior across life course. *Annual Review of Sociology*, 36, 139-157. doi:10.1146/annurev-soc-070308-120011
- U.S. Census Bureau . (2014). Profile America: Factors for features (Release No. CB14-FF.14). Retrieved from <http://www.census.gov/newsroom/facts-for-features/2014/cb14-ff14.html>

Walén, H. R., Lachman, M. E. (2000). Social support and strain from partner, family, and friends: Costs and benefits for men and women in adulthood. *Journal of Social and Personal Relationships*, 17, 5-30. doi:10.1177/0265407500171001

Yildirim, D., Aycan, Z. (2008). Nurses' work demands and work-family conflict: A questionnaire survey. *International Journal of Nursing Studies*, 45, 1366-1378. doi:10.1016/j.ijnurstu.2007.10.010

Zick, C. D., Smith, K. R., Brown, B. B., Fan, J. X., Kowaleski-Jones, L. (2007). Physical activity during the transition from adolescence to adulthood. *Journal of Physical Activity & Health*, 4, 125-137.