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Healthy Time Use in the Encore Years: Do Work, Resources, Relations, and Gender Matter?*

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Abstract

Social engagement is theorized to promote health, with ages 55 to 75 – what some call “encore” adulthood – potentially a time for ongoing engagement or social isolation. We use the American Time Use Survey (N=11,952) and a life course perspective to examine associations between paid work, resources, relations, and healthy time use for men and women in the first (55–64) and second (65–74) halves of the encore years. Work limits sufficient sleep (full-time working men) and television watching (all workers) but also time spent in physical activity (full-time workers). College-educated and healthy encore adults – across age and gender divides – are more likely to exercise and watch less television. Marriage and caregiving encourage socializing and limit television watching, despite differential effects on physical activity and sleep. These findings fit well with a gendered life course perspective suggesting socially patterned (by work, resources, relationships, gender, age) health behaviors.

Understanding patterns of daily life among contemporary retirement-age Americans (ages 55 to 75) is of heightened scientific and social significance as growing numbers of the large Boomer cohort (b. 1946–1964) and those in the cohort preceding them move through this life phase, even as conventional retirement templates (such as moving lock-step from full-time paid work to full-time leisure at certain ages) are being dismantled. We have argued elsewhere (Moen and Flood 2013; Moen and Lam 2015) that these trends, combined with extended healthy life expectancy, are producing a new life stage – an encore phase of adulthood. While typically located in the years around 55 to 75, encore adulthood (also called the third age) is less a specific age than a transitional time between the traditional career- and family-building stage of conventional adulthood and the frailties associated with conventional old age (Laslett 1987, 1989; see also Gilleard and Higgs 2007; Karisto 2007; McCullough and Polak 2007; Moen and Altobelli 2007; Sadler 2006; Silva 2008). A moving platform of intertwined social forces – increases in life expectancy, the aging Boomer cohort, declines in disability, deteriorations of pension security, delays in the age of full Social Security eligibility, early retirement incentives, long-term unemployment of older workers, delays in retirement timing, the blurring of the retirement transition through bridge or post-retirement jobs, more women retiring, and the rise in adult care obligations – point to the need for understanding the health behaviors of older Americans in this transitional and often uncertain period of the life course that falls neither in the “prime” working years nor

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under the rubric of “old age.” Moreover, how people spend their time is increasingly seen as a key risk factor for health and well-being, one that is especially vital because it is potentially modifiable (Berkman and Kawachi 2000; House 2002; Krieger 2011; Oakes and Kaufman 2006).

This paper begins to fill the void in our understanding of healthy time use during encore adulthood – the stage of life beginning around age 55, when most Americans are employed full time, and ending around age 75, when most are out of the workforce (Moen and Flood 2013; Warner, Hayward, and Hardy 2010). With the leading edge of the large Boomer cohort (b. 1946–1954) moving through their 60s and the trailing edge (b. 1955–1964) following close behind, the health-related time use of this large segment of the population is of considerable interest.

We draw on data from the American Time Use Survey (ATUS) to examine the interface between engagement (in paid work, volunteering, family care work) and health behaviors as it is potentially modified by age and gender. First, we document the time spent in health-related behavior by encore adults with varying labor force attachments separately for men and women ages 55–64 and 65–74. Second, we examine the time contemporary men and women ages 55 to 75 allocate to health-promoting and health-detracting behaviors, considering similarities and differences by age, health status, and education as well as by gender. Third, we examine how another form of social engagement – relationships with others – is associated with healthy time use for women and men in this age group.

While research on health behaviors typically examines smoking, exercise, diet, and alcohol use, we consider a different and somewhat broader set of health-related activities, and, importantly, the *time* contemporary older Americans allocate to them: time spent in meal preparation, exercise, sleep, watching television, and being with others. Meal preparation matters because it is more time intensive to prepare healthy meals than to microwave pre-packaged meals, purchase fast food, or eat at restaurants, all of which have been linked to obesity (e.g., Jeffrey and French 1998; Jenkins and Fultz 2008; Kolodinsky and Goldstein 2011). There is also evidence of an inverse relationship between preparing meals and BMI for women, such that women who spend more time preparing meals have lower BMIs (Zick, Stevens and Bryant 2011). Exercise is clearly a health-promoting behavior, encouraged by the World Health Organization (2010) and the U.S. Department of Health and Human Services (2008). Evidence also documents the importance of social contacts for health and well-being, with older populations especially at risk of social isolation (e.g., Berkman and Breslow 1983; Berkman and Kawachi 2000; Berkman and Syme 1979; Cornwell and Waite 2009; Thomas 2011, 2012). Time spent watching television is a health-detracting behavior given its sedentary nature, associated with poorer health and higher body mass index (Jeffrey and French 1998; Tucker and Bagwell 1991; Tucker and Friedman 1989; Zick et al. 2011). And, while sleep is increasingly seen as a prerequisite for good health, either more or less than the recommended amount (7–9 hours) may lead to poor health outcomes (Buxton and Marcelli 2010; Patel 2007; Patel et al. 2006), though a meta-analysis of associations between sleep duration and mortality shows that evidence is mixed (Kurina et al. 2013).

A Gendered Life Course Approach

We bring together several strands of scholarship to theorize gender- and age-specific patterns of healthy time use for Americans in the encore years, using a gendered life course perspective (Moen 2001; Moen and Spencer 2006) in combination with the concepts of health lifestyles (Cockerman 2005) and constrained choice (Bird and Rieker 2008). Men and women move through the life course following different temporal rhythms, with enormous implications for gender inequality. Our gendered life course approach encourages a view of both labor force participation and healthy time use in the later life course as not simply reflective of individual choices, but as *socially patterned* – by age and gender as well as by other markers of stratification (Moen 2001; Moen and Spencer 2006), by relations with others (Cockerham 2005), and by the historical time period in which Americans come to these transitional years (Warner et al. 2010). Key life course themes shaping time allocated to health-related activities include the *structure/agency* interface, *interdependent trajectories* shaping resources, and *linked lives* (Elder, Johnson, and Crosnoe 2003).

This theoretical framing highlights the importance of considering the intersection of agency and structure (including gender and age) in explaining variation in patterned health behaviors. While encore adults can choose whether to participate in health-promoting or health-detracting activities, these choices are constrained by gendered and age-related circumstances, including health conditions and labor market ties.

The circumstances of women and men in this new life stage reflect institutionalized constraints and resources throughout the life course (Moen 2013). For example, “retirement” is a transition historically more typical of men than women, given that women have had a more limited attachment to the workforce throughout adulthood (Han and Moen 1999; Harrington Meyer and Herd 2007). But contemporary women increasingly have jobs from which they are retiring, and growing numbers of couples now confront decisions about both partners’ degree of labor force engagement.

Still, gender and age norms shape whether or not women and men work for pay and the ways they spend time in other activities, with men more likely than women to remain in paid work, whether by continuing the career mystique (Moen and Roehling 2005) of full-time engagement or else by shifting to self-employment or scaling back to fewer hours and eventually exiting the labor force altogether. At age 55, four in five men (80%) and two-thirds (68%) of women in the U.S. are still working for pay, while most Americans have left even part-time employment by age 75 (Moen and Flood 2013; Warner et al. 2010). But the gendered life course continues to operate in exacerbating gender disparities in resources (Pleau 2010). For example, women come to and move through these encore years with fewer economic (including pension) resources and more disrupted employment histories than men (Harrington Meyer and Herd 2007). Despite these gender differences and disparities, we theorize that paid work time and age (and other conditions, such as poor health and the absence of a college education) will similarly constrain both women’s and men’s health behaviors. By contrast, we theorize social ties – marriage, caring for (grand)children or older relatives – differently affect the time women and men allocate to health behaviors.

We are addressing a fundamental question about gender, health, and age. Does the healthy time use of encore adults vary because of gender and age, or because they are in or out of integrative roles such as working or volunteering? This is of enormous importance as policymakers have postponed the age of eligibility for full Social Security to encourage those in encore adulthood to work longer, and are considering more extreme measures.

Research Hypotheses

Our gendered life course framing suggests three key drivers of the time older Americans allocate to healthy behaviors – time scarcity related to paid work, health and educational resources, and interlocking social relations or “linked lives” (Elder et al. 2003)

Work as Source of Time Scarcity Hypothesis

Goode’s (1960) classic role strain theory combined with the (very real) ceiling on time imposed by the 24 hours in each day suggest that the more time older Americans spend on paid work, the less time they allocate to health-related activities. This is the *time scarcity hypothesis*. This may be both beneficial – by shortening time available for potentially harmful health behaviors (such as television watching) – and unfavorable – by limiting time that could be spent in healthy activities such as physical activity (exercising, walking, etc.), preparing (healthy) meals, and getting adequate sleep. Indeed, research suggests that employment status, which limits time for other activities, rather than age, is the key driver of differences in time use among Americans 55 and older (Krantz-Kent and Stewart 2007). Corollary to the time scarcity hypothesis is *time availability* (Blood and Wolfe 1960). Since full-time jobs occupy approximately half (8) of the waking hours of employees on work days (Bureau of Labor Statistics 2011), shifts to self-employment or part-time work as well as labor market exits could enable encore adults to allocate greater time to health-promoting activities, though there is limited research on how less than full-time employment shapes healthy time use.

In addition to influencing time available for healthy behaviors, paid work may also facilitate set routines, organizing the day in ways that might promote health-related time use. The absence of routinized expectations associated with work may limit older non-employed adults’ ability or inclination to establish regular patterns for sleeping, physical activity, socializing, or preparing meals, and may, in fact, exacerbate negative health behaviors, such as sleeping excessively (more than nine hours a night) and watching long hours of television (Gauthier and Smeeding 2003; Rosenkoetter, Gams, and Engdahl 2001), especially at older ages (Gauthier and Smeeding 2010). On the other hand, contemporary jobs are often highly demanding, fostering a sense of time strain (Moen et al. 2013) that might exacerbate negative health behaviors, such as relaxing or watching television, as ways to ease the stresses of work.

Resources Hypothesis

A college education and good health – fundamental resources ensuing from earlier life course paths – also shape behavior during encore adulthood through processes of cumulation of advantage or disadvantage (Dannefer 2011). Education and health are key

drivers of health-related behaviors, both directly, in terms of shaping lifestyle choices (Cockerham 2005), and indirectly, through opportunities, risks, and preferences for employment (Belgrave 1988; Choi 1994; Quinn and Kozy 1996). College-educated older Americans maintain their ties to full-time employment longer (Cahill, Giandrea, and Quinn 2006) and spend more time in paid work (Moen and Flood 2013). Employment is both a cause and consequence of better health (see Bird and Rieker 2008; Luoh and Herzog 2002). Therefore, a college education and a high subjective health rating should predict more time spent in healthy behaviors for men and women during encore adulthood, both through labor market participation (reducing time available for health-detracting behaviors) and lifestyle preferences (increasing time spent in health-promoting behaviors). We propose that encore adults with less than a college education and poor/fair health watch more television, the dominant form of leisure in the U.S., and exercise less (see also Asheet al. 2009; Grzywacz and Marks 2001; Shaw and Spokane 2008).

There is some support for this. Rosenkoetter and colleagues' (2001) study of a small sample of recent retirees shows that men and women in their 60s and 70s in good health tend to exercise more and spend more time with others than the less healthy. But they find no differences by health status in time spent watching television. Other studies show short- and long-hour sleep (less than seven and more than nine hours) is more typical among individuals in poor health compared to good health (Buxton and Marcelli 2010; Hale 2005; Patel et al. 2006; Patel 2007).

Based on this evidence, we offer a *resource hypothesis*, emphasizing the role of health and educational resources (in combination with institutionalized gender-graded and age-graded labor market and retirement expectations) in shaping time allocations. We propose that health and educational resources operate similarly for encore women and men regardless of age, but that these resources are differentially allocated by gender and age. Reminiscent of Rosow's (1974) classic "roleless role" hypothesis about the absence of institutionalized obligations and expectations for retirees, those who are older (and not working) may engage in fewer health-promoting activities. Increases in television watching with age (Gauthier and Smeeding 2003) may be symptomatic of the absence of both commitments and routine associated with socially integrative roles like paid work or volunteering.

Linked Lives Hypothesis

The third key driver of health behaviors is other people. The life course theme of linked lives (Elder et al. 2003; Moen and Hernandez 2009) suggests that social ties shape time use. Encore adulthood is associated with the end of active parenting of young children (and even marriage for some), but often increased commitments to caring for grandchildren (e.g., Fuller-Thomson and Minkler 2001; Minkler 1999) and/or ailing parents, spouse, or other infirm relatives (e.g., Altergott 1988; Arber and Timonen 2012; Lima et al. 2008; Marks 1996; Moen and Flood 2013). Given the significance of social relations for behavior (e.g., Umberson, Crosnoe, and Reczek 2010) and the gendered nature of caregiving, we examine the links between gender, marital status, caring for infirm adults, and caring for (grand)children, on the one hand, and time spent in healthy behaviors, on the other. Although women do not "retire" from care work and are less likely than men to have their

time structured by work obligations (especially if they are providing spousal care – see Dentinger and Clarkberg 2002; Palvalko and Artis 1997), caregiving may constrain time available for health behaviors.

The evidence on caregivers' time use suggests that caregiving may both encourage and detract from healthy behaviors. Caregivers are more likely to volunteer than non-caregivers (Burr et al. 2005; Choi et al. 2007; Moen and Flood 2013). And while those caring for grandchildren spend less time with friends and spouses and feel more pressed for time, grandparents also find meaning in this role (Jendrek 1993) and may experience other health benefits, such as getting more exercise (Hughes et al. 2007).

Marriage may also shape time use both in terms of spending time with others and in other health behaviors (e.g., Umberson 1987). Evidence shows that unmarried people are more likely to experience short-hour sleep than married individuals (Hale 2005). Mattingly and Bianchi (2003) found married women spend about an hour less in leisure than unmarried women, while men experience no difference in leisure time by marital status.

Our *linked lives hypothesis* acknowledges that women in the encore years are especially prone to having their days organized around caring for children or grandchildren as well as for parents, spouses, or other ailing relatives (e.g., Austen and Ong 2010; Bird and Rieker 2008; Elder et al. 2003; Folbre 2012; Moen and Spencer 2006). We propose analogous gendered time allocations to health behaviors, with men spending more time in both physical activity and television watching and women devoting more time to meal preparation and being with others. Individuals whose lives are linked to others – spouses, parents, grandparents, caregivers, coworkers – obviously spend more time engaged in social activities, net of other factors, than those with fewer of such ties, but it is unclear whether such ties are associated with more or less time in other health-related behaviors.

Contributions

To summarize, little is known about how Americans spend their time during what is coming to be seen as an encore adulthood, a bonus period (roughly between ages 55 and 75) resulting from increased healthy life expectancy typically past family- and career-building but before the infirmities associated with old age (Freedman 2011; Laslett 1987, 1989; Moen and Flood 2013; Moen and Lam 2015). We propose that a complex set of forces shape the time Americans allocate to healthy behaviors during these years of labor market transition, both through their choices and the constraints and facilitators structuring these choices. We test three hypotheses. First is the *time scarcity hypothesis* –that the time constraints of full-time paid work mean that encore adults working full time spend less time in health-related behaviors. This is especially consequential for men's lives, since men in this age group are more likely to be in the labor force. We do not theorize the way part-time or self-employment may be related to time allocated to health activities, but clearly these may be less time constraining than full-time employment. Second is the *resource hypothesis*, emphasizing the role of health and educational resources in shaping the ways encore adults allocate their time, with women typically having fewer such resources. And third is the

linked lives hypothesis, positing that women's but not men's healthy time use is related to their marital and caregiving activities.

Data and Procedures

To investigate healthy time use during the encore years we draw on time diary data from the American Time Use Survey (ATUS) (Hofferth, Flood, and Sobek 2013). The ATUS, collected annually since 2003, offer a unique opportunity to analyze daily patterns of time allocation among non-institutionalized retirement-age men and women. The data contain detailed descriptions of activities as well as rich demographic information; and the large sample sizes of the ATUS permit gender- and age-specific comparisons of older adults with different levels of labor market engagement, health status, education, caregiving, and marital relationships. We use multivariate regression techniques to examine the time encore adult men and women devote to five health-related activities: sleeping, preparing meals, physical activity, television watching, and socializing. We consider 1) the extent to which time allocations of encore adult women and men vary by their labor market attachment; 2) how health and education are related to the time men and women in this stage spend on health-related behaviors (recognizing the recursive nature of this relationship); and 3) whether social relations in the form of linked lives predict men's and women's healthy time use. These forces – employment status, health and education resources, and family relationships – may intersect with gender and age in ways that foster heterogeneity in healthy time use by encore adults.

Data

ATUS respondents report the activities they engaged in over a 24-hour period from 4:00 a.m. of a specified day until 4:00 a.m. of the following day. Activities are coded using a three-tier, six-digit coding scheme that represents over 400 activities. All responses are recorded using Computer Assisted Telephone Interview procedures. Data are collected all days of the week, with weekends oversampled. Weights correct for the survey design such that aggregating across different days of the week results in a representative picture of average time use among the population. Because health is such an important predictor of employment (e.g., Moen and Flood 2013; Warner et al. 2010) and of time use more generally, we restrict our sample to years in which self-reported health data were collected (2006 to 2008 and 2010).

Dependent Variables

Our dependent variables capture contemporary encore adults' engagement in health-related activities on the ATUS diary day. Specifically, we examine time sleeping; preparing meals; in physical activity (such as exercising and participating in sports as well as walking or biking as a mode of transportation); watching television; and socializing outside of paid work. We treat sleep as a categorical variable, indicating whether respondents get the recommended 7–9 hours of sleep, less than seven hours, or more than nine hours of sleep per 24-hour period. Watching television and socializing (outside of paid work and – in the descriptives only – during paid work) indicate the number of minutes on the ATUS diary day in the activity and may range from as little as zero minutes to an entire one-day period

(1440 minutes). We use two measures of physical activity and preparing meals: an indicator of whether the respondent engaged in the activity on the diary day and, conditional upon participation, minutes per day spent in the activity. Activity codes for each dependent variable are available in Appendix A.

Independent Variables

Based on our gendered life course framing we model time use separately by age and gender, including as independent variables respondents' employment status, health, social-locational context (education and race), volunteer status, and the nature of their linked lives (such as marital, parental, and caregiving status). *Employment status* indicates whether respondents are working full time, part time, are self-employed, or not working for pay (reference category). Though self-employment can be both full and part time, time allocated to work is presumed to be more discretionary for the self-employed compared to those working for someone else. Evidence indicates that significant numbers of encore adults moving through the retirement years engage in a period of self-employment (Zissimopoulos and Karoly 2007, 2009). Furthermore, self-employment has been found to be more satisfying than organizational employment because it provides greater degrees of autonomy, variety, flexibility, and job security (Hundley 2001). Another form of engagement that might shape time use in encore adulthood is volunteer work. *Volunteer* is a binary indicator of participation in formal volunteer activities for a non-profit organization on the ATUS diary day.

Health is self-reported, with five response categories ranging from poor to excellent (good is the reference category). Variables capturing social-locational context include *gender*; *age* (ten-year age groups – 55–64 and 65–74); *college degree* is binary and indicates whether the respondent received a bachelor's degree or higher (reference is high school degree or less); and *race* is coded as non-Hispanic white (reference), non-Hispanic black, non-Hispanic other race, and Hispanic.

Our linked lives measures include whether the respondent is *married* (yes/no), whether they *care for infirm adults* (reference, not caring for adults) or *care for (grand)children* (reference, not caring for children) on the ATUS diary day, and whether there is a *child (or grandchild) under 18 in the home* (reference is no child under 18 in the home). Few in encore adulthood (5% of men and 2% of women) co-reside with children under 18, and most of those who do have co-resident grandchildren (76%). We also control for *weekday* versus weekend (reference) diaries, and survey year (2006 (reference), 2007, 2008, and 2010).

Analysis

We use three approaches to model encore adults' healthy time use. First, we estimate multinomial logit models for hours of sleep on the ATUS diary day, differentiating between the daily recommended amount of sleep (7–9 hours), less than seven hours, and more than nine hours. Second, we use OLS regression to model minutes spent watching television and socializing on the ATUS diary day. Unlike in the case of television watching and socializing with others (where there are very few zeroes – no one doing them), physical activity and meal preparation activities are less commonly reported on the diary day. Because estimates

from two-part models are less biased than estimates from Tobit models (Stewart 2013; Daunfeldt and Hellstrom 2007), we use logit models to estimate diary day participation in physical activity and meal preparation and OLS models to estimate minutes spent in these activities (conditional on participation). Our decision to analyze age and gender subgroups is generally supported by model-level Chow tests showing significant differences in OLS age- and gender-specific models and significant age and gender coefficients in pooled non-linear models (available upon request).

Results: Time Allocation Profiles of Encore Adult Men and Women

Table 1 shows age and gender-specific sample characteristics of encore adults (ages 55 to 75) and their time use patterns. (Bivariate relationships between individual characteristics of respondents and their participation in as well as time allocated to various health-related behaviors are available in Appendix B.) We theorized that full-time workers would be the most constrained in their engagement in both health-promoting and health-detracting behaviors, or alternatively that full-time work might organize the day, including time for physical activity regardless of age or gender, though women and the older age group would be less likely to work full time. As expected, full-time work is substantially lower among 65–74 year olds compared to 55–64 year olds (12% vs. 47% for men and 6% vs. 41% for women in Table 1). Full-time workers spend less time than others preparing meals and engaging in physical activity (Appendix B). On the other hand, also as expected, full-time work provides opportunities for social interaction on the job, with full-time workers (not surprisingly) spending more time with coworkers than part-timers or the self-employed. Part-time and self-employed workers spend less time watching television than non-workers, but more time doing so than full-time workers (Appendix B). Time spent sleeping, television watching, and socializing outside of work is higher among the older (compared to younger) age group (Table 1).

As theorized, resources and relationships also shape time use in encore adulthood. Lower levels of health, often accompanying increases in age (Table 1), are associated with more time sleeping and watching television and less physical activity for men and women in both age groups (Appendix B). Educational differences are especially pronounced, with college-educated men and women engaging more in physical activity and watching less television (Appendix B). In terms of linked lives, marriage appears to be protective against both too much sleep and television watching for men and women; married individuals also spend more time with others. Those providing adult care are less likely to engage in physical activity compared to those not caring for an infirm adult (women care providers also watch less television). By contrast, physical activity is more common among caregivers of (grand)children.

We next turn to multivariate models to better understand these patterns, estimating the effects of work, resources, and linked lives on women's and men's participation in health-related behaviors. Note that while we test central tendencies (means), there is considerable variability (see standard deviations) in healthy time use among encore adults. To capture at least some of this heterogeneity, we estimate models separately for four distinct age and gender subgroups.

Results: Multivariate Models of Healthy Time Allocations

Sleep

We first estimate the odds of less and more than optimal sleep time (compared to seven to nine hours – see Table 2). Results (shown as relative risk ratios, with numbers greater than one indicating higher relative risk and below one indicating lower relative risk) show that working predicts sleep time in gendered ways. Full-time work is protective against too much sleep for men but also doubles their risk of sleeping less than recommended hours compared to non-working men (RRR=1.825 for 55–64 year old men and RRR=2.708 for 65–74 year old men). There are age differences as well in the sleep effects of part-time work; men 55–64 working part time are protected against too much sleep (RRR=.522) but part-timer men 65–74 are 2.59 times as likely to *not* get enough sleep relative to non-working men. For women ages 55–64, all forms of paid work limit long-hour sleep (>9 hours) but, unlike men, work does not increase women's risk of getting too little sleep. Among 65–74 year old women, working part time is protective against too much sleep (RRR=.614).

Self-reported health has independent – and important – effects on sleep in addition to any indirect effects (through different levels of employment) in the encore years. Men and women reporting poor health are at greater risk of sleeping more than the recommended nine hours per night while excellent health is protective against sleeping too much (except among women ages 65–74, though the coefficient is in same direction). Note, however, that good health could well be a consequence of consistently getting optimal amounts of sleep.

Linked lives in the form of social relations reveal only scattered associations with average sleep time for men and women in this encore stage. For men ages 55–64 marriage is protective against too much sleep (RRR=.780) and for women ages 65–74 marriage is protective against too little sleep (RRR=.678) compared to the recommended amount (Table 2). Women 65–74 who provide adult care are 2.5 times as likely to sleep less than the recommended amount per night. So, too, do men ages 65–74 who provide (grand)child care have double the odds of not getting sufficient sleep (RRR=2.08). By contrast, caring for (grand)children protects women 55–64 against too much sleep (RRR=.701).

Television watching

Watching long hours of television, the dominant sedentary activity in contemporary life, has been linked to greater mortality risks (Matthews et al. 2012; Wijndaele et al. 2011). We find Americans ages 55 to 75 spend large amounts of time watching TV and that engagement in both paid work and formal (organizational) volunteering is associated with less time watching television (Table 3). Comparing men and women ages 55–64, we find that self-employed and full-time working men spend more time watching television than similarly-situated women (Chow tests, $p < .05$). Men and women who volunteer spend roughly one hour less per day watching television compared to non-volunteers.

Self-reported health status also matters. Net of other factors (including employment status), encore adult men and women in excellent health spend approximately 30 fewer minutes watching television than those in good health (Table 3); moreover, those in good health

watch about an hour less television than those in poor health. The health status/TV watching relationship is most pronounced among women (ages 55–64) and men.

Social relationships relate more to women's than men's time watching television. Married women watch less television than their unmarried counterparts, with women 65–74 benefitting more from marriage than their male counterparts (Chow test, $p < .05$). And adult care is protective against television watching for women ages 55–64, who watch 33 minutes less television than women not providing such care.

Social Engagement

Paid work and volunteering are associated with men's and women's socializing (Table 3). All forms of employment constrain the time encore adults have for socializing outside of paid work. Effects are especially pronounced for men who work full time and for younger men (55–64) who are self-employed. Volunteering also promotes socializing with others outside of paid work for younger (55–64) but not older (65–74) women.

Not surprisingly, men and women ages 55–64 in poor health spend about an hour less socializing than do those in good health (Table 3); otherwise health is not significantly associated with time spent with others. Both child and adult caregivers – regardless of age or gender – spend more time in social engagement than non-caregivers. Married men and women spend more time socializing, with larger effects for older (65–74) compared to younger (55–64) encore adults (Chow tests, $p < .05$). This reinforces the buffering effect of marriage against social isolation (e.g., Cornwell 2011).

Meal Preparation

Consistent with previous research documenting the gendered division of unpaid housework (e.g., Bianchi et al. 2000), preparing meals remains largely women's work, regardless of age group ($p < .05$ for gender coefficient in pooled models); moreover, women spend more time cooking than men who prepare meals (Chow tests, $p < .05$) (Table 4). Older women (65–74) working full time have lower odds of preparing meals compared to women ages 55–64 working full time ($p < .05$ for age/full-time work interaction). Not surprisingly, given that married women in encore adulthood are more likely to prepare meals than unmarried women (OR=1.21 for women 55–64 and OR=1.5 for women 65–74), married men have lower odds of meal preparation than their unmarried counterparts (OR=.524 and OR=.497 for men 55–64 and 65–74, respectively).

Physical Activity

Employment and gender (but not age group) are also related to differences in physical activity. Men and women (in both age groups) employed full time spend less time exercising than their non-working counterparts. Women, however, have lower odds of exercising than men ($p < .05$ for gender coefficients in age-specific models) and spend less time exercising (including walking and biking for transportation) when they do (Chow tests, $p < .05$).

Even net of employment, resources in the form of subjective health and educational attainment matter for physical activity. There is a clear health gradient: excellent health

compared to good health is associated with more exercise, and those in good health engage in more physical activity than those in poor health across both age and gender (Table 4). Of course the directions of these effects operate both ways; those who exercise may be healthier as a result of their more active lifestyle. The direction of the relationship between education and physical activity is clearer cut, since educational credentials are typically accrued earlier in the life course. College-educated men and women have higher levels of physical activity (Table 4) than those without a college degree.

Relationships between caregiving and participation in physical activity during the encore years are somewhat scattered. (Grand)child care increases the odds that women ages 65–74 exercise (OR=1.717), especially compared to younger (55–64) women ($p<.05$ for age coefficient in women's model). Men providing (grand)child care, however, exercise fewer minutes than non-care providers. Similarly, women ages 55–64 who give care to adults have lower odds and time in physical activity compared to women not providing adult care.

Conclusions

The large Boomer cohort (born 1946–64) is moving to and through a new life stage, the bonus years of vitality we call encore adulthood (Moen and Flood 2013; Moen and Lam 2015), coming after the career- and family-building years but before the infirmities associated with old age. A key concern of both policy makers and individuals at this life course stage is maintaining health or at least managing chronic health conditions. Little is known about how time is spent by those in this new encore stage; and yet more time in health-promoting activities and limited time in health-detracting activities will be key to the health of this growing segment of the population (along with corollary health-care costs). This is a transitional time of life, replete with exits (out of full-time work, as well as widowhood) and entrances (starting one's own business, caring for grandchildren, volunteering) as well as, for some, the onset of chronic health problems. Does engagement in paid work or volunteering, health and educational resources, and/or social relations promote healthy time use? And does this differ by age and gender? Recognizing the heterogeneity of this life stage, we estimated models separately by both gender and age (dividing the sample into age groups 55–64 and 65–74). We find that men and women in the early and later years of encore adulthood differ in their degree of employment and subjective health ratings, but that in many ways the relationships between employment, health, and health behaviors tend to be similar. Nonetheless, we find some important age and gender differences in healthy time use during the encore years.

We tested three hypotheses: that roles (especially full-time paid work but also volunteering) produce time scarcity and limit health behaviors; that resources (subjective health rating and a college degree) promote positive and reduce time spent in negative health behaviors; and that family relationships (or linked lives) are related to health behaviors in gendered ways. Consistent with the time scarcity hypothesis, we find that paid work limits encore men's and women's time in both health-promoting and health-detracting behaviors. Effects are most pronounced for those working full time; paid work limits the time they spend sleeping – protecting them from getting too much sleep – but also putting men at risk of getting too little sleep, not exercising, and not preparing meals. Women who work also spend less time

in physical activity than non-working women. We find time constraints can be beneficial as well, with full-time work and volunteering limiting time watching television. Those not working have more discretionary time and allocate it to health-promoting activities as well as to large amounts of television watching.

But work is not the only factor that keeps even the busiest individuals from exercising, preparing healthy meals, or getting enough sleep. Our results also support the resource hypothesis, showing that those with high subjective health ratings and a college degree seem to develop health lifestyles perpetuating their health advantage. For the men and women in this encore adulthood stage, a college education, which has been associated with cumulative advantages in health (Mirowsky and Ross 2005, 2008), tends to mean less – yet still substantial – time watching television, even among healthy, college-educated, full-time workers. Encore men and women in the best health are the most protected against health-detracting behaviors, while those in the worst health spend the least time in physical activity and social engagement (only for men) and the most time sleeping and watching television. Education and subjective health – resources that both directly and indirectly (through selection into paid work) affect time spent in healthy time use – are each positively associated with health-promoting behaviors and negatively associated with health-detracting behaviors.

Relations with others, what life course scholars call linked lives, also predict health behaviors, as proposed in our third hypothesis. Marriage encourages health-promoting socializing for men and women of all ages, and limits television time (for women only, which related to gender disparities in leisure time, a positive outcome in this case, given the sedentary nature of watching television). Providing care to others is also conducive to healthy time use across age and gender lines, promoting socializing and restricting time adults in the encore years spend watching television. On the other hand, caregiving is associated with an increased risk of insufficient sleep among 65–74 year old men providing care to (grand)children and women in both age groups caring for infirm adults. This could be because of the stress of caring for others, and/or sleep could be interrupted by caregiving obligations.

To conclude: this study is pathbreaking in terms of shedding light on those in a new transitionary encore adult stage, focusing on time spent in specific (and potentially modifiable) health behaviors and developing and testing hypotheses about factors associated with healthy time use. In particular, is work related to healthy time use in encore adulthood? The answer appears to be yes, but the story is more complicated. Full-time work can mean less than the recommended hours of sleep, especially for men ages 65 to 74. Caregiving responsibilities both limit the odds of women working (Moen and Flood 2013) and reduce the time women spend watching television and being physically active even if increasing their tendency to exercise (ages 65–74). Future studies need to address whether part time work, self-employment, and volunteering may promote overall healthy time use, since the benefits of working full time (less time watching television and sleeping long hours) may be attenuated by less physical activity and less than adequate sleep time.

Our findings are further enhanced by the recency, representativeness, and size of the ATUS sample. But there are a number of limitations. Our health-related measures are not exhaustive; those we consider are only a subset of the universe of health behaviors, and future research could examine other activities (e.g., visiting doctors, self-care, and vacations). Because the data are only collected for a single day per respondent, examination of within-person variation in healthy time use over the course of a week, for example, is not possible. The single day limitation also means that we may not observe individuals doing activities they perform regularly but not daily (e.g. exercise). Similarly, we are unable to observe how time allocations differ following a change in status – such as transitioning out of paid work or taking on care responsibilities. Neither do we know whether employment or non-employment (or providing care to grandchildren or infirm relatives) is voluntary or involuntary. In addition, because the ATUS is cross-sectional, we are unable to establish causal ordering. For example, subjective health status is very likely to be both a precursor and a product of healthy time use, creating a cycle of advantage or disadvantage. Finally, because the ATUS samples the non-institutionalized population, the least healthy members of this 55–74 age group are likely missing from our sample.

Nevertheless, this study documents the distribution of and heterogeneity in healthy time use among the growing population of 55 to 75 year old American men and women, those traversing an encore adult phase characterized by eventual exits from full-time jobs into self-employment, part-time work, volunteering, caregiving, or the total leisure typically associated with retirement. It also indicates patterned subgroup differences – by age group and gender, but also by employment, educational attainment, health status, marriage, and caregiving responsibilities. As the Boomers move through this encore stage, ways of encouraging health-promoting behaviors will increasingly be on both research and policy agendas.

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References

- Alteergott, Karen. Social Action and Interaction in Later Life. In: Alteergott, Karen, editor. *Daily Life in Later Life: Comparative Perspectives*. London: Sage Publications; 1988. p. 117-146.
- Arber, Sara; Timonen, Virpi, editors. *Contemporary Grandparenting: Changing Family Relationships in Global Contexts*. Bristol: Policy Press; 2012.
- Ashe, Maureen C.; Miller, William C.; Eng, Janice J.; Noreau, Luc. Older Adults, Chronic Disease, and Leisure-Time Physical Activity. *Gerontologist*. 2009; 55(1):64–72.
- Austen, Siobhan; Ong, Rachel. The Employment Transitions of Mid-Life Women: Health and Care Effects. *Ageing and Society*. 2010; 30(2):207–227.
- Belgrave, Linda Liska. The Effects of Race Differences in Work History, Work Attitudes, Economic Resources, and Health on Women's Retirement. *Research on Aging*. 1988; 10(3):383–398. [PubMed: 3187189]
- Berkman, Lisa; Breslow, Lester. *Health and Ways of Living: The Alameda County Study*. New York, NY: Oxford University Press; 1983.

- Berkman, Lisa; Kawachi, Ichiro. *Social Epidemiology*. New York, NY: Oxford University Press; 2000.
- Berkman, Lisa F.; Leonard Syme, S. Social Networks, Host Resistance and Mortality: A Nine-year Follow-up Study of Alameda County Residents. *American Journal of Epidemiology*. 1979; 115(5): 684–94.
- Bianchi, Suzanne M.; Milkie, Melissa A.; Sayer, Liana C.; Robinson, John P. Is Anyone Doing the Housework? Trends in the Gender Division of Household Labor. *Social Forces*. 2000; 79(1):191–228.
- Bird, Chloe E.; Rieker, Patricia P. *Gender and Health: The Effects of Constrained Choices and Social Policies*. New York, NY: Cambridge University Press; 2008.
- Blood, R.; Wolfe, D. *Husbands and Wives*. New York: Free Press; 1960.
- Bureau of Labor Statistics. [11/12/11] American Time Use Survey – 2010 Results. 2011. Accessed from <http://bls.gov/news.release/pdf/atus.pdf> on
- Burr, Jeffrey A.; Choi, Namkee; Mutchler, Jan E.; Caro, Francis G. Caregiving and Volunteering: Are Private and Public Helping Behaviors Linked? *Journal of Gerontology*. 2005; 60B:S247–S56.
- Buxton, Orfeu M.; Marcelli, Enrico. Short and long sleep are positively associated with obesity, diabetes, hypertension, and cardiovascular disease among adults in the United States. *Social Science and Medicine*. 2010; 71(5):1027–1036. [PubMed: 20621406]
- Cahill, Kevin E.; Giandrea, Michael D.; Quinn, Joseph F. Retirement Patterns from Career Employment. *The Gerontologist*. 2006; 46(4):514–523. [PubMed: 16921005]
- Choi, Namkee G. Racial Differences in Timing and Factors Associated with Retirement. *Journal of Sociology and Social Welfare*. 1994; 21(3):31–52.
- Choi, Namkee G.; Burr, Jeffrey A.; Mutchler, Jan E.; Caro, Francis G. Formal and Informal Volunteer Activity and Spousal Caregiving among Older Adults. *Research on Aging*. 2007; 29:99–124.
- Cockerham, William C. Health Lifestyle Theory and the Convergence of Agency and Structure. *Journal of Health and Social Behavior*. 2005; 46:51–67. [PubMed: 15869120]
- Cornwell, Benjamin. Age Trends in Daily Social Contact Patterns. *Research on Aging*. 2011; 33:598–631.
- Cornwell, Erin York; Waite, Linda J. Social Disconnectedness, Perceived Isolation, and Health among Older Adults. *Journal of Health and Social Behavior*. 2009; 50:31–48. [PubMed: 19413133]
- Dannefer, Dale. Age, the Life Course, and the Sociological Imagination: Prospects for Theory. In: Binstock, Robert; George, Linda, editors. *Handbook of Aging and Social Sciences*. New York, NY: Academic; 2011. p. 3-16.
- Daunfeldt, Sven-Olov; Hellstrom, Jorgen. Intra-household Allocation of Time to Household Production Activities: Evidence from Swedish Household Data. *Labour*. 2007; 21(2):189–207.
- Dentinger, Emma; Clarkberg, Marin. Informal Caregiving and Retirement Timing among Men and Women: Gender and Caregiving Relationships in Late Midlife. *Journal of Family Issues*. 2002; 23:857–79.
- Elder, Glen H., Jr; Johnson, Monica Kirkpatrick; Crosnoe, Robert. The Emergence and Development of the Life Course. In: Mortimer, J.; Shanahan, MJ., editors. *Handbook of the Life Course*. New York: Plenum; 2003. p. 3-19.
- Fuller-Thomson, Esme; Minkler, Meredith. American Grandparents Providing Extensive Child Care to their Grandchildren: Prevalence and Profile. *The Gerontologist*. 2001; 41(2):201–209. [PubMed: 11327486]
- Folbre, Nancy. *For love and money: Care provision in the United States*. New York: Russell Sage Foundation; 2012.
- Freedman, Marc. *The Big Shift: Navigating the New Stage beyond Midlife*. New York, NY: Public Affairs; 2011.
- Gauthier, Anne H.; Smeeding, Timothy M. Time Use at Older Ages. *Research on Aging*. 2003; 25(3): 247–274.
- Gauthier, Anne H.; Smeeding, Timothy M. Historical Trends in the Patterns of Time Use of Older Adults. *International Studies in Population*. 2010; 8(5):289–310.

- Gilleard, Chris; Higgs, Paul. Third Age and the Baby Boomers: Two Approaches to the Social Structuring of Later Life. *International Journal of Ageing and Later Life*. 2007; 2(2):13–30.
- Goode, William J. A Theory of Role Strain. *American Sociological Review*. 1960; 25(4):483–496.
- Grzywacz, Joseph G.; Marks, Nadine F. Social Inequalities and Exercise during Adulthood: Toward an Ecological Perspective. *Journal of Health and Social Behavior*. 2001; 42(2):202–220. [PubMed: 11467253]
- Hale, Lauren. Who has time to sleep? *Journal of Public Health*. 2005; 27(2):205–211. [PubMed: 15749721]
- Han, Shin-Kap; Moen, Phyllis. Clocking Out: Temporal Patterning of Retirement. *American Journal of Sociology*. 1999; 105(1):191–236.
- Harrington Meyer, Madonna; Herd, Pamela. *Market Friendly or Family Friendly? The State and Gender Inequality in Old Age*. New York, NY: Russell Sage; 2007.
- Hofferth, Sandra L.; Flood, Sarah M.; Sobek, Matthew. American Time Use Survey Data Extract System: Version 2.4 [Machine-readable database]. Maryland Population Research Center, University of Maryland, College Park, Maryland, and Minnesota Population Center, University of Minnesota; Minneapolis, Minnesota: 2013.
- House, James S. Understanding Social Factors and Inequalities in Health: 20th Century Progress and 21st Century Prospects. *Journal of Health and Social Behavior*. 2002; 43(2):125–142. [PubMed: 12096695]
- Hughes, Mary Elizabeth; Waite, Linda J.; LaPierre, Tracey A.; Luo, Ye. All in the Family: The Impact of Caring for Grandchildren on Grandparents' Health. *Journal of Gerontology: Social Sciences*. 2007; 62B(2):S108–S119.
- Hundley, Greg. Why and When are the Self-Employed More Satisfied with Their Work? *Industrial Relations*. 2001; 40(2):293–316.
- Jeffrey, Robert W.; French, Simone A. Epidemic obesity in the United States: are fast foods and television viewing contributing? *American Journal of Public Health*. 1998; 88(2):277–280. [PubMed: 9491022]
- Jendrek, Margaret Platt. Grandparents who Parent their Grandchildren: Effects on Lifestyle. *Journal of Marriage and Family*. 1993; 55(3):609–621.
- Jenkins, Kristi Rahrig; Fultz, Nancy H. The Relationship of Older Adults' Activities and Body Mass Index. *Journal of Aging and Health*. 2008; 20(2):217–234. [PubMed: 18287329]
- Karisto, Antti. Finnish Baby Boomers and the Emergence of the Third Age. *International Journal of Ageing and Later Life*. 2007; 2(2):91–108.
- Kolodinsky, Jane M.; Goldstein, Amanda B. Time Use and Food Pattern Influences on Obesity. *Obesity*. 2011; 19(12):2327–2335. [PubMed: 21617636]
- Krantz-Kent, Rachel; Stewart, Jay. How Do Older Americans Spend Their Time? *Monthly Labor Review*. 2007; 8–26.
- Kurina, Lianne M.; McClintock, Martha K.; Chen, Jen-Hao; Waite, Linda J.; Thisted, Ronald A.; Lauderdale, Diane S. Sleep duration and all-cause mortality: a critical review of measurement and associations. *Annals of Epidemiology*. 23(6):361–370. [PubMed: 23622956]
- Laslett, Peter. The Emergence of the Third Age. *Ageing and Society*. 1987; 7(2):133–160.
- Laslett, Peter. *A Fresh Map of Life: The Emergence of the Third Age*. Cambridge, MA: Harvard University Press; 1989.
- Lima, Julie C.; Allen, Susan M.; Goldscheider, Frances; Intrator, Orna. Spousal Caregiving in Late Midlife Versus Older Ages: Implications of Work and Family Obligations. *Journal of Gerontology Social Sciences*. 2008; 63(4):S229–S238.
- Luoh, Ming-Ching; Regula Herzog, A. Individual Consequences of Volunteer and Paid Work in Old Age: Health and Mortality. *Journal of Health and Social Behavior*. 2002; 43(4):490–509. [PubMed: 12664678]
- Marks, Nadine F. Caregiving across the Lifespan: National Prevalence and Predictors. *Family Relations*. 1996; 45(1):27–36.
- Matthews, Charles E.; George, Stephanie M.; Moore, Steven C.; Bowles, Heather R.; Blair, Aaron; Park, Yikyung; Troiano, Richard P.; Hollenbeck, Albert; Schatzkin, Arthur. Amount of time spent

- in sedentary behaviors and cause-specific mortality in US adults. *American Journal of Clinical Nutrition*. 2012; 95(2):437–445. [PubMed: 22218159]
- Mattingly, Marybeth J.; Bianchi, Suzanne M. Gender Differences in the Quantity and Quality of Free Time: The U.S. Experience. *Social Forces*. 2003; 81(3):999–1030.
- McCullough, Michael F.; Polak, Emily. Change and Stability during the Third Age: Longitudinal Investigations of Self-Rated Health and Religiousness with the Terman Sample. In: James, J.; Wing, P., editors. *The Crown of Life: Dynamics of the Early Postretirement Period*. New York: Springer; 2007. p. 175–92.
- Minkler, Meredith. Intergenerational households headed by grandparents: Contexts, realities, and implications for policy. *Journal of Aging Studies*. 1999; 13(2):199–218.
- Mirowsky, John; Ross, Catherine E. Education, cumulative advantage, and health. *Ageing International*. 2005; 30(1):27–62.
- Mirowsky, John; Ross, Catherine E. Education and Self-Rated Health: Cumulative Advantage and Its Rising Importance. *Research on Aging*. 2008; 30(1):93–122.
- Moen, Phyllis. The Gendered Life Course. In: George, L.; Binstock, R.H., editors. *Handbook of Aging and the Social Sciences*. 5. San Diego, CA: Academic; 2001. p. 179–196.
- Moen, Phyllis. Constrained Choices: The Shifting Institutional Contexts of Aging and the Life Course. In: Waite, Linda J.; Plewes, Thomas J., editors. *New Directions in the Sociology of Aging*. Washington, D.C: The National Academies Press; 2013. p. 175–216.
- Moen, Phyllis; Altobelli, Joyce. Strategic Selection as a Retirement Project: Will American Develop Hybrid Arrangements?. In: James, J.; Wink, P., editors. *The Crown of Life: Dynamics of the Early Postretirement Period*. New York: Springer; 2007. p. 61–81.
- Moen, Phyllis; Flood, Sarah. Limited Engagements? Women's and Men's Work/Volunteer Time in the Encore Life Course Stage. *Social Problems*. 2013; 60(2):206–233.
- Moen, Phyllis; Hernandez, Elaine. Social Convoys: Studying Linked Lives in Time, Context, and Motion. In: Elder, G., Jr; Giele, J., editors. *The Craft of Life Course Research*. New York: Guilford Press; 2009. p. 258–279.
- Moen, Phyllis; Kelly, Erin L.; Lam, Jack. Healthy Work Revisited: Do Changes in Time Strain Predict Well-Being? *Journal of Occupational Health Psychology*. 2013; 18(2):157–172. [PubMed: 23506547]
- Moen, Phyllis; Lam, Jack. *International Encyclopedia of the Social and Behavioral Sciences*. 2. Amsterdam, NL: Elsevier; 2015. Retirement and Encore Adulthood: The New Later Life Course.
- Moen, Phyllis; Lam, Jack; Ammons, Samantha; Kelly, Erin L. Time Work by Overworked Professionals: Strategies in Response to the Stress of Higher Status. *Work & Occupations*. 2013; 40(2):79–114. [PubMed: 24039337]
- Moen, Phyllis; Roehling, Patricia. *The Career Mystique: Cracks in the American Dream*. Boulder, CO: Rowman and Littlefield; 2005.
- Moen, Phyllis; Spencer, Donna. Converging Divergences in Age, Gender, Health, and Well-Being: Strategic Selection in the Third Age. In: Binstock, R.; George, L., editors. *Handbook of Aging and the Social Sciences*. Burlington: Elsevier Academic Press; 2006. p. 127–144.
- Patel, Sanjay R.; Malhotra, Atul; White, David P.; Gottlieb, Daniel J.; Hu, Frank B. Association between Reduced Sleep and Weight Gain in Women. *American Journal of Epidemiology*. 2006; 164(10):947–954. [PubMed: 16914506]
- Patel, Sanjay R. Social and demographic factors related to sleep duration. *Sleep*. 2007; 30(9):1077–1078. [PubMed: 17910376]
- Pavalko, Eliza K.; Artis, Julie E. Women's Caregiving and Paid Work: Causal Relationships in Late Midlife. *Journal of Gerontology: Social Sciences*. 52B(4):S170–S179.
- Pleau, Robin L. Gender Differences in Postretirement Employment. *Research on Aging*. 2010; 32(3):267–303.
- Quinn, Joseph F.; Kozy, Michael. The Role of Bridge Jobs in the Retirement Transition: Gender, Race, and Ethnicity. *The Gerontologist*. 1996; 36(3):363–372. [PubMed: 8682334]
- Rosenkoetter, Marlene M.; Gams, John M.; Engdahl, Richard A. Postretirement Use of Time. Activities, Adaptation, and Aging. 2001; 25(3–4):1–18.

- Rosow, Irving. Socialization to Old Age. Los Angeles: University of California Press; 1974.
- Sadler, William A. Changing Life Options: Uncovering the Riches of the Third Age. *LLI Review*. 2006; 1:11–20.
- Shaw, Benjamin A.; Spokane, Linda S. Examining the Association Between Education Level and Physical Activity Changes During Early Old Age. *Journal of Aging Health*. 2008; 20:767–787. [PubMed: 18559963]
- Silva, Luna Rodrigues Freitas. From Old Age to Third Age: The Historical Course of the Identities Linked to the Process of Ageing. *História, Ciências, Saúde – Manguinhos*. 2008; 15(1):155–168.
- Stewart, Jay. Tobit or not Tobit? *Journal of Economic and Social Measurement*. 2013; 38(3):263–290.
- Thomas, Patricia A. Trajectories of Social Engagement and Limitations in Late Life. *Journal of Health and Social Behavior*. 2011; 52:430–443. [PubMed: 22144732]
- Thomas, Patricia A. Trajectories of Social Engagement and Mortality in Late Life. *Journal of Aging and Health*. 2012;1–22.10.1177/0898264311432310
- Tucker LA, Bagwell M. Television viewing and obesity in adult females. *American Journal of Public Health*. 1991; 81(7):908–911. [PubMed: 2053671]
- Tucker LA, Friedman GM. Television viewing and obesity in adult males. *American Journal of Public Health*. 1989; 79(4):516–518. [PubMed: 2929820]
- Umberson, Debra. Family Status and Health Behaviors: Social Control as a Dimension of Social Integration. *Journal of Health and Social Behavior*. 1987; 28(3):306–319. [PubMed: 3680922]
- Umberson, Debra; Crosnoe, Robert; Reczek, Corrine. Social Relationships and Health Across the Life Course. *Annual Review of Sociology*. 2010; 36:139–157.
- US Department of Health and Human Services (USDHHS). 2008 Physical Activity Guidelines for Americans. Washington, D.C: USDHHS; 2008. <http://www.health.gov/paguidelines/guidelines/default.aspx>
- Warner, David F.; Hayward, Mark D.; Hardy, Melissa A. The Retirement Life Course in America at the Dawn of the Twenty-First Century. *Population Research and Policy Review*. 2010; 29(6):893–919. [PubMed: 21170285]
- Wijndaele, Katrien; Brage, Soren; Besson, Herve; Khaw, Kay-Tee; Sharp, Stephen J.; Luben, Robert; Wareham, Nicholas J.; Ekelund, Ulf. Television viewing time independently predicts all-cause and cardiovascular mortality: the EPIC Norfolk Study. *International Journal of Epidemiology*. 2011; 40(1):150–159. [PubMed: 20576628]
- World Health Organization. Global Recommendations on Physical Activity for Health. 2010. http://whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf
- Zick, Cathleen D.; Stevens, Robert B.; Keith Bryant, W. Time use choices and healthy body weight: A multivariate analysis of data from the American Time Use Survey. *International Journal of Behavioral Nutrition and Physical Activity*. 2011; 8:84. [PubMed: 21810246]
- Zissimopoulos, Julie M.; Karoly, Lynn A. Transitions to Self-Employment at Older Ages: The Role of Wealth, Health, Health Insurance, and Other Factors. *Labour Economics*. 2007; 14:269–95.
- Zissimopoulos, Julie M.; Karoly, Lynn A. Labor-Force Dynamics at Older Ages: Movements into Self-Employment for Workers and Nonworkers. *Research on Aging*. 2009; 31(1):89–111. [PubMed: 23049149]

Biography

Sarah M. Flood is the Director of U.S. Survey Projects at the Minnesota Population Center at the University of Minnesota where she oversees National Institutes of Health funded projects to develop, support, and improve population data infrastructure. Her research interests are at the intersection of gender, work, family, life course, and time use.

After 25 years at Cornell University, Phyllis Moen accepted a McKnight Presidential Endowed Chair and a professorship in Sociology at the University of Minnesota in 2003. She has published numerous books and articles on careers, retirement, health, gender, policy

and families as they are institutionalized, transforming, and intersecting over the life course. Moen is currently writing a book on Boomers.

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Table 1

Means/Percentages of Independent and Dependent Variables for Men and Women Ages 55–64 and 65–74, 2006–2008 and 2010

	Men			Women		
	All	55–64	65–74	All	55–64	65–74
Independent variables						
Employment Status						
Full Time	34.55	46.98 <i>a</i>	12.41	27.61	40.72 <i>b</i>	6.37
Part Time	6.88	6.37	7.78	12.36	13.30 <i>b</i>	10.83
Self Employed	12.11	13.28 <i>a</i>	10.03	6.83	8.06 <i>b</i>	4.83
Not Employed	46.46	33.38 <i>a</i>	69.78	53.21	37.92 <i>b</i>	77.98
Formal Volunteer						
Yes	7.37	7.13	7.79	9.49	9.18	9.97
No	92.63	92.87	92.21	90.51	90.82	90.03
Health						
Excellent	15.23	15.93	13.99	16.07	17.69 <i>b</i>	13.44
Very Good	30.35	31.39	28.50	30.71	31.47	29.49
Good	30.18	30.56	29.51	29.34	28.57	30.58
Fair	15.97	14.13 <i>a</i>	19.23	17.18	16.18 <i>b</i>	18.79
Poor	8.27	7.99	8.77	6.71	6.10 <i>b</i>	7.69
Social Location						
College Graduate						
Yes	31.79	33.70 <i>a</i>	28.40	24.25	27.04 <i>b</i>	19.75
No	68.21	66.30 <i>a</i>	71.60	75.75	72.96 <i>b</i>	80.25
Race						
White	78.52	77.41 <i>a</i>	80.51	77.38	75.76 <i>b</i>	80.02
Black	10.22	10.37	9.96	11.67	11.90	11.30
Hispanic	7.62	8.30 <i>a</i>	6.40	6.94	7.45 <i>b</i>	6.11
Other	3.63	3.92	3.12	4.01	4.90 <i>b</i>	2.56
Linked Lives						

	Men			Women		
	All	55–64	65–74	All	55–64	65–74
Married						
Yes	75.03	74.55	75.89	60.71	63.12 <i>b</i>	56.80
No	24.97	25.45	24.11	39.29	36.88 <i>b</i>	43.20
Adult Caregiving						
Yes	2.79	2.65	3.03	4.97	5.37	4.33
No	97.21	97.35	96.97	95.03	94.63	95.67
Child Caregiving						
Yes	8.05	8.13	7.91	13.11	14.16 <i>b</i>	11.41
No	91.95	91.87	92.09	86.89	85.84 <i>b</i>	88.59
Children under 18 in the home						
Yes	9.93	12.21 <i>a</i>	5.87	8.21	10.04 <i>b</i>	5.26
No	90.07	87.79 <i>a</i>	94.13	91.79	89.96 <i>b</i>	94.74
Grandchild under 18 in the home						
Yes	4.14	4.11	4.17	5.59	6.33 <i>b</i>	4.40
No	95.86	95.89	95.83	94.41	93.67 <i>b</i>	95.60
Own child under 18 in the home						
Yes	5.45	7.75 <i>a</i>	1.34	2.08	3.15 <i>b</i>	.34
No	94.55	92.25 <i>a</i>	98.66	97.92	96.85 <i>b</i>	99.66
Dependent Variables						
Sleep						
% Yes	99.94	99.91	100.00	99.91	99.87	99.96
Mean Minutes	511.30	500.40 <i>a</i>	530.71	510.52	502.24 <i>b</i>	523.92
Mean Minutes (for participants)	511.60	500.87 <i>a</i>	530.71	510.99	502.88 <i>b</i>	524.12
<7 hours	17.90	20.52 <i>a</i>	13.23	16.38	18.72 <i>b</i>	12.59
7–9 hours	43.40	45.00 <i>a</i>	40.55	44.77	45.87	43.00
>9 hours	38.70	34.48 <i>a</i>	46.23	38.85	35.41 <i>b</i>	44.42
Television Watching						

	Men			Women		
	All	55–64	65–74	All	55–64	65–74
% Yes	86.42	85.46 ^a	88.14	82.22	80.69 ^b	84.71
Mean Minutes	225.25	206.11 ^a	259.35	176.97	158.59 ^b	206.75
Mean Minutes (for participants)	260.63	241.18 ^a	294.23	215.24	196.55 ^b	244.08
Socializing (excluding paid work)						
% Yes	89.09	89.24	88.81	89.77	90.84 ^b	88.05
Mean Minutes	351.49	329.80 ^a	390.12	368.93	356.55 ^b	389.01
Mean Minutes (for participants)	394.54	369.56 ^a	439.27	410.96	392.50 ^b	441.83
Physical Activity						
% Yes	27.86	27.03	29.33	23.76	23.58	24.06
Mean Minutes	24.56	23.06	27.23	13.06	12.60	13.81
Mean Minutes (for participants)	88.16	85.31	92.85	54.97	53.44	57.39
Food Preparation						
% Yes	40.55	40.40	40.81	69.58	68.77	70.90
Mean Minutes	17.59	17.66	17.45	38.66	37.32 ^b	40.84
Mean Minutes (for participants)	43.37	43.72	42.77	55.56	54.27	57.60
Socializing (only during paid work)						
% Yes	47.00	50.75 ^a	32.86	38.63	39.84	33.21
Mean Minutes	209.39	225.35 ^a	149.28	162.96	169.83	132.00
Mean Minutes (for participants)	445.55	444.06	454.22	421.83	426.34	397.47
N	5113	3155	1958	6839	4047	2792

Source: Authors' calculations using the 2006–2008, 2010 American Time Use Survey (ATUS).

Notes: Means are weighted; sample sizes are not.

^aMen 55–64 different from men 65–74 ($p < .05$);

^bWomen 55–64 different from women 65–74 ($p < .05$).

Table 2

Relative Risk Ratios from Multinomial Logistic Regression Models: Sleeping Too Much (>9 hours) or Too Little (<7 hours) on the ATUS Diary Day for Men and Women Ages 55–64 and 65–74, 2006–2008 and 2010

	Men			Women		
	55–64		65–74	55–64		65–74
	<7 hours	>9 hours	<7 hours	>9 hours	<7 hours	>9 hours
Employment/Volunteer Status						
Full Time	1.825*** (.291)	.642*** (.081)	2.708*** (.678)	.596*** (.066)	1.318 (.187)	1.407 (.369)
Part Time	.921 (.262)	.522** (.116)	2.599** (.834)	.708* (.112)	1.038 (.207)	.614* (.118)
Self Employed	1.968** (.443)	.959 (.175)	1.111 (.357)	.676* (.132)	1.033 (.253)	.645 (.161)
Formal Volunteer (Yes)	1.615* (.361)	.831 (.202)	.589 (.217)	.655* (.115)	.976 (.202)	.764 (.139)
Health Status						
Excellent	.837 (.159)	.691* (.118)	1.491 (.430)	.617*** (.090)	.886 (.161)	1.333 (.346)
Very Good	1.093 (.173)	.855 (.115)	1.450 (.366)	.864 (.130)	.865 (.130)	.893 (.125)
Fair	1.016 (.215)	1.260 (.206)	1.475 (.455)	1.210 (.179)	1.122 (.208)	1.343 (.353)
Poor	1.107 (.342)	1.891** (.414)	4.017*** (1.577)	1.813** (.375)	1.498 (.477)	1.766*** (.279)
College Degree (Yes)	.994 (.132)	.847 (.099)	.870 (.180)	.837 (.091)	.802 (.112)	.943 (.126)
Race						
Black	1.676** (.293)	1.392* (.218)	2.550*** (.668)	1.368* (.171)	1.442* (.214)	1.854*** (.282)
Hispanic	.940 (.206)	1.410* (.246)	1.143 (.392)	1.402* (.211)	.706 (.170)	1.263 (.389)
Other	1.194 (.415)	1.310 (.325)	2.280 (1.212)	1.202 (.299)	.754 (.225)	1.799** (.358)
Linked Lives						
Married (Yes)	.939 (.120)	.780* (.086)	.828 (.151)	1.015 (.096)	.926 (.110)	.803 (.295)
Adult Care (Yes)	1.409 (.518)	.951 (.363)	.990 (.473)	1.046 (.229)	.678* (.112)	.942 (.101)
Child Care (Yes)	1.260 (.288)	.847 (.157)	2.080* (.723)	.701* (.106)	2.522** (.799)	1.611 (.400)
Children under 18 in the Home (Yes)	1.009 (.190)	1.225 (.180)	.701 (.281)	1.035 (.157)	1.047 (.177)	1.016 (.181)
Weekday	1.226 (.157)	.408*** (.041)	1.213 (.212)	.460*** (.040)	.932 (.160)	1.080 (.233)
2007	1.072 (.199)	1.092 (.172)	1.629 (.439)	.980 (.131)	1.256* (.142)	.626 (.216)
			.826 (.151)	1.370 (.226)	1.175 (.178)	.712*** (.072)
					1.090 (.245)	1.307 (.200)

	Men						Women					
	55-64			65-74			55-64			65-74		
	<7 hours	>9 hours		<7 hours	>9 hours		<7 hours	>9 hours		<7 hours	>9 hours	
2008	.915 (.160)	.890 (.130)		1.307 (.350)	.826 (.144)		1.195 (.203)	.949 (.128)		1.275 (.294)	1.197 (.186)	
2010	.953 (.166)	1.004 (.147)		1.552 (.437)	1.158 (.202)		1.045 (.177)	1.011 (.131)		1.190 (.264)	1.226 (.188)	
Constant	.241*** (.057)	2.158*** (.393)		.118*** (.037)	1.451 (.276)		.294*** (.065)	1.948*** (.318)		.190*** (.050)	1.100 (.179)	
<i>Model Fit</i>												
F	5.670***			4.312***			6.399***			3.761***		
df	40			40			40			40		
N of Observations	3155			1958			4047			2792		

Source: Authors' calculations using the 2006-2008 and 2010 American Time Use Survey (ATUS).

Notes: Data shown for multinomial logistic regression are relative risk ratios with standard error in parentheses. Reference categories are not working for pay, not a formal volunteer, good health, ages 65-69, less than a college degree, white, not married, not giving adult care, not providing care to non-resident children, no children under 18 in the household, weekend interview, and 2006.

* $p < .05$;

** $p < .01$;

*** $p < .001$ (two-tailed tests).

Table 3

Coefficients from Ordinary Least Squares Regression Models: Television Watching and Socializing on the ATUS Diary Day for Men and Women Ages 55–64 and 65–74, 2006–2008 and 2010

	A. Men			
	55–64		65–74	
	Television Watching	Socializing (excluding during paid work)	Television Watching	Socializing (excluding during paid work)
Employment/Volunteer Status				
Full Time	–108.342 *** (9.243)	–156.242 *** (12.726)	–103.688 *** (13.256)	–151.523 *** (20.220)
Part Time	–41.827 * (17.689)	–59.635 ** (21.629)	–75.175 *** (17.009)	–78.106 ** (24.743)
Self Employed	–105.766 *** (12.350)	–154.633 *** (16.560)	–75.807 *** (14.279)	–86.425 *** (23.232)
Formal Volunteer (Yes)	–50.052 *** (12.297)	75.650 *** (20.283)	–70.180 *** (13.442)	46.838 (23.959)
Health Status				
Excellent	–27.722 ** (10.630)	–1.016 (14.622)	–40.069 ** (14.129)	7.716 (21.380)
Very Good	–6.441 (9.082)	.383 (12.067)	–24.844 (12.934)	13.529 (18.013)
Fair	40.274 ** (13.199)	–15.756 (16.937)	9.590 (17.337)	–10.572 (20.569)
Poor	79.978 *** (20.296)	–65.699 ** (22.424)	93.864 *** (27.504)	–29.877 (27.407)
College Degree (Yes)	–50.511 *** (7.672)	–16.658 (10.598)	–65.265 *** (10.504)	–8.067 (15.231)
Race				
Black	25.013 * (12.609)	–30.734 * (15.424)	89.141 *** (20.098)	–72.046 *** (20.739)
Hispanic	–16.214 (11.511)	–3.355 (16.901)	–30.956 (18.672)	–35.287 (23.399)
Other	–13.647 (21.281)	–9.455 (22.786)	–10.599 (22.215)	5.500 (33.193)
Linked Lives				
Married (Yes)	–7.437 (8.219)	183.535 *** (10.441)	–4.129 (11.601)	264.321 *** (13.349)
Adult Care (Yes)	–17.330 (22.616)	89.403 *** (25.794)	4.612 (25.434)	123.984 *** (31.712)
Child Care (Yes)	–36.232 ** (13.523)	106.630 *** (16.069)	–47.640 ** (18.249)	85.914 *** (24.969)
Children under 18 in the Home (Yes)	7.587 (11.338)	–12.347 (14.587)	6.310 (28.273)	4.396 (26.227)
Weekday	–63.947 *** (7.821)	–169.384 *** (10.106)	–41.423 *** (10.269)	–88.845 *** (13.213)
2007	–7.088 (11.282)	–13.789 (14.663)	7.897 (14.217)	–6.761 (20.303)
2008	28.250 ** (10.530)	2.956 (14.199)	32.825 * (15.368)	28.173 (18.584)
2010	–1.028 (10.003)	–13.322 (13.666)	16.700 (15.518)	–11.962 (18.670)
Constant	336.669 *** (13.325)	420.108 *** (18.312)	326.899 *** (17.039)	280.943 *** (21.265)
<i>Model Fit</i>				
R-Squared	.195	.263	.171	.255
F	25.31 ***	55.05 ***	17.47 ***	38.22 ***
df	20	20	20	20
N of Observations	3155	3155	1958	1958

	B. Women			
	55–64		65–74	
	Television Watching	Socializing (excluding during paid work)	Television Watching	Socializing (excluding during paid work)
Employment/Volunteer Status				
Full Time	–72.831 *** (7.101)	–134.395 *** (11.618)	–114.126 *** (10.012)	–127.886 *** (20.473)
Part Time	–39.166 *** (9.270)	–86.148 *** (14.967)	–44.772 *** (11.314)	–75.356 *** (16.790)
Self Employed	–73.263 *** (9.479)	–116.820 *** (19.323)	–70.401 *** (16.174)	–89.557 *** (28.199)
Formal Volunteer (Yes)	–48.544 *** (7.503)	52.116 ** (18.616)	–70.397 *** (9.425)	–5.282 (17.047)
Health Status				
Excellent	–26.473 *** (7.803)	10.930 (14.196)	–38.009 *** (11.313)	6.957 (19.936)
Very Good	–15.532 * (6.713)	6.236 (11.453)	–3.929 (9.929)	–18.234 (14.983)
Fair	28.303 ** (10.583)	6.748 (14.886)	21.982 (12.693)	–28.941 (17.976)
Poor	53.846 ** (19.407)	–50.570 * (23.771)	32.123 (18.362)	–40.518 (25.409)
College Degree (Yes)	–33.000 *** (5.733)	–18.670 (10.917)	–49.995 *** (8.073)	–19.595 (13.505)
Race				
Black	14.346 (8.911)	–38.568 ** (12.323)	21.714 (11.830)	–60.200 *** (15.698)
Hispanic	–10.142 (10.517)	29.172 (16.529)	–4.634 (13.961)	37.507 (22.699)
Other	–12.894 (13.403)	–22.978 (19.259)	–15.262 (27.439)	–26.825 (39.060)
Linked Lives				
Married (Yes)	–26.416 *** (6.180)	160.226 *** (9.226)	–35.022 *** (8.194)	248.302 *** (12.162)
Adult Care (Yes)	–33.229 ** (11.401)	113.176 *** (21.477)	–24.529 (20.785)	103.181 ** (31.539)
Child Care (Yes)	–27.788 *** (7.379)	159.309 *** (13.785)	–58.474 *** (11.043)	103.717 *** (16.716)
Children under 18 in the Home (Yes)	–1.242 (8.604)	14.691 (15.584)	8.848 (17.848)	35.864 (25.337)
Weekday	–42.607 *** (5.723)	–147.713 *** (9.031)	7.839 (7.450)	–75.678 *** (11.031)
2007	8.086 (7.592)	2.664 (13.456)	–1.880 (11.318)	13.890 (16.653)
2008	17.819 * (8.345)	–.503 (13.110)	1.698 (12.081)	9.663 (16.780)
2010	14.444 (7.727)	2.925 (12.732)	5.440 (11.371)	6.793 (16.120)
Constant	256.671 *** (10.892)	406.831 *** (17.726)	257.163 *** (12.718)	319.542 *** (18.662)
Model Fit				
R-Squared	.146	.288	.118	.290
F	23.95 ***	75.07 ***	18.66 ***	45.51 ***
df	20	20	20	20
N of Observations	4047	4047	2792	2792

Notes: Data shown for OLS models are regression coefficients with standard error in parentheses. Reference categories are not working for pay, not a formal volunteer, good health, ages 65–69, less than a college degree, white, not married, not giving adult care, not providing care to non-resident children, no children under 18 in the household, weekend interview, and 2006.

* $p < .05$;

** $p < .01$;

*** $p < .001$ (two-tailed tests).

Table 4

Odds Ratios from Binary Logit Regression Models and Coefficients from Ordinary Least Squares Regression Models: Participation and Time Spent (Conditional on Participation) in Physical Activity and Meal Preparation on the ATUS Diary Day for Men and Women Ages 55–64 and 65–74, 2006–2008 and 2010

	A. Men					
	55–64			65–74		
	Physical Activity		Meal Preparation	Physical Activity		Meal Preparation
	Participation (Logit: OR)	Minutes (OLS: β)	Participation (Logit: OR)	Minutes (OLS: β)	Participation (Logit: OR)	Minutes (OLS: β)
Employment/Volunteer Status						
Full Time	.598*** (.073)	−38.822*** (10.141)	.802 (.091)	−5.293 (5.978)	.711 (.145)	−46.978*** (12.914)
Part Time	.819 (.183)	−2.628 (20.052)	.730 (.152)	−4.826 (8.283)	.694 (.162)	−8.004 (17.782)
Self Employed	.753 (.134)	−33.182 (18.855)	.798 (.134)	−7.460 (4.937)	.560** (.124)	−6.838 (28.091)
Formal Volunteer (Yes)	1.260 (.252)	−31.092** (11.543)	1.135 (.217)	15.503 (18.105)	1.214 (.285)	−6.956 (16.950)
Health Status						
Excellent	1.755*** (.279)	37.457** (12.592)	1.149 (.173)	13.081* (5.260)	1.660** (.323)	36.650* (17.177)
Very Good	1.183 (.159)	28.154* (11.599)	1.132 (.139)	−2.307 (3.427)	1.320 (.224)	20.124 (12.691)
Fair	.890 (.150)	−14.611 (11.703)	1.017 (.148)	16.826 (10.970)	.889 (.166)	−11.682 (16.470)
Poor	.741 (.170)	−36.233* (15.738)	.828 (.164)	−3.715 (5.398)	.332*** (.095)	−7.082 (17.382)
College Degree (Yes)	1.938*** (.215)	−12.770 (10.478)	1.124 (.117)	−6.035 (3.827)	1.574** (.225)	−14.831 (12.325)
Race						
Black	.972 (.145)	−25.929** (9.839)	1.121 (.149)	12.952 (7.472)	1.706** (.307)	−23.497 (13.622)
Hispanic	1.197 (.214)	−5.754 (10.691)	1.106 (.173)	4.302 (7.281)	1.586* (.340)	−6.718 (14.075)
Other	1.279 (.333)	−4.942 (20.920)	1.732* (.417)	19.457** (6.635)	1.330 (.496)	−8.748 (15.284)
Linked Lives						
Married (Yes)	.875 (.093)	5.282 (8.132)	.524*** (.050)	2.390 (3.487)	.834 (.106)	6.745 (11.490)
Adult Care (Yes)	.801 (.271)	6.618 (27.725)	1.200 (.346)	1.224 (6.398)	.454 (.204)	−37.620 (21.358)
Child Care (Yes)	1.124 (.203)	−20.226* (9.997)	1.424* (.231)	7.172 (4.866)	1.235 (.309)	−40.807*** (11.732)
Children under 18 in the Home (Yes)	1.012 (.156)	2.332 (8.986)	.971 (.130)	1.399 (4.717)	.947 (.249)	−9.585 (17.333)

A. Men									
55–64					65–74				
Physical Activity			Meal Preparation		Physical Activity		Meal Preparation		
Participation (Logit: OR)	Minutes (OLS: β)		Participation (Logit: OR)	Minutes (OLS: β)	Participation (Logit: OR)	Minutes (OLS: β)	Participation (Logit: OR)	Minutes (OLS: β)	
1.255* (.126)	–33.392*** (9.209)		.966 (.086)	–5.858 (3.392)	1.328* (.159)	–6.861 (11.905)	1.219 (.133)	–.094 (3.162)	
.914 (.142)	7.564 (14.718)		1.020 (.143)	6.756 (7.770)	1.328 (.248)	2.315 (14.762)	1.073 (.183)	–2.662 (4.346)	
1.104 (.162)	–8.283 (10.842)		1.057 (.140)	2.505 (4.471)	1.341 (.244)	19.213 (16.721)	1.046 (.171)	2.993 (4.758)	
1.247 (.178)	.206 (11.367)		1.143 (.151)	7.142 (4.848)	1.174 (.208)	–6.892 (12.660)	1.167 (.188)	5.327 (4.711)	
.287*** (.052)	127.375*** (15.193)		1.039 (.172)	39.152*** (9.787)	.267*** (.056)	99.586*** (15.807)	1.008 (.182)	40.971*** (5.197)	
<i>Model Fit</i>									
R-Squared	.088			.053		.064		.055	
F	4.614***	3.273***	3.235***	3.961***	4.022***	1.741*	3.089***	1.809*	
df	20	20	20	20	20	20	20	20	
N of Observations	3155	848	3155	1372	1958	564	1958	864	
B. Women									
55–64					65–74				
Physical Activity			Meal Preparation		Physical Activity		Meal Preparation		
Participation (Logit: OR)	Minutes (OLS: β)		Participation (Logit: OR)	Minutes (OLS: β)	Participation (Logit: OR)	Minutes (OLS: β)	Participation (Logit: OR)	Minutes (OLS: β)	
.680*** (.079)	–19.119*** (5.489)		.785* (.084)	–12.526*** (3.285)	.696 (.159)	–19.608*** (7.300)	.388*** (.077)	–13.008*** (4.714)	
1.030 (.161)	–13.899* (6.374)		.975 (.143)	–14.636*** (4.341)	.740 (.153)	4.212 (13.597)	1.036 (.187)	.851 (5.283)	
.901 (.182)	–25.054*** (6.521)		.764 (.139)	–11.477* (5.445)	.982 (.272)	–20.305* (9.361)	.521*** (.127)	6.715 (6.890)	
1.277 (.209)	–10.463 (5.775)		.893 (.143)	–931 (5.665)	1.157 (.208)	–17.973*** (6.454)	1.533* (.283)	–8.035* (3.467)	
Employment/Volunteer Status									
Full Time									
Part Time									
Self Employed									
Formal Volunteer (Yes)									
Health Status									
Excellent									

B. Women											
55–64						65–74					
	Physical Activity			Meal Preparation			Physical Activity			Meal Preparation	
	Participation (Logit: OR)	Minutes (OLS: β)		Participation (Logit: OR)	Minutes (OLS: β)		Participation (Logit: OR)	Minutes (OLS: β)		Participation (Logit: OR)	Minutes (OLS: β)
Very Good	1.245 (.159)	5.751 (5.244)		.985 (.113)	1.418 (3.372)		1.301 (.198)	–3.878 (8.095)		1.288 (.185)	7.660* (3.809)
Fair	.621** (.101)	–11.885 (6.171)		.920 (.131)	7.128 (4.305)		.745 (.139)	–10.127 (11.042)		.823 (.130)	11.324* (4.930)
Poor	.360*** (.089)	–9.463 (10.757)		.693 (.137)	–10.285 (5.416)		.684 (.180)	–18.871* (9.005)		.773 (.161)	2.398 (5.443)
College Degree (Yes)	1.453*** (.160)	6.674 (4.540)		.758** (.078)	–4.167 (2.876)		1.597** (.229)	15.210* (7.124)		.787 (.104)	–6.275* (3.162)
Race											
Black	.794 (.108)	–3.042 (5.427)		.800* (.091)	6.654 (4.170)		.950 (.158)	4.328 (10.359)		1.056 (.149)	11.184** (4.057)
Hispanic	1.421* (.229)	–3.145 (5.551)		1.414* (.205)	14.901*** (4.200)		1.835*** (.386)	–4.780 (9.982)		1.178 (.249)	16.234** (5.378)
Other	1.372 (.314)	11.529 (10.863)		1.644* (.405)	2.215 (5.086)		1.407 (.494)	–.782 (14.303)		1.008 (.296)	23.020* (10.204)
Linked Lives											
Married (Yes)	.772** (.076)	–2.441 (4.243)		1.216* (.108)	15.338*** (2.619)		1.026 (.117)	5.437 (5.358)		1.501*** (.163)	17.115*** (2.905)
Adult Care (Yes)	.625* (.146)	–20.768* (8.632)		1.467 (.335)	–2.121 (4.623)		.673 (.227)	–22.206 (11.345)		1.957 (.742)	17.114 (8.788)
Child Care (Yes)	1.066 (.157)	8.832 (8.569)		1.481** (.218)	–3.714 (3.700)		1.717** (.328)	–20.936** (7.361)		1.280 (.241)	7.014 (4.960)
Children under 18 in the Home (Yes)	.893 (.138)	–8.006 (7.998)		1.213 (.180)	19.313*** (4.114)		.550* (.154)	12.198 (19.427)		1.388 (.324)	.214 (7.205)
Weekday	1.405*** (.131)	–10.114* (4.815)		1.389*** (.114)	–11.598*** (2.876)		1.434*** (.163)	10.581 (5.622)		1.284* (.130)	–14.756*** (3.330)
2007	.837 (.119)	2.632 (6.038)		.854 (.107)	–1.348 (3.829)		.693* (.116)	13.648 (8.544)		.795 (.121)	–2.631 (4.392)
2008	1.007 (.142)	1.870 (5.439)		.965 (.123)	–4.373 (3.770)		.696* (.117)	–2.306 (5.902)		.819 (.126)	–1.995 (3.920)
2010	.858 (.120)	11.916* (5.636)		1.072 (.133)	1.278 (3.851)		.819 (.136)	20.429* (8.055)		1.305 (.203)	–5.244 (4.199)
Constant	.316*** (.055)	64.720*** (8.680)		1.962*** (.319)	58.132*** (4.898)		.237*** (.042)	44.551*** (7.548)		1.744*** (.277)	53.205*** (4.979)
Model Fit											
R-Squared		.072			.059			.082			.070
F	5.085***	2.531***		4.304***	8.403***		4.041***	1.693*		4.912***	6.928***
df	20	20		20	20		20	20		20	20
N of Observations	4047	916		4047	2672		2792	622		2792	1897

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Notes: Data shown for Logit models are Odds Ratios with standard error in parentheses and model participation in physical activity/meal preparation on the diary day. Data shown for OLS models of time spent in physical activity/meal preparation conditional on participation are regression coefficients with standard error in parentheses. Reference categories are not working for pay, not a formal volunteer, good health, less than a college degree, white, not married, not giving adult care, not providing care to non-resident children, no children under 18 in the household, weekend interview, and 2006.

* $p<.05$;
** $p<.01$;
*** $p<.001$ (two-tailed tests).

Source: Authors' calculations using the 2006–2008 and 2010 American Time Use Survey (ATUS).

Notes: Data shown for Logit models are Odds Ratios with standard error in parentheses and model participation in physical activity/meal preparation on the diary day. Data shown for OLS models of time spent in physical activity/meal preparation conditional on participation are regression coefficients with standard error in parentheses. Reference categories are not working for pay, not a formal volunteer, good health, less than a college degree, white, not married, not giving adult care, not providing care to non-resident children, no children under 18 in the household, weekend interview, and 2006.

* $p<.05$;
** $p<.01$;
*** $p<.001$ (two-tailed tests).

Appendix A

Activities included in Dependent Variables: ATUS-X Codes and Labels

Activity Code	Activity Label
<i>Sleep</i>	
0101xx	Sleeping (including sleeplessness)
<i>Meal Preparation</i>	
020201	Food and Drink Preparation
<i>Physical Activity</i>	
1301xx	Participating in Sports, Exercise, or Recreation
--	Any activity in which the respondent also reported walking or biking as a mode of transportation
<i>Television Watching</i>	
120303	Television and Movies (not religious)
120304	Television (religious)
<i>Socializing (excluding during paid work)</i>	
--	Any activity in which the respondent reported being “with” someone else, except during paid work
<i>Socializing (only during paid work)</i>	
--	Any activity in which the respondent reported being “with” someone else while doing paid work

A comprehensive list of activity codes is available at: <https://www.atusdata.org/atus-action/variables/ACTIVITY>.

Appendix B

Means/Percentages of Time Allocations of Men and Women Ages 55–64 and 65–74, 2006–2008 and 2010

A. Men (N=5,113)																		
	Sleeping			Meal preparation			Physical Activity			Passive Leisure (Television Watching)			Socializing (excl paid work) ¹			Socializing (during paid work) ²		
	% Yes	Mean (SD) Minutes	% <7 hrs	% 7–9 hrs	% >9 hrs	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	
Full Sample	99.91	511 (124)	18	43	39	41	18 (38)	28	25 (68)	86	225 (202)	89	351 (269)	47	209 (246)			
Employment Status																		
Full Time	99.85	480 (116)	26	47	28	39	15 (40)	25	17 (54)	82	157 (155)	90	281 (240)	54	250 (254)			
Part Time	100	514 (122)	17	46	37	39	16 (37)	28	28 (72)	85	213 (187)	89	368 (267)	36	130 (192)			
Self Employed	100	498 (108)	20	45	35	36	13 (31)	28	24 (77)	82	159 (152)	90	309 (239)	31	132 (217)			
Not Employed	99.98	538 (127)	12	40	48	43	21 (38)	30	29 (75)	91	295 (222)	89	413 (283)	--	--			
Formal Volunteer																		
Yes	100	485 (101)	22	48	30	40	19 (57)	35	26 (58)	83	156 (140)	96	438 (243)	24	77 (160)			
No	100	513 (125)	18	43	39	41	17 (36)	27	24 (69)	87	231 (205)	89	345 (270)	48	215 (248)			
Health																		
Excellent	100	487 (102)	20	52	28	40	20 (42)	38	41 (92)	82	162 (165)	92	350 (263)	45	211 (247)			
Very Good	99.83	492 (111)	21	47	32	41	15 (30)	30	29 (76)	85	189 (173)	91	355 (257)	50	224 (252)			
Good	99.98	510 (116)	17	44	39	41	17 (34)	25	20 (55)	87	225 (191)	88	351 (273)	45	196 (240)			
Fair	100	540 (139)	14	36	50	42	23 (54)	24	17 (58)	90	283 (225)	87	352 (280)	49	205 (245)			
Poor	100	574 (161)	13	26	62	38	15 (28)	17	11 (44)	93	365 (256)	83	344 (290)	37	175 (258)			
Social Location																		
Age																		
55–64	99.91	500 (120)	21	45	34	40	18 (40)	27	23 (66)	85	206 (193)	89	330 (261)	51	225 (249)			
65–74	100	531 (128)	13	41	46	41	17 (34)	29	27 (73)	88	259 (213)	89	390 (278)	33	149 (226)			
College Graduate																		
Yes	100	494 (104)	20	49	31	42	17 (32)	37	31 (71)	82	161 (158)	92	348 (254)	46	202 (245)			
No	99.91	519 (131)	17	41	42	40	18 (40)	24	22 (67)	88	255 (213)	88	353 (276)	48	214 (247)			
Race																		
White	99.92	506 (115)	18	46	37	39	16 (35)	27	25 (71)	86	217 (195)	90	361 (268)	45	205 (247)			

A. Men (N=5,113)																	
	Sleeping			Meal preparation			Physical Activity			Passive Leisure (Television Watching)			Socializing (excl paid work) ¹			Socializing (during paid work) ²	
	% Yes	Mean (SD) Minutes	% <7 hrs	% 7-9 hrs	% >9 hrs	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes
Black	100	532 (166)	22	32	47	46	24 (51)	29	19 (50)	87	298 (253)	82	292 (270)	51	214 (246)		
Hispanic	100	534 (132)	15	38	47	41	21 (44)	29	23 (56)	85	215 (188)	88	329 (276)	59	254 (250)		
Other	100	523 (133)	19	36	44	49	27 (40)	33	26 (72)	91	213 (171)	91	366 (260)	48	179 (209)		
Linked Lives																	
Married																	
Yes	99.93	505 (117)	18	45	37	37	16 (37)	27	25 (68)	87	215 (194)	97	403 (260)	48	215 (248)		
No	99.97	530 (140)	17	38	45	52	23 (38)	29	24 (69)	86	255 (223)	67	197 (235)	45	192 (241)		
Adult Caregiving																	
Yes	100	496 (112)	22	45	33	52	27 (40)	21	16 (53)	85	224 (185)	99	500 (228)	25	97 (193)		
No	99.94	512 (124)	18	43	39	40	17 (38)	28	25 (69)	86	225 (203)	89	347 (269)	47	212 (247)		
Child Caregiving																	
Yes	100	494 (102)	23	43	35	47	24 (40)	32	21 (48)	85	190 (177)	100	482 (229)	50	208 (229)		
No	99.94	513 (125)	17	43	39	40	17 (38)	28	25 (70)	87	228 (204)	88	340 (269)	47	210 (248)		
Children under 18 in the home																	
Yes	100	513 (129)	20	41	39	40	19 (37)	28	21 (56)	83	214 (211)	94	372 (263)	56	253 (254)		
No	99.93	511 (123)	18	44	39	41	17 (38)	28	25 (70)	87	227 (201)	89	349 (270)	46	203 (245)		
Grandchild under 18 in the home																	
Yes	100	524 (132)	18	38	44	35	15 (29)	24	18 (53)	88	256 (229)	94	405 (279)	60	245 (263)		
No	99.94	511 (123)	18	44	38	41	18 (38)	28	25 (69)	86	224 (201)	89	349 (269)	46	208 (246)		
Own child under 18 in the home																	
Yes	100	499 (118)	23	41	36	45	24 (44)	31	25 (60)	80	174 (174)	95	366 (250)	54	257 (253)		
No	99.94	512 (124)	18	44	39	40	17 (37)	28	25 (69)	87	228 (203)	89	351 (270)	46	205 (245)		
Timing																	
Survey Year																	
2006	100	515 (126)	17	43	40	39	16 (32)	25	22 (63)	87	219 (199)	89	358 (270)	--	--		
2007	99.78	504 (122)	20	43	38	40	17 (42)	27	25 (74)	85	213 (194)	89	344 (270)	--	--		

A. Men (N=5,113)														
	Sleeping			Meal preparation			Physical Activity		Passive Leisure (Television Watching)		Socializing (excl paid work) ¹		Socializing (during paid work) ²	
	% Yes	Mean (SD) Minutes	% <7 hrs	% 7-9 hrs	% >9 hrs	% Yes	Mean (SD) Minutes	% Yes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes
2008	99.97	508 (128)	18	46	37	40	17 (36)	29	26	(72)	88	246 (209)	89	364 (271)
2010	100	518 (119)	17	42	41	43	20 (40)	30	25	(64)	86	222 (204)	90	340 (266)
Interview Day														
Weekday	99.93	500 (118)	20	46	34	41	17 (38)	29	24	(64)	86	209 (192)	89	314 (250)
Weekend	99.97	539 (132)	13	37	50	40	18 (38)	25	26	(79)	87	266 (220)	89	446 (292)
B. Women (N=6,839)														
	Sleeping			Meal preparation			Physical Activity		Passive Leisure (Television Watching)		Socializing (excl paid work) ¹		Socializing (during paid work) ²	
	% Yes	Mean (SD) Minutes	% <7 hrs	% 7-9 hrs	% >9 hrs	% Yes	Mean (SD) Minutes	% Yes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes
Full Sample	100	511 (123)	16	45	39	70	39 (54)	24	13	(37)	82	177 (169)	90	369 (274)
Employment Status														
Full Time	100	488 (114)	22	49	29	64	31 (49)	22	10	(32)	77	122 (126)	90	278 (244)
Part Time	100	492 (106)	17	50	33	73	38 (53)	26	14	(40)	83	158 (138)	92	355 (244)
Self Employed	100	498 (99)	15	53	31	65	35 (47)	27	12	(29)	76	115 (117)	90	330 (254)
Not Employed	100	528 (131)	13	40	46	72	43 (57)	24	14	(39)	86	218 (189)	89	424 (285)
Formal Volunteer														
Yes	100	487 (92)	17	53	30	71	36 (50)	31	15	(33)	74	112 (115)	94	409 (266)
No	100	513 (92)	16	44	40	69	39 (50)	23	13	(33)	83	184 (115)	89	365 (266)
Health														
Excellent	100	483 (96)	18	54	28	65	34 (48)	31	20	(45)	78	128 (133)	91	369 (274)
Very Good	100	499 (108)	17	49	34	72	40 (55)	27	15	(37)	82	155 (147)	91	375 (271)
Good	100	511 (115)	16	45	39	71	37 (52)	23	12	(37)	82	177 (162)	90	370 (272)
Fair	100	527 (136)	15	35	50	70	45 (63)	17	8	(29)	86	227 (196)	90	371 (276)
Poor	100	585 (191)	15	28	57	66	33 (46)	13	6	(22)	86	265 (224)	80	330 (295)

B. Women (N=6,839)																		
	Sleeping			Meal preparation			Physical Activity			Passive Leisure (Television Watching)			Socializing (excl paid work) ¹			Socializing (during paid work) ²		
	% Yes	Mean (SD) Minutes	% <7 hrs	% 7-9 hrs	% >9 hrs	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	
Social Location																		
Age																		
55-64	100	502 (125)	19	46	35	69	37 (54)	24	13 (35)	81	159 (160)	91	357 (271)	40	170 (233)			
65-74	100	524 (119)	13	43	44	71	41 (54)	24	14 (39)	85	207 (179)	88	389 (279)	33	132 (219)			
College Graduate																		
Yes	100	500 (104)	16	51	33	65	32 (47)	31	19 (44)	76	127 (132)	90	346 (262)	37	148 (219)			
No	100	514 (129)	17	43	41	71	41 (56)	21	11 (34)	84	193 (176)	90	376 (278)	39	169 (235)			
Race																		
White	100	505 (114)	16	47	36	69	37 (53)	24	13 (37)	82	171 (164)	91	381 (274)	38	159 (228)			
Black	100	529 (165)	20	33	47	66	40 (57)	18	10 (32)	84	217 (196)	83	284 (261)	46	207 (258)			
Hispanic	100	539 (125)	11	36	53	75	53 (60)	27	13 (32)	85	194 (171)	91	408 (287)	28	124 (223)			
Other	100	511 (128)	17	45	38	76	44 (55)	29	18 (48)	77	154 (164)	90	323 (253)	43	180 (217)			
Linked Lives																		
Married																		
Yes	100	507 (113)	16	47	38	72	44 (56)	24	13 (37)	81	160 (152)	98	452 (257)	38	152 (222)			
No	100	515 (138)	18	42	41	65	30 (49)	24	12 (36)	84	203 (190)	77	240 (250)	40	179 (242)			
Adult Caregiving																		
Yes	100	491 (127)	24	42	34	79	49 (57)	17	6 (22)	80	149 (144)	100	508 (246)	33	148 (220)			
No	100	512 (123)	16	45	39	69	38 (54)	24	13 (37)	82	178 (170)	89	362 (274)	39	164 (231)			
Child Caregiving																		
Yes	100	492 (111)	20	47	33	78	47 (53)	27	14 (36)	82	146 (132)	100	517 (230)	31	113 (194)			
No	100	513 (125)	16	44	40	68	37 (54)	23	13 (37)	82	182 (174)	88	347 (274)	39	169 (234)			
Children under 18 in the home																		
Yes	100	510 (128)	17	43	40	76	52 (63)	20	10 (33)	82	178 (177)	95	414 (260)	36	158 (238)			
No	100	511 (123)	16	45	39	69	37 (53)	24	13 (37)	82	177 (168)	89	365 (275)	39	163 (230)			
Grandchild under 18 in the home																		
Yes	100	515 (135)	18	39	43	75	52 (66)	17	9 (34)	85	195 (186)	93	417 (261)	42	171 (239)			

B. Women (N=6,839)																		
	Sleeping			Meal preparation			Physical Activity			Passive Leisure (Television Watching)			Socializing (excl paid work) ¹			Socializing (during paid work) ²		
	% Yes	Mean (SD) Minutes	% <7 hrs	% 7-9 hrs	% >9 hrs	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	% Yes	Mean (SD) Minutes	
No	100	510 (122)	16	45	39	69	38 (53)	24	13 (37)	82	176 (168)	90	366 (275)	38	163 (230)			
Own child under 18 in the home																		
Yes	100	497 (108)	16	48	36	77	53 (58)	26	13 (31)	75	126 (135)	98	403 (262)	32	140 (214)			
No	100	511 (123)	16	45	39	69	38 (54)	24	13 (37)	82	178 (170)	90	368 (275)	39	163 (231)			
Timing																		
Survey Year																		
2006	100	513 (130)	15	47	38	71	40 (54)	26	12 (34)	81	172 (171)	91	368 (273)	--	--			
2007	100	506 (121)	18	43	39	66	37 (55)	22	12 (38)	81	173 (162)	91	375 (276)	--	--			
2008	100	508 (121)	17	44	38	69	37 (51)	24	12 (33)	83	183 (174)	89	371 (280)	--	--			
2010	100	515 (121)	15	45	40	73	41 (56)	23	15 (41)	83	180 (169)	89	362 (270)	39	163 (230)			
Interview Day																		
Weekday	100	500 (120)	18	47	34	71	37 (49)	25	14 (36)	81	169 (165)	90	335 (263)	48	207 (243)			
Weekend	100	536 (128)	12	38	50	65	42 (64)	20	11 (38)	84	196 (177)	90	453 (284)	14	54 (150)			

Source: Authors' calculations using the 2006–2008, 2010 American Time Use Survey (ATUS).

Notes: Means are weighted; standard deviations are in parentheses next to means.

¹ This measure does not include time spent with others during paid work.

² Descriptives for 2010 only. This measure includes time spent with others during paid work for those who work for pay.