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## Disability and Patterns of Leisure Participation across the Life Course

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## Disability and Patterns of Leisure Participation across the Life Course

### Abstract

*Objectives: Patterns of healthy leisure are dependent upon age, but people with disabilities are particularly susceptible to passive and disengaged types of activities. This study evaluates how individuals with disabilities spend their time in passive, active, social, and isolated forms of leisure over the life course, and how these patterns vary by age.*

*Methods: Nationally representative data are analyzed from 70,165 respondents aged 15 and over in the 2008, 2010, and 2012-2016 American Time Use Survey. Linear regression models estimate the association between disability and leisure time, net of self-rated health and sociodemographic controls.*

*Results: People with disabilities report significantly more, and poorer quality, leisure than people without disabilities. The isolated leisure time of people with disabilities is most different from people without disabilities in later life—whereas differences in total and passive leisure time, by disability status, are greatest in midlife. Patterns vary by type of functional limitation.*

*Discussion: People with disabilities spend less time in health-promoting forms of leisure at all ages, but these patterns are unique across midlife and older age.*

**Keywords:** time use, functional limitation, physical activity, social isolation, midlife

## Introduction

How much and what type of time individuals spend in leisure matters for multiple facets of their physical and mental health. Prolonged time in passive forms of leisure like watching television are associated with higher risk of type 2 diabetes, cardiovascular disease, and all-cause mortality (Grøntved & Hu, 2011). Alternatively, active forms of leisure that entail physical or mental exertion—as well as socially engaged forms of leisure that build or maintain social connections—tend to promote well-being (Adams, Leibbrandt, & Moon, 2011).

These patterns are dependent upon age. Total time spent in leisure generally follows a U-shaped curve, with a relatively high amount in early adulthood, a drop during prime working and childrearing ages, and a subsequent upturn through retirement and older adulthood (Bureau of Labor Statistics, 2019). With age also comes an increasing proportion of leisure time spent alone (Marcum, 2013) and in passive (Gauthier & Smeeding, 2003) forms of leisure. Some—but not all—of these age differences can be explained by life-course factors such as employment, marital status, and living arrangements (Cornwell, 2011). Others vary by gender (Sayer, 2016; Sayer, Freedman, & Bianchi, 2016).

Yet it is important to disentangle the effects of age from those of disability when evaluating leisure over the life course. Disability prevalence increases with age (Brault, 2012) and is positively related to total leisure time (Shandra, 2018). However, disability status cannot fully explain the association between age and leisure (Pagán-Rodríguez, 2014); instead, disability and age may interact (Prizer, Gay, Gerst-Emerson, & Froehlich-Grobe, 2016).

This study uses nationally representative data from the American Time Use Survey (ATUS) to evaluate how patterns of leisure participation vary according to disability status. I begin by comparing how much total time individuals with and without disabilities spend in leisure, as well as how much of this time is spent isolated at home, alone. I then disaggregate leisure time into passive forms like relaxing or watching television, physically or cognitively active forms like exercising or reading, and social forms like communicating with others or attending social events. Next, I assess if these patterns are conditional upon age, and if life course and sociodemographic characteristics attenuate age-dependent differences. Finally, I consider variation in these patterns by the presence of physical, cognitive, sensory, or multiple disabilities.

### I. Leisure Differences by Disability Status

Time use is a useful tool for evaluating daily living because it is a bounded resource and because time spent in one activity necessarily impacts the amount of time spent in other activities (Williams, Masuda, and Tallis, 2016). Recent analyses of the ATUS indicate that working-aged people with disabilities spend more than two more hours per day in leisure than those without disabilities, with considerably less time spent in work-related activities and

more time spent in personal care (Anand & Ben-Shalom, 2014; Meyers & Ravesloot, 2016; Shandra, 2018).

But more leisure does not mean better leisure, and existing research suggests that people with disabilities are less likely than those without disabilities to participate in active and engaged activities and more likely to participate in passive and isolated activities. Freedman and colleagues (2017) find that older adults with physical impairments are less likely than those without physical impairments to report socializing, exercising, and going out for pleasure in the last week. Likewise, Pagán-Rodríguez (2014) finds that individuals with disabilities spend more time in passive (but also in physically active) forms of leisure than those without disabilities in the Time Use Survey for Spain.

Access to quality leisure opportunities may be constrained for people with disabilities, versus those without disabilities, regardless of age. Physical barriers in the built environment can make spaces such as fitness facilities, parks, and community centers unusable (Rimmer, Padalabalanarayanan, Malone, & Mehta, 2017). The technology used to present information about facilities online and in leisure spaces may be inaccessible (Lisney, Bowen, Hearn, & Zedda, 2013). Attitudinal barriers, including experiences of stigma and negative labeling by recreational staff, can deter people with disabilities from pursuing leisure activities (Bedini, 2000). Additionally, transportation-related barriers can hinder social participation as well as the maintenance of personal networks (Bascom & Christensen, 2017).

Additionally, people with disabilities also report poorer health than those without disabilities (Froehlich-Grobe, Jones, Businelle, Kendzor, & Balasubramanian, 2016) that may further impact their access to active and social activities. Although those in poor health spend more time watching television and less time exercising than those in good health (Podor & Halliday, 2012) previous analyses of the ATUS indicate that health status cannot fully explain differences in total leisure time by disability status (Shandra, 2018).

## **II. Life Course Differences among People with Disabilities**

Other constraints on people with disabilities' leisure time may be age-dependent. Contrary to the pattern observed among people without disabilities, Pagán (2014) finds an inverted U-shaped relationship between age and active leisure time for people with disabilities: those in midlife spend significantly more time in active leisure than those who are younger and older. Women with disabilities' time spent in passive and social leisure follows the same U-shape relationship with age as those without disabilities.

Barriers to accessing quality leisure may also be age-graded, particularly for individuals who are younger and for whom disability is less prevalent among age peers (Taylor 2018). Namkung and Carr (2019), for example, find that people with disabilities in early midlife (ages 40-49) reported higher perceived lack of respect, harassment, and service discrimination than those in young adulthood (age 30-39) and in late midlife (50-64) and older age (age 65+). Additionally, younger people without disabilities perceive disability as more stigmatizing than older people without disabilities (Erler & Garstecki 2002). The increased stigma faced by

younger adults with disabilities may be an additional barrier to accessing active forms of leisure relative to older adults with disabilities and younger adults without disabilities.

On the other hand, interactions with age-graded institutions are also predictive of leisure time. School enrollment may increase younger people with disabilities' odds of engaging in active and social leisure activities (Dunton et al 2012; Zick et al. 2007), relative to older people with disabilities. Employment has the opposite effect, such that those who are working part- or full-time report less active, passive, and social leisure than those who are not employed (Bureau of Labor Statistics, 2019). Yet, on average, people with disabilities are less likely to enroll in college, have lower levels of education, and are less likely to be employed than people without disabilities (Brault, 2012; Bureau of Labor Statistics, 2018; Sanford et al. 2011). As a result, young people with disabilities may spend less time in active and social leisure during school years, relative to those without disabilities. Likewise, working-aged adults with disabilities may spend more time in active, passive, and social leisure than working-aged adults without disabilities. Retirement ages may level differences in leisure time because people with and without disabilities are less likely to be employed—and because a greater array of accessible social services may be available to people in encore adulthood (the period typically occurring between ages 55-75, after the career-building and family-building years, but before the onset of severe health limitations (Mortimer & Moen, 2016)).

People with disabilities may also be uniquely susceptible to alone time—both because of their lower levels of engagement with social institutions and their lower likelihood of marrying and living with coresident children (Altman & Bernstein, 2008; Clarke & McKay, 2014). From a linked lives perspective, this means that people with disabilities are not only more likely to live alone (Schur, Kruse, and Blanck, 2014)—but also less likely to be embedded in the social relationships of spouses and children throughout their life courses (e.g., Elder 1994). And because time alone increases with age (Krantz-Kent and Stewart, 2007), the gap between people with and without disabilities' isolated time use may widen in older adulthood.

### **III. Methods**

The American Time Use Survey (Hofferth, Flood, & Sobek, 2018) is a nationally representative survey sponsored by the U.S. Bureau of Labor Statistics that collects information on daily time use. Respondents aged 15 and over were chosen randomly from households that had undergone their final interview for the Current Population Survey (CPS), with ATUS collected two to five months after the final CPS interview. The sample was randomized by day such that half the respondents reported on a weekday and half reported on a weekend day. Computer-assisted telephone interviewing was used to ask respondents to provide demographic information, as well as a detailed account of their activities during a 24-hour period beginning at 4:00 am. The “diary day” is the day about which the respondent reports, with pooled data from all available years (2003-2018) resulting in an initial sample size of 201,151 diary days.

Although the ATUS includes detailed information on time use and sociodemographic characteristics for every year, information on both disability and health is available more sporadically. Detailed disability data was introduced in mid-2008, reducing the sample size to 110,123 diary days. Self-rated health as collected at the time of the ATUS interview was included in the Eating and Health or Well-Being modules administered to subsets of respondents in 2008, 2010, and 2012-2016. Of the respondents with disability data, 70,454 had information on self-rated health and an additional 289 were excluded due to interviewer-reported data quality problems. No other eligibility exclusions were made, leaving a total analytic sample of 70,165 respondents aged 15 and older. All analyses were weighted using the corresponding module weights and Stata's (StataCorp, 2015) subpopulation command.

### III.1. Measures

The focus on active and social activities used here is informed by previous analyses of leisure, wellbeing, and inequality.(Adams et al., 2011; Passias, Sayer, & Pepin, 2017) I begin with a measure of total leisure that is further disaggregated into three mutually exclusive measures of passive (e.g., relaxing or watching television), active (e.g., participating in sports or reading for personal interest), and social (e.g., communicating with others or attending social events) leisure time. See Appendix Table 1 for the complete list of ATUS codes. Additionally, I calculate a separate measure of isolated leisure that includes the minutes spent in total leisure time when the respondent was at home and alone.

Disability status in the ATUS was measured in the CPS interview and designed to correspond to “four basic areas of functioning (vision, hearing, mobility, and cognitive functioning) that identified the largest component of the population of people with disabilities...[and] two key elements that could be used for monitoring independent living and the need for services” (Brault, Stern, & Raglin, 2007). The analyses presented in the main tables use a dichotomous indicator that includes any of these disabilities (N = 8,237). The corresponding Appendix Tables use a five-category indicator of type of functional limitation, differentiating between respondents who report sensory (deaf/serious difficulty hearing or blind/serious difficulty seeing when wearing glasses), cognitive (because of a physical, mental, or emotional condition had serious difficulty concentrating, remembering, or making decisions), physical (serious difficulty walking or climbing stairs) disabilities, or multiple disabilities. This measure is constructed to be mutually exclusive to enable comparison between respondents who report no—or any type of—functional limitation.

Age differentiates between respondents who are 15-19, 20-29, 30-39, 40-49, 50-59, 60-69, and 70 or more years old. Other covariates include self-rated health, sex, highest completed level of education, school enrollment, race/ethnicity, and immigration status (compared foreign-born to those born in the US, Puerto Rico or US Outlying Areas, or abroad of American parent/s). I also include partnership status, number of adults in the household, the presence of an own child aged 0-5, 6-12, or 13-17 in the household, metropolitan residence, and annual family income (CPS began imputing missing data for family income in 2010; missing values for previous years were replaced with the respondent's median income level



by education, gender, and year). Models also control for survey year, whether the interview took place in summer, and whether the interview took place on a weekend or holiday.

Appendix Table 3 indicates that, on average, people with disabilities report significantly lower levels of education, enrollment, employment, income, and self-rated health than those without disabilities. They are also less likely to be married and living with household children.

## **III.2. Analysis**

The first aim is to compare how individuals with and without disabilities spend their daily time—on average—in minutes of total, passive, active, social, and isolated leisure. To do so, I examine bivariate differences in the mean of each outcome by disability status, with hypothesis tests calculated from Stata's `lincom` command. Next, I evaluate if these patterns vary by age by graphing and testing differences between mean minutes of each leisure type by age and disability status. I then use ordinary least squares regression to consider if these patterns are explained or attenuated by life course and sociodemographic differences between people with and without disabilities—and if disability and age interact to predict leisure time, net of covariates. Finally, all analyses are re-estimated using the five-category type of functional limitation measure. Some of the cell sizes in the interaction between age and this functional limitation measure are notably small—particularly among those with physical or multiple disabilities in the youngest age group (Appendix Table 3)—and therefore hypothesis tests for these comparisons should be interpreted with caution. They are presented here for consistency with the main models.

## **IV. Results**

### **IV.1. Any Disability**

Table 1 presents weighted means, by disability status, of the distribution of leisure time. People with disabilities report, on average, 456 minutes of daily leisure—two hours more than the 321 minutes reported by people without disabilities. The majority (71% or 326 minutes, versus 61% or 195 minutes for people without disabilities) is spent in passive activities, most commonly watching television and movies. Fourteen percent or 65 minutes is spent in active forms (versus 16% or 52 minutes for people without disabilities), primarily reading for personal interest and playing games. The remainder (11% or 49 minutes) is spent in social activities (17% or 55 minutes for those without disabilities) such as socializing and communicating with others. Finally, a significantly higher percentage of people with disabilities' total leisure time is spent in isolation, compared to people without disabilities: 61% (279 minutes) versus 39% (124 minutes).

Figure 1 displays the distribution of leisure types—passive, active or social (Panel A) and isolated leisure (Panel B)—by age and disability status. Although total, passive, active, and isolated leisure tends to follow a U-shaped curve for people without disabilities, the same pattern is not observed for people with disabilities. Instead, there is a steep rise in total, passive, and isolated leisure between ages 30-39 and 40-49 for those with disabilities.



Appendix Table 2 displays corresponding tests of significance, by disability status and age. The largest difference in total and passive leisure time, by disability status, occurs during the ages of 40-49.

Table 2 evaluates if some of these differences in time use are attenuated by health and socioeconomic characteristics. Net of these controls, disability is positively associated with total (Model 2.1), passive (Model 2.3), and isolated (Model 2.9) leisure time—and negatively associated with social (Model 2.7) leisure. However, results are conditional on age, as demonstrated by the interaction terms displayed in Table 2. The regression-adjusted difference in predicted minutes spent in leisure by disability status and age (holding all other covariates at their means) is graphed in Figure 2. Results indicate that—for people with disabilities—the difference in predicted minutes of total and passive leisure at age 40-49 is 42 and 41 minutes (respectively) larger than for people without disabilities. The only significant age difference in adjusted minutes of active leisure occurs in ages 15-19, with those with disabilities spending 32 minutes more than those without disabilities. For social leisure, those with disabilities aged 15-19 and 60-69 spend significantly less time than those without disabilities. A slightly different pattern emerges for isolated leisure, with those in the 20-29 and 30-29 spending significantly less time in isolated leisure when they have a disability—and those in the 40-49, 50-59, 60-69, and 70 plus age groups spending significantly more adjusted time than those without disabilities.

## **IV.2. Physical, Cognitive, Sensory, or Multiple Disabilities**

Supplemental models explore potential differences in leisure time by the presence of a physical, cognitive, sensory, or multiple disabilities (versus no disability). Appendix Table 5 indicates that people with multiple disabilities spend the most time (479 minutes) in total leisure, followed by those with physical (471), sensory (417), and cognitive (415) disabilities. Those with physical and multiple disabilities also spend the greatest percentage of their leisure time (74%) in passive activities—particularly, television. Those with sensory, cognitive, physical, or multiple functional limitations spend significantly more time in isolated leisure than those without functional limitation.

Appendix Figure 1 and Appendix Table 3 disaggregate these trends by age. The total and isolated leisure patterns among those with sensory limitations, only, most closely approximate the U-shape observed among people without disabilities—although time spent in passive leisure is more linear than curvilinear with age. Among those with cognitive or physical limitations, only, there is a steep rise in total, passive, and isolated leisure between the ages of 30-39 and 40-49. Among those with multiple limitations, this rise in total, passive, and isolated leisure occurs after ages 20-29 and increases more steeply through ages 40-49 than in older ages. As in the overall disability analyses, the largest differences in total leisure time between those who do have functional limitations and those who do not occur between the ages of 40-49, followed by age 50-59. These differences tend to be the smallest among those with sensory limitations only, and largest among those with multiple limitations.

Appendix Table 6 presents multivariate models indicating that the observed differences in leisure patterns cannot be fully explained by health and socioeconomic controls; those with physical disabilities only experience the largest differences in leisure time (35 minutes in total leisure, 40 in passive, and 48 in isolated; all  $p < .05$ ). Appendix Figure 2 graphs the difference in predicted minutes of leisure by functional limitation status and age. Results are again conditional on age, with the largest significant regression-adjusted difference in predicted minutes occurring for those with physical (57 minutes) and multiple (59 minutes) disabilities in the 40-49 age group. People with physical disabilities aged 40-49 are also estimated to spend 68 more minutes in passive leisure, 13 minutes less in active leisure, and 49 more minutes in isolated than those without disabilities in the same age category. The largest differences in isolated leisure emerge among those with cognitive disabilities, as those aged 60-69 are predicted to spend 89 more minutes, and those aged 15-19 are predicted to spend 50 more minutes than those without disabilities in the same age categories.

## V. Discussion

Time use reflects peoples' lived experiences. Quality leisure time can promote physical and cognitive health, whereas sedentary and passive time is deleterious (Adams et al., 2011). Time spent with others signals social integration and inclusion, whereas time spent alone is related to loneliness (Russell, 2009). This study evaluates leisure time use among people with disabilities, who experience health and social disparities relative to those without disabilities (Krahn, Walker, & Correa-De-Araujo, 2015; Schur, Kruse, & Blanck, 2013). It also considers the moderating effect of age, and how younger people with disabilities experience leisure relative to older people with disabilities.

Results indicate that people with disabilities spend more than two hours per day in leisure than those without disabilities—time that is disproportionately spent in passive activities like television watching and socially isolated activities that occur at home, alone. They spend more time in active forms of leisure like reading, playing games, and arts and crafts (but less time in exercise) and slightly less time in all types of social activities. Further, differences in leisure time cannot be fully explained by socioeconomic characteristics and self-rated health. Net of controls, people with disabilities spend about a half hour more than those without disabilities in passive and isolated leisure, on an average day. Future research could extend these analyses by disaggregating these leisure categories into substantively meaningful subcategories—for example, by differentiating between physically or cognitively engaged active forms of leisure.

These results are conditional upon age. Compared to those without disabilities, people with disabilities experience lower-quality types of leisure across the life course. Older adults with disabilities—particularly those aged 60-69—spend significantly less time in social leisure and significantly more time in socially isolated leisure than age peers without disabilities. Yet the greatest disparities in passive leisure by disability occur during 40-49-years of age. This age category, in particular, may reflect a period in which people with disabilities are less connected to age-graded institutions like employment and the linked lives of spouses and children than their age peers without disabilities (Bureau of Labor Statistics, 2018; Clarke &

McKay, 2014) and more susceptible to experiences of stigma and discrimination (Namkung & Carr, 2019). Midlife is also an important window for health-promoting leisure interventions among disabled populations.

Young adults with disabilities also experience leisure differently. Those in the 15-19-year age range are predicted to spend significantly more time in active forms of leisure (perhaps facilitated by secondary school enrollment)—but less time in social forms—than those without disabilities. In bivariate analyses, they also spend 46 minutes more, on average, in socially isolated leisure. These patterns are especially pronounced among young adults with cognitive disabilities. Young adults with disabilities are less likely than those without disabilities to report markers of adulthood such as full-time employment, independent living, marriage, and parenting (Janus 2009)—institutions and relationships which provide opportunities for social participation and interaction. Yet young people with intellectual disabilities and autism report even fewer interactions with friends, relative to those with other disabilities (Wagner et al. 2005). Future analyses of the ATUS could lend nuance to these results.

In sum, leisure time is substantively different for individuals with and without disabilities, as well as for individuals with disabilities at different stages in the life course. Importantly, the disparities faced by people with disabilities are often not solely determined by their age or their health (Krahn et al., 2015; Shandra, 2018). Recommendations for practice include accessibility audits of recreational programs and services that target transportation-related, environmental, communication, or social barriers to leisure participation. Similarly, public health programs should be inclusive of people with disabilities in planning, implementation, and service delivery in order to account for diverse access needs. Finally, healthcare practitioners—many of whom lack awareness of disability-related issues or hold unconscious biases or negative attitudes toward patients with disabilities (Knaak, Mantler, & Szeto, 2017)—would be well-served to identify accessible opportunities for active and social recreation that may promote higher quality leisure among disabled populations.

## **VI. Strengths and Limitations**

The American Time Use Survey is advantageous for evaluating leisure time because it provides nationally representative estimates, detailed activity categories, and a large enough sample size to facilitate comparisons by disability type and age group. Additionally, because the time diary design requires respondents to account for all minutes of the day, estimates may be less prone to recall bias, aggregation bias, and social desirability bias than other data collection techniques (Bolger, Davis, & Rafaeli, 2003; Robinson & Godbey, 2010).

Despite these advantages, the current study is not able to differentiate between age, period, and cohort effects. Historically, people in the United States report more time in leisure than half a century ago (e.g., Aguiar and Hurst, 2007); however, this rate of increase might differ for people with and without disabilities—particularly as assistive technologies became more advanced and disability rights laws evolved. Likewise, the observation period is inclusive of

the Great Recession, a period that affected leisure time and employment (Aguiar, Hurst, and Karabarbounis 2013)—with workers with disabilities facing greater risk of job loss (Livermore and Honeycutt 2015). Collection of the ATUS data is ongoing and provides researchers the opportunity to disentangle these trends.

Finally, the ATUS is a cross-sectional data source; results are correlational and should be interpreted as such. Additional information on the timing of disability onset and persistence (Verbrugge, Latham, & Clarke, 2017), the severity of disability (Katz & Morris 2007) or within-person leisure participation over time, is not available. Although healthy leisure may also play a preventive role in reducing the likelihood or severity of disability (Stern & Munn, 2010; Verghese, Wang, Katz, Sanders, & Lipton, 2009), the purpose of this study is to evaluate leisure quantity and quality among the population of individuals who have a disability and may be at higher risk of other health disparities (Krahn et al., 2015). In the context of leisure, disability is not equally experienced across the life course.

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**Table 1. Minutes Per Day Spent in Leisure Activities, by Disability Status**

	No disability		Any disability	
	Mean	% Total	Mean	% Total
Total leisure	321	100	456 ***	100
Type of leisure				
Passive	195	61	326 ***	71
Television & movies	165	51	275 ***	60
Relaxing, thinking	15	5	32 ***	7
Computer use for leisure (excluding games)	11	3	11	2
Listening to the radio or playing music	3	1	6 ***	1
Active	52	16	65 ***	14
Reading for personal interest	20	6	34 ***	8
Playing games	11	4	16 ***	4
Participating in sports, exercise, or recreation	19	6	10 ***	2
Arts & crafts, collecting, and other hobbies	2	1	4 ***	1
Social	55	17	49 ***	11
Socializing and communicating with others	41	13	41	9
Attending or hosting social events (not volunteering)	6	2	3 ***	1
Arts and entertainment	6	2	4 ***	1
Attending sports or recreational events	2	1	1 ***	0
Isolated leisure	124	39	279 ***	61
N	61,928		8,237	

*Note:* Results weighted and rounded to the nearest whole number. Minutes may not sum to whole categories because infrequently occurring and residual categories are not shown. See Appendix Table 1 for full categorization.

<sup>a</sup> Statistically different from "No disability" (\* $p < .01$ , \*\*  $p < .01$ , \*\*\* $p < .001$ ).

**Table 2. Ordinary Least Squares Regression of Minutes Per Day Spent in Leisure Activities**

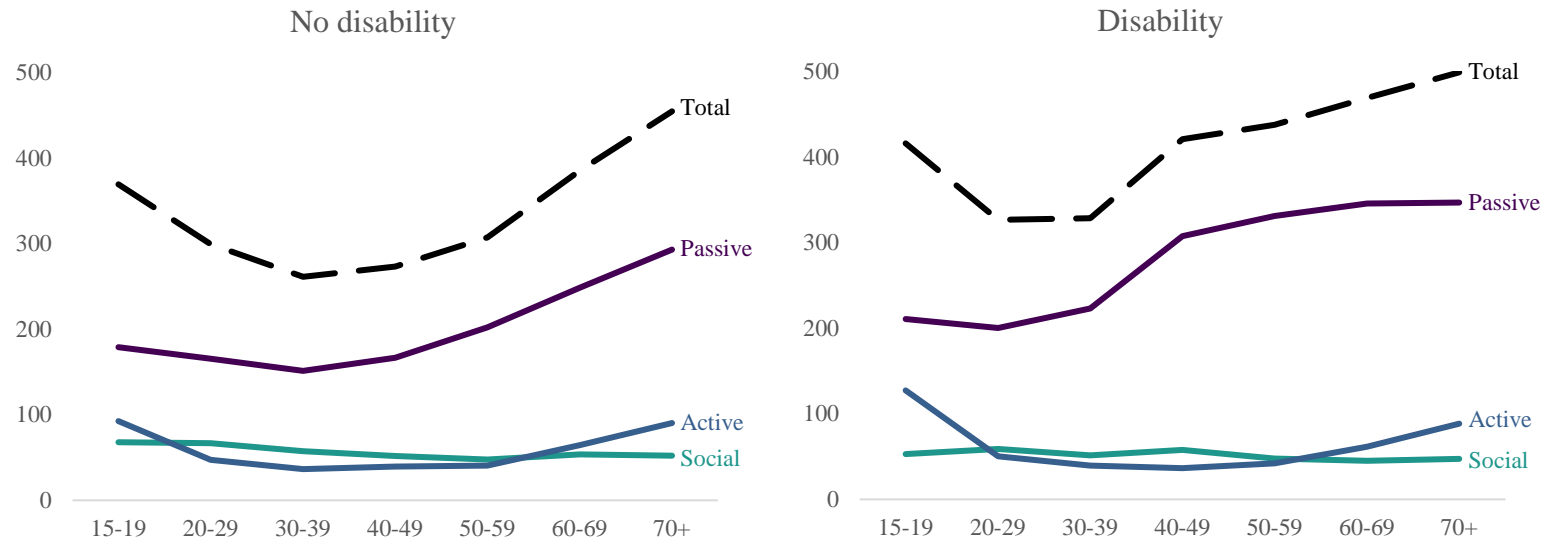
	Type of leisure									
	All		Passive		Active		Social		Isolated	
	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)	(2.8)	(2.9)	(2.10)
Any disability	24.7 ***	25.1 ***	27.8 ***	26.8 ***	1.9	3.2	-3.5 **	-2.7	34.0 ***	43.3 ***
Age										
20-29	-52.4 ***	-52.6 ***	-104.5 ***	-104.6 ***	17.5 ***	16.8 ***	20.3 ***	21.0 ***	-141.0 ***	-138.0 ***
30-39	-47.9 ***	-46.6 ***	-57.0 ***	-56.3 ***	-20.8 ***	-20.1 ***	24.6 ***	24.9 ***	-110.9 ***	-105.6 ***
40-49	-52.2 ***	-51.1 ***	-41.3 ***	-40.7 ***	-30.3 ***	-29.5 ***	16.4 ***	16.5 ***	-89.4 ***	-83.7 ***
50-59	-54.9 ***	-56.5 ***	-33.5 ***	-35.2 ***	-32.9 ***	-31.7 ***	10.0 ***	9.5 ***	-76.3 ***	-72.1 ***
60-69	-54.0 ***	-55.9 ***	-25.6 ***	-27.6 ***	-34.0 ***	-33.2 ***	4.1 **	3.9 *	-58.5 ***	-56.0 ***
70+	-25.7 ***	-26.4 ***	-11.9 ***	-13.6 ***	-19.4 ***	-18.9 ***	4.4 **	5.2 **	-34.0 ***	-33.4 ***
Interactions										
Any disability x age 20-29		-5.7		-16.6		28.9		-14.1		-13.7
Any disability x age 30-39		-51.2 ***		-41.3 ***		-2.3		-6.6		-65.5 ***
Any disability x age 40-49		-42.0 ***		-35.6 ***		-2.7		-4.0		-64.2 ***
Any disability x age 50-59		16.5		13.7		-8.8 *		7.3		-21.5 *
Any disability x age 60-69		11.4		10.9		-2.6		1.4		-3.0
Any disability x age 70+		3.2		8.0		-1.4		-3.9		4.0
Self-rated health										
Very good	5.3 *	5.3 *	10.8 ***	10.8 ***	-5.1 ***	-5.1 ***	0.6	0.6	6.6 ***	6.6 ***
Good	9.7 ***	9.7 ***	23.6 ***	23.6 ***	-9.7 ***	-9.8 ***	-2.2	-2.2	13.6 ***	13.6 ***
Fair	17.7 ***	17.3 ***	41.7 ***	41.3 ***	-14.0 ***	-13.9 ***	-6.2 ***	-6.3 ***	25.9 ***	25.6 ***
Poor	33.7 ***	32.4 ***	73.8 ***	72.4 ***	-22.4 ***	-22.0 ***	-11.6 ***	-11.9 ***	44.5 ***	43.8 ***
Female	-67.1 ***	-67.0 ***	-57.0 ***	-56.9 ***	-14.0 ***	-14.0 ***	2.6 **	2.6 **	-40.0 ***	-40.1 ***
Race/ethnicity										
Non-Hispanic Black	-17.5 ***	-17.6 ***	-5.8 **	-5.8 **	-16.5 ***	-16.5 ***	4.4 **	4.4 **	-17.3 ***	-17.5 ***
Hispanic	19.6 ***	19.5 ***	42.4 ***	42.3 ***	-24.9 ***	-24.9 ***	-0.5	-0.5	30.3 ***	30.1 ***
Non-Hispanic other	-8.0 *	-8.1 *	7.5 *	7.3 *	-6.7 ***	-6.7 ***	-9.0 ***	-9.0 ***	8.1 **	7.8 **
Immigrant	-36.1 ***	-36.1 ***	-25.9 ***	-26.0 ***	-5.3 ***	-5.3 ***	-4.6 **	-4.5 **	-11.1 ***	-11.4 ***
Education										
High school diploma/GED	-11.9 ***	-11.9 ***	-25.1 ***	-25.1 ***	10.2 ***	10.2 ***	0.9	0.9	-1.1	-0.9
Some college/Associate's degree	-20.0 ***	-20.2 ***	-50.8 ***	-50.9 ***	21.8 ***	21.7 ***	4.6 **	4.6 **	-8.3 **	-8.4 **
Bachelor's degree and higher	-30.8 ***	-31.0 ***	-69.2 ***	-69.2 ***	29.0 ***	28.9 ***	4.0 *	4.0 *	-13.1 ***	-13.1 ***

Enrolled in school	-60.8 ***	-60.8 ***	-44.8 ***	-44.9 ***	-8.1 ***	-8.2 ***	-6.0 **	-6.0 **	-32.0 ***	-32.4 ***
Employment										
Employed part-time	-84.0 ***	-83.8 ***	-56.6 ***	-56.4 ***	-17.1 ***	-17.2 ***	-7.9 ***	-7.8 ***	-47.2 ***	-47.4 ***
Employed full-time	-124.9 ***	-124.6 ***	-80.0 ***	-79.8 ***	-26.2 ***	-26.5 ***	-14.2 ***	-14.0 ***	-66.7 ***	-67.5 ***
Family income										
\$25,000-49,999	-7.8 **	-7.7 **	-12.7 ***	-12.6 ***	3.2 **	3.2 **	0.7	0.7	-11.7 ***	-11.7 ***
\$50,000-74,999	-11.2 ***	-11.1 ***	-20.5 ***	-20.5 ***	4.1 **	4.055 **	3.1 *	3.167 *	-14.1 ***	-14.3 ***
\$75,000 and higher	-14.5 ***	-14.3 ***	-27.3 ***	-27.1 ***	5.3 ***	5.2 ***	5.3 ***	5.3 ***	-11.8 ***	-11.9 ***
Marital status										
Married or cohabiting	-25.7 ***	-26.0 ***	-15.5 ***	-15.8 ***	-7.6 ***	-7.7 ***	0.5	0.5	-88.8 ***	-89.2 ***
Widowed, divorced, separated	-8.3 ***	-8.7 **	-7.2 **	-7.5 **	-3.4 **	-3.4 **	2.3	2.3	10.6 ***	10.1 ***
Number of adults in household	-0.5	-0.4	0.9	0.9	-1.5 **	-1.5 **	1.4 *	1.4 *	-16.6 ***	-16.6 ***
Own child aged 0-5 in household	-56.6 ***	-56.8 ***	-30.5 ***	-30.8 ***	-16.4 ***	-16.4 ***	-5.3 ***	-5.3 ***	-30.5 ***	-31.2 ***
Own child aged 6-12 in household	-29.0 ***	-28.5 ***	-23.7 ***	-23.4 ***	-3.0 **	-3.1 ***	-0.9	-0.8	-26.5 ***	-26.5 ***
Own child aged 13-17 in household	-18.4 ***	-17.9 ***	-11.1 ***	-10.7 ***	-2.2 *	-2.3 *	-3.1 *	-3.0 *	-16.9 ***	-16.7 ***
Lives in a metropolitan area	-2.8	-2.8	-4.0 *	-4.1 *	-2.9 **	-2.9 **	4.2 ***	4.2 ***	-9.1 ***	-9.0 ***
Constant	492.1 ***	492.3 ***	348.7 ***	349.2 ***	101.2 ***	100.9 ***	25.4 ***	25.2 ***	355.9 ***	353.6 ***
R <sup>2</sup>	0.250	0.250	0.216	0.217	0.083	0.083	0.042	0.042	0.304	0.305

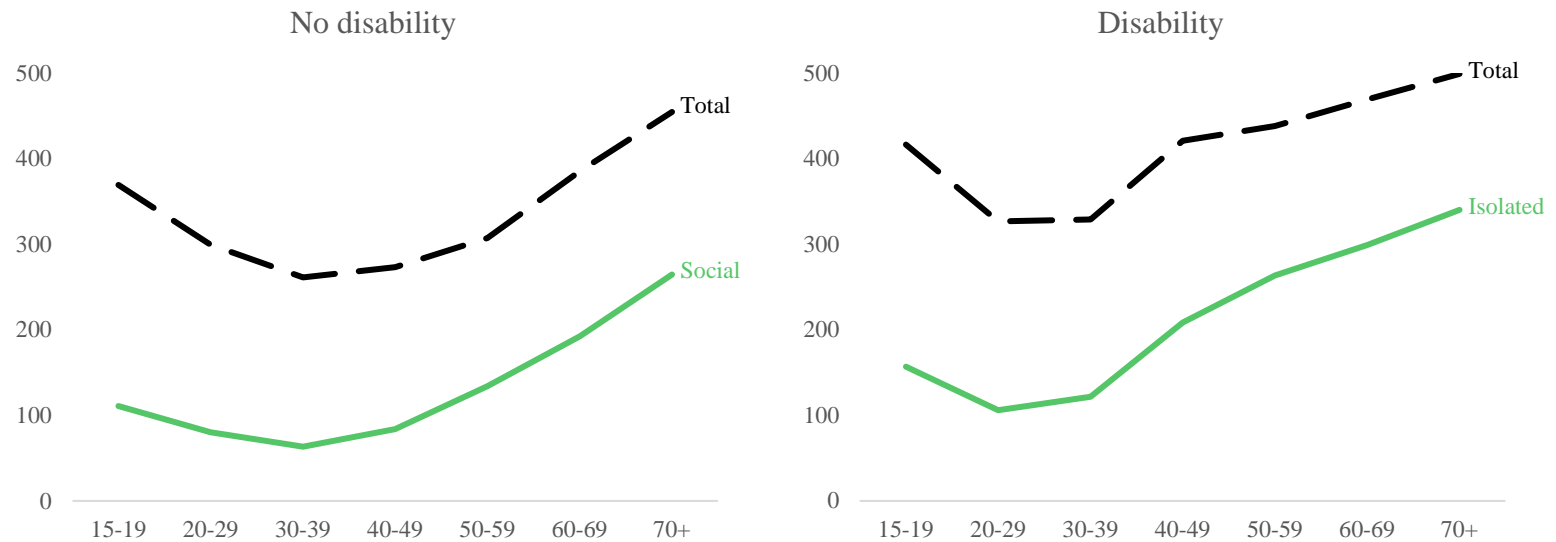
*Note:* Data shown are weighted linear regression coefficients; also includes control for summer interview, weekend/holiday interview, and survey year.

Source: American Time Use Survey. N = 70,166. \* p < .05, \*\* p < .01, \*\*\* p < .001.

*Panel A: Passive, Active, and Social Leisure*

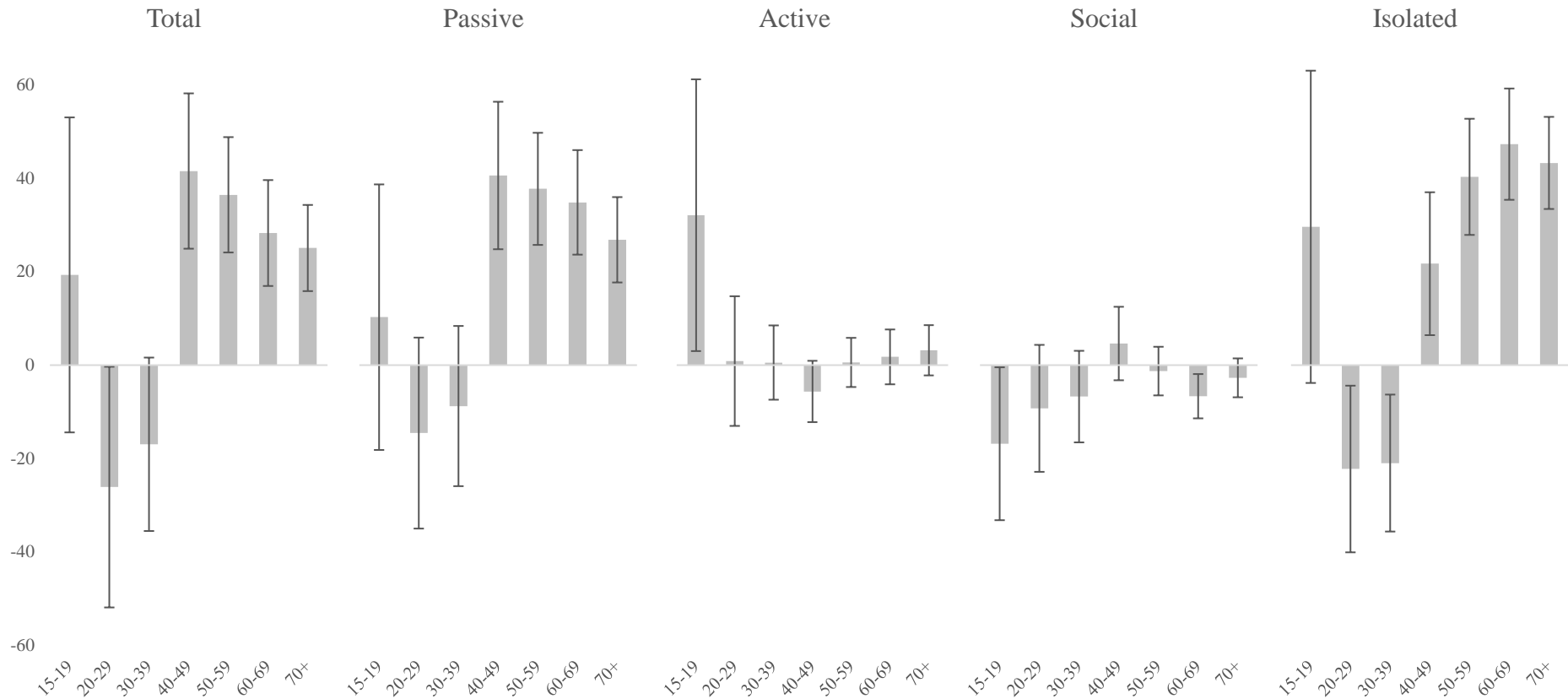


*Panel B: Isolated Leisure*



**Figure 1. Minutes Per Day Spent in Leisure Activities, by Disability Status and Age**

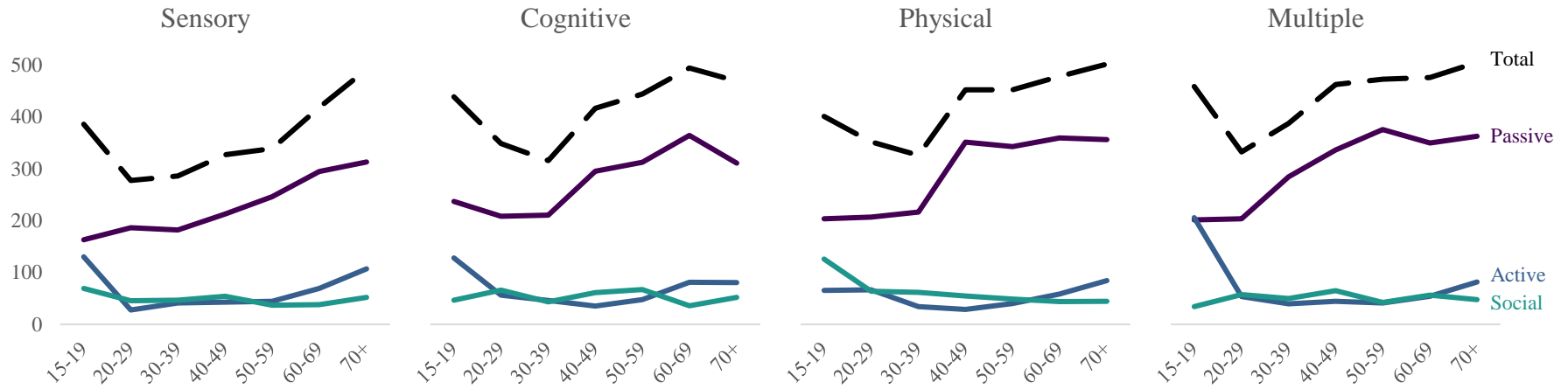
Source: American Time Use Survey. Result are weighted.



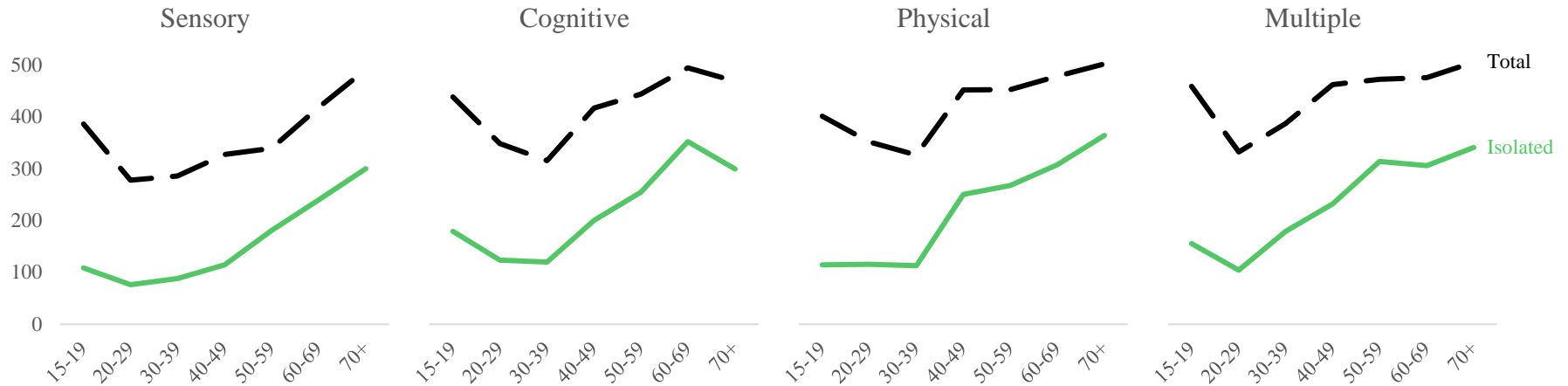
**Figure 2. Adjusted Difference in Predicted Minutes of Leisure, by Disability Status and Age**

Source: American Time Use Survey. Results for Total, Passive, Active, Social, and Isolated types of leisure are calculated from adjusted Model 2.2, 2.4, 2.6, 2.8, and 2.10 in Table 2, respectively. 95% confidence intervals calculated from contrasts of predictive margins.

*Panel A: Passive, Active, and Social Leisure*

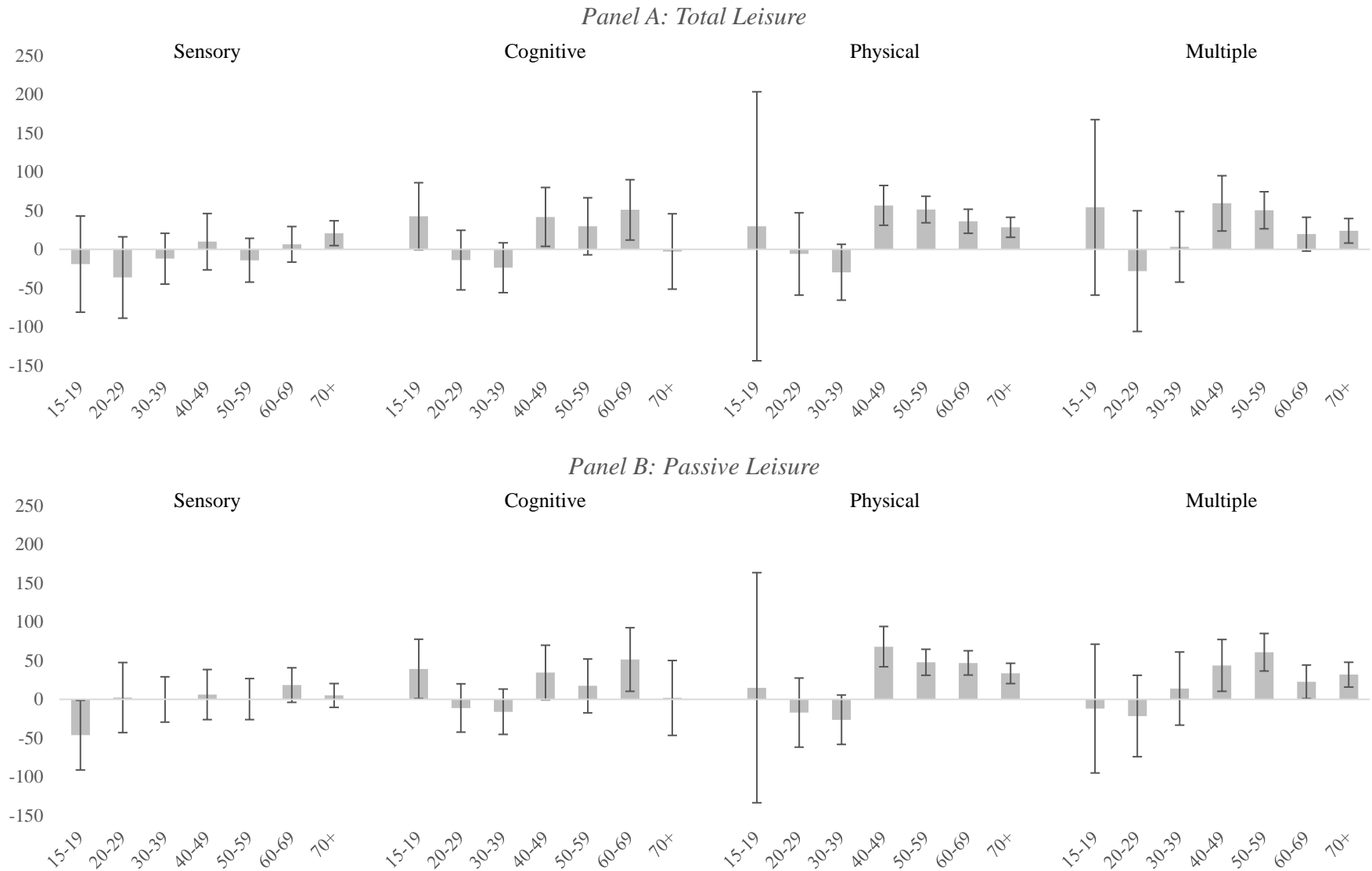


*Panel B: Isolated Leisure*



**Appendix Figure 1. Minutes Per Day Spent in Leisure Activities, by Disability Status and Age**

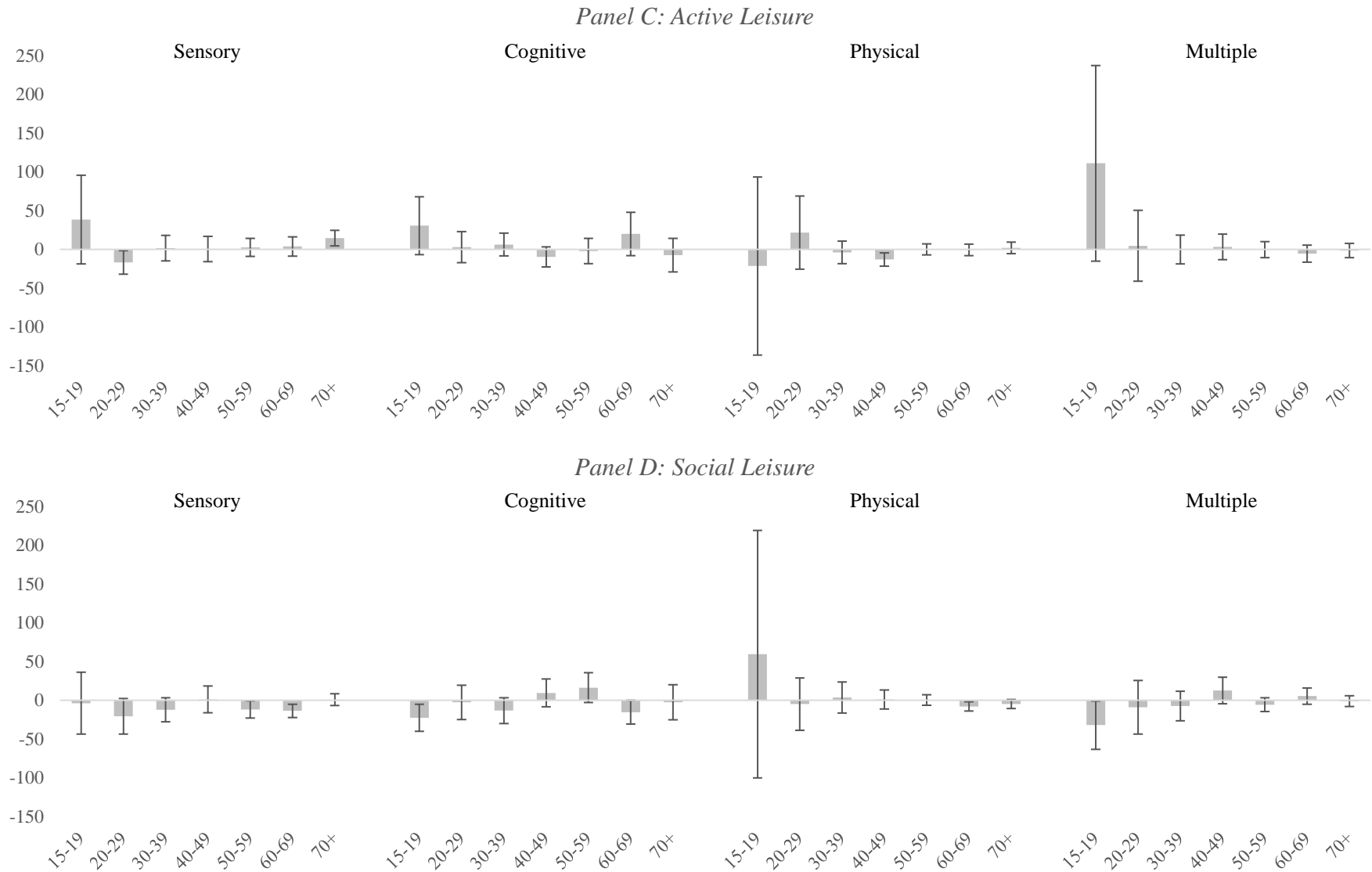
Source: American Time Use Survey. Result are weighted.



**Appendix Figure 2. Adjusted Difference in Predicted Minutes of Leisure, by Functional Limitation and Age**

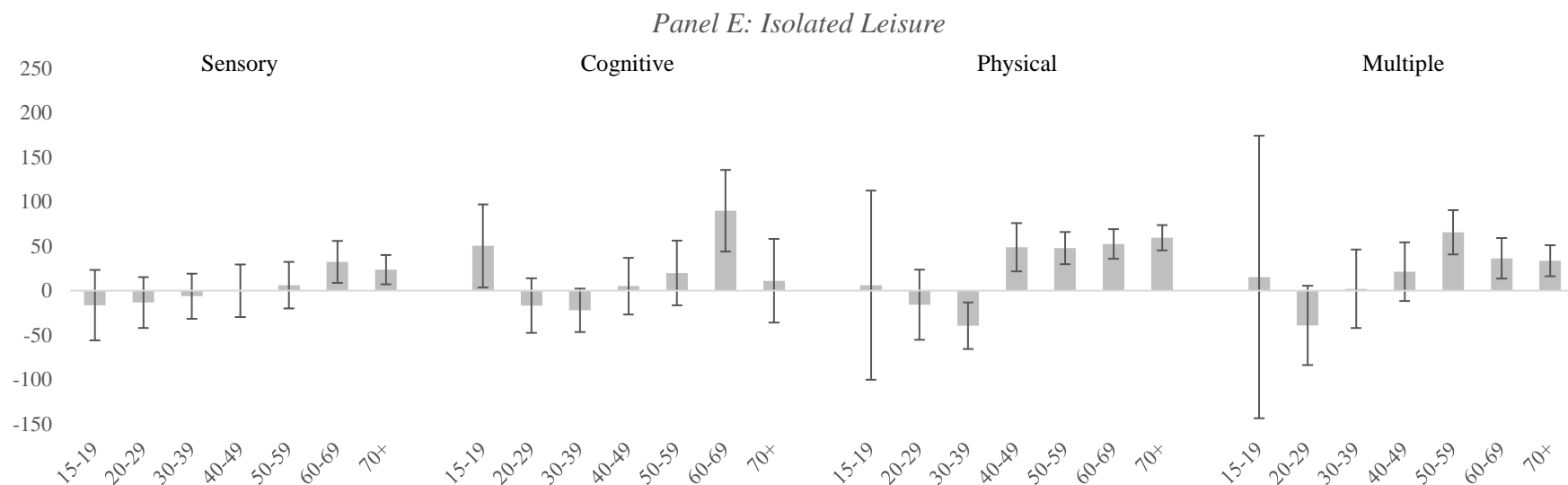
Source: American Time Use Survey. Results for Total, Passive, Active, Social, and Isolated types of leisure are calculated from adjusted Model A6.2, A6.4, A6.6, A6.8, and A6.10 in Appendix Table 6, respectively. 95% confidence intervals calculated from contrasts of predictive margins.





**Appendix Figure 2. Adjusted Difference in Predicted Minutes of Leisure, by Functional Limitation and Age (continued)**

Source: American Time Use Survey. Results for Total, Passive, Active, Social, and Isolated types of leisure are calculated from adjusted Model A6.2, A6.4, A6.6, A6.8, and A6.10 in Appendix Table 6, respectively. 95% confidence intervals calculated from contrasts of predictive margins.



**Appendix Figure 2. Adjusted Difference in Predicted Minutes of Leisure, by Functional Limitation and Age (continued)**

Source: American Time Use Survey. Results for Total, Passive, Active, Social, and Isolated types of leisure are calculated from adjusted Model A6.2, A6.4, A6.6, A6.8, and A6.10 in Appendix Table 6, respectively. 95% confidence intervals calculated from contrasts of predictive margins.

**Appendix Table 1. Leisure Category Coding Schemes, Based on ATUS Activity Codes**

<i>Passive leisure codes</i>		<i>Active leisure codes</i>	
120301	Relaxing, thinking	120307	Playing games
120302	Tobacco and drug use	120309	Arts and crafts as a hobby
120303	Television and movies (not religious)	120310	Collecting as a hobby
120304	Television (religious)	120311	Hobbies, except arts and crafts and collecting
120305	Listening to the radio	120312	Reading for personal interest
120306	Listening to or playing music (not radio)	120313	Writing for personal interest
120308	Computer use for leisure (excluding games)	130100	Participating in sports, exercise, or recreation
120399	Relaxing and leisure, n.e.c.	130301	Waiting related to playing sports or exercising
120503	Waiting associated with relaxing or leisure	130401	Security related to playing sports or exercising
		130499	Security related to sports, exercise, and recreation, n.e.c.
<i>Social leisure codes</i>		<i>Residual leisure codes</i>	
120100	Socializing and communicating	129900	Socializing, relaxing, and leisure, n.e.c.
120200	Attending or hosting social events	130399	Waiting associated with sports, exercise, and recreation, n.e.c.
120400	Arts and entertainment (other than sports)	139900	Sports, exercise, and recreation, n.e.c.
120501	Waiting associated with socializing and communicating	160101	Telephone calls to or from family members
120502	Waiting associated with attending or hosting social events	160102	Telephone calls to or from friends, neighbors, or acquaintances
120504	Waiting associated with arts and entertainment	181201	Travel related to socializing and communicating
120599	Waiting associated with socializing, n.e.c.	181202	Travel related to attending or hosting social events
130200	Attending sports or recreational events	181204	Travel related to arts and entertainment
130302	Waiting related to attending sporting events	181206	Travel related to relaxing and leisure (2005+)
130402	Security related to attending sporting events	181299	Travel related to socializing, relaxing, and leisure, n.e.c.
		181300	Travel related to sports, exercise, and recreation

Note: Coding scheme adapted from Passias, Sayer, and Pepin (2017). n.e.c. = "not elsewhere classified"

The ATUS activity codes are based upon a 3-tiered classification system. Higher-level codes listed here include all lower-level codes.

**Appendix Table 2. Minutes Per Day Spent in Leisure Activities, by Any Disability and Age**

	Age													
	15-19		20-29		30-39		40-49		50-59		60-69		70+	
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
<i>No disability</i>														
Total leisure	369	100	300	100	261	100	273	100	307	100	386	100	455	100
Leisure type														
Passive leisure	179	48	166	55	151	58	167	61	202	66	249	64	293	64
Social leisure	68	18	67	22	57	22	52	19	48	16	54	14	52	11
Active leisure	93	25	47	16	37	14	39	14	41	13	64	17	90	20
Socially isolated leisure	111	30	80	27	63	24	84	31	134	44	193	50	265	58
N	3,799		7,441		12,653		12,228		10,673		8,552		6,582	
<i>Any disability</i>														
Total leisure	416 *	100	327 *	100	329 *	100	421 *	100	438 *	100	469 *	100	499 *	100
Leisure type														
Passive leisure	211 *	51	201 *	61	223 *	68	308 *	73	332 *	76	346 *	74	347 *	70
Social leisure	53	13	59	18	52	16	58	14	48	11	45 *	10	47 *	9
Active leisure	128 *	31	50	15	40	12	37	9	42	10	62	13	89	18
Socially isolated leisure	157 *	38	106 *	32	122 *	37	209 *	50	263 *	60	299 *	64	340 *	68
N	146		261		481		810		1,617		1,931		2,998	

Source: American Time Use Survey. Data shown are weighted means and percentages. \* Statistically different from "No disability" ( $p < .05$ ).

**Appendix Table 3. Minutes Per Day Spent in Leisure Activities, by Type of Functional Limitation and Age**

	Age													
	15-19		20-29		30-39		40-49		50-59		60-69		70+	
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
<i>No limitation</i>														
Total leisure	369	100	300	100	261	100	273	100	308	100	386	100	456	100
Leisure type														
Passive leisure	178	48	166	55	151	58	167	61	202	66	249	64	295	65
Active leisure	93	25	47	16	36	14	39	14	41	13	65	17	90	20
Social leisure	68	18	67	22	57	22	52	19	48	16	54	14	52	11
Socially isolated leisure	111	30	80	27	64	24	84	31	135	44	193	50	267	59
N	3,805		7,454		12,669		12,252		10,713		8,595		6,698	
<i>Sensory limitation</i>														
Total leisure	386	100	277	100	286	100	327 *	100	339 *	100	418 *	100	491 *	100
Leisure type														
Passive leisure	163	42	187	67	182	64	213 *	65	246 *	73	294 *	70	313 *	64
Active leisure	130	34	28 *	10	41	14	43	13	44	13	69	17	107 *	22
Social leisure	69	18	45	16	47	16	54	17	37	11	38 *	9	52	11
Socially isolated leisure	108	28	76	27	88	31	114 *	35	181 *	53	239 *	57	300 *	61
N	35		55		99		146		239		319		715	
<i>Cognitive limitation</i>														
Total leisure	438 *	100	348 *	100	316 *	100	416 *	100	444 *	100	494 *	100	469	100
Leisure type														
Passive leisure	237 *	54	209 *	60	210 *	67	295 *	71	312 *	70	364 *	74	311	66
Active leisure	128	29	56	16	46	15	36	9	48	11	81	16	81	17
Social leisure	47 *	11	66	19	43	14	61	15	67	15	36 *	7	52	11
Socially isolated leisure	179 *	41	124 *	35	120	38	200 *	48	255 *	57	352 *	71	299	64
N	92		116		145		166		181		123		89	
<i>Physical limitation</i>														
Total leisure	401	100	352	100	326 *	100	452 *	100	452 *	100	478 *	100	502 *	100
Leisure type														
Passive leisure	203	51	207	59	217 *	66	351 *	78	343 *	76	359 *	75	356 *	71
Active leisure	66	16	67	19	34	10	29 *	6	40	9	58	12	85	17
Social leisure	126	31	64	18	62	19	55	12	49	11	44 *	9	44 *	9

Socially isolated leisure	115	29	116	33	113	35	250 *	55	267 *	59	307 *	64	364 *	73
N	6		40		127		290		739		973		1,224	
<i>Multiple limitations</i>														
Total leisure	459	100	332	100	387 *	100	462 *	100	472 *	100	476 *	100	505 *	100
Leisure type														
Passive leisure	201	44	203	61	284 *	73	336 *	73	376 *	80	350 *	74	362 *	72
Active leisure	206	45	54	16	40	10	45	10	41	9	54	11	82	16
Social leisure	35 *	8	58	17	50	13	65	14	43	9	57	12	48	9
Socially isolated leisure	156	34	104	31	179	46	232 *	50	314 *	66	305 *	64	340 *	67
N	10		37		94		184		418		473		844	

Source: American Time Use Survey. Data shown are weighted means and percentages. \* Statistically different from "No limitation" ( $p < .05$ ).

**Appendix Table 4. Distribution of Age, Life Course, and Sociodemographic Characteristics, by Any Disability and Type of Functional Limitation**

	Any disability		Type of Functional Limitation				
	None	Disability	None	Sensory	Cognitive	Physical	Multiple
<b>Age</b>							
15-19	6.1	1.8 <sup>b</sup>	6.1	2.2 <sup>c</sup>	10.1 <sup>c</sup>	0.2 <sup>c</sup>	0.5 <sup>c</sup>
20-29	12.0	3.2 <sup>b</sup>	12.0	3.4 <sup>c</sup>	12.7	1.2 <sup>c</sup>	1.8 <sup>c</sup>
30-39	20.4	5.8 <sup>b</sup>	20.4	6.2 <sup>c</sup>	15.9 <sup>c</sup>	3.7 <sup>c</sup>	4.56 <sup>c</sup>
40-49	19.8	9.8 <sup>b</sup>	19.7	9.1 <sup>c</sup>	18.2	8.5 <sup>c</sup>	8.93 <sup>c</sup>
50-59	17.2	19.6 <sup>b</sup>	17.2	14.9 <sup>c</sup>	19.9 <sup>c</sup>	21.7 <sup>c</sup>	20.29 <sup>c</sup>
60-69	13.8	23.4 <sup>b</sup>	13.8	19.8 <sup>c</sup>	13.5	28.6 <sup>c</sup>	22.96 <sup>c</sup>
70+	10.6	36.3 <sup>b</sup>	10.8	44.5 <sup>c</sup>	9.8	36.0 <sup>c</sup>	40.97 <sup>c</sup>
<b>Self-rated health</b>							
Excellent	20.0	5.4 <sup>b</sup>	19.9	10.7 <sup>c</sup>	8.8 <sup>c</sup>	3.3 <sup>c</sup>	3.2 <sup>c</sup>
Very good	36.2	15.0 <sup>b</sup>	36.2	29.9 <sup>c</sup>	17.7 <sup>c</sup>	10.7 <sup>c</sup>	9.42 <sup>c</sup>
Good	31.0	29.2 <sup>b</sup>	31.0	34.2 <sup>c</sup>	33.4	28.0 <sup>c</sup>	24.56 <sup>c</sup>
Fair	10.7	30.5 <sup>b</sup>	10.8	19.3 <sup>c</sup>	27.4 <sup>c</sup>	34.4 <sup>c</sup>	34.61 <sup>c</sup>
Poor	2.1	20.0 <sup>b</sup>	2.2	5.9 <sup>c</sup>	12.7 <sup>c</sup>	23.7 <sup>c</sup>	28.25 <sup>c</sup>
Female	55.2	60.1 <sup>b</sup>	55.3	47.4 <sup>c</sup>	55.9	65.9 <sup>c</sup>	61.1 <sup>c</sup>
<b>Race/ethnicity</b>							
Non-Hispanic white	66.0	66.4	66.0	75.6 <sup>c</sup>	68.9	63.0 <sup>c</sup>	64.42
Non-Hispanic Black	14.8	11.0 <sup>b</sup>	14.8	9.9 <sup>c</sup>	10.6 <sup>c</sup>	10.9 <sup>c</sup>	11.17 <sup>c</sup>
Hispanic	13.9	19.5 <sup>b</sup>	13.9	10.9 <sup>c</sup>	17.4 <sup>c</sup>	23.3 <sup>c</sup>	20.73 <sup>c</sup>
Non-Hispanic other	5.3	3.2 <sup>b</sup>	5.3	3.7 <sup>c</sup>	3.1 <sup>c</sup>	2.8 <sup>c</sup>	3.69 <sup>c</sup>
Immigrant	14.6	7.2 <sup>b</sup>	14.6	8.0 <sup>c</sup>	5.7 <sup>c</sup>	7.5 <sup>c</sup>	6.1 <sup>c</sup>
<b>Education</b>							
Less than high school	12.8	21.7 <sup>b</sup>	12.9	15.8 <sup>c</sup>	23.5 <sup>c</sup>	21.0 <sup>c</sup>	25.83 <sup>c</sup>
High school diploma/GED	51.2	60.7 <sup>b</sup>	51.2	59.5 <sup>c</sup>	61.0 <sup>c</sup>	62.4 <sup>c</sup>	59.37 <sup>c</sup>
Some college/Associate's degree	22.1	11.3 <sup>b</sup>	22.0	14.5 <sup>c</sup>	10.9 <sup>c</sup>	11.0 <sup>c</sup>	9.56 <sup>c</sup>
Bachelor's degree and higher	13.9	6.4 <sup>b</sup>	13.8	10.3 <sup>c</sup>	4.7 <sup>c</sup>	5.6 <sup>c</sup>	5.24 <sup>c</sup>
Enrolled in school	9.9	2.8 <sup>b</sup>	9.8	2.7 <sup>c</sup>	13.6 <sup>c</sup>	0.8 <sup>c</sup>	1.3 <sup>c</sup>
<b>Employment</b>							
Not employed	33.5	80.7 <sup>b</sup>	33.7	66.0 <sup>c</sup>	71.8 <sup>c</sup>	84.5 <sup>c</sup>	88.83 <sup>c</sup>
Employed part-time	13.9	7.3 <sup>b</sup>	13.8	9.8 <sup>c</sup>	13.1	5.8 <sup>c</sup>	5.49 <sup>c</sup>



Employed full-time	52.7	12.0 <sup>b</sup>	52.5	24.2 <sup>c</sup>	15.1 <sup>c</sup>	9.8 <sup>c</sup>	5.68 <sup>c</sup>
Family income							
Less than \$25,000	19.7	52.4 <sup>b</sup>	19.9	34.7 <sup>c</sup>	54.7 <sup>c</sup>	53.3 <sup>c</sup>	63.2 <sup>c</sup>
\$25,000-49,999	26.2	25.7	26.2	29.7 <sup>c</sup>	22.0 <sup>c</sup>	27.3	22.33 <sup>c</sup>
\$50,000-74,999	19.3	11.1 <sup>b</sup>	19.3	17.4 <sup>c</sup>	9.9 <sup>c</sup>	10.5 <sup>c</sup>	7.82 <sup>c</sup>
\$75,000 and higher	34.8	10.7 <sup>b</sup>	34.7	18.3 <sup>c</sup>	13.4 <sup>c</sup>	8.9 <sup>c</sup>	6.65 <sup>c</sup>
Partnership status							
Single	23.1	17.7 <sup>b</sup>	23.0	12.8 <sup>c</sup>	40.2 <sup>c</sup>	15.2 <sup>c</sup>	15.44 <sup>c</sup>
Married or cohabiting	55.9	32.5 <sup>b</sup>	55.8	47.8 <sup>c</sup>	26.4 <sup>c</sup>	30.9 <sup>c</sup>	26.46 <sup>c</sup>
Widowed, divorced, separated	21.0	49.8 <sup>b</sup>	21.2	39.4 <sup>c</sup>	33.3 <sup>c</sup>	54.0 <sup>c</sup>	58.11 <sup>c</sup>
Number of adults in household <sup>a</sup>	1.9	1.6 <sup>b</sup>	1.9	1.7 <sup>c</sup>	1.6 <sup>c</sup>	1.5 <sup>c</sup>	1.5 <sup>c</sup>
Own child aged 0-5 in household	17.5	3.7 <sup>b</sup>	17.4	4.7 <sup>c</sup>	11.0 <sup>c</sup>	2.0 <sup>c</sup>	2.4 <sup>c</sup>
Own child aged 6-12 in household	20.9	6.7 <sup>b</sup>	20.9	8.1 <sup>c</sup>	14.5 <sup>c</sup>	5.2 <sup>c</sup>	4.8 <sup>c</sup>
Own child aged 13-17 in household	12.9	5.2 <sup>b</sup>	12.9	6.2 <sup>c</sup>	6.6 <sup>c</sup>	5.1 <sup>c</sup>	4.2 <sup>c</sup>
Lives in a metropolitan area	16.3	23.0 <sup>b</sup>	16.3	26.4 <sup>c</sup>	19.9 <sup>c</sup>	22.3 <sup>c</sup>	23.6 <sup>c</sup>
N	61,928	8,237	62,186	1,608	912	3,399	2,060

*Note:* Data shown are weighted percentages, unless specified otherwise. <sup>a</sup> Data shown are means.

Source: American Time Use Survey. <sup>a</sup> Statistically different from "No disability" ( $p < .05$ ). <sup>b</sup> Statistically different from "No functional limitation" ( $p < .05$ ).

**Appendix Table 5. Minutes Per Day Spent in Detailed Leisure Activities, by Type of Functional Limitation**

	Type of Functional Limitation									
	None		Sensory		Cognitive		Physical		Multiple	
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
Total leisure	321	100	417 *	100	415 *	100	471 *	100	479 *	100
Type of leisure										
Passive	195	61	275 *	66	279 *	67	347 *	74	353 *	74
Television & movies	165	52	229 *	55	232 *	56	298 *	63	296 *	62
Relaxing, thinking	16	5	28 *	7	23 *	6	32 *	7	39 *	8
Listening to the radio or playing music	3	1	6 *	2	9 *	2	5 *	1	7 *	1
Computer use for leisure (excluding games)	11	3	11	3	14	3	11	2	10	2
Active	52	16	78 *	19	62 *	15	61 *	13	62 *	13
Playing games	11	4	16 *	4	22 *	5	15 *	3	15 *	3
Arts & crafts, collecting, and other hobbies	2	1	5 *	1	4 *	1	3 *	1	4 *	1
Reading for personal interest	20	6	43 *	10	20	5	34 *	7	34 *	7
Participating in sports, exercise, or recreation	19	6	14 *	3	15 *	4	8 *	2	8 *	2
Social	55	17	47 *	11	54	13	47 *	10	51 *	11
Socializing and communicating with others	41	13	37	9	44	10	40	9	43	9
Attending or hosting social events	6	2	4 *	1	4 *	1	3 *	1	4 *	1
Arts and entertainment	6	2	5	1	6	1	3 *	1	3 *	1
Attending sports or recreational events	2	1	1 *	0	2	0	1 *	0	1 *	0
Isolated leisure	125	39	228 *	55	216 *	52	304 *	65	305 *	64
N	62,186		1,608		912		3,399		2,060	

*Note:* Results weighted and rounded to the nearest whole number. Minutes may not sum to whole categories because infrequently occurring and residual categories are not shown. See Appendix Table 1 for full categorization. Source: American Time Use Survey.

\* Statistically different from "No limitation" ( $p < .05$ ).

**Appendix Table 6. Ordinary Least Squares Regression of Minutes Per Day Spent in Leisure Activities, By Type of Functional Limitation**

	Type of leisure									
	Total		Passive		Active		Social		Isolated	
	(A6.1)	(A6.2)	(A6.3)	(A6.4)	(A6.5)	(A6.6)	(A6.7)	(A6.8)	(A6.9)	(A6.10)
<b>Type of functional limitation</b>										
Sensory limitation	6.8	20.8 *	5.8	5.1	7.8 *	14.5 *	-5.7 *	0.7	15.5 *	23.5 *
Cognitive limitation	18.2 *	-2.9	16.4 *	2.0	4.3	-7.4	-2.3	-2.7	17.6 *	11.1
Physical limitation	34.7 *	28.4 *	40.1 *	33.7 *	-0.5	1.9	-3.9 *	-4.9	48.2 *	59.4 *
Multiple limitations	29.0 *	24.0 *	34.3 *	32.0 *	-1.0	-1.5	-0.2	-1.2	35.7 *	33.6 *
<b>Age</b>										
15-19	-52.5 *	-53.9 *	-104.5 *	-106.2 *	17.4 *	17.0 *	20.3 *	20.9 *	-140.8 *	-139.5 *
20-29	-48.2 *	-48.1 *	-57.2 *	-58.1 *	-20.8 *	-19.8 *	24.6 *	24.8 *	-110.8 *	-107.4 *
30-39	-52.6 *	-52.5 *	-41.6 *	-42.4 *	-30.2 *	-29.2 *	16.3 *	16.5 *	-89.5 *	-85.6 *
40-49	-55.2 *	-58.0 *	-33.8 *	-36.9 *	-32.8 *	-31.4 *	10.0 *	9.4 *	-76.4 *	-73.9 *
50-59	-54.6 *	-57.1 *	-26.1 *	-29.2 *	-33.9 *	-32.9 *	4.1 *	4.0 *	-58.8 *	-57.7 *
60-69	-26.3 *	-27.0 *	-12.5 *	-14.8 *	-19.3 *	-18.5 *	4.4 *	5.2 *	-34.6 *	-34.5 *
<b>Interactions</b>										
Sensory limitation x age 15-19		-40.1		-51.2 *		23.9		-4.6		-39.9
Sensory limitation x age 20-29		-57.2 *		-2.7		-31.2 *		-21.4		-36.9 *
Sensory limitation x age 30-39		-32.9		-5.2		-13.0		-13.2		-29.8
Sensory limitation x age 40-49		-11.0		1.1		-14.0		0.3		-23.7
Sensory limitation x age 50-59		-35.0 *		-4.6		-11.8		-12.6		-17.4
Sensory limitation x age 60-69		-14.4		13.3		-10.7		-14.5 *		8.8
Cognitive limitation x age 15-19		45.6		37.4		38.0		-20.0		39.2
Cognitive limitation x age 20-29		-11.1		-13.1		10.3		-0.1		-27.9
Cognitive limitation x age 30-39		-20.9		-18.0		13.6		-10.7		-33.2
Cognitive limitation x age 40-49		44.7		32.7		-2.3		12.1		-6.1
Cognitive limitation x age 50-59		32.7		15.5		5.1		18.9		8.6
Cognitive limitation x age 60-69		53.8		49.6		27.3		-12.7		78.9 *
Physical limitation x age 15-19		1.4		-18.5		-23.3		64.3		-53.2
Physical limitation x age 20-29		-34.5		-50.7 *		19.8		-0.2		-75.3 *
Physical limitation x age 30-39		-58.1 *		-59.9 *		-5.8		8.4		-98.9 *
Physical limitation x age 40-49		28.2		34.4 *		-14.9 *		5.8		-10.7

Physical limitation x age 50-59	22.8 *	14.3	-1.8	5.0	-11.7
Physical limitation x age 60-69	7.8	13.4	-2.5	-3.1	-6.9
Multiple limitations x age 15-19	30.2	-43.8	112.5	-31.0	-18.3
Multiple limitations x age 20-29	-52.1	-53.38	6.1679	-7.924	-72.77 *
Multiple limitations x age 30-39	-20.9	-17.98	1.4315	-6.224	-31.64
Multiple limitations x age 40-49	35.4	11.931	4.7447	13.657	-12.25
Multiple limitations x age 50-59	26.4	28.951 *	1.0899	-4.648	32.064 *
Multiple limitations x age 60-69	-4.4	-9.193	-3.909	6.5354	2.6127

*Note:* Data shown are weighted linear regression coefficients; includes all controls. Source: American Time Use Survey. \*  $p < .05$ . See Appendix Figure 2 for regression-based predicted minutes..



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