Appendix A: Detailed study findings

Reference	Sample	Care recipient	Data analysis	Outcomes	Main Findings
		condition			
Al Sawah et al. (2017)	National survey of 253 self- identified caregivers, 179 of which were employed	Lupus patients	Self-reported effect of caregiving: Cross- sectional descriptive statistics were reported	<u>Missed work:</u> - Number of hours missed - Percentage of paid work time missed	<u>Missed work:</u> - Mean (SD): 5.2 (8.3) hours missed in past 7 days - 12.8% of paid work time missed in past 7 days
				Productivity: - Percentage of reduced job effectiveness	<u>Productivity:</u> - 33.5% reduction in job effectiveness on average (SD = 24.4%)
				<u>Cross-cutting measure:</u> - Percent of overall work impairment (combination of abstenteeism and presenteeism)	<u>Cross-cutting measure:</u> - 27.4% work impairment on average over the past 7 days (SD = 19.8%)
Anastas et al. (1990)	National survey of 558 self- identified caregivers from 17 different employers across 9 states	General elderly	Self-reported effect of caregiving: Cross- sectional descriptive statistics were reported.	Missed work: - Used vacation time - Changed work schedule - Used personal leave - Missed work meetings - Missed outside conferences	Missed work: Within the past year - 64% used vacation time - 33% changed work schedule - 32% used personal leave - 18% missed work meetings

				- Missed overtime	- 14% missed outside conferences
				 Called in sick Taken a leave of absence 	 - 13% missed overtime - 8% called in sick - 3% took a leave of absence
				<u>Cross-cutting measure:</u> - Conflict score based on whether caregiving responsibilities had conflicted with job demands or caregiver had ever considered quitting job	<u>Cross-cutting measure:</u> - 53% of caregivers reported no conflict, 39% reported a conflict, and 8% had considered quitting
De Moor et al. (2017)	Nationally- representative sample of caregivers of cancer survivors	Cancer survivors	Cross-sectional comparison to a comparison group: Cross- sectional descriptive statistics and logistic regression to identify predictors of employment change, comparing caregivers who had made extended employment changes relative to those that did not. Applied survey weights to generate nationally-representative estimates	Missed work: - Percent of caregivers who took extended leave from work (greater than two months leave) Among caregivers that took extended leave from work of at least 2 months: - Percent that took paid leave - Percent unpaid leave	Missed work: - 8% of caregivers took an extended leave from work Among caregivers that took extended leave from work of at least 2 months: - 26% took paid leave only - 25% took unpaid leave only - 40% took paid and unpaid leave

				 Percent that took both paid and unpaid leave Predictors of extended leave 	
Franklin et al. (1994)	Sub-set of 236 employed, female caregivers participating in a study following 630 Michigan family caregivers of elderly relatives	Post-acute home care patients	Pre-post caregiving comparisons: Pre-post (caregiving role inception and 3 months following) within-subject comparison for each of the three types of employment adaptations of interest. Descriptive statistics reported.	<u>Missed work:</u> - Lost workdays - Arrive late or leave early - Missed work without pay - Take sick or personal days	 <u>Missed work:</u> Lost workdays, mean (SD): 8.53 (17.52) at Time 1 (point of role inception); 4.83 (15.96) at Time 2 (3 months later): Arrive late or leave early: 38.1% at Time 1; 23.5% at Time 2 Miss work without pay: 26.3% at Time 1; 16.7% at Time 2 Take sick or personal days: 40.7% at Time 1; 20.2% at Time 2
Wolff et al. (2016)	Nationally representative survey based on the 2011 National Health and Aging Trends Study (NHATS) and National Study of Caregiving (NSOC); 656 employed caregivers	General elderly	Cross-sectional comparison to a comparison group: Descriptive statistics comparing outcomes between caregivers who give substantial help, some help, and no help with care activities	<u>Missed work:</u> - Hours of missed work in past month - Absenteeism <u>Productivity:</u> - Presenteeism <u>Cross-cutting:</u> <u>- Work productivity loss</u> (accounting for both	<u>Missed work:</u> - Caregivers who provided substantial help reported significantly higher rates of missed work (20%) than those who gave some help (7%) and no help (3.5%) - Caregivers who provided substantial help reported significantly higher rates of absenteeism (2.1%) compared to those who provided some help (0.7%) and no help (0.2%) <u>Productivity:</u>

Ganapathy et	Nationally-	Stroke survivors	Self-reported effect of	Missed work:	Missed work:
al. (2015)	representative	with poststroke	caregiving: Cross-		
	internet survey of	spasticity	sectional descriptive	- Absenteeism	- Mean absenteeism of 9% in the past week(SD
	153 caregivers,		statistics and generalized	Duadiators of	= 15%)
	75 of which were		linear models to examine	- Predictors of	The following were significant positive
	employed		predictors of outcomes	absenteersm	- The following were significant positive
					Income between \$25,000 and \$49,999 number
					of children under 18 years of age lack of
				Productivity	nursing home coverage for stroke survivor, and
					stroke survivor did not have other caregivers
				- Presenteeism	
				Work hours lost due to	- Age was significantly and negatively
				- work hours lost due to	associated with absenteeism
				presenteersm	
				- Predictors of	
				presenteeism	Productivity:
					- Mean presenteeism of 27% in the past
					week(SD = 26%)
					Many (CD) have a farmal last due to
					- Mean (SD) hours of work lost due to
					restrictive productivity in past week. 8.8 (9.5)
				Cross-cutting measure:	- Income < \$25,000 was significantly and
				- Work productivity and	negatively associated with presenteeism
				activity impairment	
				(WPAI)	- Lack of nursing home coverage for stroke
				()	survivor significantly and positively associated
				- Predictors of work	with presenteeism
				restriction	
					Cross-cutting measure:
					- Mean work restriction of 32% in the past
					week(SD = 29%)
					- Age was significantly and negatively
					associated with overall work restriction
					- Number of children < 18 and lack of nursing
					home coverage for stroke survivor were

					significantly and positively associated with overall work restriction
Brooks (1995)	sample of 760 working caregivers of older persons employed at a large university	General elderly	caregiving: Cross- sectional descriptive statistics were reported.	- Missed days of work	- 48% of subjects missed work over a 6-month period due to their own or a family member's illness

Longacre et al. (2017)	National survey of 1,793 caregivers aged 18-64, 948 of which were employed at time of survey	General elderly	Self-reported effect of caregiving: Cross- sectional descriptive statistics and chi-squared tests of predictors associated with work interference	<u>Cross-cutting measure:</u> - Percent of caregivers reporting that caregiving has interfered with their job - Predictors of work interference	 <u>Cross-cutting measure:</u> 52.4% of employed caregivers reported that caregiving interfered with their job Those reporting that caregiving interfered with their job were more highly educated, less likely to be the care recipient's spouse and more likely to be their child or son/daughter inlaw, more likely to care for someone with more than three ADLs, and provided more hours of care relative to those that reported that caregiving did not interfere with their job
Mazanec et al. (2011)	Convenience sample of 40 employed caregivers participating in an ongoing palliative care clinical trial at a regional cancer center	Advanced cancer (pancreatic, lung, gastrointestinal, gynecologic)	Self-reported effect of caregiving: Cross- sectional descriptive statistics and bivariate correlations	Missed work: - Absenteeism - Hours missed Productivity: - Impairment while working due to caregiving (presenteeism) Cross-cutting measure: - Overall work productivity loss	Within last week <u>Missed work:</u> - Loss in work time: 9.63% of caregivers (mean of 17 hours over the past week) <u>Productivity:</u> - Impairment while working: 15.41% of caregivers <u>Cross-cutting measure:</u> - Overall work productivity loss: 22.88%

McKinlay et al. (1995)	Data selected from the Massachusetts Elder Health project, a longitudinal study tracking a representative sample of older people. Data used in the analyses were from 1,078 caregivers identified from 5,855 persons age 70+ drawn from the local census lists of 19 cities/towns in eastern Massachusetts between 1984 and 1991.	Functionally disabled elderly	Self-reported effect of caregiving: Pooled cross- sectional descriptive statistics reported. Regression analysis performed to identify determinants of employment outcomes	Cross-cutting measure: - Experience negative impact on job structure, which consisted of changes in job, number of hours worked, and/or work shift	Cross-cutting measure: - 20.3% of all employed caregivers experienced negative impact on job schedule and structure over a 7-year period - Significant predictors of impact on job structure: in-home care hours, linkage care hours, married female as caregiver, age of caregiver, formal service hours
1	1		1		

Moore et al.	A subset of 265	Dementia	Self-reported effect of	Missed work	Missed work
(2001)	employed care		caregiving: Cross-	- Late for work	- Among caregivers still working, 42% reported
	givers from a		sectional descriptive	- Sick leave for	being late for work because of caregiving
	total sample of		statistics	caregiving	- 39% reported taking sick leave due to
	2,043 caregivers				caregiving
	from National				
	Longitudinal				
	Caregiver Study,				
	a nationally-				
	representative				
	longitudinal				
	study of informal				
	caregivers of				
	elderly male U.S.				
	veterans with				
	dementia				
	compared to				
	national sample				
	from National				
	Health Interview				
	study and Panel				
	study of income				
	dynamics				
Mutschler	Nationally-	General elderly	Self-reported effect of		
(1994)	representative		caregiving: Cross-		
	survey of 494		sectional descriptive	Cross-cutting measure:	Cross-cutting measure:
	employed		statistics and regression		400/ 6
	caregivers		model to estimate the	- Number of caregivers	- 49% of caregivers were constrained
	providing care		effect of various factors on	with and probability of	- The following were significantly related to the
	for patients aged		caregiver employer	work constraints;	probability of work constraints: hours of care
	65 or older who		outcomes	caregivers were	weekly, problems with cost of care, caregiver
	require support			considered to have work	has primary responsibility caregiver is spouse
	for at least one			constraints if they	work > 30 hours per week and caregiver has a
	activity of daily			worked lewer hours than	clerical ioh
	living			desired, changed their	cicical job
				work schedule, or taken	
				time off without pay	

NAC & AARP (2015)	Nationally – representative sample of 1,248 caregivers drawn from probability- based online panel	General elderly	Self-reported effect of caregiving: Cross- sectional descriptive statistics reported.	<u>Missed work</u> - Go in late, leave early <u>Productivity:</u> - Changes in work performance	Among 724 working caregivers who had been employed at any time since they began caregiving: <u>Missed work</u> - 49% go in late/leave early/take time off <u>Productivity</u> - 7% received warning about performance/attendance
Passik & Kirsh (2005)	Convenience sample of 25 caregiver-patient dyads in which patient has cancer; 15 caregivers were working full-time	Cancer	Self-reported effect of caregiving: Cross- sectional descriptive statistics reported.	<u>Missed work</u> - Missed work days - Increased use of sick days and vacation days <u>Productivity</u> - Effectiveness at work - Likelihood to engage in work, overall	Missed work: - Spousal caregivers missed an average of 2.7 days of work and took an additional 1.29 sick days and 1.76 vacation days during the monthlong study Productivity - 32% felt they were less effective at work overall
Robison et al. (2009)	4,014 respondents randomly selected for a state-based long- term care needs assessment survey, of which 381 were	Mostly general elderly, a small proportion of younger generation care receivers	Self-reported effect of caregiving: Regression analysis of determinants of missed work among employed caregivers	<u>Missed work:</u> - Missed work, measured as using sick or vacation time in the past year related to caregiving	<u>Missed work:</u> - Caregivers who missed work in the past year were less likely to be male [OR 0.49 95% CI (0.29-0.82)], under age 61 [0.49 (0.24-1.00)], and care recipient has unment needs for community long-term care services [1.99 (1.07- 3.69).

	employed				
	caregivers				
Scharlach and Boyd (1989)	Convenience sample of 3,658 employees of a large California employer, of which 341 were caregivers and completed the caregiving portion of the survey	General elderly	Cross-sectional comparison to a comparison group: Cross- sectional descriptive results and comparisons between caregivers and non-caregivers, and regression models on the predictors of job-family conflict, days off, and time off	Missed work: - Days off in last 2 months - Number of times off during day in last month - Used vacation time - Took a day off (with pay) - Left early - Arrive late - Extended a break - Missed out on overtime - Took a day without pay - Missed a meeting - Took a personal leave Productivity: - Too tired to work - Arrived late for work - Extended a break	Missed work:Caregivers vs. non-caregivers Relative to non-caregivers, caregivers took more days off in the last 2 months: 0.79 days for caregivers vs 0.51 days for non-caregivers- Relative to non-caregivers, caregivers reported more times off during the day during last month: 0.80 times for caregivers vs. 0.48 times for non-caregivers- As a result of caregiving in the last 2 months - 42.1% of caregivers used vacation time: 26.7% reported using vacation time once or twice, 14.5% a few times, 0.9% at least weekly- 33.5% took a day off with pay: 25.6% once or twice, 7.6% a few times, and 0.3% at least weekly- 32.8% left early: 24.8% once or twice, 7.6% a few times, 0.3% at least weekly- 15.1% extended a break: 10.6% once or twice, 4.5% a few times, and 0% at least weekly- 16.1% arrived late for work: 11.4% once or twice, 4.1% a few times, 0.6% at least weekly- 16% missed out on overtime: 9.6% once or twice, 5.4% a few times, and 1.0% at least weekly

					7.4% took a day without pay: 5.1% once or
					twice 2.3% a few times 0% at least weekly
					twice, 2.5% a few times, 6% at least weekly
					- 5.1% missed a meeting: 3.9% once or twice,
					1.3% a few times, and 0% at least weekly
					As a result of caregiving <i>ever</i>
					- 11.4% took a personal leave
					Productivity:
					As a result of caregiving in the last 2 months
					21.5% were too tired to work: 10.2% once or
					twice 8.7% a few times and 3.5% at least
					weekly
					weekiy
Scharlach et	Convenience	General elderly	Self-reported effect of	Cross-cutting measure:	In the last 2 months
al. (1991)	sample of 3,658		caregiving: Cross-		
	employees of a		sectional descriptive	- Work interference, a	
	large California		statistics, bivariate	cross-cutting measure of	
	employer, of		associations, and structural	survey responses related	Cross-cutting measure:
	which 341 were		equation modeling	to change in work	In simple himseiste completions work
	caregivers and			routine, foregone work	- In simple orvariate correlations, work
	completed the			opportunities, number of	strain likelihood of purging home placement
	caregiving			hours missed, and how	likelihood of ich turnovery are recipient factors
	portion of the			much caregiving	such as self care ability, cognitive impairment
	survey			conflicted with	and behavioral disturbances: caragiver social
				caregiver's job	support and job flavibility
					support, and job mexicinity
					- In the multivariate structural equation models.
					work interference was positively associated
					with the following predictors, ordered from
					strongest to weakest significant predictors:

					care-recipient impairment and coworker support; the following were negatively associated with work interference: social support and greater job flexibility,
Stone and Short (1990)	Nationally- representative sample of 1,003 nonspousal caregivers under the age of 65, of which 491 were employed	General elderly	Self-reported effect of caregiving: Cross- sectional descriptive statistics and regression model to examine the predictors of caregivers needing work accommodations	Cross-cutting measure: - Work accommodations, measured as reporting one or more of the following adjustments because of caregiving: rearranging schedules, reducing work hours, or taking time off without pay	 <u>Cross-cutting measure:</u> For every hour the care recipient can be left alone, the caregiver is 0.67% less likely to need work accommodations Caregivers who care for elders with behavior problems are 17.94% more likely to need work accommodations Primary caregivers are 19.40% more likely to need work accommodations than secondary caregivers Female caregivers are 11.78% more likely to need work accommodations than male caregivers White caregivers are 15.06% more likely to need work accommodations than nonwhite caregivers Caregivers in fair or poor health are 14.96% more likely to need work accommodations than healthier caregivers

				<u>absenteeism and</u> <u>presenteeism</u>)	 Caregivers who provided substantial help reported significantly higher rates of presenteeism (7.9%) compared to those who provided some help (2.6%) and no help (2.7%) <u>Cross-cutting:</u> Caregivers who provided substantial help with care were over three times as likely to experience productivity loss (accounting for absenteeism and presenteeism) than caregivers who provided no help College or higher level of education and self-reported good health (relative to excellent health) were significantly associated with productivity loss
Ziran et al. (2009)	Convenience sample of 99 caregivers in a regional trauma center, 57 of which were employed	Orthopedics	Pre-post caregiving comparisons: Pre-post within-subjects comparisons. Descriptive statistics were reported.	Productivity - Employment burden - Interference with employment	 <u>Productivity</u> Significant increase in the mean level of employment burden from 1.2 to 2.0 before injury to after injury 16% reported some interference with employment before injury and 57% after the injury