

Supplementary Tables

Table S1

Characteristics of 12 longitudinal population-based studies on the impact of informal caregiving on all-cause mortality (the reference group is non-caregivers)

ID	Study	Years of study	Country	CG age (Sex)	Follow-up period (year.month)	Data**	Care receiver	Reason for providing care	Total N		Deaths		Number of collapsed HRs	Fully Adjusted HR(95%CI)
									Non CG	CG	Non CG	CG		
1	Schulz and Beach, 1999	1993-1998	US	66-96 (mixed)	5.5	CHS	Spouse	Difficulties with performing at least one ADL or IADL tasks	427	317	40 9.4%	50 15.8%	2	1.37 (0.95-1.98) †
2	Fredman et al., 2008	1997-2005	US	70-79 (mixed)	8.4	Health ABC	Family member, friends, neighbors or others	A child or a disabled or sick adult	2369	680	521 22%	140 20.6%	#NA	1.15 (0.94-1.40)
3	O'Reilly et al., 2008	2001-2005	Northern Ireland	16+ (mixed)	4.0	NIMS	Family member, friends, neighbors or others	Long-term physical or mental ill health or disability or problems related to old age	974450	162884	39920 3.5%	3128 1.9%	6	0.76 (0.74-0.79) •†
4	Brown et al., 2009	1993-2000	US	70+ (mixed)	7.0	AHEAD	Spouse	Difficulties with performing at least one ADL or IADL tasks	2732	644	756 27.6%	153 23.7%	2	0.79 (0.63-0.99) •†
5	Ramsay, Grundy, and O'Reilly, 2013	2001-2009	England and Wales	35-74 (mixed)	8.8	LSEW	Family member, friends, neighbors or others	Long-term physical or mental ill health or disability or problems related to old age	145927	31247	8658 5.9%	1613 5.16%	4	0.81 (0.77-0.85) •†
6	Roth et al., 2013	2004-2012	US	63.27* (mixed)	8.0	REGARDS	Family member	Chronic illness or disability	3503	3503	315 9%	264 7.5%	#NA	0.82 (0.70-0.97) •

7	Fredman et al., 2015	1999-2012	US	81* (female)	13.0	Caregiver-SOF	Relative or friend	Difficulties with performing at least one ADL or IADL tasks	694	374	338 48.7%	145 38.8%	#NA	0.77 (0.62-0.95) •
8	O'Reilly et al., 2015	2011-2013	Northern Ireland	25+ (mixed)	2.9	NIMS	Family member, friends, neighbors or others	Long-term physical or mental ill health or disability or problems related to old age	938937	183842	26892 2.9%	2443 1.3%	3	0.73 (0.70-0.75) •†
9	†Caputo, Pavalko, and Hardy, 2016	1984-2012	US	47-61 (female)	28.0	NLS_MW	Spouse, parents, or others	Chronically ill and disabled persons	1796	459	794 44.2%	230 50.1%	3	1.03 (0.90-1.19)
10	Leggett et al., 2019	2000-2012	US	51+ (mixed)	12	HRS	Spouse	Difficulties with performing at least one ADL tasks/Dementia	7841	2809	2218 28.3%	698 24.9%	2	0.72 (0.65-0.79) •†
11	Miyawaki et al., 2019	2000-2010	Japan	47-77 (mixed)	10	Komo-Ise	Relatives or friends	Disabled, difficulties with performing at least one ADL and IADL tasks	6742	1342	760 11.3%	105 7.8%	#NA	0.97 (0.79-1.19)
12	Shu et al., 2019	2005-2015	Australia	70+ (male)	10	CHAMP	Someone	Long-term illness, disability, or other problems	1427	189	443 31%	52 27.5%	#NA	0.94 (0.67-1.32)

Notes. † Out-of-home caregivers were excluded because their definition did not meet the inclusion criteria.

* The mean of caregivers' age.

** CHS: Cardiovascular Health Study, AHEAD: Asset and Health Dynamics (AHEAD) cohort of HRS, REGARDS: The Reasons for Geographic and Racial Differences in Stroke, Caregiver-SOF: Caregiver-Study of Osteoporotic Fractures (caregiver-SOF), LSEW: Longitudinal Study of England and Wales (LS), NIMS: The Northern Ireland Mortality Study (NIMS), Health ABC: The Health, Aging, and Body Composition, NLS_MW: National Longitudinal Survey of Mature Women, HRS: Health and Retirement Study, CHAMP: Concord Health and Aging in Men Project.

*** CG: Caregiver, Non-CG: Non-Caregiver.

NA: Not Applicable: The study reported the overall effect of informal caregiving on mortality.

†Calculated using the fixed-effect model.

- $P \leq 0.05$

Table S2

Random-effects meta-regression model of the length of follow-up years on the natural logarithm of the 12 effect sizes

Variable	Coefficient	SE	Z	P> z	95% Confidence Interval
	(B)				
The length of follow-up years	0.008	0.007	1.18	0.237	-0.005_0.022
Constant	-0.238	0.085	-2.81	0.005	-0.405_-0.072
Heterogeneity	Adjusted R-squared=14.22%				
Indices	I-squared residual=73.64%				

Notes. Outcome variable is the natural logarithm of effect sizes (HRs).

Table S3

Computed total effect for studies included in this meta-analysis and Roth and colleagues' (2015) review

Study	Fully Adjusted HR (95%CI) (present meta- analysis)	Fully Adjusted HR (95%CI) (Roth et al. (2013)
Schulz and Beach, 1999	1.37 (0.95-1.98)	1.37 (0.90-2.07)
O'Reilly et al., 2008	0.76 (0.74-0.79)	0.74 (0.71-0.76)
Brown et al., 2009	0.79 (0.63-0.99)	0.79 (0.66-0.94)
Ramsay, Grundy, and O'Reilly, 2013	0.81 (0.77-0.85)	0.83 (0.79-0.88)