
Long-term Effects of Caregiving Stress on Medical Morbidity Among Cancer Caregivers

Youngmee Kim

Charles S. Carver

University of Miami

Chiew Kwei Kaw

Ted Gansler

Ahmedin Jemal

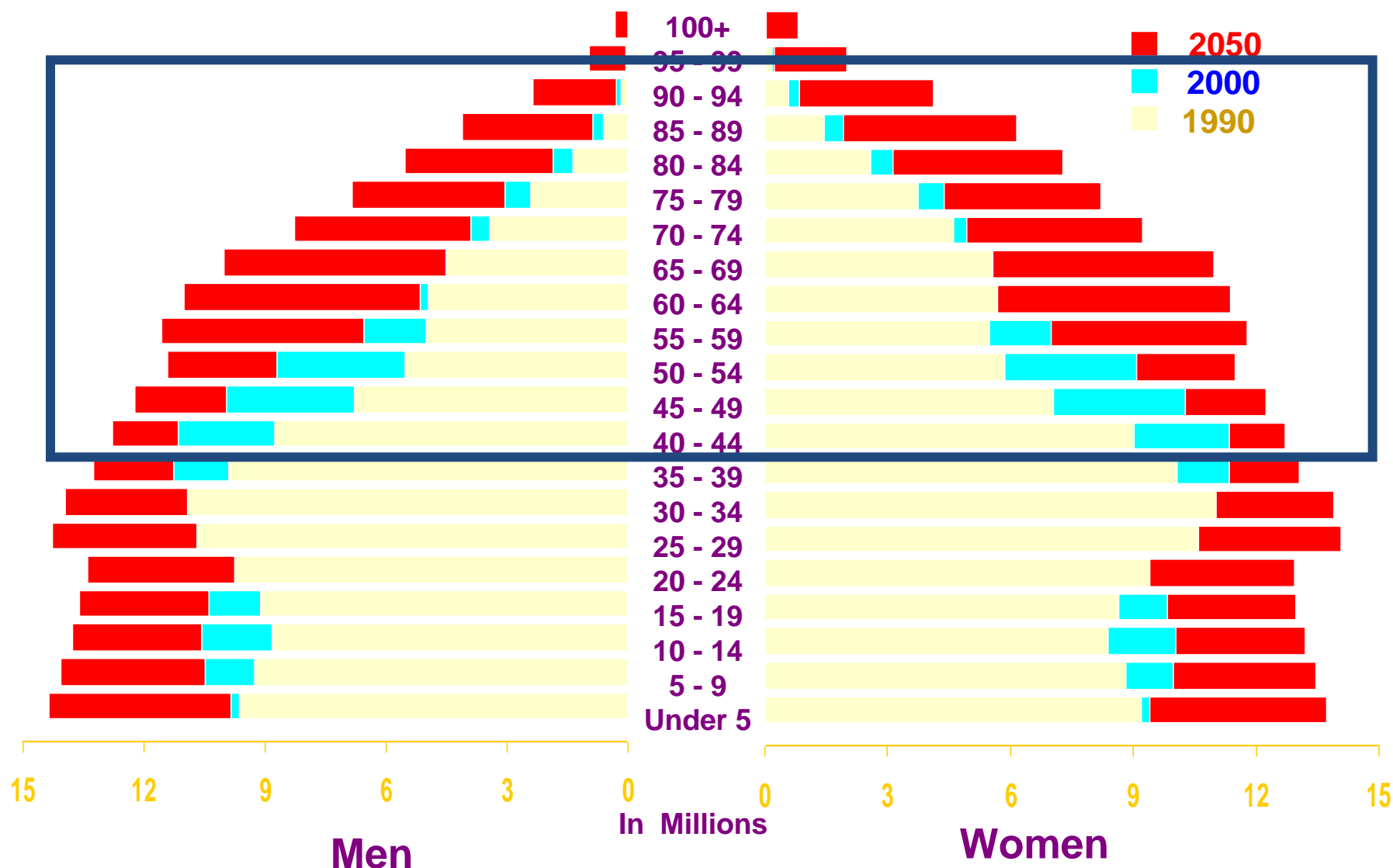
Rachel Spillers Cannady

American Cancer Society



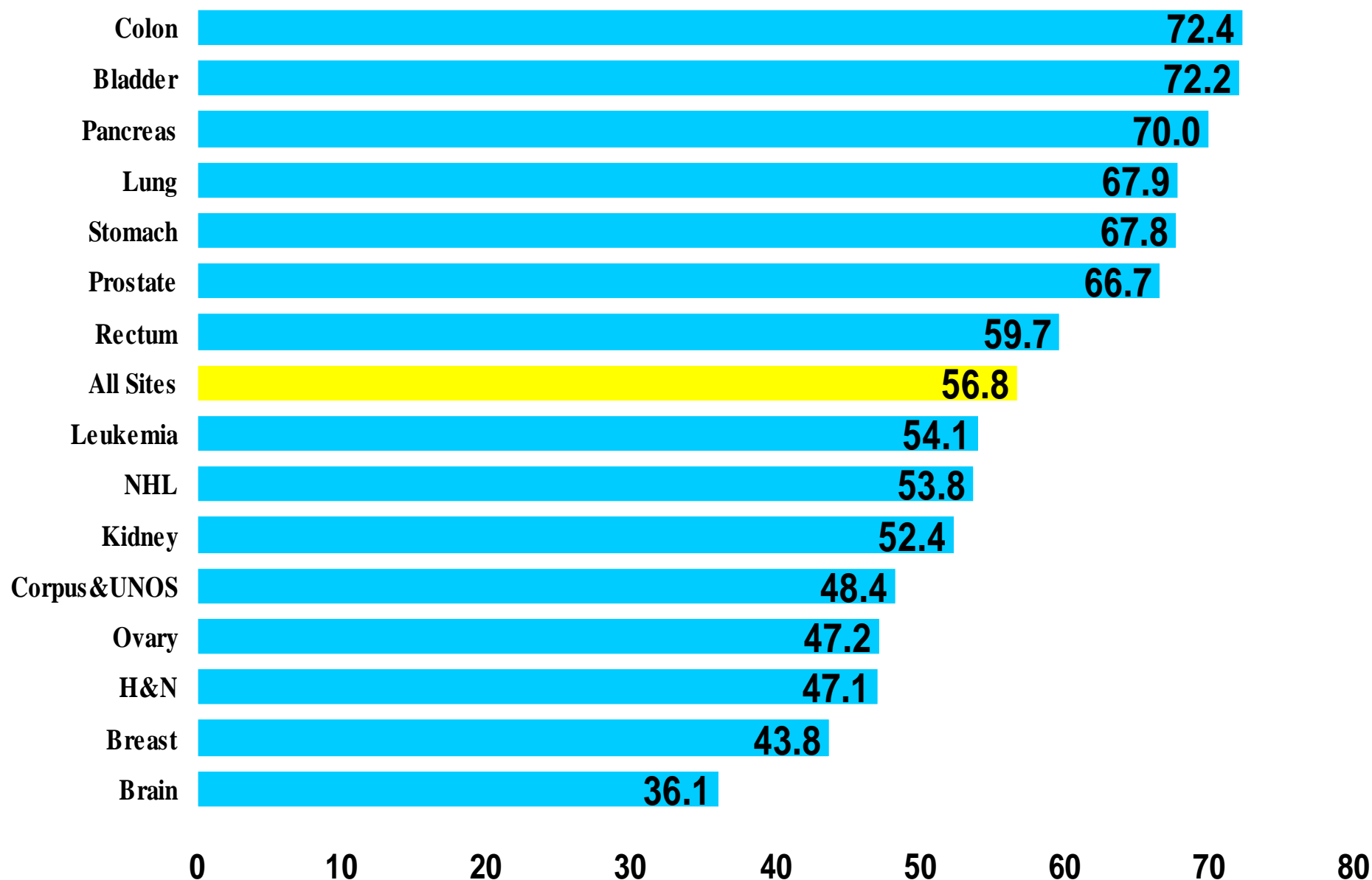
Aging, Cancer, and Caregiving

Expanding U.S. Aging Population

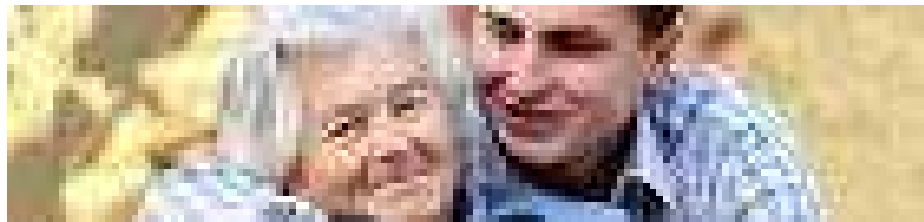


Total US Resident Population Projections from: U.S. Census Bureau, (1) 1990 Census and (2) U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin, <http://www.census.gov/ipc/www/usinterimproj/>, accessed on 09/15/2004.

Incidence (%) of Cancer in Patients $\geq 65^*$



*All Race/sex groups. Source: NCI SEER Program Data, 1997-2001.



Physical Health of Caregivers

- ❖ Compared with non-caregivers, dementia caregivers had
 - ✓ 9% greater risk of health problems
 - ✓ 23% higher level of stress hormones
 - ✓ 15% poorer antibody production
 - ✓ 63% higher mortality

Pinquart & Sorensen, 2003; Vitaliano et al. (2003).



Physical Health of Cancer Caregivers

- ❖ Early Caregivership Phase
 - ✓ self-reported health comparable to the U.S. norm
 - ✓ impaired physiological reactions in daily or lab setting
 - ✓ poorer health among burdened caregivers
- ❖ Mid- to Long-term Caregivership Phase
 - ✓ reporting health problems
 - ✓ unknown if exacerbated by caregiving stress
- ❖ Palliative Caregivership Phase
 - ✓ strained caregivers report sleep problems

Kim & Given (2008).

Physical Health of Cancer Caregivers

- ❖ Spouses of cancer patients increase the risks of coronary heart disease (CHD) and stroke by 13 to 29% up to 20 years after their spouse's cancer diagnosis, compared with a matched control
 - ✓ Swedish national data registries (cancer registries, population census, etc.)

Ji, Zöller, Sundquist, & Sunquist (2012); Schneiderman, Kim, & Shaffer (2012)

Methods

Quality of Life Survey for Caregivers

- ❖ SCS-I: Survivors of 10 most common cancers
- ❖ Caregivers: Time 1 (2 years post-dx)
Time 2 (5 years post-dx)
Time 3 (8 years post-dx)
 $n = 423$
- ❖ Measures:
 - ✓ Demographics: Age, Gender, & Income
 - ✓ Caregiving Stress: Stress Overload (Pearlin et al. 1990)
 - ✓ Cancer Severity Index (type and stage of cancer: Kim et al., 2007)
 - ✓ A list of 40 medical morbid conditions (Kim et al., 2008)

Sample Characteristics

Age at T1	54.4 (19 ~ 90)
Gender (Female)	64.7%
Household Income (>\$40,000)	64.8%
Ethnicity (White)	90.5%
Subjective Caregiving Stress	1.59 (1 ~ 4)
Cancer Severity Index	0.20 (0 ~ 1)
# of Morbidities: 2-year	4.49 (0 ~ 35)
5-year	4.49 (0 ~ 21)
8-year	1.84 (0 ~ 15)

Results

Prevalence of Morbidities

	2 Years
Back pain	41.1% (1)
Heart Disease	40.0% (2)
High Cholesterol	36.4% (3)
Obesity	36.3% (4)
Hypertension	35.0% (5)
Arthritis	32.3% (6)
Depression	27.7% (7)
Smoking	24.5%
Pulmonary	17.2%
Cancer	13.8%
Diabetes	14.9%

Note. Prevalence was age-, gender-, and ethnicity/race-adjusted;
Heart Disease includes angina (coronary heart disease),
cardiac arrest (congestive heart failure, heart attack),
and heart murmur (irregular heartbeat, pacemaker)

Prevalence of Morbidities

	2 Years	5 Years	8 Years
Back pain	41.1% (1)	30.2% (3)	17.0% (3)
Heart Disease	40.0% (2)	24.3% (4)	9.9% (7)
High Cholesterol	36.4% (3)	31.9% (2)	27.7% (2)
Obesity	36.3% (4)	20.3% (6)	9.5%
Hypertension	35.0% (5)	38.9% (1)	35.1% (1)
Arthritis	32.3% (6)	21.0% (5)	13.5% (5)
Depression	27.7% (7)	20.3% (6)	16.6% (4)
Smoking	24.5%	13.2%	5.7%
Pulmonary	17.2%	10.1%	8.3%
Cancer	13.8%	8.1%	5.4%
Diabetes	14.9%	8.1%	7.5%

Note. Prevalence was age-, gender-, and ethnicity/race-adjusted;
Heart Disease includes angina (coronary heart disease),
cardiac arrest (congestive heart failure, heart attack),
and heart murmur (irregular heartbeat, pacemaker)

Prevalence of Morbidities

	2 Years	5 Years	8 Years	NHIS 2003, 2006, 2009
Back pain	41.1% (1)	30.2% (3)	17.0% (3)	--
Heart Disease	40.0% (2)	24.3% (4)	9.9% (7)	12.9%, 12.7%, 13.3%
High Cholesterol	36.4% (3)	31.9% (2)	27.7% (2)	27.2%, -, -
Obesity	36.3% (4)	20.3% (6)	9.5%	26.4%, 29.0%, 29.2%
Hypertension	35.0% (5)	38.9% (1)	35.1% (1)	25.2%, 26.3%, 27.8%
Arthritis	32.3% (6)	21.0% (5)	13.5% (5)	21.6%, 21.0%, 22.4%
Depression	27.7% (7)	20.3% (6)	16.6% (4)	--
Smoking	24.5%	13.2%	5.7%	17.6%, 16.9%, 16.5%
Pulmonary	17.2%	10.1%	8.3%	9.7%, 11.0%, 13.3%
Cancer	13.8%	8.1%	5.4%	6.6%, 7.3%, 8.1%
Diabetes	14.9%	8.1%	7.5%	6.6%, 7.6%, 8.4%

Note. Prevalence was age-, gender-, and ethnicity/race-adjusted;
Heart Disease includes angina (coronary heart disease),
cardiac arrest (congestive heart failure, heart attack),
and heart murmur (irregular heartbeat, pacemaker)

Predicting Morbidity at 5-Year

	β	t	R^2
<u>Step 1:</u> Morbidity at 2-year	.45	10.74***	.20
<u>Step 2:</u> Age	.22	4.69***	.27
Gender (Female)	.03	0.77	
Income (> \$40K)	-.01	-0.05	
Education (> High school)	-.07	-1.65	
Spouse	-.09	-2.13*	
Employed	-.07	-1.51	
<u>Step 3:</u>			.29
Caregiving Stress	.12	3.43***	
Cancer Severity Index	.07	2.14*	

$n = 423$; * $p < .05$ ** $p < .01$ *** $p < .001$

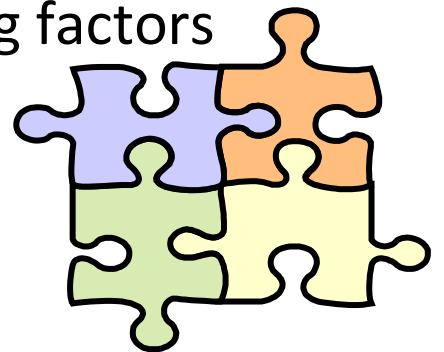
Predicting Morbidity at 8-Year

	β	t	R^2
<u>Step 1:</u> Morbidity at 5-year	.36	6.86***	.13
<u>Step 2:</u> Age	.08	1.31	.16
Gender (Female)	-.14	-2.49*	
Income (> \$40K)	.03	0.45	
Education (> High school)	-.07	-1.32	
Spouse	-.02	-0.34	
Employed	-.01	-0.17	
<u>Step 3:</u>			.25
Caregiving Stress	.15	3.22**	
Cancer Severity Index	.02	0.35	

$n = 423$; * $p < .05$ ** $p < .01$ *** $p < .001$

Limitations & Future Studies

- ❖ Caregivership continuum
 - End of life, Bereavement, Prevention
- ❖ Caregiving stress
 - care tasks, duration
- ❖ Severity of morbidity
 - individual morbidity, weigh severity
- ❖ Self-report
 - Behavioral, physiological measures, medical record review
- ❖ Moderators & mediators
 - Existing resources and risk factors, time-varying factors
- ❖ Generalizability of findings
 - Replicate with underserved populations



Conclusions

- ❖ Stressed caregivers (either subjective or objective) are more likely to develop greater medical morbid conditions requiring physicians' care.
- ❖ Stress management programs may benefit caregivers by protecting them from prematurely declining health.

Acknowledgement

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projects*

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Thank You !!!

Q & A