

# Informal caregiving time and its cost in context of older Singaporeans receiving human assistance with their daily activities

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**What about the Caregiver?**

**Findings from the baseline wave of a longitudinal study of family caregivers of older Singaporeans**

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# Background ...1

- A **strong preference for family-based or informal care** over formal care in societies like Singapore<sup>1</sup>
  - Cultural norms and values
  - Government policies and programmes
  - Lower financial costs
- With rapid population ageing in Singapore, informal caregivers' importance will increase
- Informal caregivers **contribute substantially** to the social and health care system

<sup>1</sup>Suen, J., Thang, L.L. Contextual Challenges and the Mosaic of Support: Understanding the Vulnerabilities of Low-Income Informal Caregivers of Dependent Elders in Singapore. *J Cross Cult Gerontol* 33, 163–181 (2018). <https://doi.org/10.1007/s10823-017-9334-4>

# Background ...2

- In the **informal caregivers' absence**, the need to substitute with formal care workers and services would **overwhelm** a country's health care and social services budget
- Informal caregiving hours and costs found to be of significant value in Western countries
  - U.S., 2017: Approximately 41 million informal caregivers provided an estimated 34 billion hours of care, worth US\$470 billion<sup>2</sup>
  - UK, 2014: For people with dementia, the total cost of informal care is £11.6 billion<sup>3</sup>
  - Highlights the importance of having informal caregivers that are well-supported

<sup>2</sup>Reinhard, Susan C. Lynn Friss Feinberg, Ari Houser, Rita Choula, and Molly Evans. *Valuing the Invaluable: 2019 Update – Charting a Path Forward*. Washington, DC: AARP Public Policy Institute. November 2019. <https://doi.org/10.26419/ppi.00082.001>

<sup>3</sup>Prince, M et al (2014) Dementia UK: Update Second Edition report produced by King's College London and the London School of Economics for the Alzheimer's Society

# Background ...3

- Little is known about the monetary value of informal caregiving in Singapore
- Findings from existing research in Singapore
  - Focused on older adults with specific health conditions
    - Cost of informal caregiving increased with severity of dementia<sup>4-6</sup>
    - Costs were higher for older adults who did not receive care from a foreign domestic worker irrespective of severity<sup>4-5</sup>

<sup>4</sup>Woo, L. L., Thompson, C. L., & Magadi, H. (2017). Monetary cost of family caregiving for people with dementia in Singapore. *Archives of gerontology and geriatrics*, 71, 59-65.

<sup>5</sup>Chong, M., Tan, W., Chan, M., Lim, W., Ali, N., Ang, Y., & Chua, K. (2013). Cost of informal care for community-dwelling mild–moderate dementia patients in a developed Southeast Asian country. *International Psychogeriatrics*, 25(9), 1475-1483. doi:10.1017/S1041610213000707

<sup>6</sup>Woo, L.L. & Thompson, C.L. & Dong, Y.H.. (2017). Net informal costs of dementia in Singapore. *Journal of Clinical Gerontology and Geriatrics*. 8. 98-101. 10.24816/jcgg.2017.v8i3.06.

# Aims

1. Quantify the **amount of caregiving time** provided by primary and secondary informal caregivers of Singaporeans aged  $\geq 75$  years receiving human assistance with their daily activities
2. Calculate the **monetary value** of the informal caregiving time

# Method: Proxy Good Method (PGM) ...1

- Data from the baseline wave of the TraCE study on **278 care-recipient/caregiver (CR/CG) dyads** were used
- **Definition:** PGM values time spent on caregiving at the labour market price of a close substitute

# Method: Proxy Good Method (PGM) ...2

- 1) Time spent on caregiving activities was ascertained (self-reported):
  - Helping care-recipient (CR) perform basic activities of daily living (ADLs)
  - Helping CR perform instrumental ADLs (IADLs)
  - Supporting the CR's healthcare-services use
  - Other caregiving-related activities
- **Recall method** used – caregiver was asked to specify the time spent for specific care activities and tasks during a specific timeframe
  - E.g. for ADLs - *“How many **hours in a typical week** do you spend helping (CR) perform the activities we have just discussed: take a bath/shower; dress up; walk around the house; stand up from or sit down on a bed/chair; use the sitting toilet; eat?”*

# Method: Proxy Good Method (PGM) ...3

- 2) Time spent on each caregiving activity was added up to arrive at the total time spent on caregiving per (typical) week
  - Weekly number of caregiving hours was limited to a **maximum of 112 hours a week (16 hours/day)**, assuming 8 hours/day for the caregiver to rest and for other non-caregiving related activities<sup>7-8</sup>

<sup>7</sup>Oliva-Moreno, J., Aranda-Reneo, I., Vilaplana-Prieto, C., González-Domínguez, A., & Hidalgo-Vega, A. (2013). Economic valuation of informal care in cerebrovascular accident survivors in Spain. *BMC Health Services Research*, 13(1), 508. doi:10.1186/1472-6963-13-50

<sup>8</sup>Escribano-Sotos, F., & Pardo-García, I. (2015). Analyzing the costs of informal care for persons with dementia in Spain. *Journal of Promotion Management: The New Spirit of Strategy for Competitive Management*, 21(4), 459-474. doi:10.1080/10496491.2015.1051398



# Method: Proxy Good Method (PGM) ...4

- 3) The price of a suitable market substitute was ascertained
- **2019 *median* gross monthly income of a full-time worker in the Health & Social Services industry<sup>9</sup>** used as the middle-range estimate
    - Middle estimate: \$22.02/hour
  - Sensitivity analyses for conservative and generous cost estimates
    - Conservative estimate: \$20.71/hour
    - Generous estimate: \$27.61/hour

<sup>9</sup>Comprehensive Labour Force Survey, Manpower Research & Statistics Department, MOM

# Method: Proxy Good Method (PGM) ...5

- 4) The annual cost of informal caregiving time was calculated
- Assumes that informal care is provided throughout the year

**Annual cost of caregiving time =**

**Mean caregiving hours per week X (hourly cost of the median gross income of a full-time Health and Social Services worker in Singapore x 52 weeks)**

# Defining “Caregivers”

## PRIMARY

Main caregivers providing care

## SECONDARY

Caregivers playing a supporting role

### Informal

- Unpaid caregivers
- E.g. Children of CR

### Formal

- Paid caregivers
- E.g. Nursing home staff



### Informal

- Unpaid caregivers
- E.g. Family members or close friends supporting the primary informal caregiver

### Formal

- Paid caregivers
- E.g. Foreign Domestic Workers (FDWs)

# Results: Caregiving time ...1

Table 1. Caregiving hours per week, by caregiver type

Caregiving hours provided per week					
CG type	N (%) <sup>a</sup>	Mean (SD)	Minimum	Maximum	Median (IQR)
Primary informal CG	278 (100%)	29.3 (28.3)	0	112	19.7 (31)
Secondary informal CGs	140 (50.4%)	13.3 (19.9)	0.1	112	8 (11)
<i>All informal CGs</i>	<i>278 (100%)</i>	<i>36.0 (34.7)</i>	<i>0</i>	<i>224</i>	<i>27.3 (30)</i>
FDWs	134 (48.2%)	42.1 (32.7)	0.5	112	32.8 (40.5)
<i>All informal CGs and FDWs</i>	<i>278 (100%)</i>	<i>56.7 (49.5)</i>	<i>0.5</i>	<i>308.6</i>	<i>40 (53)</i>

Note. CG = Caregiver; FDW = foreign domestic worker; IQR = interquartile range; SD = standard deviation.

<sup>a</sup> The number and proportion of care-recipients receiving care from the specified type of caregiver

# Results: Caregiving time ...2

Table 2. Caregiving hours per week for each caregiving activity, by caregiver type

<u>Mean</u> caregiving hours provided per week for each activity				
CG Type <sup>a</sup>	Helping CR with ADLs (SD)	Helping CR with IADLs (SD)	Supporting CR's healthcare service use (SD)	Other caregiving-related activities (SD)
Primary informal CG (N = 278)	5.2 (11.0)	10.3 (13.3)	2.5 (3.8)	11.3 (14.6)
Secondary informal CGs (N = 140)	0.8 (3.9)	2.1 (5.7)	1.1 (3.8)	2.7 (6.0)
<i>All informal CGs (N = 278)</i>	6.0 (12.6)	12.4 (14.9)	3.6 (5.4)	14.0 (16.7)
FDWs (N = 134)	15.7 (20.2)	19.1 (18.5)	3.2 (5.9)	10.8 (17.6)
<i>All informal CGs and FDWs (N = 278)</i>	13.3 (21.8)	20.8 (19.4)	4.8 (6.7)	17.8 (21.9)

Note. CG = Caregiver; CR = Care-recipient; FDW = foreign domestic worker; SD = standard deviation.

<sup>a</sup> Number in parenthesis indicates the number of care-recipients receiving care from the specified type of caregiver

# Results: Cost of informal caregiving time ...1

Table 3. Annual cost of informal caregiving time, by caregiver type

CG Type	N <sup>a</sup>	Mean caregiving hours per week (SD)	Annual cost <sup>b</sup> – Middle estimate (\$)	Annual cost <sup>b</sup> – Conservative estimate (\$)	Annual cost <sup>b</sup> – Generous estimate (\$)
Primary informal CG	278	29.3 (28.3)	<b>33,550</b> 2,796/month	31,554 2,629/month	42,067 3,506/month
Secondary informal CGs	140	13.3 (19.9)	<b>15,229</b> 1,269/month	14,323 1,194/month	19,095 1,591/month
All informal CGs	278	36.0 (34.7)	<b>41,221</b> 3,435/month	38,769 3,231/month	51,686 4,307/month

Note. CG = Caregiver; FDW = foreign domestic worker; SD = standard deviation.

<sup>a</sup> The number of care-recipients receiving care from the specified type of caregiver

<sup>b</sup> Annual cost of caregiving time = Mean caregiving hours per week X (hourly cost of the median gross income of a full-time Health and Social Services worker in Singapore x 52 weeks)

# Results: Cost of informal caregiving time ...2

Table 4. National-level projection of the annual cost of informal caregiving time for older Singaporeans

Age of care-recipients	Elderly resident population in the age range requiring human assistance with daily activities	CG Type	Middle estimate (\$, billion)	Conservative estimate (\$, billion)	Generous estimate (\$, billion)
≥ 75 years	30.9% <sup>a</sup> : 66,424 persons	Primary informal CGs	2.23	2.10	2.79
		Secondary informal CGs	0.51	0.48	0.64
		All informal CGs	2.74	2.58	3.43
≥ 60 years	13.7% <sup>a</sup> : 123,162 persons	Primary informal CGs	4.13	3.89	5.18
		Secondary informal CGs	0.95	0.89	1.19
		All informal CGs	5.08	4.78	6.37

Note. CG = Caregiver; FDW = foreign domestic worker.

<sup>a</sup> Proportion estimates from a nationally representative study of older Singaporeans, THE SIGNS Study-I, conducted in 2016-2017

# Results: Cost of informal caregiving time ...3

Table 5. Informal caregiving hours (from primary and secondary informal caregivers) and their annual cost, by care-recipient health status

Care-recipient health status		N (%) <sup>a</sup>	Mean caregiving hours per week (SD)	Annual cost – Middle estimate (\$)	Annual cost – Conservative estimate (\$)	Annual cost – Generous estimate (\$)
ADL limitations	None	106 (38.1%)	28.6 (30.5)	32,748	30,800	41,062
	1-2	53 (19.1%)	27.3 (23.1)	31,260	29,400	39,195
	3 or more	119 (42.8%)	46.5 (39.7)	53,244	50,077	66,761
IADL limitations	None	8 (2.9%)	15.9 (14.6)	18,206	17,123	22,828
	1-2	79 (28.4%)	26.0 (24.3)	29,771	28,000	37,329
	3 or more	191 (68.7%)	41.0 (37.8)	46,947	44,154	58,865
Dementia status	Not diagnosed	197 (70.9%)	33.5 (33.9)	38,359	36,077	48,097
	Diagnosed	74 (26.6%)	41.9 (36.1)	47,977	45,123	60,157

Note. SD = standard deviation.

<sup>a</sup> Number in parenthesis indicates the number of care-recipients receiving care from the specified type of caregiver



# Discussion ...1

- This analysis highlights the **substantial time commitment** towards care provision by informal caregivers and its **monetary value**
- Our findings are supported by existing research in Singapore and other countries
  - 36 hours of informal care (*our analysis*) versus 38 hours of informal care (*The Survey On Informal Caregiving, 2011*<sup>10</sup>)
  - National level estimates of the annual cost of informal caregiving comparable to other countries similar to Singapore

<sup>10</sup>Chan, Angelique, Ostbye, Truls, Malhotra, Rahul, and Athel J. Hu, *The Survey on Informal Caregiving*. Singapore: Summary Report For MCYS, (Ministry of Community Development, Youth and Sports, Singapore, 2011)

# Discussion ...2

- Regardless of how the time and costs are expressed and calculated, the **contribution of informal caregivers is significant**
- Estimated informal caregiving time and its cost will be helpful in informing social policy measures that aim to **enhance caregiver support**
- **Economic evaluations of models of care** for older adults should include informal caregiving time and its cost

# Discussion ...3

- **Strengths**

1. Quantified the cost of informal caregiving time **based on older adults who require human assistance with their daily activities** rather than a specific health condition

- **Limitations**

1. Initial estimates of median gross monthly income of a full-time worker in the Health & Social Services industry were used and are in the process of **getting more specific estimates**
2. PGM has its own limitations e.g. overestimation of the caregiving time also known as **problem of “joint production”**

- **Costs of formal care** can be considered to better understand the overall cost of caregiving in Singapore
- Consider **different factors** that may affect or lead to variations in the cost of informal caregiving

# Thank you!

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