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19 – 22 March, 2012
ON HEALTHY AGEING

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Validity of proxy-reported weight for older adults

Rahul Malhotra¹

Angelique Chan^{1,2}

Truls Østbye^{1,3}

1. Health Services and Systems Research, Duke – National University of Singapore Graduate Medical School, Singapore.
2. Sociology, National University of Singapore, Singapore.
3. Community and Family Medicine, Duke University, Durham, NC, USA.

1st World Congress on Healthy Ageing
Kuala Lumpur, Malaysia
19th March 2012

Proxy-report

- Research and clinical settings.
- Most common for young children.
- Not uncommon for older adults:
 - Esp. those with cognitive impairment or dementia.
 - E.g. Health status, Functional status, Weight.
- **Validity of proxy-report of weight of older adults?**

Objectives

1. To assess the validity of proxy-reported weight for older adults.
2. To ascertain the variation in validity of proxy-reported weight by:
 - older adult-proxy relationship.
 - older adult demographics (age, gender and ethnicity).
 - older adult measured body mass category.

Methods

Social Isolation, Health and Lifestyles Survey 2009

- Survey of 5000 community-dwelling older Singaporeans, aged 60 years and above.
- **458 (9.2%) older adults** had a **proxy respondent**.
 - Child (59.8%), Spouse (15.9%), Other (24.3%).
 - 222 (48.5%) : estimate of the older adult's weight.
 - Variation in ability to provide a weight estimate by older adult-proxy relationship: Chi-square test.
- **136 older adults** had **proxy-reported as well as measured weight**.

Methods

Validity of proxy-reported weight (N=136):

- Difference between proxy-reported and measured weight:
Proxy-reported weight – measured weight
- Percentage bias in proxy-reported weight:
(Proxy-reported weight – measured weight / Measured weight) x 100
 - +ve value: Overestimation of measured weight.
 - -ve value: Underestimation of measured weight.
 - Overall, by older adult characteristics and by older adult-proxy relationship (ANOVA or t-test).
- Prediction equation for actual weight.

Results

Table 1: Ability to provide an estimate of older adult weight by older adult-proxy relationship

Older adult-proxy relationship	% (n) who provided estimate of older adult weight
Child (N=274)	52.2% (143)
Spouse (N=73)	43.8% (32)
Other (N=111)	42.3% (47)

p >0.05 (Chi-square test)

Child proxy-respondents most likely to provide an estimate for older adult weight

Results

Table 2: Average difference in proxy-reported and measured weight, and percentage bias, overall and by older adult body mass category and older adult-proxy relationship (N=136)

Variable	Proxy reported minus measured weight Mean (S.E.)	Percentage bias	p-value
Overall	0.56 (0.38) kg	1.38%	-

Older adult demographics : No significant variation

Results

Prediction Equation for actual weight (in kg)

- Linear regression analysis
- 125 older adults (11 outlier or influential data points deleted)
- Based on proxy-reported weight and older-adult proxy relationship (child / spouse / other)

$$\begin{aligned} \text{Actual weight} = & \mathbf{0.86} + \mathbf{0.99} \text{ (*proxy-reported weight*)} \\ & + \mathbf{0.87} \text{ (*spouse proxy-respondent*)} \\ & - \mathbf{0.98} \text{ (*other proxy respondent*)} \end{aligned}$$

Conclusion

- **Proxy respondents provide a fairly accurate estimate of the weight of older adults.**
- If possible, choose a **child** of the older adult as the proxy
 - Most likely to provide an estimate.
 - Most close to the actual weight .

Acknowledgements / Funding

- **Social Isolation, Health and Lifestyles Survey 2009:**
 - Ministry of Community Development, Youth and Sports, Singapore.
 - Nihon University Population Research Institute from the "Academic Frontier" Project for Private Universities: matching fund subsidy from MEXT (Ministry of Education, Culture, Sports, Science and Technology), 2006-2010.
- **Analyses:**
 - Tsao Foundation Ageing Research Initiative, NUS.
 - A*STAR infrastructure grant to the Duke-NUS Program in Health Services and Systems Research.

**THANK
YOU**

Results

- **Proxy respondents (N=458)**

- Child 59.8%
- Spouse 15.9%
- Other relative/friend 24.3%

- Reason/s for a proxy-respondent:

- hearing/speaking difficulty 71.8%
- memory loss/dementia 41.9%
- physical illness/disability 21.0%

- Profile of older-adult:

- Average age 81.6 \pm 7.7 years
- Mostly female 66.4%
- Majority of Chinese ethnicity 67.9%