Social capital and healthy ageing:

Longitudinal findings from Household, Income and Labour Dynamics in Australia

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I. Multidisciplinary approach to social capital research

Social capital as a concept has a long history in political science: *democracy, political participation* from the mid 18th century (Tocqueville 1835, Hanifan 1916, …)

Related terms were used in sociology: *social life, networks, norms* (Bourdieu 1972, Coleman 1988, Putnam 1993, …) and economics: *poverty & inequality* (Loury 1977, Fukuyama 1999, World Bank's Social Capital Working Paper series 1998-2001, OECD 2010… Piketty 2014...)

Early population health and epidemiological studies

Classic work on psychosocial influence on individual's mental health and illness:

Lack of **social integration** and **social support** (*Le Suicide*, Durkheim 1897).

Longitudinal studies on **social connections and mortality rates**:

''The Roseto Effect: social solidarity" 50-year mortality data (1935-1985) between two neighbouring communities in Pennsylvania (Bruhn et al 1966; Egolf et al 1992).

Income inequality, social cohesion and health:

Unequal access to resources → Erosion of social cohesion (Wilkinson 1996, Kawachi 1997).

II. Methodological considerations

Definitions and level of analyses

"What people feel" (eg trust, safe) vs "What people do" (eg participation, support)

"Bonding" - horizontal ties within the same social group such as friends or family
"Bridging" - vertical ties which crosses social groups
"Linking" - relationship between an individual and an institution (eg government)

Micro – individual; Meso – group or organisation; Macro – community or society

From concepts to measures in quantitative analyses:

Putnam (1993 p. 35) social capital refers to *'social networks, norms and trust that facilitate action and cooperation for mutual benefit'.* Social capital has been conceptualised at individual and collective levels.

Empirical studies based on existing population health survey data

Individual level: social capital is captured using **proxy** measures such as percent reporting trust, frequency of engaging in social activities, or perceived levels of social support.

Collective level: these individual measures are generally aggregated and averaged within each group.

Ref: Putnam 1993, Putnam 2000. Szeter & Woolcock. 2004. Kawachi, Subramanian, Kim. 2008.

Social capital: health - ageing - Australia

Australian Bureau of Statistics 2000. *Measuring social capital*. -- "social networks and support, community participation, trust in people and institutions, tolerance of diversity"

Australian Institute of Family Studies. 2002. *Families, social capital & citizen project.* -- "core measures: informal ties (kinship, friends, neighbours, work colleagues), generalised trust, institutional relationships"

Productivity Commission 2003: *Social capital: Reviewing the concept and its policy implications.*

- "…through individual benefits — people with good access to social capital tend to be more 'hired, housed, healthy and happy' than those without' (page xi)

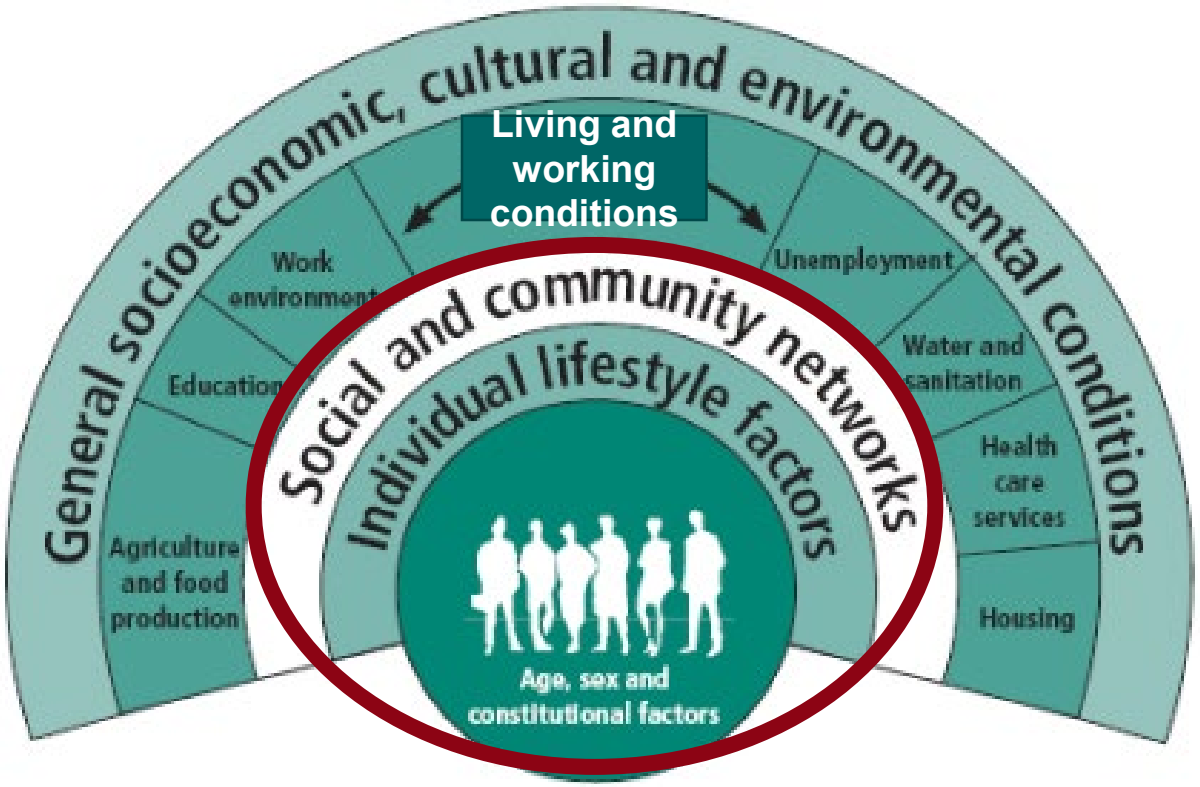
The Treasury. 2013. Social inclusion and healthy ageing -- flexible workforce participation, age discrimination

Empirical research on social capital and health, with a handful focusing on older persons:

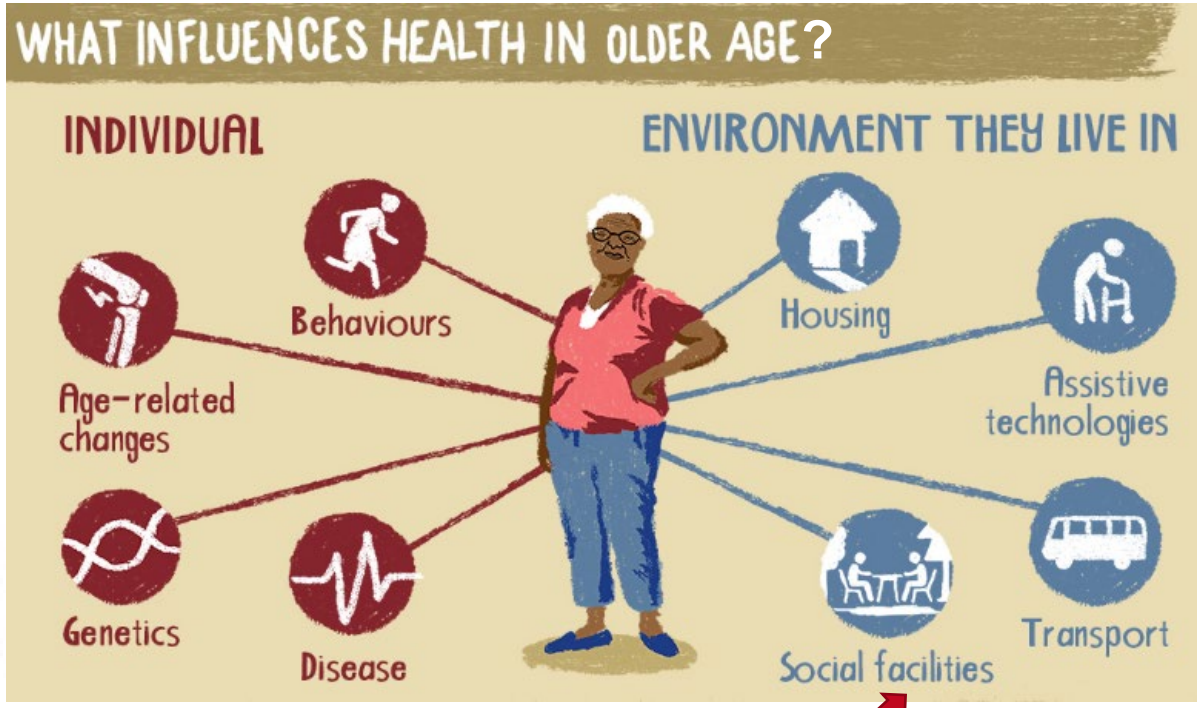
- Families, social capital and health (Baum et al. 1997; Baum et al. 1999);
- Ageing and families from a support networks perspective (Kendig 1986; Russell & Kendig 1999);
- Ageing, social capital and social support (Stone 2003) - inequalities in support networks and negative impacts on older person; Volunteering and productive ageing (Warburton 2010), Regional variations in social isolation amongst older Australians (Beer et al 2016), Social participation as an indicator of successful ageing (Douglas et al 2017).

III. Social determinants and healthy ageing

WHO 2008 Social determinants of health



WHO 2015-2030 Healthy Ageing



"Being able to live in **environments [family, community, society]** that support and maintain your intrinsic capacity and functional ability is key to *Healthy Ageing*."

Ref: Dalgren G, Whitehead M. 1991. Marmot 2005. World Health Organization Commission on Social Determinants of Health. 2008.
Ben-Shlomo, Kuh et al. Eds. 2014. *A life-course approach to healthy ageing.* Oxford University Press.
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Study background and Research question

Social capital and health in Australia (Welsh & Berry 2009 ; Berry & Welsh 2010 *Soc Sci Med*)

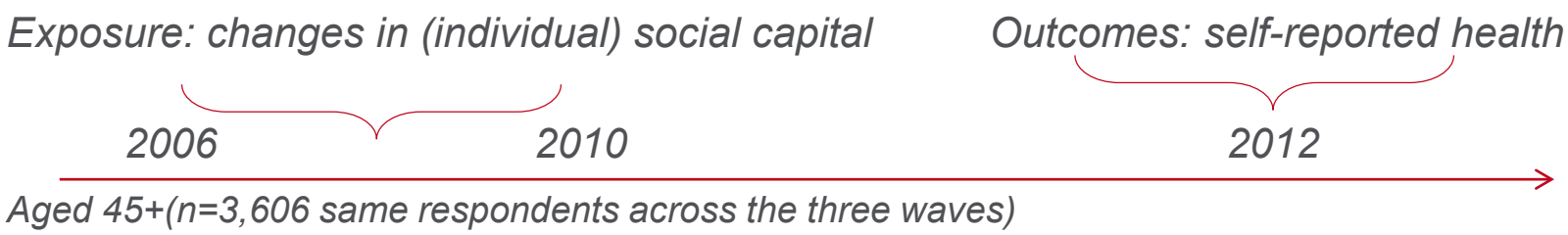
Cross-sectional analyses of Wave 6 (2006) of the Household, Income and Labour Dynamics in Australia (HILDA) Survey respondents aged 15 years and over.

Replicate and extend into longitudinal analyses:

Social capital and health dynamics in mid to later life (Yieng, Welsh, Kendig 2018 *Qual Life Res*)

Longitudinal analyses of three waves of HILDA (2006, 2010, 2012) among respondents aged 45 years and over (in 2006)

Research question: *"Do changes in (individual) social capital (measured in 2006 and 2010) predict health outcomes (measured in 2012)?"*



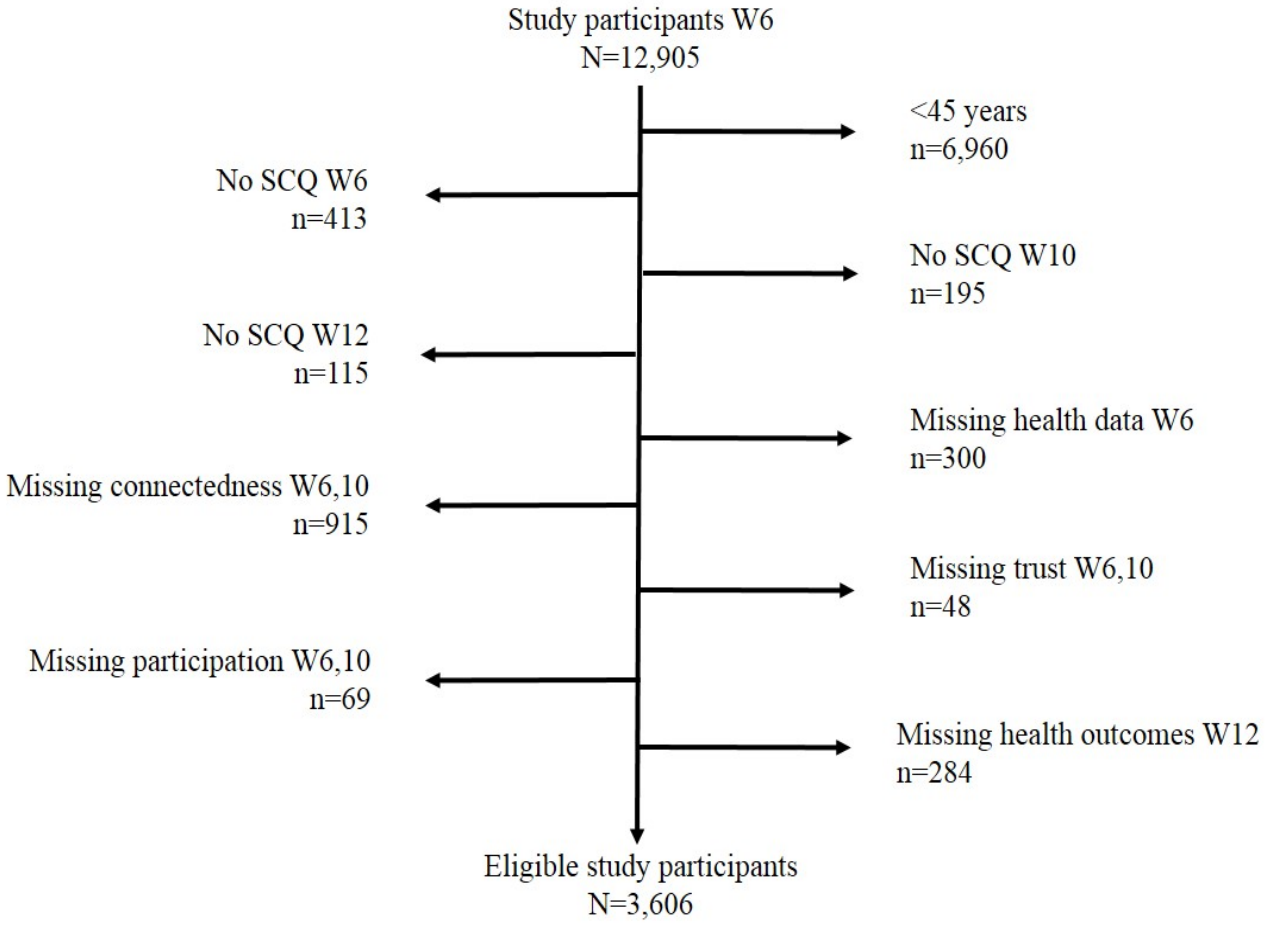
Sample and inclusion criteria

Initiated in 2001, Household, Income and Labour Dynamics in Australia (HILDA) Survey is a panel study that collects information on individual and family relationships, education and employment, and health and subjective wellbeing.

Wave 1 (2001): 19,914 individuals
Wave 11 (2011): topped up with 5,477 individuals

Waves 6 and 10 include special topic modules on social capital related variables.

Data from Self Completion Questionnaire (SCQ)



Study measures

Physical and mental health were measured using the Medical Outcomes Study Short Form 36-item Health Survey (MOS-SF-36).

The physical functioning subscale measures whether respondents are limited "a lot", "a little" or "not at all" in ten everyday activities, ranging from vigorous activities such as running, to bathing and dressing". The mental health subscale measures frequency of positive (did you feel full of life", "have you been a happy person") and negative ("have you been a nervous person", have you felt down") symptoms experienced.

For both subscales, scores ranged from 0-100 with higher scores representing better health.

Respondents were considered to have poor physical or mental health if their score was in the bottom 20% of scores for their age group.

Individual-level social capital/characteristics

Trust: "Generally speaking, would you say that most people can be trusted?"

Response: 7-point Likert scale 1 "strongly disagree" 7 "strongly agree" | ***Cut point for 'low':*** **Disagree with score of 1-4.**

Participation:

"Are you an active member of a sporting, hobby or community-based club or association?"

Response format: Yes or No | ***Cut point for 'low':*** **No**

"How often do you attend community events that bring people together?"

Response format: 6 point scale: 1 "never", "rarely" "occasionally", "sometimes", "often" and 6 "very often".

Cut point for 'low': Infrequently attending community events: "never" or "rarely".

Connectedness:

"How often do you get together with friends or relatives not living with you?"

Response: 7-point scale: "Everyday", "several times a week", "once a month", "2-3 times/month", "once a week", "1-2 every 3 months", "< once every 3 months" | ***Cut point for 'low':*** **"1-2 every 3 months" or "<once every 3 months"**

"People in my neighbourhood are willing to help each other out"

Response format: 7-point scale 1 "strongly disagree" 7 "strongly agree" | ***Cut point for 'low':*** **Disagree with score of 1-4**

Selected descriptive statistics, HILDA 2006

Individual attributes	Total (Col %)	Percent distribution		
		Low connectedness, 34%	Low trust, 28%	Low participation, 23%
Age 45-54	41 (1489)	35	34	23
55-64	33 (1156)	31	23	22
65-74	17 (681)	27	26	21
75+	8 (280)	23	18	18
Male	49 (1696)	32	29	24
Female	51 (1910)	31	27	20
Employment: full-time	38 (1378)	36	36	24
Employment: part-time	17 (354)	31	26	16
Employment: not in workforce	44 (1524)	27	27	22
Income: Quintile 1 (poorest)	21 (838)	33	32	25
Income: Q3	18 (639)	32	28	22
Income: Quintile 5 (highest)	22 (761)	32	22	20
Residence: major urban	61 (2042)	34	28	23
Residence: other urban	22 (863)	30	29	22
Residence: rural	17 (702)	27	24	19
Chronic conditions (Yes)	36 (1247)	33	32	26
Chronic conditions (No)	65 (2359)	30	25	20

Cross-sectional and longitudinal distributions of individual social characteristics

Wave 6

	Low connectedness	Low trust	Low participation
Connectedness			
High-moderate (2472)		23%	16%
Low (1134)		37%	35%
Trust			
High-moderate (2616)	27%		18%
Low (990)	43%		32%
Participation			
High-moderate (2819)	26%	24%	
Low (787)	50%	40%	

Wave 6 to Wave 10

Connectedness	
Never low	54%
Transition out of low	16%
Transition into low	12%
Consistently low	18%
Trust	
Never low	61%
Transition out of low	14%
Transition into low	10%
Consistently low	15%
Participation	
Never low	68%
Transition out of low	10%
Transition into low	9%
Consistently low	13%

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Multivariate logistic regressions predicting adverse health, by each social component, HILDA 2006-2012

Adjusted Odds Ratios [95% Confidence Interval]

	Poor physical health	Poor mental health
Connectedness		
Never low	1.00	1.00
Transition out of low	1.09 [0.77-1.54]	1.23 [0.72-2.10]
Transition into low	1.18 [0.77-180]	**1.54 [1.02-2.33]**
Consistently low	1.36 [0.90-2.07]	1.16 [0.78-1.72]
Trust		
Never low	1.00	1.00
Transition out of low	0.94 [0.64-1.38]	1.41 [0.88-2.26]
Transition into low	1.53 [0.96-2.44]	1.36 [0.83-2.23]
Consistently low	**1.64 [1.15-2.32]**	**1.69 [1.14-2.49]**
Participation		
Never low	1.00	1.00
Transition out of low	1.14 [0.76-1.77]	1.37 [0.89-2.10]
Transition into low	1.22 [0.75-1.99]	1.35 [0.84-2.15]
Consistently low	1.35 [0.94-1.93]	1.48 [0.96-2.29]

Respondents reporting poor health at the baseline of the study in 2006 were excluded from the analysis. Data were weighted to the population. Analyses were adjusted for: age groups, sex, marital status, employment status, long-term chronic health condition, residence, number of people in the household, and income quintiles. Bold values indicate statistically significance results ($p < 0.05$).

Multivariate logistic regressions predicting adverse health, by all three social components, HILDA 2006-2012

	Adjusted Odds Ratios [95% Confidence Interval]	
	Poor physical health	**Poor mental health**
Connectedness		
Never low	1.00	1.00
Transition out of low	1.04 [0.73-1.47]	1.10 [0.61-1.97]
Transition into low	1.11 [0.71-1.72]	1.38 [0.90-2.10]
Consistently low	1.22 [0.77-1.93]	0.96 [0.63-1.46]
Trust		
Never low	1.00	1.00
Transition out of low	0.90 [0.61-1.31]	1.38 [0.86-2.21]
Transition into low	1.47 [0.93-2.33]	1.31 [0.78-2.18]
Consistently low	1.54 [1.06-2.22]	**1.59 [1.08-2.36]**
Participation		
Never low	1.00	1.00
Transition out of low	1.06 [0.67-1.68]	1.30 [0.83-2.04]
Transition into low	1.14 [0.69-1.89]	1.22 [0.77-1.93]
Consistently low	1.26 [0.85-1.84]	1.41 [0.89-2.23]

Respondents reporting poor health at the baseline of the study in 2006 were excluded from the analysis. Data were weighted to the population. Analyses were adjusted for: age groups, sex, marital status, employment status, long-term chronic health condition, residence, number of people in the household, and income quintiles. Bold values indicate statistically significance results ($p < 0.05$).

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Discussion

Across the three individual-level social capital components, consistently low social trust was the strongest predictor for both physical and mental health outcomes.

- Trust could be an important enabler for older persons for being more active and alleviating loneliness.
- Lowest income quintile was strongly associated with low social trust and adverse health outcomes.
- Other cross-sectional studies using Australian data reported consistent findings on social capital (particularly trust and feeling safe in the community) and mental health (Phongsavan et al 2006; Zierch et al 2009).

Notably, changes in social connectedness (transition into low) were statistically associated with poor mental health but not after adjusting for trust and participation.

Despite excluding those with poor health at baseline, there could be other health-related factors not captured in the analyses. Future studies could also take into account changes in life circumstances (eg retirement, loss of family, moving into residential care) which could impact both social capital and health.

Limitations of the study:

- Only three individual proxies of social capital were used in the study (trust, connectedness, participation).
- Data from nationally representative survey are unlikely to provide conceptually thorough measures of social capital. Sociological studies could provide insights into not only the quantity but also the quality of social measures.
- Future studies within the Australian context could investigate changes in social capital at both individual and community levels. Recent international studies have explored the impact of the Great East Japan Earthquake and Tsunami on individual and collective social capital and health among older adults (multi-country team led by Kawachi et al).

Implications

- In the healthy ageing framework, individual social capital could reflect how older people perceive and interact within their environment. Types and levels of individual social capital may also differ and may be unevenly distributed by gender and access to economic resources across the lifespan. Taking into account these factors could help to promote health and wellbeing in later life.

- In Australia, there has been increasingly strong evidence on different patterns of social capital and health between urban and rural areas as well as between aboriginal and non-aboriginal communities (Baum 1999, Oxnyx 2000, Ziersch 2009, Putland et al 2013). For example, rural residents have higher levels of community participation but might have lower levels of tolerance of diversity. Policies aiming to strengthen social capital should be designed to accommodate specific settings and communities.

- A cautionary note in public health is that social capital should not be considered a ‘less expensive’ way to address poverty and inequality. Building social capital should be considered as a complement to broader social and economic structural interventions and not as a replacement for them.

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Forum on Healthy Ageing

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