




**The Australian Rural Mental Health Study 60+ Cohort:  
are they ageing actively?**


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**Australian Rural Mental Health Study - ARMHS**


- Multi-site longitudinal cohort study.
- Determinants and outcomes of mental health and wellbeing
- Randomly sampled from electoral role
- Physical health, psychological symptoms & mental disorders
- Individual, family/household & community factors.



**Active Ageing**


- Multidimensional construct
- Determined by interplay of biological, psychological, social/cultural, economic and environmental factors.
- Agency
- Structural factors

WHO, 2002




**Objectives**

- Utilise ARMHS baseline data to explore relationships between a set of multidimensional factors and wellbeing in a rural/remote context.
- Measures assessing agency & structural factors.
- Describe the characteristics of community dwelling participants aged  $\geq 60$  years. (N=1103).
- Identify factors which predict wellbeing outcomes



**Multidimensional Predictors**


- Biological: Age
- Behavioural: Proportion of life lived in district, BMI, smoking, and alcohol consumption (AUDIT)
- Social Integration: Berkman Symes Social Network Index (1979), Sense of Community index (Perkins et al., 1990)
- Community factors: ARMHS Community concerns scale.
- Macro environmental factors: Area Remoteness Index scores (ARIA) (ABS, 2002), Socio-Economic Index For Areas (SEIFA index) (ABS 2006).



**Wellbeing Outcomes**

- Physical Health:
  - Global physical health rating.
- Mental Health:
  - Global mental health rating,
  - Kessler10 (K10).
- Life satisfaction:
  - Global satisfaction with life.


### ARMHS 60+ cohort



	Inner Regional	Outer Regional	Remote/Very Remote	Total	
<b>Age (M, SD)</b>	69.0 (6.68)	68.6 (6.92)	68.7 (6.4)	68.8 (6.71)	$\chi^2(4)=2.01$
<b>Gender</b>	% (N)	% (N)	% (N)	% (N)	
Male	47, (186)	44, (187)	41, (114)	44, (487)	
Female	54, (214)	56, (237)	60, (165)	56, (616)	$\chi^2(2)=2.12$
<b>Marital Status</b>	% (N)	% (N)	% (N)	% (N)	
Married	75, (299)	69, (293)	72, (198)	72, (790)	
Widowed	14, (56)	17, (72)	17, (48)	16, (176)	
Separated	9, (36)	11, (48)	6, (16)	9, (100)	
Never married	2, (7)	2, (8)	4, (12)	3, (27)	$\chi^2(6)=13.52$
<b>Years lived in:</b>	<b>M (SD)</b>	<b>M (SD)</b>	<b>M (SD)</b>	<b>M (SD)</b>	
District	29.6 (22.2)	31.1 (23.2)	45.4 (21.3)	34.1 (23.3)	$F(2,1082)=46.68^{***}$
Current home	16.0(12.6)	18.2 (15.2)	24.3 (16.0)	18.9 (14.9)	$F(2,1076)=26.96^{***}$


\*\*\* p<0.001

### Behavioural, Social integration, & Community



	Mean	SD	Min	Max	Comments
<b>Behavioural factors</b>					
BMI	20.38	6.35	7.25	55.07	45%<; 23%> healthy range
Smoking*	15/day	8/day	1	>26	7% smoke*
	<b>Low</b>	<b>Risky/Haz</b>	<b>High/Harm</b>	<b>High Risk</b>	
Alcohol Consumption	52% (578)	7% (76)	1% (10)	.5% (4)	22% never; 30% 4 or > times/wk
<b>Social Integration</b>	<b>Low</b>	<b>Med.</b>	<b>Med/High</b>	<b>High</b>	
BSNI (% N)	10%, (92)	33%, (318)	41%, (390)	15%, (146)	56% med/highly integrated
Sense of community	9.24	2.16	1	12	
<b>Community factors</b>	<b>M</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	
Community concerns	16.91	6.75	8	40	4% responding all/most of time

### Macro-environmental factors



**ARIA scores** - Accessibility of goods, services and opportunities for social interaction:


- 62% >1.84 - 3.51 Some restrictions
- 13% >3.51 - 5.80 Significantly restricted
- 20% >5.80 - 9.08 Very restricted
- 6% >9.08 - 12 Locationally disadvantaged - very little

**SEIFA** - Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)

- 21 variables including: high/low income households, employment, education, occupation, mortgage/rent, internet access in the area etc.
- The distribution of scores is divided into ten equal groups. The lowest scoring 10% of areas = decile 1


1 2 3 4 5 6 7 8 9 10  
 ← Most Disadvantaged      Most Advantaged →

### Outcome measures



	M	SD	Min	Max	Comments
Global Physical Health	3.16	0.985	1	5	38% very good/excellent; 37% good
Global Mental Health	3.69	0.963	1	5	60% very good/excellent; 29% good
K10 scores (out of 50)	13.98	4.94	10	44	24% had scores >15.
Satisfaction with Life	3.80	0.842	1	5	17% extremely satisfied, 56% very satisfied


### Predictor & outcome relationships



	Physical Health	Mental Health	K10 out of 50	Satisfaction with Life
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Age	-0.113**	0.014	-0.100**	0.042
Proportion Life in District	-0.027	-0.038	-0.061	0.047
BMI	-0.167**	-0.116**	0.121**	-0.072
Alcohol Consumption	-0.152**	-0.108*	0.121*	0.075
Smoking (rpb)	-0.109*	-0.083*	0.114*	-0.057
Berkman Symes	0.145**	0.217**	-0.185**	0.234**
Sense of Community	0.149**	0.192**	-0.196**	0.296**
Community Concerns	-0.234**	-0.304**	0.384**	-0.296**
ARIA score	-0.047	-0.075	0.030	-0.015
SEIFA	-0.086	0.071	-0.051	0.053


\*\* p<0.001  
\* p<0.01

### Predictors of wellbeing



Explanatory variable	Physical Health			Mental Health (K10)			Satisfaction with Life		
	<i>b</i>	<i>SE(b)</i>	$\beta$	<i>b</i>	<i>SE(b)</i>	$\beta$	<i>b</i>	<i>SE(b)</i>	$\beta$
(Constant)	5.741	0.523		13.800	2.547		3.341	0.438	
Age	-0.027	0.006	-.183**	-0.013	0.027	-0.018	-0.001	0.005	-0.011
Proportion life in district	-0.152	0.118	-.052	-0.022	0.574	-0.001	-0.059	0.099	-0.023
Alcohol Consumption	-0.291	0.083	-.133**	0.747	0.405	.067	-0.053	0.070	-0.028
Smoking	-0.329	0.141	-.089	0.918	0.690	.049	0.009	0.119	.023
BMI	-0.027	0.007	-.148**	0.051	0.034	.055	-0.005	0.006	-.032
Berkman Symes	0.089	0.043	.081	-0.692	0.208	-.140*	0.158	0.036	.169**
Sense of Community	0.042	0.018	.092	-0.324	0.088	-.140**	0.087	0.015	.223**
Community Concerns	-0.032	0.006	-.216**	0.262	0.028	.356**	-0.033	0.005	-.263**
ARIA score	0.009	0.015	.025	-0.037	0.073	-.021	0.013	0.012	.034
SEIFA	0.012	0.014	.035	-0.005	0.069	.003	0.006	0.012	.020


\*\* p<0.001      Physical Health:  $F(10,615)=11.07, p<0.001, \text{Adjusted } R^2=.14$   
 \* p<0.01      Mental Health (K10):  $F(10,615)=16.61, p<0.001, \text{Adjusted } R^2=.20$   
 Satisfaction with Life:  $F(10,615)=13.96, p<0.001, \text{Adjusted } R^2=.17$



## Discussion

- Overall physical and mental health rated in positive terms.
- Majority of respondents very/extremely satisfied with life.
- However around 10-20% of participants indicated experiencing noteworthy psychological distress, being socially isolated and having lower levels of self rated physical health.
- Level of remoteness and the socioeconomic advantage/disadvantage of area of residence had little impact on wellbeing, as did proportion of life in district.


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## Discussion

- Healthy behaviours, in combination with concerns about changes in one's immediate community predictive of physical health.
- Concerns about changes in one's community, and being socially integrated were the strongest predictors of overall wellbeing in models tested.
- Caveat: model's fit. Still a large proportion of unexplained variance – need to consider other measures improve predictive modeling.

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## Considerations

- Can not rule out biased sample – unwell or frail individuals failed to participate etc.
- Global measures may lack accuracy in defining true states.
- Small effect sizes – practical relevance?
- Cross sectional data limits conclusions

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## THANK YOU

### Questions?

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