

Socioeconomic, behavioural and social health correlates of optimism and pessimism in older men and women: a cross-sectional study

Additional material

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Socioeconomic, behavioural and social health correlates of optimism and pessimism in older men and women: a cross-sectional study

Supplementary Material

Contains four (4) tables to detail further analyses completed to support the conclusions presented in this manuscript, plus one figure detailing selection of final study sample included in analyses, and additional material on the specific items used to measure the optimism and pessimism, and social health variables (i.e., loneliness, social isolation, and social support)

Table S1. Spearman correlations between independent variables, n=10,146

	1	2	3	4	5	6	7	8	9	10	11	12
1	1.00											
2	0.01	1.00										
3	-0.05	-0.06	1.00									
4	0.18	0.27	-0.04	1.00								
5	-0.03	-0.01	0.25	-0.04	1.00							
6	-0.10	-0.07	0.18	-0.19	0.22	1.00						
7	-0.12	-0.15	0.06	-0.07	0.05	0.08	1.00					
8	-0.03	-0.22	0.08	-0.07	0.09	0.09	0.07	1.00				
9	-0.03	-0.22	0.08	-0.07	0.02	0.06	0.06	-0.02	1.00			
10	0.04	0.02	-0.03	0.19	-0.02	-0.05	-0.05	-0.01	-0.02	1.00		
11	-0.001	-0.05	-0.03	0.02	-0.04	-0.03	-0.05	-0.01	-0.07	0.03	1.00	
12	0.004	-0.02	-0.02	0.03	-0.01	-0.03	-0.05	-0.002	-0.05	0.03	0.26	1.00

Key: 1 = age (years); 2= gender; 3 = education level; 4 = living situation; 5 = SEIFA - the Socio-Economic Indexes for areas based on the Index of Relative Socio-economic Advantage and Disadvantage (ABS, 2016); 6 = Annual gross household income (\$AU); 7 = physical activity; 8 = alcohol intake; 9 = volunteer work; 10 = loneliness; 11 = social isolation; 12 = social support

Table S2. Characteristics of study participants with and without complete data on variables of interest

	Complete data available (n = 10,146):	Missing data on variables of interest (n = 2,750):	p
Optimism (Mean \pm SD)	12.36 \pm 2.34	12.42 \pm 2.33	0.26
Pessimism (Mean \pm SD)	6.58 \pm 3.10	7.14 \pm 3.23	<0.001
Age (Mean \pm SD)	74.9 \pm 4.13	76.5 \pm 4.77	<0.001
Age group (years) n(%):			<0.001
70 – 74	6260 (61.7)	1290 (46.7)	
75 – 84	3590 (35.4)	1290 (46.7)	
85 +	296 (2.9)	170 (6.2)	
Gender n(%):			
men	4874 (48.0)	1010 (36.7)	<0.001
women	5272 (52.0)	1740 (63.3)	
Education Level n(%):			
\leq 12 years	5768 (56.8)	1853 (67.4)	<0.001
> 12 years	4378 (43.2)	897 (32.6)	
Married n(%):			
no	3633 (35.8)	1219 (44.3)	<0.001
yes	6513 (64.2)	1531 (55.7)	
Living situation n(%):			
lives with others	7218 (71.1)	1835 (66.7)	<0.001
lives alone	2928 (28.9)	915 (33.3)	
SEIFA¹ n(%):			
least advantaged	2119 (20.9)	695 (25.6)	<0.001
2nd quintile	2057 (20.3)	567 (20.9)	
3rd quintile	2938 (29.0)	714 (26.3)	
4th quintile	1719 (16.9)	445 (16.4)	
most advantaged	1313 (12.9)	297 (10.9)	

Annual gross household income (\$AU) n(%):			
< \$20,000	1465 (14.4)	419 (20.4)	<0.001
\$20,000 – 49,999	5326 (52.5)	1004 (48.9)	
\$50,000 – 99,999	1895 (18.7)	262 (12.8)	
\$100,000 +	468 (4.6)	70 (3.4)	
prefer not to answer	992 (9.8)	298 (14.5)	
Physical activity n(%):			
less physically active²	3386 (33.4)	912 (35.9)	0.02
more physically active³	6760 (66.6)	1630 (64.1)	
Smoking status n(%):			
never	5589 (55.1)	1633 (59.4)	<0.001
current/former	4557 (48.9)	1117 (40.6)	
Alcohol intake n(%):			
never drank alcohol	1455 (14.3)	557 (20.3)	<0.001
former drinker	461 (4.5)	136 (4.9)	
current – low risk⁴	5571 (54.9)	1432 (52.1)	
current – high risk⁵	2659 (26.2)	625 (22.7)	
Volunteer work n(%):			
no	5770 (56.9)	1524 (61.3)	<0.001
yes	4376 (43.1)	961 (38.7)	
Lonely n(%):			
no	9670 (95.3)	2582 (94.0)	0.005
yes	476 (4.7)	165 (6.0)	
Socially isolated n(%):			
not socially isolated	9949 (98.1)	1533 (98.0)	0.91
socially isolated	197 (1.9)	31 (2.0)	
Social support n(%):			
supported	9950 (98.1)	2385 (97.8)	0.44
low	196 (1.9)	53 (2.2)	

¹: SEIFA: the socio-economic indexes for areas based on the Index of Relative Socio-economic Advantage and Disadvantage (ABS, 2016); ²: less physically active—doing no, or only light, activity in a typical week; ³: more physically active—engaging

in moderate or vigorous activity in a typical week; ⁴: low risk - ≤ 40 g pure ethanol (four standard drinks) on any one day, and ≤ 100 g pure ethanol in a week; ⁵ - > 40 g pure ethanol on any one day or > 100 g pure ethanol in a week

Total n (missing):

SEIFA = 2718; Income = 2054; Physical activity = 2542; Volunteer work = 2485; Lonely = 2747; Social isolation = 1564; Social support = 24

Table S3. The association of socioeconomic, behavioural and social health factors with optimism and pessimism in 10,146 men and women aged 70 years and over: results of ordinal logistic regression

	Optimism		Pessimism	
	Men	Women	Men	Women
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
	p-value	p-value	p-value	p-value
Age	1.00 (.98 – 1.01)	1.02 (1.00 – 1.03)	1.00 (0.99 – 1.02)	1.01 (0.99 – 1.02)
	0.64	0.008	0.47	0.45
Education level				
≤ 12 years	1.00	1.00	1.00	1.00
> 12 years	1.13 (1.01 - 1.27)	1.26 (1.13 – 1.40)	0.55 (0.49 – 0.61)	0.60 (0.53 – 0.68)
	0.03	<0.001	<0.001	<0.001
SEIFA¹:				
least advantaged	1.00	1.00	1.00	1.00
2nd quintile	1.01 (0.86 – 1.19)	1.12 (0.95 – 1.31)	0.82 (0.69 – 0.96)	0.85 (0.72 – 1.00)
	0.91	0.17	0.02	0.04
3rd quintile	0.99 (0.84 – 1.15)	1.03 (0.90 – 1.20)	0.88 (0.69 – 0.94)	0.81 (0.70 – 0.93)
	0.84	0.64	0.007	0.004
4th quintile	0.88 (0.74 – 1.05)	1.08 (0.91 – 1.28)	0.85 (0.70 – 1.02)	0.76 (0.64 – 0.90)

	0.15	0.38	0.09	0.002
most advantaged	0.95 (0.78-1.16)	1.00 (0.83 – 1.21)	0.66 (0.54 – 0.81)	0.67 (0.55 – 0.82)
	0.63	0.98	<0.001	<0.001
Annual gross household income (\$AU) :				
< \$20,000	1.00	1.00	1.00	1.00
\$20,000 – 49,999	1.02 (0.86 – 1.22) 0.79	1.20 (1.04 – 1.38) 0.01	0.70 (0.59 – 0.84) <0.001	0.65 (0.56 – 0.76) <0.001
\$50,000 – 99,999	1.10 (0.90 – 1.35)	1.24 (1.03 – 1.50)	0.49 (0.40 – 0.61)	0.44 (0.36 – 0.54)
	0.35	0.03	<0.001	<0.001
\$100,000 +	1.24 (0.95 – 1.63)	1.36 (0.97 – 1.90)	0.38 (0.29 – 0.51)	0.48 (0.33 – 0.68)
	0.12	0.07	<0.001	<0.001
prefer not to answer	0.89 (0.69 – 1.16)	0.91 (0.75 – 1.10)	0.80 (0.60 – 1.07)	0.91 (0.75 – 1.10)
	0.39	0.33	0.13	0.32
Living situation:				
lives with others	1.00	1.00	1.00	1.00
lives alone	1.01 (0.87- 1.17) 0.90	0.96 (0.86 – 1.07) 0.41	0.77 (0.65 – 0.92) 0.004	0.89 (0.89 – 0.99) 0.04
Physical activity:				
less physically active²	1.00	1.00	1.00	1.00
more physically active³	1.35 (1.19 – 1.52)	1.16 (1.05 – 1.29)	0.79 (0.70 – 0.89)	0.88 (0.79 – 0.98)

		<0.001	0.005	<0.001	0.02
Smoking status:					
	never	1.00	1.00	1.00	1.00
	current/former	1.00 (0.90 – 1.12) 0.96	0.89 (0.80 – 1.00) 0.04	1.07 (0.95 – 1.19) 0.26	1.12 (1.00 – 1.26) 0.05
Alcohol intake:					
	never	1.00	1.00	1.00	1.00
	former drinker	0.78 (0.58 – 1.06) 0.11	0.87 (0.65 – 1.16) 0.35	1.44 (1.07 – 1.96) 0.02	1.00 (0.75 – 1.33) .98
	current – low risk⁴	0.99 (0.80 – 1.24) 0.95	0.87 (0.76 – 0.99) 0.03	1.03 (0.84 – 1.26) 0.78	0.87 (0.76 – 1.00) 0.05
	current – high risk⁵	0.88 (0.70 – 1.11) 0.28	0.83 (0.70 – 0.98) 0.03	1.12 (0.90 – 1.38) 0.30	0.95 (0.79 – 1.13) 0.54
Volunteer work:					
	no	1.00	1.00	1.00	1.00
	yes	1.25 (1.12 – 1.39) <0.001	1.24 (1.12 – 1.38) <0.001	0.70 (0.63 – 0.78) <0.001	0.69 (0.62 – 0.77) <0.001
Lonely:					
	no	1.00	1.00	1.00	1.00
	yes	0.74 (0.56 – 0.97)	0.59 (0.47 – 0.74)	2.16 (1.52 – 3.06)	1.56 (1.23 – 1.97)

		0.03	<0.001	<0.001	<0.001
Socially isolated:					
not socially isolated		1.00	1.00	1.00	1.00
socially isolated		0.59 (0.42 – 0.84)	0.56 (0.34 – 0.94)	1.24 (0.86 – 1.78)	1.00 (0.59 – 1.70)
		0.004	0.03	0.25	0.99
Social support:					
socially supported		1.00	1.00	1.00	1.00
low	0.78 (0.54 – 1.14)		0.33 (0.21 – 0.52)	1.73 (1.08 – 2.77)	1.87 (1.23 – 2.86)
	0.20		<0.001	0.02	0.004

¹ SEIFA: the socio-economic indexes for areas based on the Index of Relative Socio-economic Advantage and Disadvantage (ABS, 2016); ² less physically active– doing no, or only light, activity in a typical week; ³ more physically active– engaging in moderate or vigorous activity in a typical week; ⁴ low risk - ≤40g pure ethanol (four standard drinks) on any one day, and ≤100g pure ethanol in a week; ⁵ high risk - > 40g pure ethanol on any one day or > 100g pure ethanol in a week

* Interpretation: T1 vs. T2 + T3, or T1 + T2 vs. T3, that is the odds of being in a higher category of optimism or pessimism

Table S4. Socioeconomic, behavioural and social health correlates of optimism and pessimism, using a unidimensional measure of optimism (n=10,146)

	Optimism*	
	Men	Women
	OR (95% CI)	OR (95% CI)
	p	p
Age	1.00 (0.99-1.01) 0.80	1.00 (0.99-1.02) 0.73
Education level:		
≤ 12 years	1.00	1.00
> 12 years	1.64 (1.46-1.84) <0.001	1.58 (1.42-1.76) <0.001
SEIFA¹:		
least advantaged	1.00	1.00
2 nd quintile	1.08 (0.92-1.28) 0.34	1.18 (1.01-1.38) 0.04
3 rd quintile	1.13 (0.97-1.32) 0.12	1.22 (1.05-1.41) 0.008
4 th quintile	1.08 (0.90-1.28) 0.41	1.31 (1.11-1.55) 0.002
most advantaged	1.25 (1.02-1.52) 0.03	1.32 (1.09-1.59) 0.004
Annual gross household income (\$AU):		
< \$20,000	1.00	1.00
\$20,000-49,999	1.37 (1.15-1.64) <0.001	1.52 (1.32-1.75) <0.001

\$50,000-99,999	1.78 (1.45-2.18)	1.99 (1.65-2.41)
	<0.001	<0.001
\$100,000+	1.99 (1.51-2.62)	2.13 (1.51-2.99)
	<0.001	<0.001
prefer not to answer	1.04 (0.79-1.35)	1.00 (0.82-1.20)
	0.80	0.97
Living situation:		
lives with others	1.00	1.00
lives alone	1.14 (0.98-1.33)	1.03 (0.93-1.15)
	0.10	0.55
Physical activity:		
less physically active²	1.00	1.00
more physically active³	1.33 (1.18-1.50)	1.18 (1.07-1.31)
	<0.001	0.002
Smoking status:		
never	1.00	1.00
current/former	0.94 (0.84-1.05)	0.89 (0.79-0.99)
	0.24	0.04
Alcohol intake:		
never	1.00	1.00
former drinker	0.73 (0.54-0.99)	0.96 (0.72-1.27)
	0.04	0.78
current – low risk⁴	0.99 (0.81-1.21)	1.02 (0.89-1.17)
	0.95	0.79
current – high risk⁵	0.88 (0.71-1.08)	0.93 (0.78-1.11)
	0.23	0.41
Voluntary work:		

no	1.00	1.00
yes	1.43 (1.29-1.60)	1.43 (1.29-1.59)
	<0.001	<0.001

Lonely:

no	1.00	1.00
yes	0.56 (0.42-0.75)	0.60 (0.47-0.76)
	<0.001	<0.001

Socially isolated:

not socially isolated	1.00	1.00
socially isolated	0.63 (0.43-0.92)	0.90 (0.55-1.47)
	0.02	0.68

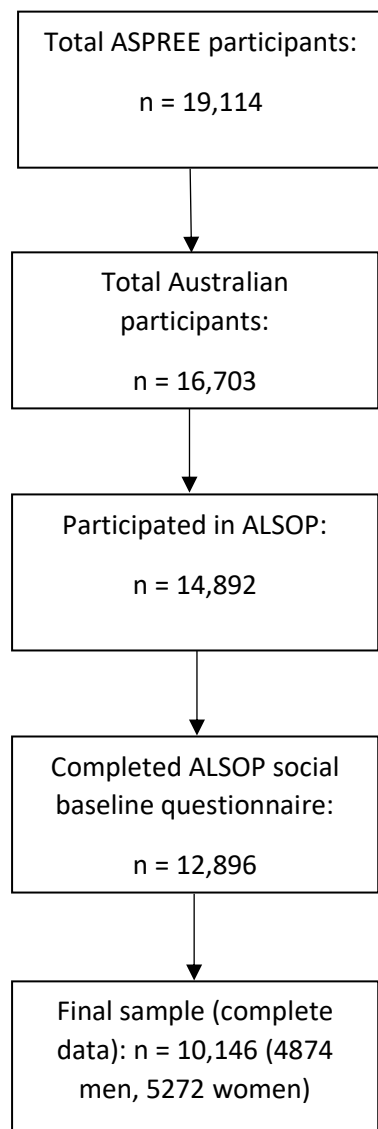
Social support:

socially supported	1.00	1.00
low	0.43 (0.29-0.64)	0.38 (0.24-0.59)
	<0.001	<0.001

¹: SEIFA: the socio-economic indexes for areas based on the Index of Relative Socio-economic Advantage and Disadvantage (ABS, 2016); ² less physically active—doing no, or only light, activity in a typical week; ³ more physically active—engaging in moderate or vigorous activity in a typical week; ⁴ low risk - $\leq 40\text{g}$ pure ethanol (four standard drinks) on any one day, and $\leq 100\text{g}$ pure ethanol in a week; ⁵ high risk - $> 40\text{g}$ pure ethanol on any one day or $> 100\text{g}$ pure ethanol in a week

* Interpretation: T1 vs. T2 + T3, or T1 + T2 vs. T3, that is the odds of being in a higher category of overall 'optimism' score (when 3 optimism items are summed with the reverse-scored 3 pessimism item)

Figure S1. Process of selection of final sample for data analysis



ASPREE: ASPirin in Reducing Events in the Elderly clinical trial

ALSOP: ASPREE Longitudinal Study of Older Persons study

Additional Material S1. Specific items used to measure the optimism and pessimism, and social health variables (i.e., loneliness, social isolation, and social support)

a. Items from Revised Life Orientation Test (LOT-R) (Scheier et al., 1994) included in ALSOP Social Baseline questionnaire

Optimism items
1. In uncertain times, I usually expect the best
2. I'm always optimistic about my future
3. Overall, I expect more good things to happen to me than bad
Pessimism items
1. If something can go wrong for me, it will
2. I hardly ever expect things to go my way
3. I rarely count on good things happening to me

note: to highlight the optimism and pessimism items, they do not appear in the order in which they were presented in the ALSOP social baseline questionnaire

b. Questions to assess social isolation and social support from Lubben Social Network Scale (J.E. Lubben, 1988), included in the ALSOP Social Baseline questionnaire

FAMILY: considering the people to whom you are related either by birth of marriage					
1. How many relatives (including spouses, partners, children, etc.) do you see or hear from at least once a month?					
none	1	2	3-4	5-8	9 or more
2. How many relatives do you feel at ease with, that you can talk to about private matters?					
none	1	2	3-4	5-8	9 or more
3. How many relatives do you feel close to, such that you could call on them for help?					
none	1	2	3-4	5-8	9 or more
FRIENDS: considering ALL your friends, including those who live in your neighbourhood					
4. How many friends do you see or hear from at least once a month?					
none	1	2	3-4	5-8	9 or more

5. How many friends do you feel at ease with, that you can talk to about private matters?					
none	1	2	3-4	5-8	9 or more
6. How many friends do you feel close to, such that you could call on them for help?					
none	1	2	3-4	5-8	9 or more

c. Question assessing loneliness, from CES-D (L. S. Radloff, 1977), included in the ASPREE baseline data

I felt lonely			
0	1	2	3
Rarely or <1/day	Some or a little, 1-2 days	Occasionally or moderate, 3-4 days	All of the time, 5- 7 days

