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**Ageing Attitudes and Mental Health in Middle and Later Adulthood:
The Buffering Effect of Education**

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**Ageing Attitudes and Mental Health in Middle and Later Adulthood:
The Buffering Effect of Education**

Abstract

Objective(s): Negative attitudes toward ageing have been associated with poor mental well-being, and protective factors are not well-understood. This study examined the relationship between ageing attitudes and symptoms of anxiety and depression, and the potential moderating effect of age, and buffering effects of social support, physical activity and education.

Methods: This study used a sub-sample of 482 adults aged 50+years from a mail questionnaire study in Brisbane, Australia. Data were analysed using linear regression.

Results: People with more positive ageing attitudes reported fewer symptoms of anxiety and depression, with no moderating effect of age. There was a significant interaction between ageing attitudes and education on depression, and a similar trend for anxiety.

Conclusion: This study confirmed the adverse impacts of negative ageing attitudes on mental health, and indicated that those with low education may be most vulnerable. This has implications for future research and targeting interventions for mental health promotion.

Keywords (5 MeSH): Anxiety, Attitude, Australia, Depression, Well-being

Introduction

With rapidly ageing populations, understanding mental well-being (e.g., absence of mental illness) in later adulthood is crucial. Research has demonstrated the adverse impacts of anxiety and depression on older persons. For instance, older adults with generalised anxiety disorder show poorer short-term memory than older adults without this diagnosis¹, and older adults with depressive symptoms are more likely to display cognitive decline, somatic symptoms, and loss of interest in living than younger counterparts². The World Health Organization lists depression and anxiety as the most common mental illnesses among older adults, affecting approximately 7% and 3.8% of the world's older population respectively³. Mental illnesses, such as anxiety and depression, among community-dwelling older adults are often sub-clinical^{1,4}. That is, apart from the visible statistics, there may be a larger "invisible" population with mental illness symptoms without meeting diagnostic criteria. Given the adverse impacts of mental illnesses, more work is needed to identify the factors associated with mental health problems in middle and late adulthood.

Ageing Attitudes and Mental Health

The term "ageing attitudes" encompass self and other people's views on ageing, and both aspects have real and severe consequences for physical, cognitive and psychological well-being⁵. Ageist stereotype threats, or incidents that force people into stereotypes of their associated age groups, negatively impact overall physical functioning and longevity^{6,7}. In terms of cognitive well-being, negative age stereotypes are associated with Alzheimer's disease biomarkers and compromised cognitive performance^{8,9}. For psychological well-being, more negative ageing attitudes are associated with greater reactivity to daily stressors among older adults¹⁰. Moreover, studies have examined the associations between ageing attitudes and mental health. Cross-sectional studies have found that negative perceptions of ageing are associated with a higher level of anxiety and depression than positive perceptions^{11,12}. Consistent with this, an Irish longitudinal study by Freeman and colleagues demonstrated that negative ageing perceptions predicted the onset and persistence of depression and anxiety among adults aged 50 and above during a period of two years¹³.

The ageing literature provides insights regarding the mechanisms linking negative ageing attitudes and detrimental impacts. Stereotype embodiment theory suggests that if people internalise negative ageing stereotypes, they are more likely to struggle from conscious or unconscious activation of these negative stereotypes, which have negative impacts on older adults' psychological and physical well-being due to cumulated or chronic stress¹⁴. These adverse consequences of negative ageing perceptions have direct implications

1 on society because ageism has been estimated to add an excess cost of approximately \$63
2 billion USD to American healthcare annually¹⁵. The results of having negative ageing
3 attitudes are therefore profound and deserve further investigation, in particular to identify
4 potential moderators.

5 **Potential Moderators**

6 There may be age-related differences in the association between ageing attitudes and
7 mental health because older adults appear to show greater reactivity to stressors than younger
8 adults¹⁰. In other words, older adults with negative ageing attitudes may experience
9 associated stress to a greater extent than younger or middle-aged adults. Furthermore, older
10 individuals have been internalising ageist perceptions and endured potential negative impacts
11 for longer periods of time than younger people. Hence, the relationship between negative
12 ageing attitudes and mental health may be stronger for older adults than middle-aged adults.

13 Apart from age, there are three protective factors that are often included in the mental
14 health literature: social support, physical activity and education. Having sufficient social
15 support is known to be important. For example, previous college sample studies have
16 demonstrated that social connectedness uniquely contributes to lower levels of anxiety and
17 depression^{16,17}. Individuals with sufficient social support tend to feel more calm and cared
18 about and think of themselves more positively, which opposes negative self-perceptions.

19 Similar to social support, physical activities have long been considered to be an
20 effective protective factor for psychological well-being. According to a meta-meta-analysis
21 by Rebar and colleagues with almost 400 randomised trial effects and more than 14,000 non-
22 clinical participants across the lifespan, physical activities showed significant reductive
23 effects for both anxiety and depression¹⁸. According to a review, the mechanisms by which
24 physical activity may buffer against and reduce mental health problems are through its
25 neurophysiological and psychological benefits¹⁹. Regarding neurophysiological benefits,
26 regular physical exercise is associated with lower hypothalamic-pituitary-adrenal (HPA) axis
27 reactivity (i.e., modulates anxiety or stress reactivity), and higher levels of serotonin and
28 norepinephrine in the brain (i.e., similar to the effects of antidepressants). As for
29 psychological benefits, engaging in physical activities is associated with higher levels of self-
30 esteem, which may be because individuals who exercise are more likely to perceive
31 themselves as more competent than those who do not exercise. Thus, physical activities may
32 also be a buffer against the impacts of negative ageing attitudes on mental health.

33 Education is also a potential protective factor for mental health. A 2-year longitudinal
34 study reported adults above age 45 with lower educational attainment were more anxious

1 than those with higher educational attainment²⁰. This was interpreted in terms of additional
2 stress, such as income instability, exposure to violence, harsher parenting, substandard
3 housing and pollution, that people with lower educational attainments often experience²¹.
4 However, apart from the associated socioeconomic disadvantages, there may also be other
5 types of potential benefits or protective effects of higher education levels. For example, one
6 study showed that college students who took ageing-related courses reported more positive
7 attitudes toward ageing than students who did not take such courses²².

8 Despite different underlying mechanisms, social support, physical activity and
9 education all seem promising in buffering against negative ageing attitudes on mental health.
10 Yet, to our knowledge, previous studies have not assessed the moderating effects of these
11 three factors in the same analysis. Such evidence could inform how to prioritise resources for
12 future interventions against negative ageing attitudes and promoting positive ageing.

13 **Present Study**

14 The present study focussed on adults aged 50 and above, and had the following three
15 aims: (1) to explore associations between ageing attitudes and symptoms of anxiety and
16 depression, (2) to examine potential age differences in the relationship between ageing
17 attitudes and mental health, and (3) to compare the potential buffering effects of social
18 support, physical activity and education on the association between ageing attitudes and
19 mental health. First, we hypothesised that people with more positive ageing attitudes would
20 show fewer anxiety and depression symptoms than people with less positive ageing attitudes.
21 Second, we predicted that there would be a significant and positive age moderation effect on
22 the associations between ageing attitudes and mental health. That is, the associations between
23 ageing attitudes and mental health would be stronger with older age. Finally, we expected
24 that all three protective factors would show significant reductive effects on the relationships
25 between ageing attitudes and mental health.

26 **Method**

27 **Participants**

28 This study used data from a longitudinal project, HABITAT, which started in 2007 in
29 Brisbane, Australia. HABITAT aimed to understand physical activity participation and
30 associated factors among middle-aged and older adults. The project was approved by the
31 Human Research Ethics Committee of the Queensland University of Technology (ID3967H).
32 Details of the study are available elsewhere²³. Participants from that longitudinal study were
33 initially identified ($N=17,000$) using systematic probability and random sampling in 200
34 socioeconomically representative neighbourhood areas in Brisbane. Participants received a

1 mail survey every two to three years. In 2014 and 2016, a randomly selected subsample of
2 people who responded to all mail surveys was invited to engage in extra assessment on
3 physical and psychosocial functioning. Mental health data used in the current study were
4 from the 2016 subsample which included 686 participants. These data were used as they
5 could be aligned with the 2016 mail survey data, which was the only survey to include
6 assessment on ageing attitudes, social support, and physical activity. Date of birth and
7 education data were used from the original baseline mail survey data collected in 2007. After
8 excluding participants with missing data in the key variables, a total of 482 participants were
9 included in this study ($M_{age}=61.68$, $range_{age}=50-74$). For a summary of the sample
10 characteristics, please see *Table 1*.

11 **Measures**

12 Anxiety was measured using the 20-item Geriatric Anxiety Inventory developed by
13 Pachana and colleagues²⁴. The scale was originally designed to have dichotomous response
14 options (agree versus disagree) and was adapted to a Likert scale ranging from 0 (disagree) to
15 3 (strongly agree) in this study to be more sensitive to non-clinical anxiety levels in healthy
16 community samples. Scale internal reliability assessed using the current sample was
17 considered acceptable ($\alpha=.95$). Composite score of the 20-item scale was calculated for each
18 participant. Q-Q plot showed no significant departure from the line after square-root
19 transformation, suggesting data normality.

20 Depression was measured using the 15-item Geriatric Depression Scale²⁵. The
21 original dichotomous response options were also adapted to use a Likert response scale
22 ranging from 0 (disagree) to 3 (strongly agree) for the purpose of capturing levels of
23 depression in a non-clinical population. Mean score of the scale was used in our analyses.
24 Scale internal reliability of the current sample was considered acceptable ($\alpha=.83$). A
25 composite score of the 15-item scale was calculated for each participant. Q-Q plot showed no
26 significant departure from the line after square-root transformation, suggesting data
27 normality.

28 Ageing attitudes were measured using a 12-item Expectations Regarding Ageing
29 Survey, and response options ranged from 1 (definitely true) to 4 (definitely false)²⁶. We used
30 the average of the 12 items, and higher scores on this measure represents more positive
31 attitudes toward ageing. Scale internal reliability assessed using the current sample was
32 considered acceptable ($\alpha=.88$). A composite score of the 12-item scale was calculated for

1 each participant. The median score of the sample was utilised to categorise participants into
2 “below median” and “above median” groups.

3 Physical activity items were derived from the Active Australia survey, which assessed
4 the total duration (in minutes) of walking (for exercise, recreation or to get to and from
5 places), moderate activities and vigorous activities in the previous week²⁷. Missing and
6 extreme data were managed, and total activity time was calculated using standard
7 procedures²⁷ with total activity time = walking time + moderate activity time + vigorous
8 activity time*2. Median score of the sample was utilised to categorise participants into
9 “below median” and “above median” groups.

10 Social support was measured using a 4-item scale with response options that ranged
11 from 1 (not at all) to 7 (completely). Higher scores on this measure represent having more
12 social support. Scale internal reliability of the current sample was considered acceptable
13 ($\alpha=.95$). Composite score of the 4-item scale was calculated for each participant. Median
14 score of the sample was utilised to categorise participants into “below median” and “above
15 median” groups.

16 Demographic information included age, sex, education and income. Sex is a
17 dichotomised variable where 0 represents males and 1 represents females. Educational
18 attainment was measured with 9 levels – Year 9 or less, Year 10, Year 11, Year 12, certificate
19 (trade/business), diploma/associate degree, bachelor degree, graduate diploma/certificate, or
20 postgraduate degree. Participants were grouped into two groups: people who received
21 postsecondary education or not. Income level was measured as annual gross household
22 income in Australian dollars with 11 levels – less than \$15,599, \$15,600-20,799, \$20,800-
23 25,999, \$26,000-31,199, \$31,200-36,399, \$36,400-41,599, \$41,600-51,999, \$52,000-72,799,
24 \$72,800-93,599, \$93,600-129,999, and \$130,000 or more. Details of this study’s measures
25 are reported in *Table 1*.

26 **Data Analysis**

27 We first performed a correlational analysis with all the key variables to better
28 understand the association between these variables. For the first hypothesis, we performed
29 two between-groups *t*-test analyses to test the main effect of ageing attitudes on anxiety and
30 depression respectively. We also did the same analysis with covariates (i.e., sex and
31 household income). We then conducted four analyses of variance (ANOVA) for the
32 remaining hypotheses in order to test the two mental health outcomes (i.e., anxiety and
33 depression) separately. For the second hypothesis, we examined the interacting effect of age

1 and ageing attitudes on the two mental health outcomes. We also repeated these analyses with
2 covariates. Finally, for the third hypothesis, we used three two-way interaction terms, ageing
3 attitudes with the three common protective factors (i.e., social support, physical activities and
4 education) to predict the two outcomes. Again, we performed the same analyses with
5 covariates. All of the analyses were performed using R.

6 **Results**

7 We first examined the correlation of all the key variables of this paper. We found
8 significant negative correlations between positive ageing attitudes and the two mental health
9 outcomes (anxiety: $r=-.28, p<.01$; depression: $r=-.32, p<.01$), illustrating the detrimental
10 effects of having negative ageing attitudes. Mental health outcomes and the three moderators
11 were all negatively correlated. These results suggested that performing more physical
12 activity, having more social support and education were all associated with lower levels of
13 mental illness symptoms, which hinted their potential moderating role. Details of the
14 correlation analysis are summarised in *Table 2*.

15 To examine the main effects of ageing attitudes, *t*-test results revealed that people
16 with different ageing attitudes reported significantly different levels of anxiety ($t(480)=6.47,$
17 $p<.001$) and depression symptoms ($t(480) = 7.31, p<.001$). Specifically, people with more
18 positive ageing attitudes ($M_{anx}=.38, M_{dep}=.52$) showed fewer mental illness symptoms than
19 people with more negative ageing attitudes ($M_{anx}=.59, M_{dep}=.71$).

20 We then examined the moderating role of age on the association between ageing
21 attitudes and mental illness symptoms. However, our ANOVA analyses showed that age did
22 not significantly moderate the association between ageing attitudes and mental illness
23 symptoms for anxiety ($F(1,478)=1.50, p=.22, \eta^2=<.01$) and depression ($F(1,478)=.37,$
24 $p=.54, \eta^2=<.01$) respectively. These results remained the same after controlling for the
25 effects of sex and household income.

26 Finally, we performed ANOVA analyses with three two-way interactions to compare
27 the moderating role of physical activity, social support, and education on mental health.
28 Interestingly, education was the only moderator that showed promising moderating effect on
29 anxiety ($F(1,474)=3.68, p=.06, \eta^2=<.01$) and depression ($F(1,474)=3.86, p=.05, \eta^2=<.01$).
30 *Tables 3* and *4* display the ANOVA results in detail. These results remained consistent after
31 controlling for the covariates. In addition, we removed the non-significant two-way
32 interaction terms and focused on the interactions between ageing attitudes and education. The
33 interaction term was significant for both anxiety ($F(1,478)=4.39, p=.04, \eta^2=<.01$) and
34 depression ($F(1,478)=5.52, p=.02, \eta^2=.01$). These results are visualised in *Figures 1* and *2*

1 and details are summarised in *Tables 5* and *6*. To tease apart the effect of education
2 attainment from socioeconomic benefits, we performed additional analyses and used
3 household income to replace education. We found no significant anxiety ($F(473) = 1.65, p =$
4 $.20, \eta p^2 < .01$) and depression ($F(473) = .23, p = .63, \eta p^2 < .01$) difference between people
5 with lower or higher household income. Again, these results remained the same after
6 controlling for covariates.

7 **Discussion**

8 To broaden our understanding of ageing attitudes and mental health, the present study
9 examined associations with anxiety and depression in adults aged 50 and above, the potential
10 moderating role of age, and the buffering effects of social support, physical activity and
11 education. We found that people with more positive ageing attitudes showed fewer anxiety
12 and depression symptoms, which confirmed our first hypothesis. This study builds on
13 existing literature on the disadvantages of having negative ageing attitudes. Specifically, this
14 finding supports previous studies that having more positive ageing attitudes is associated with
15 better mental health such as lower levels of anxiety and depression^{11,12,13}.

16 We did not observe the expected interactions between age and ageing attitudes for
17 both anxiety and depression, which is consistent with Freeman and colleagues' findings that
18 reported no significant interaction between age group and ageing attitudes for both anxiety
19 and depression¹³. These consistent patterns point to the possibility that the relationships
20 between ageing attitudes and mental health are similar for middle-aged and older adults. It
21 was initially considered that older adults may have internalised negative attitudes longer than
22 younger counterparts, which would accumulate more stress and compromise mental well-
23 being. However, the negative impacts of internalising negative attitudes to ageing may be the
24 same for middle-aged and older adults. While middle-aged and older adults may show
25 different stereotype processes (i.e., middle-aged adults may dissociate from ageist stereotypes
26 more, and older adults may internalise more ageist stereotypes), both processes contribute to
27 change in self-concept, which has implications for people's health²⁸. Younger adults may be
28 the only age group spared from old age stereotypes. Since both the current and Freeman et
29 al.'s study samples only included adults over the age of 50, there may have been insufficient
30 age variation to capture age-related differences. Future studies could examine age differences
31 of ageing attitudes on mental well-being using a more age varied sample.

32 As predicted, education attainment had a significant interaction with ageing attitudes,
33 but contrary to expectations, the interactions of social support and physical activity were not
34 significant. However, both social support and physical activity were associated with fewer

1 anxiety and depression symptoms in correlation analysis, so both factors are still relevant for
2 mental health and well-being. However, in the context of ageing attitudes, education
3 appeared to be a more relevant buffering factor compared to social support and physical
4 activity. As mentioned before, higher socioeconomic status is associated with having more
5 resources, which may lessen potential adverse impacts of negative ageing attitudes.
6 Interestingly, household income does not yield the same results as education, which suggests
7 the unique buffering effect of college education. Perhaps tertiary education equips individuals
8 with knowledge and critical thinking that reduces the impacts of ageing attitudes, such as
9 knowing that ageing stereotypes may not apply to every older adult. Researchers have
10 previously illustrated the benefits of education courses on ageing in terms of ageism
11 reduction²². Yet, few studies specifically examine why people with higher education
12 attainment are less impacted by ageing attitudes. Therefore, in future studies, it would be
13 important to identify the specific aspect(s) of higher education, such as the experience of
14 tertiary education itself, critical thinking or the specific knowledge gained from tertiary
15 education, or more opportunities for successful ageing, that may attenuate the effect of ageing
16 attitudes on mental health.

17 To our knowledge, this study may be one of the first to examine the effects of
18 different buffering variables concurrently on the association between ageing attitudes and
19 mental health. The mental health measures used in this study were specifically designed to
20 measure anxiety and depression of older adults and were adapted from dichotomous into
21 Likert scales to increase sensitivity in a non-clinical, community-dwelling population.
22 Nevertheless, this study also has several limitations. We would like to emphasise that the
23 moderation of education on the association between ageing attitudes and anxiety and
24 depression were not significant when other interaction terms were included, so this result
25 should be interpreted with caution. However, we did find significant interaction in the follow-
26 up analysis where we focused on the ageing attitudes and education interaction on anxiety
27 and depression. The present study only measured participants' educational attainment at
28 baseline in 2007, which was nine years before other measures. We acknowledge that
29 educational attainment, though usually stable in adulthood, is subject to change. Future
30 studies could investigate the impact of further education received. Also, the current study was
31 cross-sectional, so we cannot exclude the possibility that poor mental health precipitates
32 negative ageing attitudes. As well, this study utilised a subsample from the later waves of a
33 longitudinal study, which may be biased because participants continuing in the study might
34 be more committed and healthier than those who dropped out in earlier waves. Moreover, the

1 study focused on age, education, social support and physical activity, which may not be the
2 only protective factors against negative ageing attitudes. Future research could consider
3 testing or controlling for other factors such as cognitive capacity, personality and marital
4 status. Finally, we acknowledge that all data were self-reported and therefore subject to
5 response, recall and social desirability biases.

6 Taken together, the present study highlights the positive relationship between positive
7 ageing attitudes and mental health among middle-aged and older adults. Our findings
8 demonstrate that people with lower education attainment and negative ageing attitudes may
9 have worse mental health than people with higher education attainment and therefore should
10 be considered a priority target group for related interventions. It is encouraging to see
11 ageism-combating strategies, such as the Reframing Ageing Initiative that was launched in
12 2014, have already included components of educating the public regarding ageing and the
13 impacts of ageism²⁹. We hope that these efforts may be extended to specifically reach people
14 with lower educational attainment, so more people may maintain mental well-being during
15 middle and late adulthood.

16

Impact Statement

Understanding mental health and ageing attitudes are crucial in ageing societies. This article highlights the relationship between positive ageing attitudes and higher education, and can inform future research and interventions on mental health among older adults, in particular among adults with less education.

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Table 1: Demographic characteristics and key variable descriptives

Variables	Total Sample (<i>n</i> = 482)
Age (years; range 50-74)	61.68 ± 6.91
Sex	
Male	192 (39.83%)
Female	290 (60.17%)
Gross Household Annual Income ^	
Less than \$15,599	12 (2.49%)
\$15,600 - 20,799	18 (3.73%)
\$20,800 - 25,999	24 (4.98%)
\$26,000 - 31,199	13 (2.70%)
\$31,200 - 36,399	20 (4.15%)
\$36,400 - 41,599	12 (2.49%)
\$41,600 - 51,999	45 (9.34%)
\$52,000 - 72,799	57 (11.83%)
\$72,800 - 93,599	52 (10.79%)
\$93,600 - 129,999	73 (15.15%)
\$130,000 or more	103 (21.37%)
Don't know or don't want to answer	53 (11.00%)
Anxiety (range 0-3) #	.48 ± .36
Depression (range 0-3) #	.61 ± .30
Ageing Attitudes (range 1-4)	2.60 ± .50
Below Median	221 (45.85%)
Above Median	261 (54.15%)
Physical Activities (weighted mins/week; range 0-2520)	421.37 ± 438.15
Below Median	248 (51.45%)
Above Median	234 (48.55%)
Social Support (range 1-7)	4.32 ± 1.41
Below Median	258 (53.53%)
Above Median	224 (46.47%)
Education	
Without Postsecondary Education	269 (55.81%)
With Postsecondary Education	213 (44.19%)

Note. Continuous variable data are presented as mean ± standard deviation; categorical variable data are presented as *n* (%).

Variables with **square-root** transformed scores

^ Income was measured in Australian dollars (AUD) and the exchange rate during the time of data collection was 1 USD to ~ 1.35 AUD.

31. Table 2. Pearson correlation for the key variables.

32.

Variable	1	2	3	4	5	6	7	8
1. Ageing Attitudes								
2. Anxiety	-.28** [-.36, -.20]							
3. Depression	-.32** [-.39, -.23]	.59** [.53, .65]						
4. Physical Activity	.04 [-.05, .13]	-.06 [-.15, .03]	-.15** [-.24, -.06]					
5. Social Support	.15** [.06, .24]	-.22** [-.31, -.13]	-.34** [-.42, -.26]	.09* [.00, .18]				
6. Education	.05 [-.04, .13]	-.18** [-.26, -.09]	-.14** [-.23, -.05]	.10* [.01, .19]	.22** [.14, .31]			
7. Age	-.04 [-.13, .05]	-.04 [-.13, .05]	.06 [-.03, .15]	-.12* [-.20, -.03]	.00 [-.09, .09]	-.11* [-.20, -.02]		
8. Sex	.18** [.09, .26]	.08 [-.01, .17]	-.05 [-.14, .04]	-.13** [-.21, -.04]	.12** [.03, .21]	-.02 [-.11, .07]	.08 [-.01, .17]	
9. Household Income	.14** [.05, .23]	-.16** [-.24, -.07]	-.17** [-.26, -.09]	.09 [-.00, .18]	.08 [-.01, .17]	.20** [.11, .28]	-.34** [-.41, -.25]	-.08 [-.16, .01]

33.

34. Note. Values in square brackets indicate the 95% confidence interval for each correlation. * indicates $p < .05$, ** indicates $p < .01$.

35.

36. *Table 3: Three two-way analysis of variance results with anxiety as the criterion.*

37.

Measure	$F(1, 474)$	p	partial η^2
(Intercept)	957.48	< .001	.67
Ageing Attitudes	43.97	< .001	.08
Physical Activity	.60	.438	< .01
Social Support	11.99	< .001	.02
Education	13.92	< .001	.03
Ageing Attitudes \times Physical Activity	.18	.668	< .01
Ageing Attitudes \times Social Support	.21	.646	< .01
Ageing Attitudes \times Education	3.68	.056	< .01

38.

39. *Table 4:* Three two-way analysis of variance results with depression as the criterion.
40.

Measure	$F(1, 474)$	p	partial η^2
(Intercept)	2547.39	< .001	.84
Ageing Attitudes	60.09	< .001	.11
Physical Activity	8.98	.003	.02
Social Support	44.52	< .001	.09
Education	8.19	.004	.02
Ageing Attitudes \times Physical Activity	.54	.464	< .01
Ageing Attitudes \times Social Support	.06	.813	< .01
Ageing Attitudes \times Education	3.86	.050	< .01

41.

42. *Table 5: Two-way analysis of variance results with anxiety as the criterion.*

43.

Measure	$F(1, 478)$	p	partial η^2
(Intercept)	942.12	< .001	.66
Ageing Attitudes	43.27	< .001	.08
Education	13.70	< .001	.03
Ageing Attitudes \times Education	4.39	.037	< .01

44.

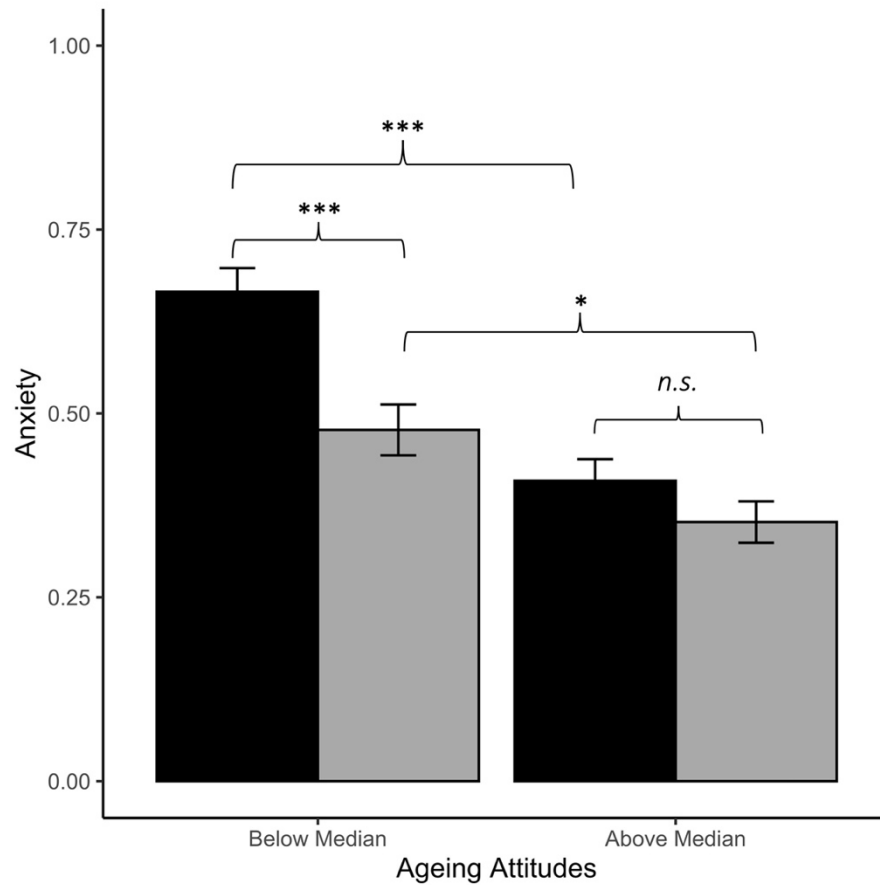
45. *Table 6:* Two-way analysis of variance results with depression as the criterion.

46.

Measure	$F(1, 474)$	p	partial η^2
(Intercept)	2315.43	< .001	.83
Ageing Attitudes	54.62	< .001	.10
Education	7.44	.007	.02
Ageing Attitudes \times Education	5.52	.019	.01

47.

48.

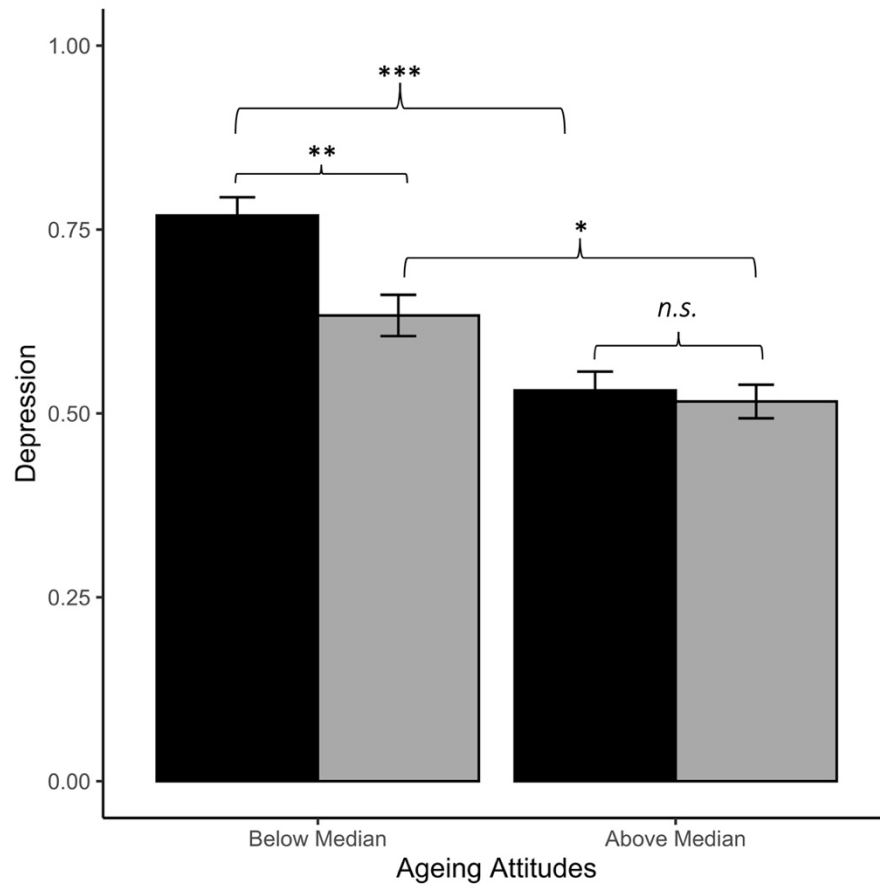


49.

50. *Figure 1.* Two-way analysis of variance results with anxiety as the criterion. The black bars represent the average score of people without postsecondary education; the gray bars represent the average score of people with postsecondary education. Error bars represent standard errors. * indicates $p < .05$, ** indicates $p < .01$, *** indicates $p < .001$.

51.

52.



53.

54. *Figure 2.* Two-way analysis of variance results with depression as the criterion. The black bars represent the average score of people without postsecondary education; the gray bars represent the average score of people with postsecondary education. Error bars represent standard errors. * indicates $p < .05$, ** indicates $p < .01$, *** indicates $p < .001$.