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Experiences of ageism and the mental health of older adults

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Abstract

Objectives: This article examines relationships between experiences of ageism and four specific mental health outcomes among older Australian adults, including whether these relationships vary depending on age, gender, and sexual orientation.

Methods: A survey was conducted nationwide involving 2,137 participants aged 60 years and older. Mental health variables included depressive symptoms, anxious symptoms, general stress, and positive mental health or flourishing.

Results: Recent experiences of ageism were found to be strongly related to poorer mental health on all four mental health variables. However, experiences of ageism appeared to have a greater effect on the mental health of those who were younger in age (specifically depression), of men more so than women (specifically depression), and of those who identified as heterosexual as opposed to other sexual orientations (specifically general stress).

Conclusion: These findings suggest that experiences of ageism may be an important factor in the health and well-being of older adults, especially for those who are younger, male, and heterosexual, and may need to be taken into account when devising strategies for supporting healthier and happier ageing.

Keywords

Aging; ageism; age discrimination; depression; well-being

Introduction

In growing older, people can become increasingly vulnerable to the effects of ageism (Bugental & Hehman, 2007). Ageism is broadly defined as prejudice or discrimination towards people due to their age (Nelson, 2005). Conceptually, ageism has been proposed to manifest in at least three forms, which include: negative attitudes towards older people, old age and the ageing process; discrimination or treating older people unfairly; and implementing policies and practices that reinforce negative stereotypes of older people (Butler, 1980). Unlike many other forms of prejudice and discrimination, ageism can potentially affect all individuals who enter older age. Specific adverse effects of age discrimination on the lives of older people can include limiting their employment opportunities (Abrams, Swift, & Drury, 2016) and career progression (Bal, Reiss, Rudolph, & Baltes, 2011). It may also result in age-biased healthcare decision-making in mental health and general healthcare settings (Robb, Chen, & Haley, 2002), as well as in a range of other settings (van den Heuvel, 2012).

Experiences of ageism refer to situations in which people believe or perceive that they have been treated unfairly as a direct result of their age (Minichiello, Browne, & Kendig, 2000). Studies show that experiences of other forms of discrimination, such as racism, sexism, and homophobia, can have major repercussions on health and well-being. Such experiences can be especially damaging to mental health, with studies showing strong links between discrimination, stress, and poorer mental health outcomes (Luo, Xu, Granberg, & Wentworth, 2012; Pascoe & Smart Richman, 2009; Schmitt, Branscombe, Postmes, & Garcia, 2014). This is encapsulated in Minority Stress Theory (MST; Meyer, 2003), which suggests that belonging to a stigmatised population can result in a range of negative experiences, such as discrimination and prejudice, and that these experiences can result in stress and potentially mental health challenges such as depression and anxiety. A number of

studies have provided evidence that supports MST in a range of populations such as ethnic and sexual minorities (Pascoe & Smart, 2009). Despite this body of work, much less research has investigated links between experiences of ageism and mental health. Just like many minority groups, older people can experience the effects of stigma, and according to MST might feasibly also experience stress and challenges to their mental health (Meyer, 2003). In this article, we present findings from a study that builds on previous research by further testing links between experiences of ageism and a range of mental health outcomes.

Numerous qualitative and quantitative studies have been conducted on the perceived impact of ageism on the lives of older people more generally, such as receiving poorer treatment and service in a variety of settings (Minichiello et al., 2000; Minichiello, Browne, & Kendig, 2012; Rippon, et al., 2013), subjective age (Hess & Dikken, 2010), and body image (Öberg & Tornstam, 2003; Ward & Holland, 2011). Of studies specifically on ageism and mental health, most have been conducted in the United States. There has been a general lack of research on this topic outside of the U.S., including in Europe. Of the few studies that have been conducted, these have broadly been consistent with the predictions of MST, with experiences of ageism found to be significantly associated with greater depressive symptoms or other poorer mental health outcomes. For example, nationally-representative data from the Midlife Development in the United States Survey (MIDUS) showed that perceptions of age-related discrimination were associated with depressive and anxious symptoms (Yuan, 2007). An earlier study, conducted in 1999, examined mental health associations and multiple types of perceived discrimination, including ageism, and found that day-to-day experiences of ageism were significantly linked to mental health (Kessler, Mickelson, & Williams, 1999). The study also found that these experiences were comparable to a range of other life stressors in terms of their associations with mental health. Another study in the United States also found that experiences of ageism were linked to lower overall well-being (Garstka, Schmitt,

Branscombe, & Hummert, 2004).

The above studies, however, were cross-sectional. A longitudinal analysis was conducted recently involving data from the Health and Retirement Study in the U.S. (Han & Richardson, 2015). It was found that changes in perceived age-related discrimination prospectively predicted changes in depressive symptoms over a four-year period. Another longitudinal study, the Health and Retirement Study, examined multiple forms of discrimination, which included age discrimination, and found that experiences of any form of discrimination prospectively predicted poorer mental health in older adults (Luo, Xu, Granberg, & Wentworth, 2012).

While the links between experiences of ageism and mental health appear well-established, there is a shortage of studies that have examined multiple aspects of mental health, such as depression, anxiety, general stress, and positive mental health. In addition, little is known about the degree to which links between experiences of ageism and mental health vary across different subpopulations. Of potential relevance is Crisis Competence Theory (CCT), which suggests that people who experience discrimination in their younger years related to other aspects of their background such as sexual orientation or race may develop a greater coping capacity that helps them when facing ageism (Friend, 1991; Kimmel, 1978; Sharp, 1997). For example, previous research conducted in the United States found that, although older African American adults reported greater instances of discrimination, older European American adults had a stronger relationship between discrimination and negative mental health outcomes (Ayalon & Gum, 2011). This might be due to some older African American adults developing coping mechanisms as a result of dealing with experiences of discrimination throughout their lives and therefore becoming less affected by age-related discrimination in later life. Similarly, many women encounter sexism throughout their lives (Swim, Hyers, Cohen, & Ferguson, 2001) and people who are non-

heterosexual (e.g., many people in the LGBTI community) often encounter homophobia or transphobia (Averett, Yoon, & Jenkins, 2013; Ragins & Cornwell, 2001).

While there is potentially a wide range of subgroups that could be examined, in this article we focus on subgroups based on gender, sexual orientation, and age (i.e., younger-old vs. older-old) as three examples in which links between experiences of ageism and mental health might potentially vary. At a group level, women and people who have non-heterosexual identities may have had more exposure to discrimination such as sexism and heterosexism in their younger years than men or those who are heterosexual, and according to CCT, may be more readily prepared when encountering ageism. For this reason, we also examine age as a possible moderating factor in links between ageism and mental health. In other words, the older-old group may have had more exposure to ageism while some of those in the younger-old group may only be encountering ageism for the first time. On the other hand, it is also possible that experiencing ageism in conjunction with being from another stigmatised population (e.g., lesbians and gay men) might result in overall greater discrimination and stress (Wight, LeBlanc, De Vries, & Detels, 2012), as a form of additional jeopardy for stigmatised groups (Bowleg, Huang, Brooks, Black, & Burkholder, 2003). Thus, knowing whether mental health and experiences of ageism differentially impact several subgroups is important because it can help target and refine any support strategies aimed at assisting older people to mitigate the health effects of ageism.

It is also worth considering not only mental health problems such as depression or anxiety, but also positive mental health. A growing body of research has been conducted on positive mental health, sometimes also referred to as flourishing (Keyes, 2002). Positive mental health is thought to have two main components: eudaimonic and hedonic well-being. Broadly-speaking, eudaimonic well-being refers to experiencing a meaningful engagement with life, such as striving to reach one's potential, while hedonic well-being refers to having

frequent positive feelings, such as happiness (Tennant et al., 2007). To identify possible pathways for assisting older people to live happier and healthier lives, it may therefore be important not only to examine experiences of ageism in relation to mental health challenges, such as depression, anxiety, or general stress, but also to positive mental health.

In this article, we present findings from a large nationwide cross-sectional survey of Australians aged 60 years and older that included measures of mental health and subjective or perceived experiences of ageism. We had two main aims: (1) to test whether experiences of ageism were linked to a range of mental health measures, including symptoms of depression, anxiety, and general stress, as well as positive mental health, and (2) to examine whether any such associations were moderated by gender, age, and sexual orientation. The second aim enabled an assessment of the degree to which experiences of ageism might be differentially linked to mental health depending on these sociodemographic factors. For both aims, we analysed depression, anxiety, and stress separately in order to explore whether experiences of ageism related to these outcomes differently, particularly given the additional impact that depression and/or anxiety can have in a person's life beyond general stress.

Method

Participants

A survey was completed by 2,137 Australian adults aged 60 years and older. Of this group, 18 participants did not specify their gender or they identified as transgender or as some other gender. Due to this small sample, this group was excluded from further analyses. The remaining 2,119 participants therefore comprised the final sample for analysis. This group was aged between 60 and 94 years, with a mean age of 66.71 years (SD = 5.56).

Procedure

The survey was conducted from July 2015 to December 2015, and was available to complete both online and on paper. A diverse range of recruitment strategies were used to reach as wide a sample as possible throughout the country. These included interviews on national and local radio stations, articles published in mainstream news sources as well as those targeting older Australians, and advertisements sent out to ageing and aged care organisations, many of whom went on to promote the study in their newsletters, social media, and on their websites. Advertisements were also sent to senior citizen organisations, service clubs, local governments, and a range of health clinics. In addition, age-targeted advertising was conducted on Facebook and on a popular online dating website, and the study was further promoted at events targeting older Australians such as a senior's festival. Full details of all procedures for the study are available in a recent methodology article ([*removed for blind review*] et al., 2017). Advertisements directed participants to the online survey and also gave participants the option of contacting the project team to have a reply-paid paper version posted to them. Further paper versions were sent to a range of organisations to distribute to potential participants. Before starting the survey, participants were informed that their responses were anonymous and confidential. It took participants a median time of 33 minutes to complete the survey. Participation was purely voluntary; no incentives or rewards were provided for participating. The study was granted ethical approval by the University Human Ethics Committee.

Measures

Survey measures used in this article included:

Ageism. Experiences of ageism were measured using the Ageism Survey (Palmore, 2001). This scale consists of 20 items that present a wide range of events related to ageism

and asks participants to rate how often they have experienced each event. Examples of items include “I was called an insulting name related to my age” and “I was treated with less dignity and respect because of my age”. Response options included 0 “never”, 1 “once”, and 2 “more than once”. Item scores were added to produce a total score from 0 to 40 to indicate more frequent experiences of ageism. The Ageism Survey has been shown to have high levels of reliability and validity, with all items loading onto a single factor (Palmore, 2001). Internal reliability (Cronbach’s alpha) for the scale in this study was $\alpha = .83$.

Depression, Anxiety, and Stress. The three subscales of the Depression, Anxiety, and Stress Scale (DASS-21) (Antony, Bieling, Cox, Enns, & Swinson, 1998) were used to measure three aspects of mental health. The DASS-21 consists of 21 items measuring symptoms of depression, anxiety, and general stress. Responses are provided on a four-point scale from 0 to 3. Item scores are added for each subscale to produce a total score, which is then multiplied by two, as recommended by the scale developers in order to make the scores comparable with the longer 42-item version of the scale (Henry & Crawford, 2005). Thus, scores ranged between 0 and 42. As instructed by the scale developers, where data was missing for only one item in a subscale, this was substituted for the mean score of the subscale. The DASS-21 is widely used as a measure of mental health, and has shown strong reliability and validity. Internal reliability for the each of the three subscales in this study were $\alpha = .92$ (depressive symptoms), $\alpha = .79$ (anxious symptoms), and $\alpha = .87$ (general stress).

Positive mental health. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) was used to measure positive mental health (Tennant et al., 2007), that is, the degree to which participants were thriving or flourishing in their lives. The WEMWBS covers the two eudaimonic and hedonic aspects of positive mental health, and appears to have good reliability and validity as a measure of positive mental health (Stewart-Brown et al.,

2009; Tennant et al., 2007). It consists of 14 items, and participants are asked to respond according to their experience over the past two weeks on a five-point scale ranging from 1 to 5. Item scores are added to produce a total score between 14 and 70, with higher scores indicating greater positive mental health. Internal reliability for the scale in this study was α = .95.

Sociodemographic variables. Participants gave information on a range of sociodemographic items, including age, gender (male, female, other), sexual orientation (heterosexual, lesbian, gay, bisexual, queer, pansexual, other; coded as heterosexual or non-heterosexual), highest educational attainment (secondary or lower, non-university tertiary degree, undergraduate university degree, postgraduate university degree), employment status (full-time, part-time or casual, unemployed, retired, other), pre-tax income, (0-$19,999, $20,000-$49,999, $50,000-$99,999, $100,000+), country of birth (coded as Australia or other), residential location (inner city, suburban, regional or rural), and their relationship status (coded as partner or no partner). Participants also rated their overall health by responding to the item "In general, would you say your health is…" with one of five response options (excellent, very good, good, fair, poor). This single-item has been shown to be a strong predictor of objective measures of health (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Shmueli, 1999).

Statistical Analysis

The data were analysed using a hierarchical multiple regression for each of the dependent variables: depression, anxiety, stress, and positive mental health. For each of the dependent variables, we controlled for the sociodemographic variables listed above: age, gender, sexual orientation, education, employment, income, country of birth, location, relationship status, and self-rated health. We controlled for these variables given that a range

of sociodemographic factors and physical health are often associated with mental health outcomes. Ageism was entered at step 1, and the ageism by age, ageism by gender, and ageism by sexual orientation interactions were entered at step 2. To make sense of the significant interactions, these were graphed using a median split of ageism scores. Where relevant, separate regressions that controlled for the sociodemographic variables were conducted to identify significant differences in the interactions. Where there was missing data, participants were excluded but only in those analyses in which data were missing on a variable included within the analysis. Stata Version 14.1 (StataCorp, College Station, TX) was used to conduct the analyses.

Results

Sample Profile

Table 1 displays the sociodemographic characteristics of the sample. The majority of participants were male (68%) and heterosexual (91%). The sample was fairly evenly distributed across the four education levels. Over half were retired (55%). Most participants had a pre-tax income between AU$20,000-$99,999 (66%). The majority of participants were born in Australia (67%), had a partner (76%), and lived in an inner city or suburban area (59%). Means and standard deviations on each of the dependent variables are also presented in Table 1. In addition, Table 2 displays a correlation matrix for the main study variables - ageism, depressive symptoms, anxious symptoms, general stress, and positive mental health. All study variables were significantly correlated, suggesting close relationships with experiences of ageism and mental health.

Experiences of Ageism and Mental Health

Depressive symptoms. As displayed in Table 3, the hierarchical multiple regression for depressive symptoms revealed a significant effect of ageism on depression at step 1 and accounted for 29% of the variation (F [19, 1133] = 24.81, $p < .001$). At step 2, there was a significant effect of ageism on depression, a significant ageism by age interaction, and a significant ageism by gender interaction. The introduction of these variables significantly accounted for an additional 1% of the variation (F [3, 1130] = 4.29, $p = .005$). These significant interaction effects are shown in Figure 1. In the first graph, both younger (F [1, 577] = 27.62, $p < .001$) and older (F [1, 538] = 9.90, $p = .002$) participants reported significantly greater depressive symptoms with higher ageism. However, while younger and older participants reported similar levels of depressive symptoms with lower ageism (F [1, 577] = 0.64, $p = .42$), younger participants reported significantly greater depressive symptoms with higher ageism (F [1, 538] = 13.35, $p < .001$). In the second graph, men reported significantly greater depressive symptoms with higher ageism (F [1, 773] = 42.56, $p < .001$). Despite a similar trend for women, this was not significant (F [1, 342] = 1.95, $p = .16$).

Anxious symptoms. There was a significant effect of ageism on anxiety at step 1 (Table 2), which accounted for 23% of the variation (F [19, 1133] = 17.44, $p < .001$). At step 2 of the model, although there was a small significant ageism by age interaction, the overall change in variation was not significant, indicating that the inclusion of these interaction effects did not explain any additional variance.

General stress. Along with depression and anxiety, ageism had a significant effect on stress at step 1, accounting for 19% of the variation (F [19, 1133] = 13.65, $p < .001$). At step 2, there was a significant ageism by gender interaction and a significant ageism by sexual orientation interaction. The introduction of these variables significantly accounted for a

further 1% of the variation (F [3, 1130] = 3.77, p = .01). These significant interaction effects are shown in Figure 2. In the first graph, both men (F [1, 733] = 57.67, p < .001) and women (F [1, 342] = 6.47, p = .01) reported significantly greater stress with higher ageism. Despite the interaction being significant, this finding appears to be rather weak overall. With lower ageism, men and women reported similar levels of general stress (F [1, 577] = .59, p = .44) and the gender difference at higher ageism was not significant (F [1, 538] = 2.27, p = .13). In the second graph, heterosexual participants reported significantly greater stress with higher ageism (F [1, 1026] = 70.61, p < .001), but this was not the case for non-heterosexual participants (F [1, 89] = .46, p = .50). Heterosexual participants also reported significantly less stress with lower ageism than non-heterosexual participants (F [1, 577] = 7.30, p = .007). Differences between the two groups at higher ageism were not significant (F [1, 538] = 2.78, p = .10).

Positive mental health. Table 3 also displays a significant effect of ageism on positive mental health at step 1, accounting for 33% of the variation (F [19, 1057] = 26.84, p < .001), where greater ageism was associated with lower scores on positive mental health. At step 2 of the model, although there was a small significant ageism by sexual orientation interaction, the overall change in variation at step 2 was not significant, indicating that the inclusion of these interaction effects did not explain any additional variance.

Discussion

We found that a greater experience of ageism was related to several key mental health variables in a sample of Australians aged 60 years and older. Specifically, after controlling for sociodemographic variables, experiences of ageism significantly predicted poorer mental health and well-being. This is in line with previous research that also found that experiences of ageism are related to poorer mental health outcomes (Garstka et al., 2004; Han &

Richardson, 2015; Kessler et al., 1999; Yuan, 2007), and is consistent with Minority Stress Theory, which links discrimination to stress and mental health challenges (Meyer, 2003). It further appears from our findings that experiences of ageism are not only related to potential mental health problems, such as depression and anxiety, but also related to a reduced likelihood of experiencing positive mental health or flourishing.

Analyses further revealed that in some instances, the association between experiences of ageism and the mental health measures were moderated by gender, age, and sexual orientation. Specifically, results showed that for participants who experienced higher levels of ageism, being younger or male was linked to greater depression than being older or female. Higher ageism was also linked to greater stress for those who were heterosexual, but not for those who were non-heterosexual. In fact, the non-heterosexual group appeared to have comparatively high stress levels irrespective of ageism, which might be due to the impact of stigma related to their sexual orientation (Meyer, 2003). Although we found a significant interaction effect involving gender and ageism with regard to stress scores, this finding was weak overall. It appears that the gender differences are more strongly related to depressive symptoms.

These findings are broadly consistent with CCT (Friend, 1991; Kimmel, 1978; Sharp, 1997). That is, individuals who are less likely to experience prejudice and discrimination earlier in their lives, in this case men and heterosexual adults, might experience a greater negative response to ageism due to lower previous exposure to prejudice and discrimination. In societies where heterosexuality and being male tend to hold greater status, women and non-heterosexual adults can find themselves subject to various forms of prejudice and discrimination due to their gender and sexual orientation respectively (Averett et al., 2013; Ragins & Cornwell, 2001; Swim et al., 2001). While this can pose challenges throughout the life course, having faced issues of discrimination in their younger years may have prompted

some to develop coping strategies that to some extent help to buffer them from the experience of ageism.

In a similar vein, our finding that the mental health effects of ageism appeared to be less acute with greater age might be because as people grow older they develop coping skills to deal with ageism. Although we know of no studies that have sought to identify and test specific coping strategies in response to age discrimination, some studies have explored how older people make sense of ageism and ageing that may be useful in future research (Minichiello et al., 2000; Minichiello et al., 2012). It is also possible that the experience of ageism changes as people grow older. For example, those who are much older – the older-old – might experience different forms of ageism than the younger-old. Generational differences might also exist, where the younger-old might be more aware of ageism or more sensitive to ageism given that it is a newer experience for them, or they have different expectations about how they ought to be treated in older age.

In any case, the potential explanations offered above in relation to our findings are speculative, but could be tested in future research that specifically focuses on how different groups of older people experience and cope with ageism. For now, our study provides preliminary evidence that experiences of ageism are linked to a range of mental health outcomes, but somewhat differently depending on age, gender, and sexual orientation. Previously, greater attention has been given to the relationship between discrimination on the basis of characteristics such as race and sexual orientation, which highlights that ageism as a social movement has perhaps not reached the same level of awareness given to other forms of discrimination. It is possible that some people assume that poorer mental health in later life has more to do with the decline associated with biological ageing rather than the structural influences of the impact of discrimination and prejudice. Ageing advocacy organisations have often called for greater attention to be placed on the negative impact of ageism in the lives of

older people, including peak organisations in Australia such as the Council of the Ageing (http://www.cota.org.au). Findings from this study provide further evidence to support such calls and to help in the promotion of the well-being of older citizens.

The strengths of this study include the use of a large sample, and statistically controlling for a number of sociodemographic variables potentially relevant to the outcome variables. One possible limitation is related to the measurement of experiences of ageism. The ageism scale used in this study (Palmore, 2001) measures participants' perceptions of being treated unfairly due to their age, however the actual reasons for such treatment may not always be due to their age, but to other factors. That said these limitations also apply to many other studies of self-reported discrimination, such as experiences attributed to sexual orientation, race, or other characteristics. Whether people are aware of being ageist, or whether ageism is intended or not, is important to consider, but it is nonetheless the perception of ageism that is most likely to have a psychological impact on older people.

It is further worth noting that the sample for this study was not population-based, and therefore may not be entirely representative of all older Australians. The sample was, nonetheless, large and diverse, with participants included from all major areas of the country. It did, however, have a greater proportion of men than women, and predominantly consisted of participants aged in their 60s. On sexual orientation, the proportion of those reporting as non-heterosexual was closer to population-based data (Richters et al., 2014). We also did not collect reliable data on ethnic background, and it is possible that some ethnic minority populations experience ageism in different ways to other populations, and might also experience racism. Given these various limitations, additional research ought to be conducted with other samples or within population-based studies to further corroborate our findings, and to explore additional diversity in the backgrounds of older Australians and how ageism may be experienced similarly or differently depending on background, such as race. Also, how a

person views themselves in relation to their age may be more critical to their experiences of ageism than their actual chronological age (Minichiello et al., 2000), and this is a topic that could be further explored in the future.

Researchers may also wish to examine ways in which people cope with ageism. We did not directly test CCT nor did we examine coping strategies in this study, but it would be useful to identify common strategies or responses that people have when experiencing ageism. Intersections of age, gender, and sexual orientation may also be worth examining. For example, it might be worth examining coping strategies used by individuals who experience multiple forms of stigma, such as sexism and heterosexism. We did not have a large enough sample of non-heterosexual participants to reliably examine intersections, but this may be possible if larger samples are collected in the future. An additional limitation is that we combined lesbian, gay, and bisexual participants into a single "non-heterosexual" category. This was necessary due to insufficient numbers of each sexuality group for analysing them separately. Future studies would be needed to compare sexual minority populations (e.g., lesbians compared to gay men) with regard to their experiences of ageism and the relative impact on mental health.

Finally, given that our study was cross-sectional, it is not possible to determine directions of causality between experiences of ageism and mental health. One study, for example, used a cross-lagged model and found that higher levels of depressive symptoms can in some cases precede higher perceptions of age discrimination (Ayalon, 2016). Nonetheless, the differential relationships between ageism and mental health depending on gender, age, and sexual orientation suggests that associations between experiences of ageism and mental health are likely to be complex, and these would need to be further clarified in longitudinal studies. Currently there is a lack of longitudinal research on the experiences of ageism and mental health in general, as well as a broader lack of research on this topic outside of the US.

For now, our findings corroborate those of earlier studies and provide new insight into issues of ageism and mental health, particularly in revealing that experiences of ageism relate to a range of mental health outcomes, including the likelihood of experiencing positive mental health. Finding ways to change public attitudes and reduce ageism may therefore need to be a greater priority than it is currently. In the meantime, identifying ways to support those in later life to cope with the potential negative effects of age-related prejudice and discrimination is also likely to deserve a greater focus, and our findings suggest that those who are younger, male, or heterosexual may be especially vulnerable. Health professionals can aim to be more sensitive to the ageism experiences of their clients, and how this may be impacting on their daily lives and psychological well-being. Additional training for managing the impacts of ageism could be provided for mental health practitioners in particular. Further research could investigate the potential structural triggers of ageism in order to alleviate their impact on the psychosocial wellness of seniors. Although more research is needed to further clarify potentially complex relationships between ageism and mental health, our study nevertheless suggests that experiences of ageism may need to be taken into greater account in efforts toward promoting healthier and happier ageing.

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Table 1

Sample Profile (N = 2,119)

	No.	%
Gender		
Male	1,439	68
Female	680	32
Sexual orientation		
Heterosexual	1,927	91
Non-heterosexual	186	9
Education		
Secondary or below	488	23
Non-university tertiary	671	32
University undergraduate degree	516	25
University postgraduate degree	426	20
Employment status		
Full-time	453	21
Part-time	345	16
Unemployed	54	3
Retired	1,157	55
Other	98	5
Income		
0-19,999	201	14
20,000-49,999	497	36
50,000-99,999	419	30

100,000+	269	19
Country of birth		
Australia	1,390	67
Overseas	683	33
Residential location		
Inner city	314	15
Suburban	935	44
Regional or rural	856	41
Relationship status		
Partner	1,578	76
No partner	508	24

	M	*SD*
Age	66.71	5.56
Self-rated health	2.54	.99
Experiences of ageism	28.14	6.82
Depressive symptoms	6.93	8.32
Anxious symptoms	3.99	5.42
General stress	7.69	7.22
Positive mental health	51.99	9.45

Note. Depressive symptoms, anxious symptoms, and general stress were measured with the Depression, Anxiety, and Stress Subscales of the Depression, Anxiety, and Stress Scale (DASS). Experiences of ageism was measured with the Ageism Survey. Self-rated health was measured using the single-item EVGFP self-rated scale.

Table 2

Correlation Matrix of Main Study Variables

Variable	1	2	3	4	5
1 Experiences of ageism	-				
2 Depressive symptoms	.30***	-			
3 Anxious symptoms	.29***	.65***	-		
4 General stress	.29***	.70***	.68***	-	
5 Positive mental health	-.21***	-.75***	-.49***	-.55***	-

Note. Depressive symptoms, anxious symptoms, and general stress were measured with the Depression, Anxiety, and Stress Subscales of the Depression, Anxiety, and Stress Scale (DASS). Positive mental health was measured with the Warwick-Edinburgh Mental Well-being Scale (WEMWBS). Experiences of ageism was measured with the Ageism Survey.
*** $p < .001$

Table 3

Associations between Experiences of Ageism and Mental Health

	Regression Coefficients			
	Step 1		Step 2	
	B	*β*	*B*	*β*
Depressive symptoms				
Experiences of ageism	1.93	.22***	5.26	.61***
Experiences of ageism x age			-.53	-.05*
Experiences of ageism x gender			-1.37	-.22**
Experiences of ageism x sexual orientation			-1.48	-.19
ΔR^2		-		.01**
Total R^2		.29***		.30***
Anxious symptoms				
Experiences of ageism	1.22	.23***	2.91	.54***
Experiences of ageism x age			-.19	-.03
Experiences of ageism x gender			-.69	-.18*
Experiences of ageism x sexual orientation			-.75	-.15
ΔR^2		-		.00
Total R^2		.23***		.23***
General stress				
Experiences of ageism	1.87	.26***	2.33	.32***
Experiences of ageism x age			-.00	-.00
Experiences of ageism x gender			-1.09	-.08*

Experiences of ageism x sexual orientation			-1.79	-.06*
ΔR^2		-		.01*
Total R^2		.19***		.19***
Positive mental health				
Experiences of ageism	-1.32	-.14***	-4.35	-.45**
Experiences of ageism x age			-.06	-.01
Experiences of ageism x gender			.71	.10
Experiences of ageism x sexual orientation			1.96	.22*
ΔR^2		-		.00
Total R^2		.33***		.33***

Note. Results include four separate hierarchical regressions each conducted with depressive symptoms, anxious symptoms, general stress, and positive mental health respectively as the outcome variables. All results reported are adjusted for age, gender, sexual orientation, education, employment status, income, country of birth, residential location, relationship status, and self-rated health. Depressive symptoms, anxious symptoms, and general stress were measured with the Depression, Anxiety, and Stress Subscales of the Depression, Anxiety, and Stress Scale (DASS). Positive mental health was measured with the Warwick-Edinburgh Mental Well-being Scale (WEMWBS). Experiences of ageism was measured with the Ageism Survey. ΔR^2 = change in R^2 between steps 1 and 2. * $p < .05$ ** $p < .01$ *** $p < .001$

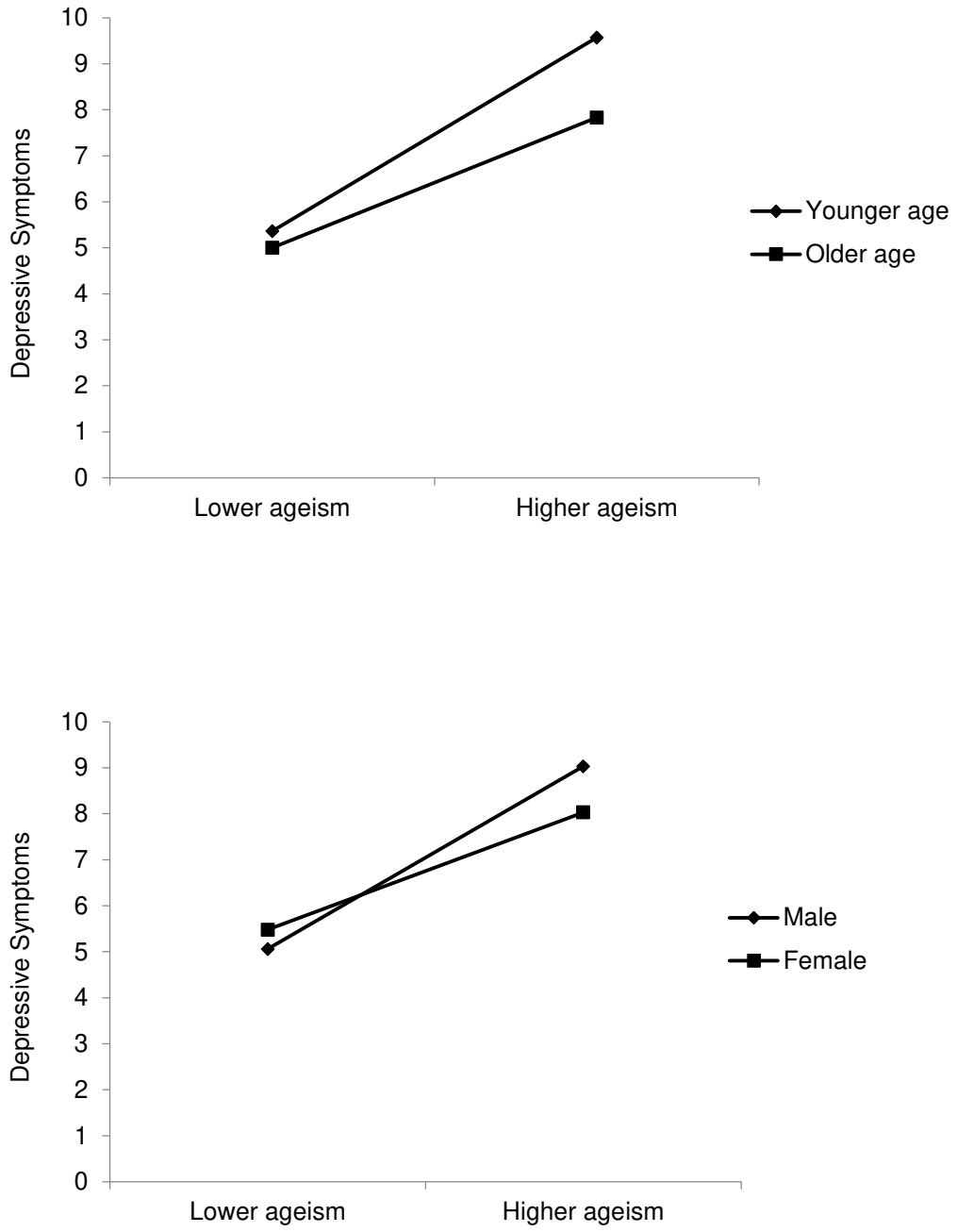

Figure 1. Depressive symptoms by age and gender according to whether participants experienced higher or lower levels of ageism

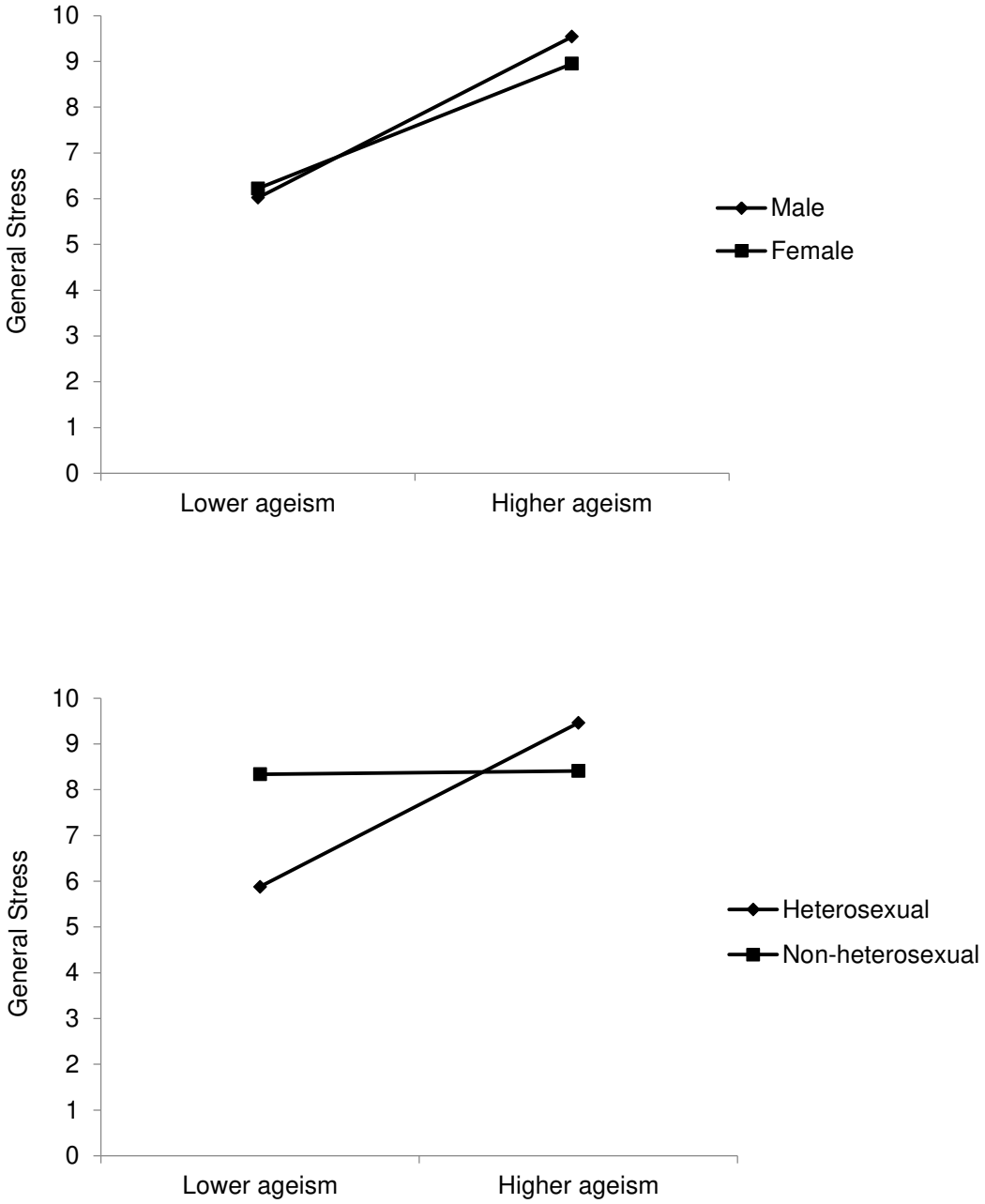

Figure 2. General stress by gender and sexual orientation according to whether participants experienced higher or lower levels of ageism