

Short- and Medium-Term Effects of Ageism on Loneliness Experienced During the COVID-19 Pandemic

Journal of Applied Gerontology
2023, Vol. 42(6) 1255–1266
© The Author(s) 2023
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/07334648231159372
journals.sagepub.com/home/jag



Sharon Shiovitz-Ezra¹ , Bracha Erlich², and Liat Ayalon³ 

Abstract

Loneliness, common in old age, may be partially attributed to ageism. The present study explored the short- and medium-term effect of ageism on loneliness experienced during the COVID-19 pandemic using prospective data derived from the Israeli sample of the Survey of Health, Aging and Retirement in Europe (SHARE) ($N = 553$). Ageism was measured before the COVID-19 outbreak and loneliness in the summer of 2020 and 2021 using a direct single question. We also tested for age differences in this association. In both the 2020 and 2021 models, ageism was related to increased loneliness. This association remained significant after adjusting for a host of demographic, health, and social variables. In the 2020 model, we also found that the positive association between ageism and loneliness was significant only in people aged 70+. We discussed the results with reference to the COVID-19 pandemic, which drew attention to two global social phenomena: loneliness and ageism.

Keywords

loneliness, ageism, quantitative methods

What this paper adds

- The study demonstrates short- and medium-term negative effects of ageism on loneliness.
- In 2020, the association of exposure to ageism with one's sense of loneliness was evident only in the older age group.
- In 2021, regardless of one's age, people over the age of 50 reported a greater sense of loneliness following perceived exposure to ageism.

Applications of study findings

- The findings of the present study point to the important place that ageism plays in our social life.
- A way to combat loneliness is to reduce exposure to ageism in various areas of life.
- Legal and educational interventions are needed to combat ageism and foster cooperation and engagement between the generations.

Introduction

Loneliness is a globally prevalent phenomenon that can be attributed to social anomie resulting from the “rapid growth of technology, social media, globalization, and polarization of societies” (Jeste et al., 2020, p.553). A recent systematic review and meta-analysis based on pre-COVID-19 pandemic studies (2000–2019) carried out in 113 countries or territories found that loneliness at a problematic level was a common experience globally, especially in older people (Surkalim et al., 2022).

Loneliness is defined as a subjective feeling of deprivation of meaningful social relationships (Perlman & Peplau, 1998). According to the cognitive discrepancy approach, loneliness is a consequence of a perceived gap between the social connections and interactions available to individuals, and

those they would like to have. This gap refers to the number and frequency of social connections and in particular to their quality (Peplau & Perlman, 1982; Perlman & Peplau, 1998). The evolutionary approach (Spithoven et al., 2019) perceives

¹Paul Baerwald School of Social Work and Social Welfare, The Hebrew University of Jerusalem, Jerusalem, ISRAEL

²Hebrew University of Jerusalem, Jerusalem, ISRAEL

³Louis and Gabi Weisfeld School of Social Work, Bar-Ilan University, Ramat Gan, ISRAEL

Corresponding Author:

Sharon Shiovitz-Ezra, Paul Baerwald School of Social Work and Social Welfare, The Hebrew University of Jerusalem, Mt.Scopus Campus, Jerusalem 91905, ISRAEL.

Email: sharon.shiovitz@mail.huji.ac.il

loneliness as an aversive marker that creates significant discomfort caused by the gap between the desired and actual social connections. This negative marker motivates people to reengage and reconnect socially whereas reconnecting with others is essential for survival and continuity.

Loneliness has been found to be detrimental to mental, cognitive, and physical health. Research has found a link between loneliness and depression (Cacioppo et al., 2010) and an association between loneliness and death wishes (Ayalon & Shiovitz-Ezra, 2011). Loneliness also has been consistently found to be associated with low cognitive function (Boss et al., 2015). In a recent prospective study that used data from the English Longitudinal Study of Aging (ELSA), loneliness was found to be positively associated with dementia risk (Rafnsson et al., 2020). The deleterious effects of persistent loneliness on cognitive impairments were also evident in contemporary longitudinal studies that used the Framingham Heart Study (Akhter-Khan et al., 2021; Tao et al., 2022).

In addition, many studies have pointed to an association between loneliness and cardiovascular morbidity, loneliness being a risk factor for heart disease and high systolic blood pressure (Hawkey et al., 2006; Thurston & Kubzansky, 2009). Loneliness was also found to be associated with inflammation and metabolic deregulation (Shiovitz-Ezra & Parag, 2019), and prospective studies have reported that it significantly increased the risk of mortality (e.g., Holt-Lunstad et al., 2015).

Studies have demonstrated the harmful health consequences of loneliness during the outbreak of COVID-19. Loneliness was positively associated with psychological distress (Creese et al., 2021) and depressive symptoms (Shrira et al., 2020), anxiety (Palgi et al., 2020) and sleep problems (Grossman et al., 2020). Loneliness was also found to be associated with low responsiveness to adopting preventive health behaviors associated with COVID-19, such as wearing a mask, maintaining hand hygiene, and social distancing (Stickley et al., 2020).

The older population is susceptible to experiencing feelings of loneliness routinely (Berg-Weger & Morley, 2020). During the COVID pandemic, older people were asked to maintain social distancing to avoid infection, resulting in increased rates of loneliness (van Tilburg et al., 2020). Loneliness is also common in old age because of prevailing age-biased feelings, attitudes, and practices that exclude older people from the social arena (Shiovitz-Ezra et al., 2018). These age-related prejudices, stereotypes, and discriminatory behaviors are termed "ageism." Older adults are often perceived as incompetent, irrelevant, senile, "doddering but dear," and mostly useless and dependent (Cuddy & Fiske, 2002). These perceptions are based on the individuals' chronological age or appearance and can lead to age-based discrimination (Iversen et al., 2009). A recent systematic review confirmed the harmful consequences of ageism on the psychological wellbeing of

older adults (Kang & Kim, 2022). Loneliness is also potentially affected by ageism.

There are three mechanisms by which ageism may compromise the social life of older adults and lead to loneliness. Smart Richman and Leary (2009) proposed a multimotive psychological framework to explain how individuals react to discrimination and stigmatization that involve rejection-related experiences. According to their theoretical model, there are three common immediate reactions to various forms of rejection: (a) prosocial behaviors that involve a desire for social connection and reconnection; (b) antisocial behaviors that are reflected in antisocial aggressive or defensive urges; and (c) socially avoidant behavioral responses that include a tendency to withdraw to avoid further rejection. Which of these reactions is activated in response to interpersonal rejection depends, among others, on how chronic and pervasive the rejection experience is, whether the rejection episodes are persistent, having occurred over a prolonged period. According to the multimotive theory, "perceptions of a pervasive, chronic nature to the rejection will predict withdrawal and avoidant patterns of responses" (Smart Richman & Leary, p. 9, 2009), resulting in increasing feelings of loneliness (Shiovitz-Ezra et al., 2018). Individuals may also adopt the stereotypes of old age as a time of loneliness, as described in Levy's theory of stereotype embodiment (Levy, 2009). Last, age-based discriminatory practices that increase social exclusion of older adults because of mandatory retirement, for example, increase their risk of becoming lonely (Shiovitz-Ezra et al., 2018).

Research has found evidence of the ageism-loneliness association. In the American Health and Retirement Survey, perceptions of discrimination based on age significantly predicted feelings of loneliness five years later (Sutin et al., 2015). In another study, older adults who read negative texts about old age and old people subsequently reported stronger feelings of loneliness than did those who had read positive or neutral texts (Coudin & Alexopoulos, 2010). A study by Pikhartova et al. (2016), based on the ELSA, established a relationship between late-life loneliness stereotypes and feelings of loneliness several years later and found that both expectations and stereotypes of loneliness in old age predicted feelings of loneliness that became self-fulfilling prophecies. Recently, an online survey revealed that aging anxiety was associated with increased loneliness and depressive symptoms. Ageism was also found to moderate these associations, with stronger association between aging anxiety and loneliness in individuals with higher ageist perceptions (Bergman & Segel-Karpas, 2021).

A cross-sectional study conducted in Italy during the COVID-19 pandemic with a convenience sample of 1301 participants who completed an online questionnaire found that perceived age discrimination positively predicted loneliness (Donizzetti & Lagacé, 2022). Negative self-perceptions of aging

were associated with greater loneliness after adjustments for background, psychological, and COVID-related factors during a lockdown in Spain (Losada-Baltar et al., 2021). In a longitudinal follow-up study conducted at four time points during a mandatory lockdown in Spain, negative stereotypical views of aging were associated with loneliness and change for the worse in loneliness over time (Losada-Baltar et al., 2022). The last two COVID-19 studies used also an online platform for data collection.

There is empirical evidence of age differences in ageism, younger ages being more likely to report higher ageism scores (Rupp et al., 2005). Age differences were also found in the ageism-depression association. Younger participants reported greater depression following exposure to higher levels of ageism (Lyons et al., 2018). During the COVID-19 pandemic, younger chronological age was also related to greater loneliness (Losada-Baltar et al., 2021), but the differential effect of age on the ageism-loneliness association is yet to be explored.

In the present study, we examined empirically the ageism-loneliness association using prospective data from three points in time. Exploring ageism measured before the outbreak of COVID-19 enabled us to assess the association between ageism experienced before the COVID-19 outbreak and loneliness experienced in the summer of 2020 and 2021. This design allows addressing the short- and medium-term associations between ageism and loneliness in the COVID-19 context. Because both ageism and loneliness have become more prevalent during the pandemic (Ayalon, 2020), it is important to test for the ageism-loneliness association in the short and medium terms. We also tested for age differences in this association. We hypothesized that ageism is positively associated with loneliness in the short and medium terms, showing differences with age, but we suggested no direction for age differences. The data were gathered using traditional methods of leave-behind questionnaire (before the pandemic) and telephone interviews (during COVID-19). Because the digital literacy of older people is lower than that of younger ones, older people who participated in online surveys were not necessarily representative of the older population (Losada-Baltar et al., 2021). We controlled for background, health, and interpersonal contact factors based on previous studies addressing loneliness correlates during COVID-19 (Groarke et al., 2021; Hajek & König, 2022; Losada-Baltar et al., 2021).

Materials and Methods

Study Design and Participants

Data were derived from three data collection waves of the SHARE. SHARE is a panel and multi-disciplinary survey of community-dwelling older adults, aged 50 years and over, and their spouses or partners in 27 European

countries and Israel (Börsch-Supan et al., 2013). The questionnaires, including Wave 8, were administered in face-to-face computer-assisted personal interviews (CAPI) and by self-administration using leave-behind questionnaires. The CAPI were uniform across the SHARE countries, whereas the leave-behind questionnaires were country-based. With the outbreak of the COVID-19 pandemic, the CAPI data collection ended early in all SHARE countries (March, 2020). To capture the short- and medium-term effects of the outbreak, a supplemental telephone survey (SHARE Corona Survey, SCS) was administered to all SHARE panel members at two time points: summer of 2020 (SCS1) and 2021 (SCS2) (Scherpenzeel et al., 2020). Since SHARE Wave 4, including the two SCS, the project has been reviewed and approved by the Ethics Council of the Max Planck Society (<http://www.share-project.org/>). In the current analysis, we used data from the Israeli SHARE panel sample because the ageism scale was integrated only in the unique leave-behind questionnaire that was carried out in Israel in SHARE wave 8. The Hebrew University Committee for the Use of Human Subjects in Research has approved SHARE—the Israeli Panel. This study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline (Supplementary material: S1).

Figure 1 presents a flowchart of the participants selection for the present study. There were no age or gender differences between respondents with and without data on ageism, but respondents with ageism data were healthier ($t = -2.72$, $df = 1224$, $p < .01$).

Measures

Ageism was measured in SHARE-Israel wave 8 using 10 statements that were based on the Ageism Survey (Palmore, 2001). The scale asked about experiencing age-based negative discrimination in various areas of life, for example, in the labor market: “I was denied employment or promotion because of my age”; in the health system: “I was denied medical treatment because of my age”; in the financial domain: “I had difficulty getting a loan/taking out a mortgage because of my age” and in general: “I was patronized or ‘talked down to’ because of my age.” Responses were provided on a 3-point scale, ranging from 0 = Never to 2 = More than once. We summed the answers provided for the 10 ageism items and created the ageism scale ranging from 0 to 20, a higher score indicating increased prevalence of ageism. The scale showed good internal reliability in the current sample ($\alpha = .86$). The 10-item scale is presented in the online Supplementary material (S2).

Loneliness was measured identically in the two survey instruments: SCS1 (2020) and SCS2 (2021), using the direct question, “How much of the time do you feel lonely?”

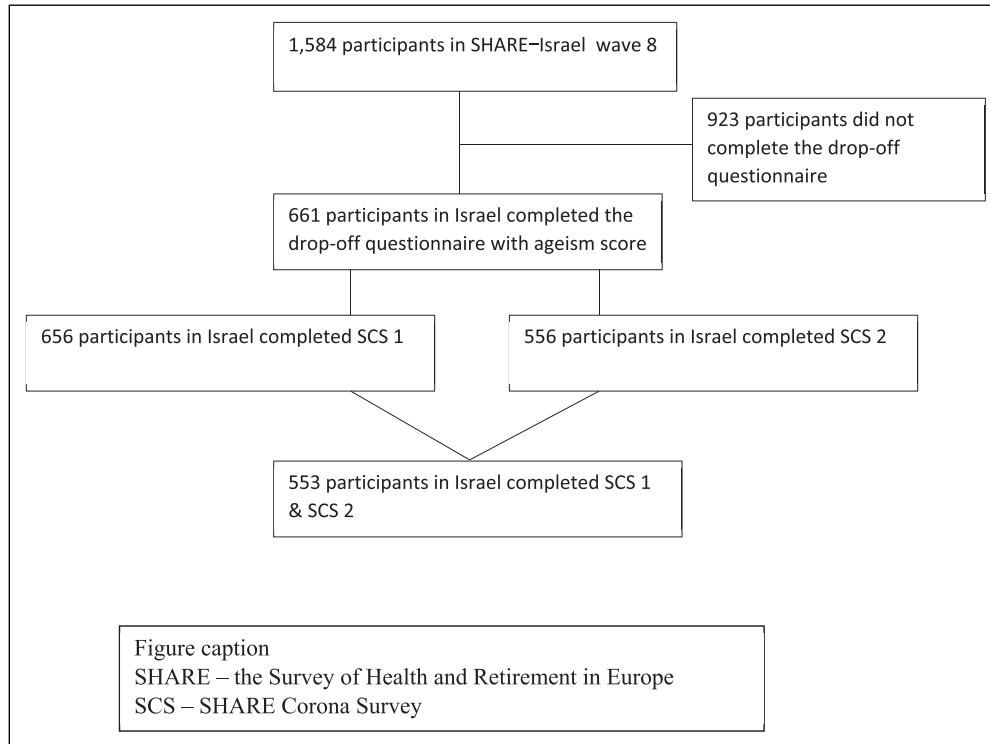


Figure 1. Flow diagram for participants selection.

Answers were provided on a three-point scale: 1 = Hardly ever or never, 2 = Some of the time, and 3 = Often. The direct loneliness question has been used extensively in many studies (Shiovitz-Ezra & Erlich, 2022; Sundström et al., 2009; Thurston & Kubzansky, 2009).

We controlled for several potential background, health, and social confounders that have previously been found associated with loneliness in later life. These controls were mostly measured at SCS1 and are presented as [Online Supplementary Material \(S3\)](#).

Data Analysis

The analysis included descriptive statistics of the study variables and bivariate analysis for the associations of the background, health, and social network measures, and of ageism, with loneliness in 2020 and in 2021, during the COVID-19 outbreak. In the summer of 2020, there was no lockdown in Israel, but the population and especially older people were asked to adhere to the guidelines of maintaining physical distance, observing hygiene rules, and wearing masks. In the summer of 2021, there was no lockdown in Israel, the vaccination campaign was in full swing, but the population was still asked to maintain the rules of social distancing and hygiene.

At the multivariate level, loneliness in the two COVID-19 waves was regressed on the study variables by means of three

models of ordinary least squares (OLS) regression. The first model included the sociodemographic, health, and social network characteristics. In the second model, the ageism measure was added to the controls. The third model included the two previous steps with an interaction term of ageism \times age to test for age differences. We used STATA 15 for the statistical analyses.

Results

[Tables 1](#) and [2](#) present the study variables. The mean age of the participants was 73.41 (SD = 8.09), with 34.54% in the young age group (50–69) ($N = 191$) and 65.46% in 70+ group ($N = 362$). The sample included 62.03% women ($N = 343$) vs. 37.97% men ($N = 210$). Participants had a moderate level of education ($M = 3.23$, SD = 1.63) and good perceived financial capacity ($M = 2.86$, SD = .93). They indicated good health before the outbreak of the pandemic ($M = 3.23$, SD = 1.63), and the majority did not experience depression during the pandemic (79.57%, $N = 440$). Almost 70% of the sample lived with a partner ($N = 383$) and had frequent electronic contact with their social network members during the COVID outbreak, in the summer of 2020 ($M = 3.70$, SD = .91). Face-to-face contact with the network was less common ($M = 2.25$, SD = .86).

[Table 2](#) presents descriptive data of the core variables, ageism, and loneliness. Respondents reported infrequent

personal experience with age-based discriminatory behaviors ($M = 2.36, SD = 3.55$). Overall, 50% of the sample did not experience any type of discrimination based on age, and the other 50% experienced ageism to some degree (Median = 1). In both COVID-19 waves, the respondents reported moderate levels of loneliness (wave 2020 $M = 1.41, SD = .68$; wave 2021 $M = 1.45, SD = .68$).

The bivariate associations of the study variables and the loneliness outcome variables are shown in Table 3. Of the socioeconomic background variables, education and perceived financial capacity were negatively associated with loneliness measured in the summer of 2020 and 2021 ($\beta = -.11, SE = .02, p < .001$; $\beta = -.06, SE = .02, p < .001$ for education; $\beta = -.12, SE = .03, p < .001$; $\beta = -.10, SE = .03, p < .001$ for financial capacity). Better education and financial capacity were associated with lower feelings of loneliness at two points in time during the outbreak. The 70+ group reported more loneliness in 2020 ($\beta = .17, SE = .06, p < .01$), but this age-loneliness association was not observed in 2021. Women reported more loneliness than did men but only in the wave of 2021 ($\beta = .14, SE = .06, p < .05$).

Self-rated health was strongly and negatively associated with loneliness measured in 2020 and 2021 ($\beta = -.18, SE = .03, p < .001$; $\beta = -.18, SE = .03, p < .001$, respectively). Depressive mood, however, was positively associated with loneliness in both waves of data collection during the outbreak ($\beta = .39, SE = .07, p < .001$; $\beta = .32, SE = .07, p < .001$, respectively). The two network variables were also significantly associated with loneliness during the pandemic. Having a partner in the household and having more frequent electronic contact with one's social network members were associated with lower feelings of loneliness in both 2020 and 2021 ($\beta = -.35, SE = .06, p < .001$; $\beta = -.32, SE = .06, p < .001$ for partner in the household; $\beta = -.19, SE = .03, p < .001$; $\beta = -.16, SE = .03, p < .001$ for electronic contact). By contrast, face-to-face contact showed no significant association with loneliness in either COVID-19 wave.

Experiencing ageism before the COVID-19 outbreak was positively associated with loneliness measured in both 2020 and 2021 COVID waves ($\beta = .02, SE = .01, p < .01$; $\beta = .03, SE = .01, p < .001$, respectively). Greater ageism was related to more frequent feelings of loneliness during the COVID-19 pandemic, the association being slightly stronger in the second COVID-19 wave (Pearson correlation $r = .12$ and $r = .15$, respectively).

In the multivariate analysis, where the background, health, and social network characteristics were included in Model 1 (Table 4), only education, self-rated health, and depression retained their significant association with loneliness measured in 2020. Higher education and better perceived health were associated with less loneliness ($\beta = -.07, SE = .02, p < .001$; $\beta = -.10, SE = .03, p < .01$, respectively). Depression was positively associated with loneliness in 2020 ($\beta = .25, SE = .07, p < .001$). Having a partner in the household and frequent electronic contact

Table 1. Univariate Description of Categorical Study Variables (N = 553).

Variables		n	%
Age	50–69	191	34.54
	70+	362	65.46
Gender	Women	343	62.03
	Men	210	37.97
Depression	Not depressed	440	79.57
	Depressed	113	20.43
Living arrangement	No partner in household	170	30.74
	Having partner in household	383	69.26

Table 2. Univariate Description of Continuous Study Variables (N = 553).

Variables	n	Mean (SD)	Range	Missing (%)
Education	549	3.23 (1.63)	0–5	.72
Financial capacity	498	2.86 (.93)	1–4	9.95
Self-rated health	553	3.04 (1.07)	1–5	.00
Face-to-face contact	549	2.25 (.86)	1–5	.72
Electronic contact	544	3.70 (.91)	1–5	1.63
Ageism	553	2.36 (3.55)	0–17	.00
Loneliness 2020 wave	549	1.41 (.68)	1–3	.72
Loneliness 2021 wave	551	1.45 (.68)	1–3	.36

Table 3. Bivariate Associations Between the Study Variables and the Loneliness Outcomes (OLS Regression).

	Loneliness 2020 wave		Loneliness 2021 wave	
	β (SE)	β	β (SE)	β
Women	.09 (.06)	.07	.14* (.06)	.10
Age 70+	.17** (.06)	.12	.12 (.06)	.08
Education	-.11*** (.02)	-.27	-.06*** (.02)	-.15
Financial capacity	-.12*** (.03)	-.16	-.10*** (.03)	-.14
Self-rated health	-.18*** (.03)	-.29	-.18*** (.03)	-.28
Depressed	.39*** (.07)	.23	.32*** (.07)	.19
Partner in household	-.35*** (.06)	-.24	-.32*** (.06)	-.22
Face-to-face contact	-.00 (.03)	-.01	-.00 (.03)	-.01
Electronic contact	-.19*** (.03)	-.26	-.16*** (.03)	-.21
Loneliness 2020 wave	—	—	.56*** (.04)	.56
Loneliness 2021 wave	.56*** (.04)	.56	—	—
Ageism	.02** (.01)	.13	.03*** (.01)	.15

Note: *** $p < .001$, ** $p < .01$, * $p < .05$.

with the network were associated with less loneliness in 2020 ($\beta = -.26, SE = .06, p < .001$; $\beta = -.13, SE = .03, p < .001$, respectively). These background, health, and social network factors explained 22% of the variance in the loneliness outcome measured in 2020.

Model 2 added the ageism variable to the regression equation and revealed that ageism retained its significant association with loneliness even after adjusting for socioeconomic, health, and social network factors ($\beta = .03$, $SE = .01$, $p < .001$). This model explained almost a quarter of the variance in the loneliness outcome. Significant interaction with age was also found in Model 3 ($\beta = .04$, $SE = .02$, $p < .05$) in 2020. Postestimation analysis revealed that the ageism-loneliness association was significant only in the older age group, not in the younger one, so that experiencing ageism had a considerable short-term deleterious effect on loneliness but for the 70+ group only (Figure 2).

Predicting loneliness, a year later in 2021 provides a somewhat different picture (Table 4). Gender and health characteristics were significantly associated with loneliness in 2021. Women reported greater loneliness than men ($\beta = .13$, $SE = .06$, $p < .05$), and better perceived health remained associated with less loneliness ($\beta = -.11$, $SE = .03$, $p < .001$). Depression measured in 2020 was positively associated with loneliness measured in 2021 ($\beta = .23$, $SE = .07$, $p < .01$). In 2021, both network characteristics retained their negative association with loneliness. Having a partner in the household and having frequent contact with the social network using digital means protected against loneliness in the medium term in 2021 ($\beta = -.22$, $SE = .06$, $p < .001$; $\beta = -.13$, $SE = .03$, $p < .001$, respectively). Overall, 17% of the variance in the loneliness outcome measured in 2021 was explained by the background, health, and social characteristics.

In model 2, we added the ageism variable and found that it had the strongest association with the loneliness outcome measured in 2021. Experiencing ageism before the COVID-19 outbreak showed a positive association with loneliness experienced more than a year into the pandemic ($\beta = .04$, $SE = .01$, $p < .001$). This finding attests to a medium-term effect of ageism on loneliness, with the model that included the ageism term explaining approximately 21% of the variance in the loneliness outcome. In a sensitivity analysis, we excluded respondents who reported depressive mood at baseline and found the same trend, with significant associations between ageism and loneliness in both 2020 and 2021. We also controlled for loneliness at baseline (before the outbreak of COVID-19), and here too the associations between ageism and loneliness in 2020 and 2021 remained significant (both analyses are presented in the [online Supplementary material: S4.1 and S4.2](#)).

We found no age differences in the ageism-loneliness association. Both age groups showed a strong positive association between ageism and loneliness (Figure 3), even after adjusting for background, health, and social network factors. Individuals aged 50 and over who experienced higher levels of ageism before the outbreak of COVID-19 were even more likely to feel lonely a year into the pandemic.

Discussion

This study addressed three pandemics that exercise a substantial effect on our everyday lives. The COVID-19 pandemic entered our lives toward the end of 2019. This pandemic has turned the spotlight on two other negative social phenomena that have been present before but were intensified by the COVID-19 pandemic and the various measures taken to halt its spread: loneliness and ageism (Ayalon, 2020). The current analysis confirmed the short- and medium-term toll that ageism extracts in loneliness from older adults. In both 2020 and 2021, experiencing age-based discrimination was associated with increased loneliness, and the association remained significant even after adjusting for demographic, health, and social variables.

The association between ageism and loneliness has been reported in past research and supported by theory (Shiovitz-Ezra et al., 2018). As noted, there are several possible explanations for this association, including social rejection directed by society at older people and rejection by older people of other older people because of their age. According to Smart Richman and Leary's multimotive theory, prolonged rejection in interpersonal experiences motivates avoidant behavioral responses and social withdrawal (Smart Richman & Leary, 2009), which may in turn increase loneliness. The division of our social life by chronological age, which allows limited contact between people of different age groups, is another possible explanation (Hagestad & Uhlenberg, 2005). The association between ageism and loneliness was confirmed by studies conducted during the COVID-19 pandemic, with negative self-perceptions of aging being related to loneliness experienced during the period of lockdown (Losada-Baltar et al., 2021, 2022). Our study further confirms this association by demonstrating its consistency across two waves of data collection over a three-year period.

The present study contributes to the literature also by demonstrating age differences in the association between ageism and loneliness. Although in 2021 there was no longer a significant interaction between ageism and chronological age, in 2020, the interaction between ageism and age was significant. Significant association between ageism and loneliness was evident only in respondents of the 70+ age group, suggesting that as age increases, the effects of exposure to ageism on one's sense of loneliness become evident. This is inconsistent with past research, which has found that the association between ageism and depression was stronger in younger than in older ages (Lyons et al., 2018). A possible explanation of this finding is that during the COVID-19 pandemic and the increased ageist public discourse, experiencing ageism had a particularly negative effect on the older population.

COVID-19 has been portrayed as a pandemic of ageism (Ayalon, 2020). Especially during the first wave of the pandemic, in the first half of 2020, governments worldwide have used various measures to halt the spread of the virus to

Table 4. The Associations Between Ageism and Loneliness Outcomes During Covid-19 (OLS Regressions).

	Loneliness 2020 wave						Loneliness 2021 wave					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β
Women	.04(.06)	.03	.05(.06)	.04	.06(.06)	.04	.13*(.06)	.09	.16*(.06)	.11	.15*(.06)	.11
Age 70+	.05(.06)	.04	.06(.06)	.04	-.02(.07)	-.01	.06(.06)	.05	.08(.06)	.06	.09(.07)	.06
Education	-.07***(.02)	-.17	-.06***(.02)	-.14	-.05**(.02)	-.13	-.02(.02)	-.05	-.01(.02)	-.03	-.01(.02)	-.03
Financial capacity	-.04(.03)	-.05	-.03(.03)	-.04	-.03(.03)	-.04	-.02(.03)	-.03	-.01(.03)	-.01	-.01(.03)	-.01
Self-rated health	-.10**(.03)	-.15	-.09**(.03)	-.14	-.09**(.03)	-.14	-.11***(.03)	.17	-.11***(.03)	-.17	-.11***(.03)	-.17
Depressed	.25***(.07)	.15	.25***(.07)	.15	.25***(.07)	.15	.23**(.07)	.14	.23**(.07)	.14	.23**(.07)	.14
Partner in household	-.26***(.06)	-.18	-.27***(.06)	-.19	-.27***(.06)	-.19	-.22***(.06)	-.15	-.24***(.06)	-.16	-.24***(.06)	-.16
Face-to-face contact	.05(.03)	.06	.03(.03)	.04	.03(.03)	.04	.02(.04)	.03	.00(.03)	.01	.00(.03)	.01
Electronic contact	-.13***(.03)	-.17	-.14***(.03)	-.18	-.13***(.03)	-.17	-.13***(.03)	-.17	-.13***(.03)	-.17	-.13***(.03)	-.17
Ageism			.03***(.01)	.15	.01(.01)	.04			.04***(.01)	.21	.04***(.01)	.21
Interaction terms												
Ageism * Age 70+					.04*(.02)	.16					-.00(.02)	-.01
Observations	485		485		485		485		485		485	
R-squared	.2168		.2393		.2475		.1693		.2077		.2077	

Note: ***p < .001, **p < .01, *p < .05.

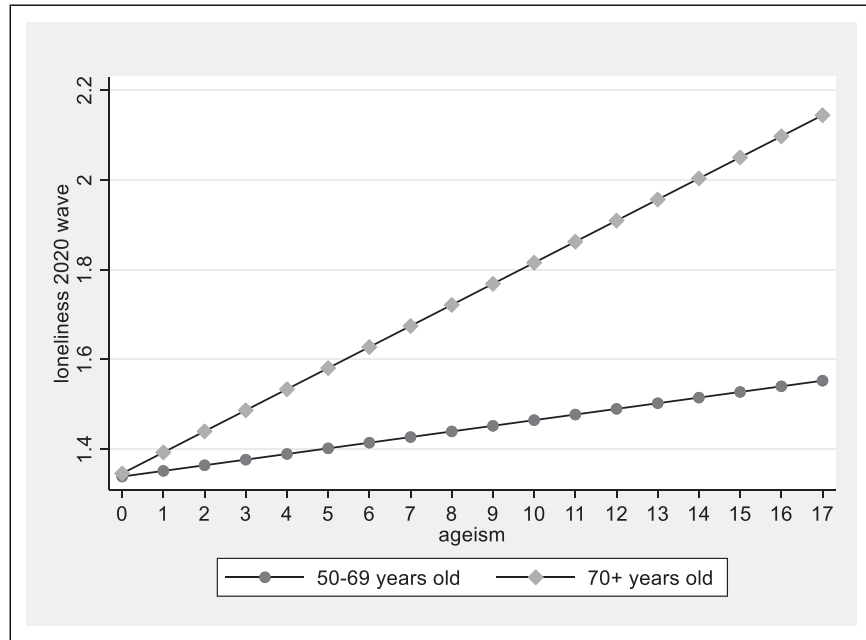


Figure 2. Association between ageism and loneliness 2020 wave, by age group.

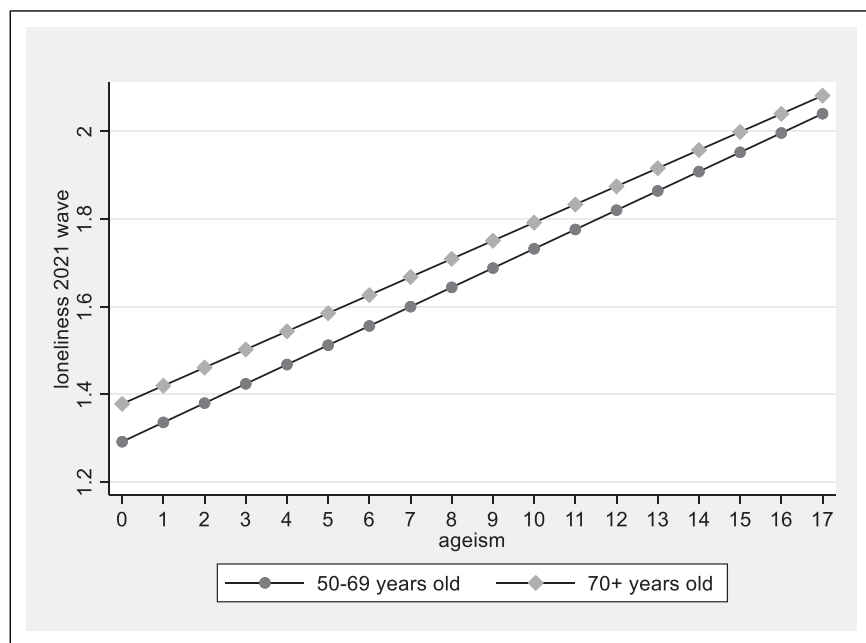


Figure 3. Association between ageism and loneliness 2021 wave, by age group.

protect populations at risk and above all, the healthcare systems. As older people were defined as a group at risk, many countries have used measures that differentiated in access to goods and services based on chronological age. The overall message in the media was that older persons were a vulnerable group that burdened the healthcare system and was not necessary for the financial benefit and sustainability of society. This message has penetrated the mindset of many

who regarded older people as vulnerable and a burden to society (Cohn-Schwartz & Ayalon, 2021). Many older people have adopted this view, possibly accounting for the fact that in 2021 there was no longer a significant interaction between ageism and age. Regardless of their age, people over 50, who have been included in the group of “elders” during the pandemic, reported a greater sense of loneliness following perceived exposure to ageism.

The present study has several limitations. First, it did not use an experimental design, therefore we cannot draw causal inferences, only suggest a possible temporal path. Moreover, according to the regulatory loop model of loneliness, lonely people tend to perceive the social world as more threatening, to have more negative social expectations, and to be more alert to negative social messages that may reinforce their loneliness (Hawkley & Cacioppo, 2010). Loneliness may therefore contribute to an increased perception of age discrimination, which in turn increases loneliness. Future research could use reciprocal models to better understand the directionality of the effects. Another limitation has to do with the fact that loneliness was measured using a single common direct question rather than a valid scale, mostly because of the limited time available on phone surveys. Moreover, we did not investigate the typology of loneliness based on the duration over which it was experienced because of the limited time between the two COVID-19 surveys (1 year). Future studies could use the next SHARE waves to explore the association between ageism and transient vs. persistent loneliness.

The present study used an age-based discrimination scale to measure ageism and found that 50% have not experienced ageism at all. We assume that measuring age-biased attitudes, beliefs, and expectations from older adults and those held by older people would have yielded higher levels of ageism (e.g., Moieni et al., 2021). It is also possible that if people were better informed about what ageism was, they would be more likely to acknowledge the experience of ageism (Okun & Ayalon, 2022). Future research can benefit from assessing the experience of ageism over time to evaluate whether the COVID-19 pandemic has indeed triggered another pandemic of ageism, which has not only short- and medium-term effects, as shown by the present study, but also long-term ones.

The findings of the present study point to the important place that ageism plays in our social life. Past research has identified several effective interventions to combat ageism (WHO, 2021). In addition to legal interventions that ban age discrimination and explicitly differentiate between right and wrong with regard to age bias (WHO, 2021), both educational interventions that provide information about ageism and intergenerational contact that fosters cooperation and engagement between the generations have been shown to be effective in reducing negative ageist attitudes toward older people (Burnes et al., 2019). Relying on such interventions to reduce ageism could alleviate loneliness in older people.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work

was supported by the H2020 SHARE-COVID19 project [grant agreement no. 101015924].

IRB Approval

The SHARE project is reviewed and approved by the Ethics Council of the Max Planck Society (<http://www.share-project.org/>).

Data Availability

This paper uses data from SHARE Waves 8 (DOIs: 10.6103/SHARE.w8.800, 10.6103/SHARE.w8ca.800), see Börsch-Supan et al. (2013) for methodological details. The SHARE data collection has been funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982, DASISH: GA N°283646) and Horizon 2020 (SHARE-DEV3: GA N°676536, SHARE-COHESION: GA N°870628, SERISS: GA N°654221, SSHOC: GA N°823782, SHARE-COVID19: GA N°101015924) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, and VS 2020/0313. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, HHSN271201300071 C, RAG052527 A) and from various national funding sources is gratefully acknowledged (see www.share-project.org). SHARE Israel is currently funded by the Ministry for Social Equality and 7 other government bodies.

ORCID iDs

Sharon Shiovitz-Ezra  <https://orcid.org/0000-0002-7967-9137>
Liat Ayalon  <https://orcid.org/0000-0003-3339-7879>

Supplemental Material

Supplemental material for this article is available online.

References

- Akhter-Khan, S. C., Tao, Q., Ang, T. F. A., Itchapurapu, I. S., Alosco, M. L., Mez, J., Piers, R. J., Steffens, D. C., Au, R., & Qiu, W. Q. Q (2021). Associations of loneliness with risk of Alzheimer's disease dementia in the Framingham Heart Study. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, 17(10), 1619–1627. <https://doi.org/10.1002/alz.12327>
- Ayalon, L.L (2020). There is nothing new under the sun: Ageism and intergenerational tension in the age of the COVID-19 outbreak. *International Psychogeriatrics*, 32(10), 1221–1224. <https://doi.org/10.1017/S1041610220000575>
- Ayalon, L., & Shiovitz-Ezra, S.S (2011). The relationship between loneliness and passive death wishes in the second half of life. *International Psychogeriatrics*, 23(10), 1677–1685. <https://doi.org/10.1017/S1041610211001384>

- Bergman, Y. S., & Segel-Karpas, D. D. (2021). Aging anxiety, loneliness, and depressive symptoms among middle-aged adults: The moderating role of ageism. *Journal of Affective Disorders, 290*(1), 89–92. <https://doi.org/10.1016/j.jad.2021.04.077>
- Berg-Weger, M., & Morley, J. E. E. (2020). *Loneliness in old age: An unaddressed health problem*. Springer.
- BörschSupan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S., & Zuber, S., (2013). Data resource profile: The survey of health, ageing and retirement in Europe (SHARE). *International Journal of Epidemiology, 42*(4), 992–1001. <https://doi.org/10.1093/ije/dyt088>
- Boss, L., Kang, D.-H., & Branson, S. S. (2015). Loneliness and cognitive function in the older adult: A systematic review. *International Psychogeriatrics, 27*(4), 541–553. <https://doi.org/10.1017/S1041610214002749>
- Burnes, D., Sheppard, C., Henderson, C. R., Jr., Wassel, M., Cope, R., Barber, C., & Pillemer, K.K. (2019). Interventions to reduce ageism against older adults: A systematic review and meta-analysis. *American Journal of Public Health, 109*(8), e1–e9. <https://doi.org/10.2105/ajph.2019.305123>
- Cacioppo, J. T., Hawkley, L. C., & Thisted, R. A.A. (2010). Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago health, aging, and social relations study. *Psychology and Aging, 25*(2), 453–463. <https://doi.org/10.1037/a0017216>
- Cohn-Schwartz, E., & Ayalon, L.L. (2021). Societal views of older adults as vulnerable and a burden to society during the COVID-19 outbreak: Results from an Israeli nationally representative sample. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 76*(7), e313–e317. <https://doi.org/10.1093/geronb/gbaa150>
- Coudin, G., & Alexopoulos, T.T. (2010). “Help me! I’m old!” How negative aging stereotypes create dependency among older adults. *Aging & Mental Health, 14*(5), 516–523. <https://doi.org/10.1080/13607861003713182>
- Creese, B., Khan, Z., Henley, W., O’Dwyer, S., Corbett, A., Vasconcelos Da Silva, M., Mills, K., Wright, N., Testad, I., Aarsland, D., & Ballard, C. (2021). Loneliness, physical activity, and mental health during COVID-19: A longitudinal analysis of depression and anxiety in adults over the age of 50 between 2015 and 2020. *International Psychogeriatrics, 33*(5), 505–514. <https://doi.org/10.1017/S1041610220004135>
- Cuddy, A. J., & Fiske, S. T.T. (2002). Doddering but dear: Process, content, and function in stereotyping of older persons. In T. Nelson (Ed.), *Ageism stereotyping and prejudice against older persons* (pp. 3–26). MIT Press.
- Donizzetti, A. R., & Lagacé, M. M. (2022). COVID-19 and the elderly’s mental illness: The role of risk perception, social isolation, loneliness and ageism. *International Journal of Environmental Research and Public Health, 19*(8), 4513. <https://doi.org/10.3390/ijerph19084513>
- Groarke, J. M., McGlinchey, E., McKenna-Plumley, P. E., Berry, E., Graham-Wisener, L., & Armour, C. C. (2021). Examining temporal interactions between loneliness and depressive symptoms and the mediating role of emotion regulation difficulties among UK residents during the COVID-19 lockdown: Longitudinal results from the COVID-19 psychological well-being study. *Journal of Affective Disorders, 285*(1), 1–9. <https://doi.org/10.1016/j.jad.2021.02.033>
- Grossman, E. S., Hoffman, Y. S. G., Palgi, Y., & Shrira, A.A. (2021). COVID-19 related loneliness and sleep problems in older adults: Worries and resilience as potential moderators. *Personality and Individual Differences, 168*(1), 110371. <https://doi.org/10.1016/j.paid.2020.110371>
- Hagestad, G. O., & Uhlenberg, P. P. (2005). The social separation of old and young: A root of ageism. *Journal of Social Issues, 61*(2), 343–360. <https://doi.org/10.1111/j.1540-4560.2005.00409.x>
- Hajek, A., & König, H. H. (2022). Prevalence and correlates of loneliness, perceived and objective social isolation during the COVID-19 pandemic. Evidence from a representative survey in Germany. *Social Psychiatry and Psychiatric Epidemiology, 57*(10), 1969–1978. <https://doi.org/10.1007/s00127-022-02295-x>
- Hawkley, L. C., & Cacioppo, J. T.T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine, 40*(2), 218–227. <https://doi.org/10.1007/s12160-010-9210-8>
- Hawkley, L. C., Masi, C. M., Berry, J. D., & Cacioppo, J. T.T. (2006). Loneliness is a unique predictor of age-related differences in systolic blood pressure. *Psychology and Aging, 21*(1), 152–164. <https://doi.org/10.1037/0882-7974.21.1.152>
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science, 10*(2), 227–237. <https://doi.org/10.1177/1745691614568352>
- Iversen, T. N., Larsen, L., & Solem, P. E. E. (2009). A conceptual analysis of ageism. *Nordic Psychology, 61*(3), 4–22. <https://doi.org/10.1027/1901-2276.61.3.4>
- Jeste, D. V., Lee, E. E., & Cacioppo, S. S. (2020). Battling the modern behavioral epidemic of loneliness: Suggestions for research and interventions. *JAMA Psychiatry, 77*(6), 553–554. <https://doi.org/10.1001/jamapsychiatry.2020.0027>
- Kang, H., & Kim, H. H. (2022). Ageism and psychological well-being among older adults: A systematic review. *Gerontology & Geriatric Medicine, 8*(8), 23337214221087023. <https://doi.org/10.1177/23337214221087023>
- Levy, B. B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science, 18*(6), 332–336. <https://doi.org/10.1111/j.1467-8721.2009.01662.x>
- Losada-Baltar, A., Jiménez-Gonzalo, L., Gallego-Alberto, L., Pedroso-Chaparro, M. D. S., Fernandes-Pires, J., & Márquez-González, M. M. (2021). “We are staying at home.” Association of self-perceptions of aging, personal and family resources, and loneliness with psychological distress during the

- lock-down period of COVID-19. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 76(2), e10–e16. <https://doi.org/10.1093/geronb/gbaa048>
- Losada-Baltar, A., Martínez-Huertas, J. Á., Marquez-Gonzalez, M., Jiménez-Gonzalo, L., Pedroso-Chaparro, M. D. S., Gallego-Alberto, L., Fernandes-Pires, J., & Márquez-González, M. M. (2022). Longitudinal correlates of loneliness and psychological distress during the lockdown situation due to COVID-19. Effects of age and self-perceptions of aging. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 77(4), 652–660. <https://doi.org/10.1093/geronb/gbab012>
- Lyons, A., Alba, B., Heywood, W., Fileborn, B., Minichiello, V., Barrett, C., Hinchliff, S., Malta, S., & Dow, B. (2018). Experiences of ageism and the mental health of older adults. *Aging & Mental Health*, 22(11), 1456–1464. <https://doi.org/10.1080/13607863.2017.1364347>
- Moieni, M., Seeman, T. E., Robles, T. F., Lieberman, M. D., Okimoto, S., Lengacher, C., Irwin, M. R., & Eisenberger, N. I. I. (2021). Generativity and social well-being in older women: Expectations regarding aging matter. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 76(2), 289–294. <https://doi.org/10.1093/geronb/gbaa022>
- Okun, S., & Ayalon, L.L. (2022). Ageism: The importance of the linguistic concept for the construction of the experience. *Ageing and Society*, 1(1), 1–15. <https://doi.org/10.1017/s0144686x22000708>
- Palgi, Y., Shrira, A., Ring, L., Bodner, E., Avidor, S., Bergman, Y., & Hoffman, Y. Y. (2020). The loneliness pandemic: Loneliness and other concomitants of depression, anxiety and their comorbidity during the COVID-19 outbreak. *Journal of Affective Disorders*, 275(1), 109–111.
- Palmore, E.E. (2001). The ageism survey: First findings. *The Gerontologist*, 41(5), 572–575. <https://doi.org/10.1093/geront/41.5.572>
- Peplau, L. A., & Perlman, D.D. (1982). Perspectives on loneliness. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 1–18). Wiley.
- Perlman, D., & Peplau, L. A. A. (1998). *Loneliness. Encyclopedia of Mental health*. New York Academic Press.
- Pikhartova, J., Bowling, A., & Victor, C.C. (2016). Is loneliness in later life a self-fulfilling prophecy? *Aging & Mental Health*, 20(5), 543–549. <https://doi.org/10.1080/13607863.2015.1023767>
- Rafnsson, S. B., Orrell, M.M., d’Orsi, E., Hogervorst, E., & Steptoe, A. (2020). Loneliness, social integration, and incident dementia over 6 Years: Prospective findings from the English longitudinal study of Ageing Loneliness, social integration, and incident dementia over 6 Years: Prospective findings from the English longitudinal study of ageing. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 75(1), 114–124. <https://doi.org/10.1093/geronb/gbx087>
- Rupp, D. E., Vodanovich, S. J., & Credé, M.M. (2005). The multidimensional nature of ageism: Construct validity and group differences. *The Journal of Social Psychology*, 145(3), 335–362.
- Scherpenzeel, A., Axt, K., Bergmann, M., Douhou, S., Oepen, A., Sand, G., Schuller, K., Stuck, S., Wagner, M., & I Börsch-Supan, A. (2020). CLE (SHARE). *Survey Research Methods*, 14(3), 217–221.
- Shiovitz-Ezra, S., & Erlich, B.B. (2022). Loneliness patterns and sleep problems after the initial outbreak of COVID-19: Findings from the survey of health, aging and retirement in Europe (SHARE). *Educational Gerontology*, 49(1), 27–37. <https://doi.org/10.1080/03601277.2022.2067960>
- Shiovitz-Ezra, S., & Parag, O.O. (2019). Does loneliness ‘get under the skin’? Associations of loneliness with subsequent change in inflammatory and metabolic markers. *Aging & Mental Health*, 23(10), 1358–1366. <https://doi.org/10.1080/13607863.2018.1488942>
- Shiovitz-Ezra, S., Shemesh, J., & McDonnell, M.M. (2018). Pathways from ageism to loneliness. In L. Ayalon & Tesch-Römer (Eds.), *Contemporary perspectives on ageism* (pp. 131–147). Springer.
- Shrira, A., Hoffman, Y., Bodner, E., & Palgi, Y.Y. (2020). COVID-19 related loneliness and psychiatric symptoms among older adults: The buffering role of subjective age. *The American Journal of Geriatric Psychiatry*, 28(11), 1200–1204. <https://doi.org/10.1016/j.jagp.2020.05.018>
- Smart Richman, L., & Leary, M. R.R. (2009). Reactions to discrimination, stigmatization, ostracism, and other forms of interpersonal rejection: A multimotive model. *Psychological Review*, 116(2), 365–383. <https://doi.org/10.1037/a0015250>
- Spithoven, A. W. M., Cacioppo, S., Goossens, L., & Cacioppo, J. T. (2019). Genetic contributions to loneliness and their relevance to the evolutionary theory of loneliness. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, 14(3), 376–396. <https://doi.org/10.1177/1745691618812684>
- Stickley, A., Matsubayashi, T., & Ueda, M.M. (2021). Loneliness and COVID-19 preventive behaviours among Japanese adults. *Journal of Public Health (Oxford, England)*, 43(1), 53–60. <https://doi.org/10.1093/pubmed/ftaa151>
- Sundström, G., Fransson, E., Malmberg, B., & Davey, A.A. (2009). Loneliness among older Europeans. *European Journal of Ageing*, 6(4), 267–275. <https://doi.org/10.1007/s10433-009-0134-8>
- Surkalim, D. L., et al. (2022). The prevalence of loneliness across 113 countries: systematic review and meta-analysis. *BMJ*, 376. <https://doi.org/10.1136/bmj-2021-067068>
- Sutin, A. R., Stephan, Y., Carretta, H., & Terracciano, A. A. (2015). Perceived discrimination and physical, cognitive, and emotional health in older adulthood. *The American Journal of Geriatric Psychiatry*, 23(2), 171–179. <https://doi.org/10.1016/j.jagp.2014.03.007>
- Tao, Q., Akhter-Khan, S. C., Ang, T. F. A., DeCarli, C., Alosco, M. L., Mez, J., Killiany, R., Devine, S., Rokach, A., Itchapurapu, I. S., Zhang, X., Lunetta, K. L., Steffens, D. C.,

- Farrer, L. A., Greve, D. N., Au, R., & Qiu, W. Q. (2022). Different loneliness types, cognitive function, and brain structure in midlife: Findings from the Framingham Heart Study. *EClinicalMedicine*, 53(12), 101643. <https://doi.org/10.1016/j.eclinm.2022.101643>
- Thurston, R. C., & Kubzansky, L. D. D. (2009). Women, loneliness, and incident coronary heart disease. *Psychosomatic Medicine*, 71(8), 836.
- van Tilburg, T. G., Steinmetz, S., Stolte, E., van der Roest, H., & de Vries, D. H. (2021). Loneliness and mental health during the COVID-19 pandemic: A study among Dutch older adults. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 76(7), e249–e255. <https://doi.org/10.1093/geronb/gbaa111>
- WHO. (2021). *Global report on ageism*. WHO.