

Reducing ageism toward older adults and highlighting older adults as contributors during the COVID-19 pandemic

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Abstract

The COVID-19 pandemic exacerbated ageism (stereotyping, prejudice, and discrimination) toward older adults in the United States, highlighting the belief that older adults are a burden. Prior to the pandemic, a growing body of research sought to reduce ageism using the PEACE (Positive Education about Aging and Contact Experiences) model. Extending that research, participants were randomly assigned to watch three videos (less than 10 min total) that challenged stereotypes about aging and older adults, depicted positive intergenerational contact, and highlighted older adults as contributors to society (experimental condition) or three videos on wallpaper (control condition). Experimental participants (undergraduate students in Study 1 and a national community sample of young adults in Study 2) reported increased endorsement of older adults as contributors to society and positive stereotypes of older adults. In addition, in Study 2, negative stereotypes of older adults and views of intergenerational conflict were also reduced among experimental (vs. control) participants. These promising findings show that relatively brief ageism reduction interventions are effective during the pandemic and for the first time, that the perception of older adults as contributors to society can be increased. Future directions and implications for social policies are discussed.

INTRODUCTION

Historically, older adults have been valued as contributors to their communities as carriers and distributors of key cultural knowledge in societies around the world (Nelson, 2005). Positive views of older adults in modern culture as capable, active, and contributors to society (e.g., providers of childcare to grandchildren, as volunteers in the community) are less common. In the past few decades, researchers, gerontologists, and public health officials have raised concerns about ageism toward older adults including rising rates of abuse (economic, physical, psychological, and sexual), discrimination (in employment and healthcare) and negative depictions of older adults (Ayalon & Tesch-Roemer, 2018; Levy et al., 2020; Levy & Macdonald, 2016; Lytle et al., 2022; Nelson, 2016; Palmore, 1990). Older adults have often been portrayed negatively as senile, sickly, and a burden on families, healthcare, the economy, and society as a whole in countries such as Canada, China, Colombia, Israel, the United Kingdom, and the United States (Abrams et al., 2015; Bai et al., 2016; Cohn-Schwartz & Ayalon, 2021; Derrer-Merk et al., 2022; Levy & Apriceno, 2019; North & Fiske, 2013b; Ramírez et al., 2019; Sutter et al., 2022; WHO, 2021).

During the COVID-19 pandemic, the burden narrative about older adults (e.g., belief that older adults use a disproportionate amount of medical resources, were the predominant reason behind lockdowns) has flourished as a result of an overwhelmed economy and healthcare system in countries such as Australia, Canada, Israel, U.K., and the U.S. (Ayalon et al., 2021; Ayalon, 2020; Cohn-Schwartz & Ayalon, 2021; Kornadt et al., 2021a; Lichtenstein, 2021). The burden narrative was partially fueled by epidemiological data that older adults were at the greatest risk of mortality from COVID-19. Although the risk of severe illness and mortality from COVID-19 does increase with age (CDC, 2021), the reliance on chronological age overshadows other important variables for assessing risk, including the presence of a pre-existing condition(s), compromised immune systems, or living in residential facilities (Maxfield et al., 2021; Previtali et al., 2020; Verbruggen et al., 2020). Thus, the oversimplification of age as a risk factor for COVID-19 and the framing of older adults as a homogenous vulnerable group reinforces negative views of older adults as burdens (Meisner, 2021). In a qualitative analysis of older adults' experiences during COVID-19, many reported being aware of the media's framing of older adults as a uniformly frail and vulnerable group (McDarby et al., 2022).

Taken together, the COVID-19 pandemic has exacerbated ageism as older adults were the targets of negative stereotypes (e.g., burdensome, frail, vulnerable) and discriminated against in terms of healthcare (e.g., triaging based on age; vaccine prioritization—see Lloyd-Sherlock et al., 2022) and employment (Ayalon et al., 2021; Fraser et al., 2020; Monahan et al., 2020; Swift & Chasteen, 2021). As ageism increases so do the many negative physical and mental health impacts of aging which have been thoroughly documented. B. Levy and colleagues work (e.g., Levy et al., 2002). In alignment with stereotype embodiment theory (Levy, 2009), in which negative age stereotypes are internalized over the course of one's life and individuals come to embody said stereotypes as they age, adults ages 55 and over who perceived that societal respect for older persons diminished during the COVID-19 pandemic reported greater declines in their subjective memory (Cohn-Swartz et al., 2022).

It is timely to address ageism toward older adults and specifically contemporary manifestations of ageism in terms of the burden narrative about older adults. Accordingly, in this paper, we test a novel ageism-reduction intervention with young adults in the U.S. that builds on a theoretical model (PEACE: Positive Education about Aging and Contact Experiences) for reducing ageism by adding a component to specifically address and challenge the spotlight on older adults as a burden on modern society. Before providing background on the intervention, we elaborate on the

historical trends in seeing older adults as contributors versus burdens as well as how negative views of aging and older adults fuels intergenerational tension.

Older adults as contributors versus burden on societies worldwide

In prehistoric and agrarian societies, older adults were typically viewed as the wise keepers and teachers of historical and cultural traditions until the printing press diminished their role (Branco & Williamson, 1982; Nelson, 2005; Stearns, 1986). The industrial revolution further contributed to changing attitudes toward older adults by placing an emphasis on adapting to new technology and increased mobility pressures for young families seeking employment, which reduced intergenerational living and contributed to growing negative perceptions of older adults (Nelson, 2005). Indeed, the shift toward valuing speed, technology, and adaptability, led to greater value placed on youth and a view of older adults as less useful and a burden on their children's and society's progress (Levy & Macdonald, 2016; Nelson, 2005; Tuckman & Lorge, 1953).

An in-depth analysis of a 600-million word corpus found that over the last 210 years, aging narratives have become more negative (Ng & Chow, 2021). Across various forms of media such as newspapers, magazines, and nonfiction books, narratives about aging shifted to focusing more on burden and illness in the 1900s (Ng & Chow, 2021). Prior to the pandemic, one common manifestation of the burden narrative focuses on the ongoing demographic shift as the current population of older adults worldwide (1 billion in 2020) will double to 2 billion by 2050 (WHO, 2021). Among some individuals, this increase in population has resulted in concerns that the "new older population will be bigger and potentially more influential than ever but also potentially more depletive, putting an unprecedented burden of care on younger generations" (North & Fiske, 2012, p. 986).

The framing of the population growth in older adults as a "silver tsunami" is one example of how the media may (in)advertently exaggerate competition between younger and older persons, resource scarcity, and amplify the stereotype that older adults are a burden on society (Calasnati, 2020; North & Fiske, 2012). In part because of population growth, older adults are often seen as a burden on working-age adults (Peterson & Ralston, 2017). This is also reflected in changes in the rates of filial piety (respect and obedience to parents) in countries such as China. Cheng and Chan (2006) found that if an individual was living in a city with more advanced modernization, support in the form of filial piety to older parents was reduced. The idea that older adults are burdens often focuses on perceived competition for resources (e.g., wealth, housing) or that older adults will use up finite resources (e.g., needing caregiving from medical staff; Bai et al., 2016; Binstock, 2010; Nelson, 2005; North & Fiske, 2012; North & Fiske, 2013a).

Perceptions of older adults as burdensome fuels intergenerational tension which manifests in different ways depending on whether the threat is perceived as realistic or symbolic. One area of perceived realistic threat is in the realm of access to enviable resources and positions in society. In this regard, older adults are seen as hoarding valuable resources (e.g., wealth, influence) and positions (e.g., employment; Martin & North, 2021). Recent empirical research demonstrated that beliefs that older adults are hoarding resources (e.g., employment) fuels bias and reduced support of older adults (Martin & North, 2021). In another type of perceived realistic threat, the focus of the conflict is based on the perception that older adults are depleting shared public services (e.g., Medicare, Social Security). Lastly, a key form of symbolic intergenerational tension is concerned with having clear distinction between age groups, such that older adults should maintain a distinct identity from younger persons (North & Fiske, 2013a).

As states across the U.S. issued stay-at-home orders, older adults were sometimes perceived as creating a burden on society and blamed for causing the disruption and ensuing economic distress as the stay-at-home orders were seen by some as protection predominately for “vulnerable” persons. Debates about whether the local, state, and the federal government should continue to risk economic hardship (e.g., layoffs, restrictions on which business could operate) with prolonged stay-at-home orders reinforced negative views of older adults as a burden on society (Levy & Macdonald, 2016; Monahan et al., 2020). This aligns with survey data collected during the pandemic, in which younger adults were more likely to endorse consumption-based stereotypes suggesting that older adults used too many resources such as healthcare or were a burden than older adults (Sutter et al., 2022). The COVID-19 pandemic has influenced perceptions of threat among both younger and older adults in a way that may be harmful for intergenerational cohesion. Whereas some older adults viewed younger adults who flouted pandemic rules as being a health threat, the economic destruction of the pandemic has increased the salience of economic threats among younger adults (Drury et al., 2022).

The COVID-19 pandemic also illustrated rising intergenerational tensions as public discourse purported that in order to reduce the economic impact of COVID-19, older adults should sacrifice their lives (Barrett et al., 2021; Swift & Chasteen, 2021). One such illustrative example was the statement from Texas’ Republican lieutenant governor, Dan Patrick, that he and other older adults would be willing to risk their health and lives so that the U.S. did not “sacrifice the country” with stay-at-home orders (Barrett et al., 2021; Knodel, 2020). This idea that older generations should sacrifice themselves for the good of younger persons or the trending Twitter hashtag #BoomerRemover in March 2020 elucidates the bubbling intergenerational tensions (Ayalon, 2020; Fraser et al., 2020; Meisner, 2021; Monahan et al., 2020; Ng et al., 2022; Sipocz et al., 2021; Swift & Chasteen, 2021).

The framing that older adults are consuming a disproportionate amount of healthcare resources in the midst of the COVID-19 pandemic or media that highlights the negative impact the pandemic has had on employment among young adults defies norms that influence, power, and jobs should be ceded to younger adults (Swift & Chasteen, 2021). In an analysis of Twitter data discussing older adults and COVID-19 from February to May 2020, one in 10 tweets implied the lives of older adults were less valuable or downplayed the risks of COVID-19 because of the perceptions older adults were mostly impacted (Xiang et al., 2021).

On an individual level, negative perceptions of older adults and intergenerational tensions were highlighted in the inadequate responses to COVID-19 (e.g., not wearing protective gear, assembling in groups; Aronson, 2020; Monahan et al., 2020). Rising intergenerational tensions may have contributed to reports of some young adults not taking the COVID-19 pandemic seriously, exemplified by reports of college students taking spring break trips in March 2020 despite warnings about the seriousness of COVID-19 (Drury et al., 2022). In May 2020, public defiance and protests of protective measures (social distancing, wearing face masks) and stay at home orders may be fueled in part by the view that older adults are a burden and to blame for societal problems (in this case, continued economic hardship on society as a whole to reduce their chances of infection and death). These examples of intergenerational tensions illustrate the burden narrative, as “protecting” older adults are seen as a drain on the economy and everyday society (Cohn & Ayalon, 2021).

Reducing ageism

Ageism is a multifaceted issue, and as such is partially driven by misrepresentations of older adults as burdens (vs. contributors) to society. Ageism is also deeply rooted in a general lack of accurate information about aging and older adulthood as well as insufficient exposure to positive contact with older adults (Levy, 2018, Lytle & Levy, 2019). In the U.S. and other countries there is little to no formal education about aging and older adulthood (Levy, 2018; Marshall, 2015). Widespread myths about aging and older adults that are provided by mass media and social media in combination with a lack of formal aging education results in widespread endorsement of stereotypes about older adults and adulthood (Levy & Apriceno, 2019). In addition, in many societies there is a lack of positive intergenerational contact between older and younger adults due to anticipated negative interactions, age-segregated housing, or infrequent contact which may reduce chances for positive interactions (Freedman & Stamp, 2018; Hagestad & Uhlenberg, 2005; North & Fiske, 2013a; WHO, 2021). As such, these two key components – education about aging and exposure to positive intergenerational contact – are highlighted in the PEACE (Positive Education about Aging and Contact Experiences) model which derives from cross-disciplinary theorizing and findings from across medicine, psychology, social work, and sociology (e.g., Bousfield & Hutchison, 2010; Caspi, 1984; Gaggioli et al., 2014; McKeown et al., 2006). Education about aging focuses on facts on aging and older adulthood that dispel societal myths. In terms of intergenerational contact, the model focuses on five optimal conditions to facilitate positive experiences that derive from intergroup contact theory (Allport, 1954) and life-review theorizing (Butler, 1963); one-to-one contact, that is cooperative, that involves sharing of personal information (e.g., life events), that overall fosters equal status within the contact situation and as best as possible is supported by any real or perceived authorities in the situation (Levy, 2018).

A small but growing body of research has examined both components of the PEACE model (Lytle & Levy, 2019; Lytle et al., 2020; Lytle et al., 2021). In a semester-long examination of the PEACE model, undergraduate students engaged in one-on-one intergenerational contact with an older adult and were provided with aging education. The intervention took place in an undergraduate design class. Students were unaware of the focus on aging until the class began, therefore students had not signed up for a class on aging or older adults. The education component included a visit from a speaker with expertise in ageism that challenged myths about older adulthood as well as exposure to several other resources on aging (e.g., books, videos, podcasts, articles). After learning about and discussing ageism, participants began a series of design projects that were consistent with the goals of the class. The positive intergenerational contact occurred during a 30-day Instagram project which included the five optimal intergenerational conditions outlined in the PEACE model: (1) one-to-one interactions that were, (2) cooperative, (3) promoted equal status, involved (4) sharing of personal information, and were (5) sanctioned by authority figures in the situation. In order to facilitate conversation and to encourage cooperation, younger and older adults were asked to discuss Instagram, create an Instagram account (if they did not already have one), and begin following each other. Younger and older adults were given daily prompts to guide their Instagram post(s), such as “the first five minutes of my day,” “someone (or thing) I love” and “... makes me anxious” and facilitate engagement. Over the span of 11 weeks, participants reported (from pre- to post-test) significantly lower aging anxiety, psychological concerns about the aging process, and negative stereotyping of older adults (Lytle et al., 2020).

Although these findings are promising, addressing ageism in a semester-long course that includes in-person contact is not always feasible. In-person intergenerational contact may not

be available or possible for a multitude of reasons (e.g., physical distancing necessary due to an infectious disease, highly age segregated populations). As such, some forms of PEACE model interventions are online and involve the presentation of written information (Lytle & Levy, 2019), other interventions show videos that illustrate aging education and intergenerational contact (Lytle et al., 2021), or facilitate intergenerational contact online (Lytle, Macdonald, & Levy, 2022). In an online, 30 min, one-time test of the PEACE model, undergraduate students and a national community sample of adults (ages 18–59) were randomly assigned to PEACE model intervention condition: (1) education about aging, (2) exposure to positive intergenerational contact, or (3) combined education and intergenerational contact, (4) or a control condition (information about wallpaper). Participants were presented with a series of ten true/false questions from Palmore's (1998) aging fact quiz and were then presented with information which elaborated on the correct answer. In the education condition participants received factual information. In the extended contact condition participants received a description of an intergenerational relationship. Lastly, in the combined condition, participants received both explanations of the factual information and a description of an intergenerational relationship. Results found that all three intervention conditions improved participants' attitudes toward older adults and increased aging knowledge relative to the control condition (Lytle & Levy, 2019). There were no significant differences between the experimental conditions; however, all three experimental conditions significantly reduced ageism compared to the control condition.

Although the intervention detailed in Lytle and Levy (2019) was interactive in that participants answered a series of true/false questions and received immediate feedback, future research explored additional online formats in which to engage participants. In a subsequent intervention, Lytle et al. (2021) examined the efficacy of an engaging intervention format that featured brief videos which was designed to reach a wide audience of younger adults. In a brief test of the PEACE model, participants were randomly assigned to watch two videos (7 min total) which provided education about aging and depicted extended intergenerational contact between younger and older adults (experimental condition) or two videos about wallpaper (control condition). In the experimental video on aging education, ageism was defined and common stereotypes were challenged, such viewing all older adults as slow, forgetful, and that most older adults live in nursing homes. The video also touted that older adults should be treated equally, that they are valuable sources of knowledge, and that aging can be reframed in a positive light as an achievement. The other experimental video was selected to fit the five conditions of the PEACE model. The video showed intergenerational contact between younger (ages 19–35) and older (ages 55–75) adults who taught each other a skill (e.g., how to do a yoga pose) and whose interaction was monitored by the narrator. The video began with the narrator asking young adults what age they considered to be "old" (with them reporting 40–50 s) and asked them to act out how an older person might send a text message (with them acting out older adults struggling to send a text message, illustrating stereotypes about older adults). Next, each older adult was partnered with a younger adult and shared a skill or hobby that they enjoyed (e.g., a yoga pose) with the other person. In an immediate post-test after the brief video intervention, participants in the experimental condition (as compared to the control condition) reported lower levels of ageism, less negative age stereotypes (e.g., "senile"), more positive age stereotypes (e.g., "wise"), and greater aging knowledge (Lytle et al., 2021).

Current research

Building on past ageism reduction research, the current investigation focuses on a brief, one-time, online intervention designed to provide education about aging and exposure to positive intergenerational contact (extended contact) among both an undergraduate sample as well as community adults. This investigation uniquely adds a focus on challenging the burden narrative and increasing a focus on the contributor narrative of older adults, which has become a pressing issue during COVID-19 pandemic (Ayalon, 2020; Cohn-Schwartz & Ayalon, 2021; Fraser et al., 2020; Levy et al., 2022; Monahan et al., 2020).

In two studies with U.S. young adults, we examined participants' stereotypes and attitudes about aging as well as their perceptions of intergenerational conflict given that past studies before and during COVID-19 indicate that young adults endorse stereotypes of older adults, report limited intergenerational contact, and were not necessarily supportive of measures to protect older adults from COVID-19 exposure (Ayalon, 2020; Chonody, 2015; Fraser et al. 2020; Monahan et al., 2020). In Study 1, we examined these questions among U.S. undergraduate students and in Study 2, we used a national community sample of young U.S. adults. Some methodological concerns in past ageism reduction interventions such as lack of theoretical grounding, random assignment, control groups, and restricted samples are addressed in the designs of Studies 1 and 2.

STUDY 1

Participants were randomly assigned to either the experimental condition (PEACE model) in which they watched videos that challenged stereotypes about aging and older adults (video 1), depicted positive intergenerational contact (video 2), and highlighted older adults as contributors to society (video 3) or watched three videos on wallpaper (control condition). We collapsed both the educational and intergenerational components together into one experimental condition based on past research that found no significant differences between intergenerational contact, educational, or a combined condition (Lytle & Levy, 2019). In line with past research, we predicted participants in the experimental (vs. control) condition would report greater endorsement of positive age stereotypes as well as lower endorsement of aging anxiety, intergroup conflict, negative stereotypes of older adults, and report perceiving older adults more as contributors and less as a burden when controlling for gender and intergenerational contact with older adults (Lytle & Levy, 2019; Macdonald & Levy, 2021; Rupp et al., 2005).

METHODS

Participants

A total of 332 (84 cis women; 240 cis men; two trans men, one genderqueer, three non-binary, and two different identity) undergraduate participants with a mean age of 18.58 ($SD=.61$, age range 18–22) completed an online survey. Participants included 68.4% White, 3.6% Black, 25.9% Asian, 13.1% Latinx, 3.0% Middle Eastern, .6% Native Hawaiian or Pacific Islander, .9% Caribbean, and 6.0% Other or Mixed (participants could choose more than one racial/ethnic identity).

Participants completed the survey between April 15, 2021 and May 14, 2021. By April 15, 2021, almost all U.S. states had made COVID-19 vaccines eligible to adults 16+. For context, on April 15, 2021, the 7-day average of new COVID-19 infections was 29,933 and the 7-day average of new vaccinations was 3,348,189 doses (NYTimes, 2021).

Procedure

Consistent with the procedure for Lytle et al. (2021), participants were directed to a secure website, Qualtrics, to complete a survey about “media and information.” Participants were told we are interested in your “ability to comprehend information from media formats such as videos, written information, and infographics.” We used a cover story to mask the purpose of the study in order to reduce the potential that participant responses would be subject to demand characteristics. Participants were recruited via a university subject pool. The university’s institutional review board approved this research prior to data collection.

Building on past research (Lytle & Levy, 2019; Lytle et al., 2021), this study used a between-subjects design in which participants were randomly assigned to watch three experimental or control videos followed by an immediate post-test. In total, the videos were brief, less than 10 min total. The experimental videos depicted information about aging and ageism, positive intergenerational contact, and challenged the stereotype that older adults are a burden on society. The experimental videos included (1) a video on aging and ageism, (2) an intergenerational contact video used in previous research (Lytle et al., 2020), and (3) a video which counteracted the stereotype that older adults are a burden. The video on aging and ageism featured an expert on ageism (Ashton Applewhite) in which she defines what ageism is and how “ageism is everywhere.” She provided scientific evidence that challenged prevailing stereotypes of older adults including the stereotype that older adults are unhappy, depressed, or that cognitive decline is inevitable. The video also challenged the view that older adults are a burden, and rather population aging is an “opportunity” to take advantage of older adults’ knowledge base and their desires to contribute to society. Additionally, the video highlighted how the mass media portrays older adults in a negative light and devalues older adults through birthday cards that poke fun of older age and tends to feature older adults in advertisements for medicines and surgeries. As stated in the video, “Aging is a lifelong process that we’re all engaged in.”

The second video (described in the introduction), was used in past research (Lytle et al., 2020), and depicted positive intergenerational contact between younger and older adults. As noted earlier, the intergenerational interactions shown addressed the five optimal intergenerational contact criteria of the PEACE model. The video depicted (a) one-to-one interactions between a younger and older adult during which the older adults taught a skill to the younger adults, and vice versa which involved, (b) equal status (each person was both a student and then a teacher) and required, (c) cooperation to learn a new skill (e.g., a dance move). Lastly, the interaction depicted, (d) sharing with the other person a skill or hobby they personally enjoyed (e.g., a yoga pose), and (e) was facilitated and encouraged by the individuals directing the video. The third video was created for this study using news headlines and other statistics of older adults as contributors in society to challenge the stereotype that older adults are a burden and do not contribute to society. The video featured six slides addressing the many ways that older adults contribute to society. The first two slides focused on how older adults contribute more hours to volunteering than any other age group. The next two slides illustrated how older doctors and nurses came out of retirement

to help fight COVID-19. The last two slides explored how grandparents serve as caregivers for grandchildren which in some situations allows their parents to go to work.

The control condition also included three videos (less than 10 min) which all focused on wallpaper. The first video showed two people demonstrating how to remove wallpaper. The second video showed how to install wallpaper. Lastly, the third wallpaper video was created for this study to parallel the third video in the experimental study; thus, the format was the same as the video challenging the stereotype of older adults as burdens.

Measures

Positive age stereotypes (PAS) and negative age stereotypes (NAS) about older adults

Participants completed the Image of Aging scale (Levy et al., 2004), which includes nine positive age stereotypes (PAS; e.g., “active”; $\alpha = .83$) and nine negative age stereotypes about older adults (NAS; e.g., “walks slowly”; $\alpha = .90$) on a 0 (*not at all characteristic*) to 6 (*very characteristic*) scale.

Contributor and burden measures

We created two measures assessing participants’ perceptions of older adults as a burden (3 items; “Older adults are often a burden on their families,” “Older adults are a drain on the healthcare system, for example, they rely too much on Medicare” and “Older adults are a burden on the economy, such as straining the social security system”; $\alpha = .86$) and as a contributor to society (3 items; “As people reach older adulthood, they continue to make valuable contributions to society,” “Older adults often contribute to their families by providing childcare for their grandchildren,” “Older adults contribute to the economy in many ways such as working full-time, part-time, and/or volunteering their time”; $\alpha = .76$) on a 0 (*do not agree at all*) to 5 (*agree completely*) scale.

Perceptions of intergenerational conflict

Participants completed the 20-item intergenerational conflict measure (North & Fiske, 2013b; e.g., “Doctors spend too much time treating sickly older people” and “If it weren’t for older people opposed to changing the way things are, we could probably progress much more rapidly as a society”) on a 1 (*strongly disagree*) to 6 (*strongly agree*) scale ($\alpha = .90$).

Aging anxiety

Participants rated four items reflecting aging anxiety (Bousfield & Hutchison, 2010; Lytle et al., 2021) on a 1 (*strongly disagree*) to 6 (*strongly agree*) scale (“I am concerned that my abilities will suffer when I am old”; $\alpha = .64$).

TABLE 1 Means and standard deviations by dependent variables in study 1

	Overall	Experimental Condition (<i>n</i> = 162)	Control Condition (<i>n</i> = 170)
Positive age stereotypes	$F(1, 327) = 12.047^{**}$	$m = 5.00; sd = .72$	$m = 4.65, sd = .67$
Negative age stereotypes	$F(1, 327) = .895$	$m = 3.19; sd = .96$	$m = 3.35; sd = .98$
Contributor	$F(1, 327) = 21.875^{**}$	$m = 4.62; sd = .94$	$m = 4.04; sd = 1.09$
Burden	$F(1, 327) = .004$	$m = 1.67; sd = .86$	$m = 1.70; sd = .87$
Intergenerational conflict	$F(1, 327) = .078$	$m = 2.38; sd = .69$	$m = 2.44; sd = .74$
Aging anxiety	$F(1, 327) = 5.437$	$m = 3.37; sd = 1.01$	$m = 3.17; sd = .91$

* $p < .05$, ** $p < .01$.

RESULTS AND DISCUSSION

As detailed in our pre-registration, we conducted a multivariate analysis of covariance (MANCOVA) examining possible differences between the experimental and control conditions (independent variables) on the set of dependent measures (positive and negative age stereotypes of older adults, burden and contributor measures, intergenerational conflict, and aging anxiety). Consistent with past research (Lytle & Levy, 2019), we included gender and quantity/quality of contact as a covariate. We also included mood as a covariate as mood differed significantly between the experimental and control groups, $F(1, 333) = 22.99, p < .001$.

We found a statistically significant difference between the experimental and control group on the main dependent variables controlling for intergenerational contact, gender, and mood, $F(6, 322) = 6.06, p < .001$, Wilks' $\Lambda = .90$, partial $\eta^2 = .10$. Follow-up ANCOVAs revealed that experimental (vs. control) participants reported significantly greater endorsement of positive stereotypes of older adults, $F(1, 327) = 12.05, p < .001, \eta^2 = 0.036$ and greater endorsement of the contributor stereotype, $F(1, 327) = 21.88, p < .001, \eta^2 = .063$. Unexpectedly, experimental (vs. control) participants also reported significantly higher aging anxiety, $F(1, 327) = 5.44, p = .020, \eta^2 = .016$ than control participants. Thinking about aging may have provoked some aging anxiety, which has occurred in past research (Lytle & Levy, 2019). There were no other differences by condition (see Table 1).

STUDY 2

Study 2 aimed to replicate Study 1 findings among a national community sample of adults ages 18–29 to address the generalizability of the findings. Consistent with Study 1, Study 2 included the same cover story, video stimuli, and key measures.

METHODS

Participants

A total of 281 (158 cis women; 116 cis men; one trans man, two genderqueer, two non-binary, and two different identity) community participants with a mean age of 25.05 ($SD = 2.82$, age range 18–29) completed an online survey. Participants included 65.1% White, 14.2% Black, 18.5% Asian,

10.3% Latinx, 1.4% Middle Eastern, 1.1% Native Hawaiian or Pacific Islander, .7% Caribbean, and 4.3% Other or Mixed (participants could choose more than one racial/ethnic identity).

Procedure

Participants were recruited via Amazon's Mechanical Turk (MTURK), an online pool of adult community participants (Lytle & Levy, 2019). MTURK participants completed the survey on May 12, 2021. Around 50% of eligible adults had received at least one dose of the vaccine by May, 2021. For context, on May 1, 2021, the 7-day average of new COVID-19 infections was 28,553 and the 7-day average of new vaccinations was 2,546,144 doses (NYTimes, 2021). Consistent with Study 1, Study 2 used a between-subjects design in which participants were randomly assigned to watch the same three experimental or control videos followed by an immediate post-test.

Measures

As in Study 1, measures included Positive Age Stereotypes (PAS; $\alpha = .86$), Negative Age Stereotypes (NAS; $\alpha = .90$), Contributor to Society ($\alpha = .89$), Burden on Society ($\alpha = .90$), Intergenerational Conflict ($\alpha = .93$), and Aging Anxiety ($\alpha = .82$). The same demographics and attention checks were used.

RESULTS

As detailed in our pre-registration and consistent with the Study 1, MANCOVAs examined potential differences between conditions, controlling for quality/quantity of contact, gender, and mood (mood differed significantly between the experimental and control groups, $F(1, 279) = 13.03, p < .001$). We found a statistically significant difference between the experimental and control group on the main dependent variables controlling for intergenerational contact, gender, and mood, $F(6, 271) = 9.63, p < .001$, Wilks' $\Lambda = .82$, partial $\eta^2 = .18$. We conducted follow-up ANCOVAs, which revealed that experimental (vs. control) participants reported significantly greater endorsement of positive stereotypes of older adults, $F(1, 276) = 26.94, p < .001, \eta^2 = .089$, greater endorsement of the contributor stereotype, $F(1, 276) = 20.72, p < .001, \eta^2 = .070$, less endorsement of negative stereotypes of older adults, $F(1, 276) = 35.68, p < .001, \eta^2 = .114$, and lower perceptions of intergenerational conflict, $F(1, 276) = 5.45, p = .020, \eta^2 = .019$. There were no other differences by condition (see Table 2).

GENERAL DISCUSSION

Nearly 2 years into the COVID-19 pandemic, reducing ageism toward older adults is paramount as intergenerational tensions about valued resources such as healthcare, workplace, and the economy became a key part of political and social discourse (Ayalon, 2020, Ayalon et al., 2021; Drury et al., 2022; Levy et al., 2022; Monahan et al., 2020; Swift & Chasteen, 2021). Young adults before and during the pandemic reported negative views of older adults as well as limited or negative intergenerational contact (Drury et al., 2022; Levy & Macdonald, 2016). In the midst of the

TABLE 2 Means and standard deviations by dependent variables in study 2

	Overall	Experimental condition (<i>n</i> = 139)	Control condition (<i>n</i> = 142)
Positive age stereotypes	$F(1, 276) = 26.935^{**}$	$m = 5.14; sd = .74$	$m = 4.62, sd = .72$
Negative age stereotypes	$F(1, 276) = 35.676^{**}$	$m = 2.85; sd = .95$	$m = 3.58; sd = 1.01$
Contributor	$F(1, 276) = 20.723^{**}$	$m = 5.06; sd = 1.04$	$m = 4.43; sd = 1.08$
Burden	$F(1, 276) = .063$	$m = 1.74; sd = .93$	$m = 1.81; sd = 1.11$
Intergenerational conflict	$F(1, 276) = 5.445^*$	$m = 2.36; sd = .78$	$m = 2.65; sd = .94$
Aging anxiety	$F(1, 276) = 2.497$	$m = 3.14; sd = 1.25$	$m = 3.45; sd = 1.07$

* $p < .05$; ** $p < .01$.

COVID-19 pandemic, older adults were sometimes perceived as being burdensome in part because of the belief that societal changes (e.g., lockdowns, mask-wearing, limited travel, remote learning) were instituted to mostly reduce the risk for older adults.

The current experimental studies examined an ageism-reduction strategy targeting young adults. Among both undergraduate students (Study 1) and a national community sample of young adults (Study 2), challenging stereotypes about aging and older adults (video 1), showing positive intergenerational contact (video 2), and highlighting the ways in which older adults are contributors to society (video 3) increased endorsement of positive stereotypes of older adults and of older adults as contributors. In the national community sample (Study 2), negative stereotypes of older adults and intergenerational conflict was also reduced among experimental participants. These findings are notable given how brief the intervention (less than 10 min) and that it was not delivered in controlled laboratory conditions. The findings are also promising in that the study took place during a highly charged period of intergenerational tensions (Drury et al., 2022).

In the light of ongoing intergenerational tensions fueled, in part, by the COVID-19 pandemic, perhaps it is not surprising that this brief intervention did not significantly influence participants' views of older adults as burdens. Instead, significant changes between control and experimental groups occurred on views of older adults as contributors. Although one of the experimental videos spotlighted some ways that older adults are contributors to society (as grandparents caring for grandchildren, community volunteers in general and with helping with treating COVID-19 and vaccinations), the content did not seem to sufficient to overtake the burden view of older adults, the other side of the contributor-burden coin. These findings suggest that future intervention iterations may need to directly challenge the burden narrative. For example, the intervention might need to challenge the mass media's misrepresentation of the risk of older adults as homogenous and that all older persons are "vulnerable" to COVID-19 which contributes to the burden narrative (Derrer-Merk et al., 2022; McDarby et al., 2022). In light of a broad spectrum of societal challenges in the U.S. pertaining to the economy and healthcare, addressing discourse blaming the growing older population will be a challenge (Levy et al., 2022) and may be the more difficult view of older adults to change.

Although ageism toward older adults is pervasive across the world, it can vary by culture and society such as by the perceived social status of older adults (APA, 2020; Marques et al., 2015; WHO, 2021); thus, our findings may be specific to young adults in the U.S. As such, future work should investigate the efficacy of this particular ageism reduction strategy in other countries and cultures.



Studying the effects of these ageism reduction strategies is an important avenue for future research given the negative health, workplace, psychological, and social consequences of ageism on older adults (Cohn-Schwartz et al., 2022; B. Levy, 2009; Levy & Macdonald, 2016; McDarby et al., 2022). For example, research deriving from stereotype embodiment theory has demonstrated how negative attitudes and stereotypes can have pervasive and insidious effects on the general health and well-being of older adults (Levy, 2009; Chang et al., 2020). For example, perceived ageism was associated with increased self-perception of aging, specifically in the domains of social loss and physical decline (Kornadt et al., 2021b). As such, COVID-19 may continue to have detrimental effects on the health of older adults for generations (Ayalon et al., 2021; Levy et al., 2022; WHO, 2021). The stereotype that older adults are burdens has indeed been shown to influence health and well-being among older adults themselves. For example, Bai et al. (2016) found that Chinese adults ages 60 and older who reported greater perceptions of older adults as a burden, were at higher risk of depressive symptoms. Similarly, in Colombia, negative stereotypes about older adults and a perceived lack of social support predicted greater anxiety about aging (Ramírez, & Palacios-Espinosa, 2016).

The current investigation explored an intervention designed to reduce ageism by combating stereotypes of older adults and did not address intersectional elements of ageism in the content of the intervention nor in the dependent measures. Older adults are not a monolith, and research has increasingly identified that ageism intersects with other ‘isms’ such that there are distinct stereotypes where age (older age) intersects with other group identities (gender, race, sexual orientation, ability status) with distinct consequences for members of those communities (Apriceno & Levy, 2019; Chrisler et al., 2016; Fredriksen-Goldsen et al., 2013; Laditka et al., 2011; Lytle, Apriceno et al., 2018; Lytle, Macdonald et al., 2018; Monahan et al., 2021). A growing body of research demonstrates how older men and women are perceived differently; for example, older women are perceived as being depressed, incompetent, and lonely at earlier ages than men (Hummert et al., 1997; Kite & Wagner, 2002). Another study found that qualified older women are perceived differently when seeking leadership positions as they face the intersection of both sexism and ageism as impediments to securing positions of power (Lytle, Macdonald et al., 2018). However, more research is needed to uncover the societal stereotypes at the intersection of age (old age) and other identities as well as systematic research to determine whether interventions designed to address said stereotypes are effective.

Social policy implications

Given the scope and prevalence of ageism, social policies or interventions on a larger scale are needed. As the population of older adults continues to grow, it is becoming increasingly important for universities to adopt policies and integrate interventions that reduce ageism toward older adults. University students often have little to no intergenerational contact with older adults, thus social policies and interventions that focus on universities and colleges are paramount. For example, more universities are embracing the Age-Friendly University (AFU) initiative which provides institutions of higher education “a framework for developing programs, practices, and partnerships to address the challenges precipitated by aging populations and persistent ageism” (Montepare & Brown, 2022, p. 2). In the past few years, the number of AFU’s has grown to 80 universities in Australia, Canada, Europe, and the U.S. (Montepare & Brown, 2022). As the number of universities and colleges adopting the principles of AFU continues to rise, there will be more opportunities for young undergraduate students to interact with older adults in the classroom and

throughout the university as a whole. Indeed, one of six principles of institutional activity among AFU's involves increasing intergenerational learning on university and college campuses, which represents an opportunity for positive intergenerational contact.

The brief online intervention described in the present investigation could work hand-in-hand with Age Friendly Universities to lead to wider scale implementation of positive intergenerational contact. The current intervention seems fitting to incorporate in first-year orientations that occur at many universities. In addition, universities could target ageism as a part of a seminar on entering the workforce and interacting with diverse individuals across age, gender, race, and ethnicity for third and fourth year students.

Beyond the university, in other settings such as in the workplace and health care, could implement the outlined intervention as long as they have access to an internet connection. Given the brief nature of the intervention (watching three videos under 10 min), participants did not have to set aside a significant amount of time (e.g., semester-long class) nor make an in-person commitment. Ageism reduction studies that use online videos (Lytle et al., 2021) are scale-able and could be used in many different environments or settings.

In a similar vein, such brief ageism reduction interventions could be incorporated into community-based intergenerational contact programs as well as wider scale social campaigns. For example, this intervention could be part of intergenerational programming such as those described by Jarrott and colleagues (2022) in which frameworks such as storytelling through photography or technology training are used to facilitate intergenerational contact. As another example, this intervention could be part of online components of social campaigns such as those described by Ayalon and Okun (2022) in which negative stereotypes about older adults were challenged.

CONCLUSIONS

The COVID-19 pandemic has exacerbated ageism toward older adults, making the need to reduce ageism more pressing (Ayalon et al., 2021; Fraser et al., 2020; Levy et al., 2022; Monahan et al., 2020; Swift & Chasteen, 2021). Intergenerational tensions and a view of older adults as burdens were fueled by conjectures that older adults were the catalyst for COVID-19 induced restrictions and mandates (e.g., lockdowns, masks, vaccines), perceptions about the homogeneity of risk for older adults, and concerns about older adults depleting healthcare resources (Drury et al., 2022).

In the midst of this charged social and political climate, the present investigation demonstrated that brief online intervention, which involved videos that focused on education about aging and older adulthood including evidence of older adults as contributors to society and depicted positive intergenerational relations, increased endorsement of positive stereotypes of older adults and of older adults as contributors. The brevity, ease of administration, and theoretical-grounding (PEACE model) are strengths of this intervention over past ones including ones that involve lengthy strategies (e.g., semester-long) that often can involve only a limited number of participants (Lytle et al., 2020). In addition, the format and delivery of the intervention allows for it to be used or adapted on a wider-scale with different age groups and in different settings such as in colleges (e.g., during first-year orientation), high schools, healthcare, and workplace settings where participants can view the videos at their convenience without a large time investment, and without an in-person commitment.

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