Instapals: Reducing ageism by facilitating intergenerational contact and providing aging education

Ashley Lytle, Nancy Nowacek & Sheri R. Levy

Published online: 04 Mar 2020.

Submit your article to this journal ⬚

View related articles ⬚

View Crossmark data ⬚

Routledge
Taylor & Francis Group

Check for updates

Instapals: Reducing ageism by facilitating intergenerational contact and providing aging education

Ashley Lytle [a], Nancy Nowacek[b], and Sheri R. Levy[c]

[a]Department of Social Sciences, Stevens Institute of Technology, Hoboken, New Jersey, USA; [b]Department of Visual Arts and Technology, Stevens Institute of Technology, Hoboken, New Jersey, USA; [c]Department of Psychology, Stony Brook University, Stony Brook, New Jersey, USA

ABSTRACT

Utilizing the PEACE (Positive Education about Aging and Contact Experiences) model as a theoretical foundation, Instapals was a novel ageism reduction intervention with undergraduate students in a non-gerontology course that 1) provided aging education and 2) facilitated positive 1-to-1 intergenerational relationships with older adults (individuals 65+) through daily exchanges on Instagram for 30 days and two in-person meetings. Paired t-tests demonstrate a significant decrease in aging anxiety, psychological concerns about aging, and negative stereotyping of older adults. Results from coded open-ended responses suggest an overall positive experience with Instapals and more positive attitudes toward aging and older adults across a semester. Findings from the first test of Instapals, a theoretically-driven intervention, shows promise for reducing ageism among larger samples and in other settings.

An unprecedented shift in aging demographics is occurring around the world. The number of adults ages 60 and over is projected to total 2 billion by 2050, more than doubling the population of older adults recorded in 2015 (WHO, 2018). As the population of older adults grows, ageism, negative stereotyping and prejudice toward older adults, is increasing (Ng, Allore, Trentalange, Monin, & Levy, 2015). While older adults have long been revered as wise, kind, and gentle, there has been a worldwide shift toward valuing youth and viewing older adults as burdensome, forgetful, incompetent, and sickly (Levy & Macdonald, 2016). Demonstrating this negative shift, an analysis of a 400 million word database found that age stereotypes have become more negative over the past 200 years (Ng et al., 2015).

Such negative ageist stereotypes can manifest themselves as discriminatory behavior including receiving fewer promotions and raises in the workplace as well as elder abuse in the form of financial, psychological, and physical abuse (Levy & Macdonald, 2016; Pillemer, Connolly, Breckman, Spreng, & Lachs, 2015). Furthermore, exposure to negative views of aging influences older adults' mental and physical health, and it can influence the future health of younger individuals who believe in and come to embody negative aging stereotypes (Lamont, Swift, & Abrams, 2015; Levy, 2009; Levy & Apriceno, 2019; Ramírez, Palacios-Espinosa, Dyar, Lytle, & Levy, 2018).

Negative attitudes toward aging have been found across the lifespan, with much research showing that college students endorse stereotypes of older adults. Such misconceptions include viewing older adults as inactive, irritable, unproductive, and worth avoiding (Rupp, Vodanovich, & Credé, 2005; Wurtele & Maryuma, 2013). As such, interventions to reduce ageism among college students are particularly needed.

Ageism-reduction interventions: the PEACE model

Ageism-reduction interventions are not common and tend to lack a theoretical foundation Levy (2016); Roodin, Brown, and Shedlock (2013). For example, in their critical literature review, Brown, Kother, and Wielandt (2011) concluded that the existing ageism intervention literature lacked context and theoretical underpinnings. As such, findings that some interventions yield reduced ageism while others do not can be difficult to interpret as it may be unclear what factors contributed to promising or null results (see Levy, 2016; Roodin et al., 2013). Integrating findings and theorizing across medicine, psychology, social work, and sociology, Levy (2016) suggested two key theoretical factors for reducing ageism as part of the PEACE (Positive Education about Aging and Contact Experiences) model: 1) education about aging and, 2) positive intergenerational contact. In an empirical test of the PEACE model, education about aging and knowledge of positive extended intergenerational contact provided during one brief online session improved undergraduates' attitudes toward older adults and aging knowledge (Lytle & Levy, 2017). The current investigation involves a novel three month intervention called *Instapals*, which aims to test for the first time whether ageism can be reduced by providing more accurate aging education and facilitating positive intergenerational contact using technology (Instagram). Instapals, a two-pronged intervention, integrates aging education and exposure to positive aging role models into an undergraduate course that is not explicitly about aging, development, or geriatrics and facilitates both in-person and online positive intergenerational contact. The positive contact between younger and older adults and aging education are the foundation of this intervention and derived from the PEACE model, are each reviewed in turn.

Intergenerational contact

A long-standing and extensive body of research deriving from intergroup contact theory suggests that negative attitudes stem in part from lack of personal and positive contact between groups (Allport, 1954; Lytle, 2018; Pettigrew, 1998). A growing body of literature on intergenerational contact demonstrates that positive contact with older adults is related to lower levels of ageism (Bousfield & Hutchison, 2010; Kalisch et al.,2013; Lytle & Levy, 2017; McCleary, 2014; Meshel & McGlynn, 2004; Van Dussen & Weaver, 2009). However, contact experiences are not always positive and thus theorists and researchers have considered what features facilitate positive experiences (Allport, 1954; Butler, 1963). For example, life-review theory points to the importance of intergenerational contact that involves encouraging older adults to share their life story and life sessions as a way to forge a personal connection between older and younger adults (Butler, 1963; Gaggioli et al., 2014; Pinquart & Forstmeier, 2012). For example, intergenerational contact was facilitated during a service learning program in which older adults and undergraduate students met in

small groups for forty-five minutes each week for nine weeks. Attitudes toward older adults improved during the program from a pretest and posttest (Penick, Fallshore, & Spencer, 2014). In another study, undergraduate students enrolled in a gerontology course were required to engage in twelve hours of service-learning with older adults in the community. Undergraduates' reflections on their experiences revealed that interactions with the older adult participants challenged their preconceived notions of older adults and had a positive impact on them (Kalisch et al., 2013).

Drawing on intergroup contact theory (Allport, 1954; Bousfield & Hutchison, 2010) as well as and life-review theorizing (Butler, 1963; Gaggioli et al., 2014; Pinquart & Forstmeier, 2012), the PEACE model highlights five conditions of intergenerational contact that likely facilitate reduced ageism: "individualized, provide or promote equal status, are cooperative, involve sharing of personal information, and are sanctioned within the setting" (Levy, 2016, p. 1). Instapals was designed to explicitly address these five criteria by involving one-to-one contact both in-person and online, involve a cooperative and equal status task of sharing personal information via Instagram, and within the context of the support from the class instructor.

Education about aging and exposure to positive role models

Exaggerations and myths about older adulthood as predominately marked by poor health, depression, and Alzheimer's are portrayed in the media. Simultaneously, there is little formal schooling about the aging process (Levy, 2016). Widespread myths about aging in conjunction with a lack of aging education can result in pervasive misunderstandings about older adults and the aging process. Indeed, studies show that individuals have little knowledge of the aging process and endorse many falsehoods about aging and older adults such as inaccurate beliefs about mental health and memory (Cherry et al., 2014). As such, one of the main causes of negative attitudes about older adults is thought to be lack of education about aging (Allan & Johnson, 2009; Burnes et al., 2019; Levy, 2016; Lytle & Levy, 2017; Ragan & Bowen, 2001; Wurtele & Maruyama, 2013), resulting in a growing call to incorporate aging education in university courses (Marshall, 2015).

This leaves open an avenue to challenge the many myths about aging as a period of inevitable decline and despair with scientific facts. For example, the belief that older adults are more prone depression can be challenged by empirical evidence that old age is associated with improved emotional well-being (Carstensen et al., 2011). A growing body of research suggests that providing accurate information about stereotypes such as the actual prevalence of Alzheimer's disease, depression, and activity levels of older adults is an effective way to reduce ageism (Allan & Johnson, 2009; Burnes et al., 2019; Lytle & Levy, 2017; Ragan & Bowen, 2001; Wurtele & Maruyama, 2013). As a way to augment accurate information about aging, Levy (2016) suggested exposure to positive role models that challenge negative and erroneous ideas about aging and older adults as another key ingredient for reducing ageism. For example, exposure to both accurate information on aging and healthy aging role models resulted in more positive attitudes toward older adults (McCleary, 2014). Along the same lines, Ragan and Bowen (2001) showed the importance of reinforcement of aging education through discussion, showing that undergraduates' attitudes toward older adults showed improvement from pretest to a delayed posttest (1 month later) only among participants who discussed the material (compared to

a no discussion group and innocuous discussion group). Therefore, Instapals involved exposure to aging education and positive aging role models involving reinforcement through discussion and knowledge based applications of aging education.

Current study: Instapals

To our knowledge, Instapals is the first intervention to incorporate both key elements of the PEACE model: aging education and intergenerational contact (addressing the five criteria for positive contact; Levy, 2016) while uniquely utilizing technology to facilitate intergenerational contact. In light of the lack of aging education (Levy, 2016; Marshall, 2015), this study tests the efficacy of Instapals in a non-gerontology or developmental course. Based on past research in the ageism reduction literature, we hypothesize that participation in the Instapals intervention will reduce participants' negative stereotyping and aging anxiety as well as increase their positive attitudes toward older adults.

Method

Participants

A total of 14 undergraduate students (women = 11, men = 3) with a mean age of 20.36 (SD = 1.22) participated in two online surveys. Participants were asked if they would participate in a study on "interpersonal interactions." If they consented, participants were given access to an online survey via Qualtrics. Attitudes and stereotypes toward older adults and aging were assessed at two timepoints, 11 weeks apart (Time 1: before meeting their older adult partner on January 23, 2019; Time 2: after the project ended, April 10, 2019). Participation was voluntary, and participants were able to leave the study at any time. The university's institutional review board approved the study prior to data collection.

Procedure

Undergraduate participants were drawn from a design course taught by one of the coauthors. The course is a required class for design majors; however, the focus on aging, older adults, and challenging ageism was not known in advance and was introduced once the semester started.

Part 1 of Instapals: providing education about aging

The semester began with the education about aging component of the PEACE model. On the first day of class, participants watched a TED talk about ageism and then the same expert came to the classroom to talk about ageism and provided accurate information about aging to combat myths of aging and older adults. Consistent with past studies showing the importance of reinforcing the information (Ragan & Bowen, 2001), the expert engaged the class in a discussion, and answered questions. As examples, the discussion addressed questions about how to avoid misunderstandings in interactions with older generations, what to expect when engaging older strangers, and how to express curiosity about aging without insult. In the following weeks, participants were exposed to additional

educational components on aging and ageism that were intended to be consistent with the PEACE model. For example, participants were exposed to positive role models of aging (videos, podcasts, articles) who defied prevalent myths of aging and read several chapters of *This Chair Rocks: A Manifesto Against Ageism* (Applewhite, 2016) which challenged falsehood about aging. Participants also watched several videos on aging and ageism, ranging in topic from aging as a life-long process to the hidden costs of ageism and ways to fight ageism. After a few weeks of reading about and discussing aging and ageism, participants began a series of projects that were consistent with the academic goals of the class, furthering their design knowledge and skills. First, participants created a three-part poster series on anti-ageist behaviors as a way to synthesize their knowledge and engage with other individuals on the topic of ageism. Each participant determined the content of their poster campaign and had artistic license to present the information as they saw fit using the design knowledge learned in class. Some examples of participant generated posters included flipping scripts on various stigmas of aging, for example "Crows' feet are signs of a lifetime of laughter", portrayals of aging as a superpower, and messages that align aging with nature and processes respected in the natural world. A second design project that focused on aging and ageism was designing their own "old person in training" shirts. This project was intended to be a manifestation of their growing understanding about aging, specifically thinking of age as a continuous category and blurring the lines between young and old. Participants were required to wear their individually designed t-shirts for two full days over the course of a week to facilitate conversations about aging with individuals outside of the classroom and challenge their own age identities.

Part 2 of Instapals: facilitating positive intergenerational contact

Then, three weeks into the semester, the other key component of the PEACE model – facilitating positive intergenerational contact began with attention to the five contact criteria. Using the traditional framework of Pen Pals, Instapals facilitated one-to-one intergenerational relationships between undergraduate students (participants) and older adults through daily exchanges on Instagram (IG) for 30 days. Older adults from OATS (older adult technology services), a nonprofit based in New York City, voluntarily participated in this project. OATS harnesses the power of technology to empower older adults to live successful, independent, and more connected lives. Accompanied by the course instructor, participants went to Senior Planet, a flagship center for OATS in New York City, to meet face to face with their older partner and an OATS team member. Undergraduate students made presentations about the basics of IG and the reasons and ways they use IG as a way to introduce IG to older adults who were unfamiliar and to begin sharing of personal information. Next, the course instructor and OATS team member randomly paired younger and older adults for 30 minutes of conversational time. To address the PEACE model criteria of one-to-one interactions that are cooperative and promote equal status and involve sharing of personal information as sanctioned by authority figures in the situation, younger and older adult pairs were encouraged to take turns talking to one another about who they are and some of their interests. To help facilitate the conversation and to encourage cooperation, older and younger adults were asked to discuss IG, create new IG accounts, and begin following each other.

For the next 30 days, intergenerational pairs exchanged a minimum of one IG post a day, using the hashtags #Instagenerationsproject and #AgingWithAttitude. Younger and

older adults were given daily prompts or themes to inspire their IG post(s), such as "the first five minutes of my day," "someone (or thing) I love" and " … makes me anxious." Revealed by both groups were initial anxieties about making daily posts, "doing posts right," and generally using the social media platform in such a specific way. That shared understanding underscored observations by both groups of the shared interests and other similarities between generations that unfolded over the course of the month. At the end of 30 days, the younger and older adults met for a closing party to discuss their experiences and share what they learned during Instapals. All in all, these interactions addressed the five criteria to facilitate positive intergenerational contact of the PEACE model (individualized, equal status, cooperative, sharing of personal information, and sanctioned by Professor/University and nonprofit OATS).

Measures

Stereotyping of older adults

An 8 item measure of stereotyping was assessed (Fraboni, Saltstone, & Hughes, 1990; Rupp et al., 2005) on a 1 (*Strongly Disagree*) to 6 (*Strongly Agree*) scale (Time 1 α = 0.88; Time 2 α = 0.82 "many old people just live in the past") with higher scores indicating more negative stereotyping.

Affective attitudes toward older adults

A 5 item measure of attitudes or feelings toward older adults was assessed (Fraboni et al., 1990; Rupp et al., 2005) on a 1 (*Strongly Disagree*) to 6 (*Strongly Agree*) scale (Time 1 α = 0.77; Time 2 α = 0.75 "the company of most old people is quite enjoyable" – reverse scored) with higher scores indicating more negative affective attitudes.

Aging anxiety

A 4 item measure of aging anxiety was assessed (Bousfield & Hutchison, 2010) on a 1 (*Strongly Disagree*) to 6 (*Strongly Agree*) scale (Time 1 α = 0.83; Time 2 α = 0.89, "I am concerned that my abilities will suffer when I am old ") with higher score indicating greater aging anxiety.

Psychological concerns about aging

A 5 item measure of psychological concerns about aging was assessed (Lasher & Faulkender, 1993) on a 1 (*Disagree*) to 5 (*Agree*) scale (Time 1 α = 0.84; Time 2 α = 0.83, "I expect to feel good about myself when I am old") with higher scores indicating lower psychological concerns about aging.

Open-ended responses

At the beginning of the semester (before the Instapals intervention) and again at the end of the semester, participants answered four open-ended prompts (1: Aging is; 2: Old age begins; 3: The first thing that comes to mind when I think of "old age" is; 4: Describe yourself at 75) based on Lamb (2014).

Analysis overview

Quantitative

Using SPSS (version 24), paired t-tests were used to examine possible within subject differences in affective attitudes and stereotyping between Time 1 (beginning of semester) and Time 2 (end of semester). Effects size was calculated using Cohen's d. Using G-Power (Faul et al., 2007), a tool to compute statistical power analyses, our sample size was appropriate to detect a medium sized effect ($d = 0.5$) with a power of 0.60.

Open-ended

Two independent coders who were blind to the study hypotheses coded possible shifts in participants' pre and post open-ended responses to the four prompts (Lamb, 2014) on a scale −2 (very negative shift from pre to post); −1 (negative shift), 0 (no shift); 1 (positive shift); and 2 (very positive shift). Interrater reliability was calculated using Cohen's κ, there was moderate to strong agreement, κ =.71, $p < .001$; κ = .69, $p < .001$; κ = .82, $p < .001$; κ = .64 $p < .05$, respectively.

Participants also provided an end of semester reflection regarding the Instapals project. Two independent coders who were blind to the study hypotheses coded for the presence (1) or absence (0) of the following four themes based on Kalisch et al (2013; themes 1 & 2) and generated by the authors (themes 3 & 4): 1) I had preconceived notions about older adults and/or aging; 2) This experience has positively affect my life; 3) Older and younger adults can be/are similar (could refer to all sorts of things, similar interests, likes/dislikes, values, concerns, etc.;); and 4) This project/experience was enjoyable. Discrepancies were resolved by one of the authors.

Results

Quantitative results

Paired t-tests revealed a significant difference between Time 1 ($M = 2.86$, $SD = 0.80$) and Time 2 ($M = 2.35$, $SD = 0.68$) for stereotyping of older adults, $t (13) = 2.62$, $p < .05$, $d = 0.71$, suggesting that participants showed a significant decrease in negative stereotyping of older adults. There was a significant difference in aging anxiety between Time 1 ($M = 4.38$, $SD = 1.21$) and Time 2 ($M = 3.36$, $SD = 1.07$), $t (13) = 3.75$, $p < .01$, $d = 0.89$, suggesting that participants showed a significant decrease in aging anxiety. Likewise, there was also a significant difference in psychological concerns about aging between Time 1 ($M = 3.40$, $SD = 0.51$) and Time 2 ($M = 3.96$, $SD = 0.68$), $t (13) = −2.31$, $p < .05$, $d = 0.92$, suggesting that participants showed a significant decrease in psychological concerns about aging. However, contrary to expectations, there was no significant change in affective attitudes toward older adults.

Open-ended results

Coding of open-ended pre- and post-responses revealed a positive shift of attitudes among each of the four prompts. The average score for the "aging is" was 0.69, 0.90 for "old age begins," 0.50 for "first thing," and 0.47 for "yourself at 75," demonstrating positive shifts on average for participants from the beginning to the end of the semester. An example of a pre-

post positive shift for the "aging is" prompt was "scary" (pre) and "exciting! it means collecting more experiences" (post). For the prompt "old age begins", one participant wrote "begins at 70" (pre) and "whenever you decide to describe yourself as "old" (post). In response to the prompt "The first thing that comes to mind when I think of old age … ", one participant said "a fear of dying and losing independence" (pre) and "MISCONCEPTION, SOCIETY'S CONSTRUCTS – old age should not be feared so someone can sell you something" (post). Lastly, for the prompt "Describe yourself at 75 … ", a participant wrote "I really hope living" (pre) and "The same, but smarter and more accomplished. Happier." (post).

Analyses of participants' end of semester reflections revealed promising results for the Instapals intervention as well. Importantly, 93% of participant responses were coded as noting that older and younger adults have similarities, which is a hallmark of low stereotyping or recognition of cross-group similarities (Allport, 1954). As examples, one participant remarked "We shared some similar interests, especially in the field of art, and I tried to briefly explain to him why and how I used Instagram." Noting similarities, another participant said "I also originally thought the older group would struggle a bit with the mechanics of Instagram and overall engagement. I was pleasantly surprised whenever I read their posts and saw how similar they were to our own."

Moreover, 100% of participants' reflections were coded as enjoying the experience of Instapals and 93% of reflections were coded as mentioning that this experience positively affected their life, suggesting that this intervention was worthwhile and holds promise for use with other students and in other settings. For example, one participant stated, "This project was an overall awesome experience. I love the community we were all able to build together throughout this project." Another participant remarked, "Overall, I found this project very eye opening and after reflecting on the project, I realized that I actually learned more about older adults than I had originally thought. We are just people, we all have our own wants and desires."

More than half of participants' reflections (71%) mentioned having preconceived notions about older adults, which aligns with the literature showing that younger adults are exposed to negative stereotypes of older adults (Levy & Macdonald, 2016) and also suggests that participants were not simply giving positive responses to the questions to please the instructor. For example, one participant remarked "When Ageism was first introduced to me, I must admit that it was a sort of foreign concept. It had never occurred to me that you could be discriminatory against older people. In my sheltered experience, all of the stereotypes perpetuated about this group were true." Another participant stated, "This project definitely changed my views on older people and technology. It showed me that if you want to learn something new, that spark of interest is all you need. Even with new technology, age doesn't matter as long as you are willing to try." Another participant remarked, "This entire project most defiantly changed all my original assumptions about older adults in a very positive way." As a whole, these open-ended responses point to an overwhelmingly positive effect as a result of the Instapals intervention that was reported by almost all participants.

Discussion

Results from the first test of Instapals, an intervention derived from the PEACE model (Levy, 2016), revealed that facilitating positive intergenerational contact and challenging inaccurate aging beliefs through education reduced ageism. Statistically significant reductions in established measures of ageism and aging concerns were found from the

beginning to the end of the semester. That is, participants showed a significant decrease in aging anxiety, psychological concerns about aging, and negative stereotyping of older adults across a semester. Although the sample of participants was small, the effect sizes were large ($d = 0.71$ for aging stereotypes, $d = 0.89$ for aging anxiety, and $d = 0.92$ for psychological concerns about aging). In terms of effect sizes in the ageism reduction literature, a recent meta-analysis of ageism reduction interventions reported average effect sizes of $d = 0.33$ for attitudes, $d = 0.13$ for aging anxiety, and $d = 0.50$ for comfort (Burnes et al., 2019). Thus, while it is not possible to make a direct statistical and methodological comparison to these other interventions, the large effect sizes from the Instapals intervention point to the promising combination of both positive intergenerational contact and education about aging as key ingredients in ageism reduction interventions.

In addition to responding to established measures of ageism and aging concerns, study participants provided their thoughts on ageism and aging in their own words. Results from coding of participants' open-ended responses were largely consistent with the quantitative results. That is, participants reported predominately positive attitudinal changes toward aging and older adults. An analysis of participants' responses to four pre- and post- open-ended prompts about aging and self-perceptions of aging showed a positive shift in attitudes toward aging over the course of a semester. These results demonstrate a shift in viewing aging as a predominately negative life stage to a life-long process filled with a variety of experiences.

Similarly, participants end of semester reflections suggest that this intervention was enlightening, influential, and enjoyable. The end of semester reflections were in response to a completely open-ended prompt that provided students an opportunity to reflect on their experience with Instapals. Significantly, 93% of participants mentioned that older and younger adults have similarities, which reflects recognition of cross-age similarities and low stereotyping (Allport, 1954). Moreover, 100% of participants reported that they enjoyed the experience of Instapals, and 93% mentioned this experience positively affected their life. In keeping with the pervasiveness of stereotypes about older adults, 71% of participants noted that before starting Instapals, they had preconceived negative notions about older adults. In conjunction with the quantitative results, participants' open-ended responses suggest that the Instapals intervention was both influential in changing participants' attitudes about aging and older adults and that the delivery of the intervention was engaging and enjoyable.

While this Instapals intervention shows promise, there are some weaknesses that future studies could address. Similar to the other semester long intervention studies with a small number of students making a control group unfeasible (Kalisch et al., 2013; Penick et al., 2014), Instapals was a within-subjects design. As mentioned earlier the small number of students enrolled in the class, made a control group unfeasible. Also, because Instapals had structured tasks, such as posting daily to prompts on Instagram, it is more scale-able and repeatable than other past ageism-reduction interventions that rely solely on unique in-class discussions (Chonody, 2015).

In future studies, it would be worthwhile to expand the intervention to include testing the potential benefits of this intervention among older adult participants. Research suggests older adults internalize stereotypes about aging, which can have negative effects on physical, cognitive, and mental health (Abrams, Eller, & Bryant, 2006; Levy, 2009; Levy & Apriceno, 2019; Ramírez et al., 2018). As noted earlier, positive intergenerational

contact that involves sharing one's life story and experiences has been found to not only benefit the attitudes of those listening but also older adults (Gaggioli et al., 2014; Pinquart & Forstmeier, 2012). Unfortunately, much of the ageism reduction literature focuses solely on outcomes among younger and middle age adult participants (Levy & Macdonald, 2016; Roodin et al., 2013). Internalizing ageism is associated with aging concerns, well-being, and even longevity (Abrams et al., 2006; Levy, 2009; Ramírez et al., 2018), we look forward to future consideration of the potential benefits of interventions such as these among older adult participants. Furthermore, exploring the effectiveness of these kinds of interventions in other countries and cultures as well as individuals who vary by gender, race, sexual orientation, and other characteristics are worthwhile future areas of inquiry (Levy & Macdonald, 2016; Lytle, et al., 2018; Lytle, et al., 2018).

The Instapals intervention provided a unique exploration of how technology can be utilized to facilitate positive intergenerational contact. The results point to the promise of using technology as a way to engage a large group of individuals in positive intergenerational contact. This is also noteworthy in that some older adults have limited contact in their everyday lives, and there is growing concern over age segregation (North & Fiske, 2012). As demonstrated in the open-ended responses, participants found Instapals to be an engaging and exciting project that utilized a key form of technology, Instagram.

This intervention also was unique in that it incorporated ageism reduction into a non-gerontology or development undergraduate course. Aging education was provided hand in hand with several projects whose main purpose fit with the academic goal of the class, to increase knowledge of design and design skills. As mentioned earlier, participants did not self-select into an aging specific course, which speaks to the utility of including aging education more broadly across the educational curriculum (Marshall, 2015). Thus, these results have implications for future ageism reduction interventions, providing a roadmap for how other educators or leaders may incorporate intergenerational contact and aging education in their classrooms or organizations. For example, educators could connect their students with older adults in the same industry. A class on social justice and activism could seek out older adult activists to encourage communication that has historical significance for students' present day education.

In conclusion, this study tested Instapals, which is deeply rooted in theoretical (Allport, 1954; Butler, 1963; Levy, 2016) and empirical (Kalisch et al., 2013; Lytle & Levy, 2017; Ragan & Bowen, 2011) elements of the ageism reduction literature. To our knowledge, Instapals is the first intervention to incorporate both key elements of the PEACE model: intergenerational contact and aging education, while using technology, Instagram, to facilitate intergenerational contact. The sentiments from one participant captures the efficacy of the Instapals intervention, "I have opened my eyes to ageism, seen how it has affected people and seen it in myself."

ORCID

Ashley Lytle 🆔 http://orcid.org/0000-0003-0880-5930

References

Abrams, D., Eller, A., & Bryant, J. (2006). An age apart: The effects of intergenerational contact and stereotype threat on performance and intergroup bias. *Psychology and Aging*, 21(4), 691–702. doi:10.1037/0882-7974.21.4.691

Allan, L. J., & Johnson, J. A. (2009). Undergraduate attitudes toward the elderly: The role of knowledge, contact and aging anxiety. *Educational Gerontology*, 35(1), 1–14. doi:10.1080/03601270802299780

Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.

Applewhite, A. (2016). *This chair rocks: A manifesto against ageism*. New York, NY: Celadon Books.

Bousfield, C., & Hutchison, P. (2010). Contact, anxiety, and young people's attitudes and behavioral intentions towards the elderly. *Educational Gerontology*, 36(6), 451–466. doi:10.1080/03601270903324362

Brown, C. A., Kother, D. J., & Wielandt, T. M. (2011). A critical review of interventions addressing ageist attitudes in healthcare professional education. *Canadian Journal of Occupational Therapy*, 78, 282–293. doi:10.2182/cjot.2011.78.5.3

Burnes, D., Sheppard, C., Henderson, C. R., Jr, Wassel, M., Cope, R., Barber, C., & Pillemer, K. (2019). Interventions to reduce ageism against older adults: A systematic review and meta-analysis. *American Journal of Public Health*, 109(8), e1–e9. doi:10.2105/AJPH.2019.305123

Butler, R. N. (1963). The life review: An interpretation of reminiscence in the aged. *Psychiatry*, 26, 65–76. doi:10.1080/00332747.1963.11023339

Carstensen, L. L., Turan, B., Scheibe, S., Ram, N., Ersner-Hershfield, H., Samanez-Larkin, G. R., … Nesselroade, J. R. (2011). Emotional experience improves with age: Evidence based on over 10 years of experience sampling. *Psychology and Aging*, 26(1), 21–33. doi:10.1037/a0021285

Cherry, K. E., Blanchard, B., Walker, E. J., Smitherman, E. A., & Lyon, B. A. (2014). Knowledge of memory aging across the lifespan. *The Journal of Genetic Psychology: Research and Theory on Human Development*, 175(6), 547–553. doi:10.1080/00221325.2014.982069

Chonody, J. M. (2015). Addressing ageism in students: A systematic review of the pedagogical intervention literature. *Educational Gerontology*, 41(12), 859–887. doi:10.1080/03601277.2015.1059139

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175–191. doi:10.3758/BF03193146

Fraboni, M., Saltstone, R., & Hughes, S. (1990). The Fraboni Scale of Ageism (FSA): An attempt at a more precise measure of ageism. *Canadian Journal On Aging*, 9(1), 56–66. doi:10.1017/S0714980800016093

Gaggioli, A., Morganti, L., Bonfiglio, S., Scaratti, C., Cipresso, P., Serino, S., & Riva, G. (2014). Intergenerational group reminiscence: A potentially effective intervention to enhance elderly psychosocial wellbeing and to improve children's perception of aging. *Educational Gerontology*, 40, 486–498. doi:10.1080/03601277.2013.844042

Kalisch, H. R., Coughlin, D. R., Ballard, S. M., & Lamson, A. (2013). Old age is a part of living: Student reflections on intergenerational service-learning. *Gerontology & Geriatrics Education*, 34(1), 99–113. doi:10.1080/02701960.2012.753440

Lamb, E. G. (2014). "Polyester pants and orthopedic shoes": Introducing age studies to traditional aged undergraduates. https://ageculturehumanities.org/WP/polyesterpants and-orthopedic-shoes-introducingage-studies-to-traditional-aged-undergraduates/.

Lamont, R. A., Swift, H. J., & Abrams, D. (2015). A review and meta-analysis of age-based stereotype threat: Negative stereotypes, not facts, do the damage. *Psychology and Aging*, 30, 180–193. doi:10.1037/a0038586

Lasher, K. P., & Faulkender, P. J. (1993). Measurement of aging anxiety: Development of the anxiety about aging scale. *The International Journal of Aging and Human Development*, 37(4), 247–259. doi:10.2190/1U69-9AU2-V6LH-9Y1L

Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332–336. doi:10.1111/2Fj.1467-8721.2009.01662.x

Levy, S. R. (2016). Toward reducing ageism: PEACE (Positive education about aging and contact experiences) model. *The Gerontologist*. doi:10.1093/geront/gnw116

Levy, S. R., & Apriceno, M. (2019). Ageing: The role of ageism. *OBM Geriatrics*, *3*(4), 19. doi:10.21926/obm.geriatr.1904083

Levy, S. R., & Macdonald, J. L. (2016). Progress on understanding ageism. *Journal Of Social Issues*, *72*(1), 5–25. doi:10.1111/josi.12153

Lytle, A. (2018). Intergroup contact theory: Recent developments and future directions. *Social Justice Research*, *31*(4), 374–385. doi:10.1007/s11211-018-0314-9

Lytle, A., Dyar, C., Apriceno, M., & Levy, S. R. (2018). Sexual orientation and gender differences in aging perceptions and concerns among older adults. *Innovations in Aging*, *2*(3), 1–9. doi:10.1093/geroni/igy036

Lytle, A., & Levy, S. R. (2017). Reducing ageism: Education about aging and extended contact with older adults. *The Gerontologist*. doi:10.1093/geront/gnx177

Lytle, A., Macdonald, J., Dyar, C., & Levy, S. R. (2018). Ageism and sexism in the 2016 United States presidential election. *Analyses of Social Issues and Public Policy*, *18*, 81–104. doi:10.1111/asap.12147

Marshall, L. (2015). Thinking differently about aging: Changing attitudes through the humanities. *The Gerontologist*, *55*(4), 519–525. doi:10.1093/geront/gnu069

McCleary, R. (2014). Using film and intergenerational colearning to enhance knowledge and attitudes toward older adults. *Educational Gerontology*, *40*(6), 414–426. doi:10.1080/03601277.2013.844034

Meshel, D. S., & McGlynn, R. P. (2004). Intergenerational contact, attitudes, and stereotypes of adolescents and older people. *Educational Gerontology*, *30*(6), 457–479. doi:10.1080/03601270490445078

Ng, R., Allore, H. G., Trentalange, M., Monin, J. K., & Levy, B. R. (2015). Increasing negativity of age stereotypes across 200 years: Evidence from a database of 400 million words. *PloS One*, *10*, e0117086. doi:10.1371/journal.pone.0117086

North, M. S., & Fiske, S. T. (2012). An inconvenienced youth? Ageism and its potential intergenerational roots. *Psychological Bulletin*, *138*(5), 982–997. doi:10.1037/a0027843

Penick, J. M., Fallshore, M., & Spencer, A. M. (2014). Using intergenerational service learning to promote positive perceptions about older adults and community service in college students. *Journal of Intergenerational Relationships*, *12*(1), 25–39. doi:10.1080/15350770.2014.870456

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, *49*(1), 65–85. doi:10.1146/annurev.psych.49.1.65

Pillemer, K., Connolly, M., Breckman, R., Spreng, N., & Lachs, M. S. (2015). Elder mistreatment: Priorities for consideration by the White House conference on aging. *The Gerontologist*, *55*(2), 320–327. doi:10.1093/geront/gnu180

Pinquart, M., & Forstmeier, S. (2012). Effects of reminiscence interventions on psychosocial outcomes: A meta-analysis. *Aging & Mental Health*, *16*, 541–558. doi:10.1080/13607863.2011.651434

Ragan, A. M., & Bowen, A. M. (2001). Improving attitudes regarding the elderly population: The effects of information and reinforcement for change. *The Gerontologist*, *41*(4), 511 515. doi:10.1093/geront/41.4.511

Ramírez, L., Palacios-Espinosa, X., Dyar, C., Lytle, A., & Levy, S. R. (2018). The relationships among aging stereotypes, aging anxiety, social support, religiosity, and expected health among Colombians. *Journal of Adult Development*. Advanced Online Publication. doi: 10.1007/s10804-018-9299-8.

Roodin, P., Brown, L. H., & Shedlock, D. (2013). Intergenerational service-learning: A review of recent literature and directions for the future. *Gerontology & Geriatrics Education*, *34*(1), 3–25. doi:10.1080/02701960.2012.755624

Rupp, D. E., Vodanovich, S. J., & Credé, M. (2005). The multidimensional nature of ageism: Construct validity and group differences. *The Journal of Social Psychology*, *145*(3), 335 362. doi:10.3200/SOCP.145.3.335-362

Van Dussen, D. J., & Weaver, R. R. (2009). Undergraduate students' perceptions and behaviors related to the aged and to aging processes. *Educational Gerontology*, *35*(4), 340–355. doi:10.1080/03601270802612255

World Health Organization (WHO). (February, 2018). Ageing and health. Retrieved from https://www.who.int/news-room/fact-sheets/detail/ageing-and-health.

Wurtele, S. K., & Maruyama, L. (2013). Changing students' stereotypes of older adults. *Teaching Of Psychology*, *40*(1), 59–61. doi:10.1177/0098628312465867