



Effectiveness of Intergenerational Exchange Programs Between Adolescents and Older Adults: A Systematic Review

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Effectiveness of Intergenerational Exchange Programs Between Adolescents and Older Adults: A Systematic Review

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ABSTRACT

Communities are aging and becoming more segregated, leading to fractured relationships between generations. Intergenerational exchange has improved cohesion, particularly when different generations engage as equal partners. This paper presents a systematic review of intergenerational studies between adolescents and older adults. Thirteen papers were reviewed using PRISMA guidelines, and outcomes, methodological quality, facilitators, and barriers identified, to better understand effectiveness and inform recommendations for future practice. The framework informed quality assessment, and the papers were rated moderate or high quality. Unfortunately, heterogeneity across studies rendered comparison challenging. Further attention is required to elucidate guidelines for implementing and reporting intergenerational studies.

Contribution to the Field

- (1) This review demonstrated how non-familial intergenerational programs involving adolescents and older adults provided benefits to both. Benefits for older adults included improved wellbeing, cognitive, and social engagement.
- (2) Benefits for adolescents were identity formation and skill development. Shared outcomes for both generations were improved attitudes and stereotypes, reduced generational gap, and solidarity.
- (3) High variability in program design, methodology, and sample size was evident across studies. However, it highlighted the suitability of IG engagement across differing contexts.
- (4) Future recommendations included facilitator training, diverse samples, and longitudinal methodological designs.

KEYWORDS

Intergenerational relations;
adolescent; older adult;
systematic review

The overall pattern of an aging population has occurred globally, with predicted numbers of older people (aged 65+) to double by 2050 (United Nations, 2019). Communities have changed as many services have become

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digitized, disadvantaging those who were not technologically proficient. The COVID-19 pandemic brought about immediate and rapid transfers of essential services online and impacted opportunities for intergenerational (IG) contact (Drury et al., 2022). Collectively, these factors may have placed older individuals at risk of social isolation and loneliness, especially those who were least mobile or connected. Similarly, higher incidences of loneliness were reported among younger people (NSPCC, 2021) and suggestions have been made for mixed age neighborhoods to improve service access for younger and older residents (Sabater et al., 2019). Reduced contact between generations and inaccurate perceptions or attitudes may have developed to produce the concept of “other” (Lepianka, 2015; Tajfel & Turner, 1986). Consequently, many of the positive attributes of integration, such as democracy, trust, and positive social cohesion, were jeopardized (Sabater et al., 2018; Social Integration Commission, 2014).

Altered social demographics highlighted a shift from traditional cultural practices to knowledge transfer between generations. Older adults experienced fewer opportunities to adopt previously held roles, such as carer or educator, and were unable to impart wisdom or achieve generativity (Erikson & Erikson, 1998). Consequently, younger generations were less likely to learn skills, history, and heritage from older family or community members. Older adults also lost access to the social and technological expertises of younger people (Korupp & Szydluk, 2005; UNESCO, 2011), which impacted their ability to remain active and engaged, particularly during the COVID-19 pandemic.

Intergroup contact theory (Allport, 1954) purports that prejudice between distanced groups may be reduced via increased contact, especially when the groups have equal status, common goals, intergroup cooperation, and institutional support. The quality of contact was more effective in improving attitudes and stereotypes compared to frequency of contact (Drury et al., 2016; Pettigrew & Tropp, 2006). Positive effects were further mediated when friendship development and heightened empathy occurred between groups, and when anxiety related to interacting with outgroup members decreased (Page-Gould et al., 2008; Pettigrew & Tropp, 2006, 2008).

IG programs have connected older and younger generations to facilitate social exchange, knowledge transfer, and promote active participation in developing meaningful relationships (Beynon & Lang, 2018; MacCallum et al., 2010). The IG methods have been transferred into the learning paradigm as a guided exploration of differences between groups (Franz & Scheunpflug, 2016) and placed both generations as equal partners in the process. They have supported lifelong learning and improved wellbeing in older members of society and improved connectedness between groups (Beynon & Lang, 2018; Burnes et al., 2019; MacCallum et al., 2010; Mannion, 2012; Newman & Hatton-Yeo, 2008). Nevertheless, challenges have existed among IG studies, including small, homogeneous samples and recruitment difficulties (Bertram

et al., 2018; Fair & Delaplane, 2015; Gallagher & Fitzpatrick, 2018; Norouzi et al., 2015), and the impact of IG projects required further evaluation (Jarrott et al., 2021; Martins et al., 2019).

The IG studies have predominantly recruited children (aged 5–12 years) or university students (aged 18+) (Jarrott et al., 2021; Martins et al., 2019; Pstross et al., 2017). Adolescent participants were underrepresented within the IG literature – this is important as it has been suggested that adolescents and older adults possess similarities that render them suitable for collaboration. Specifically, they have parallel and complimentary developmental needs that create a cohesive synergy (Newman & Hatton-Yeo, 2008). Older adults desire to achieve generativity (Erikson & Erikson, 1998), accomplishment, and wisdom, whereas adolescents typically strive for identity formation via evaluation of morals, beliefs, and social connection (Erikson, 1959; Erikson & Erikson, 1998). Under circumstances that promote positive mutual engagement, age-specific needs may be reciprocally addressed. Age is an important factor when planning and implementing IG programs, as this can affect the appropriateness of content, engagement of participants, and program impact (Gerritzen et al., 2020).

Collaborative activities, such as skill development or engaged story telling (Cohen-Mansfield & Muff, 2022), are key to IG programs, and outcomes show improved attitudes, knowledge, or wellbeing (DeVore et al., 2016). However, communication between participants is often one-way, i.e., one group has interviewed or coached the other in learning a skill, and consequentially, measured outcomes have been unilateral (Barnard, 2014). Content analysis of four decades of IG research revealed that only 38% of the studies involved non-familial participants and measured the experiences of both groups (Jarrott, 2011).

Reciprocity is the equal exchange of support or information between individuals or groups (Antonucci & Jackson, 1989) and sets IG programs apart from others that simply included more than one age group (Mannion, 2012). When relationships are reciprocal, successful adaptation and response to aging is facilitated, as is learning and communication, and improved wellbeing (Antonucci & Jackson, 1989; Litwin, 2004; McKee & Heydon, 2015). As such, reciprocity has been significant in promoting benefits for both groups involved in IG exchange and an essential aspect of IG programs (Knight et al., 2014).

Diversity exists across many aspects of IG programs (Martins et al., 2019), yet some key features remain universal. Specifically, inclusion of participants from older and younger generations, who engaged in shared activities toward a mutual goal, with the aim of improving social, psychological, or health outcomes, such as relationships or attitudes between groups (Drury et al., 2017; Springate et al., 2008). Nevertheless, evidence highlighting the benefits of IG programs has been inconsistently reported, and examination of the effectiveness of activities could be further explored

(Drury et al., 2017; Martins et al., 2019). Robust claims regarding the value of such projects have been challenging to assert (Knight et al., 2014), and there remains a need to improve the implementation and evaluation of IG practice (Kaplan, 2002; Martins et al., 2019). Giraudeau and Bailly (2019) recommended key conditions to promote successful exchange; specifically, meaningful activities and understanding of the other generation. Yet, the reported samples included children aged 5–12 years and failed to address the dearth of literature including adolescents. The current review aimed to complement and extend current IG research by identifying the benefits of IG exchange and recommending means of improving the quality and effectiveness of programs.

The objectives of this study were to (1) identify outcomes of IG programs for adolescents and older adults; (2) examine the methodological quality of IG programs; (3) identify barriers and facilitators for delivering IG studies; and (4) recommend best practices for future programs of IG engagement.

Method

This review was conducted and reported in accordance with PRISMA guidelines (Page et al., 2021) and the protocol was registered on PROSPERO (CRD42019145405).

Search strategy

A systematic literature search was conducted on the databases Medline, Embase, PsycInfo, CINAHL, and ProQuest Complete using the following search terms: (Intergeneration* OR inter-generation* OR multigeneration* OR multi-generation* OR “skipped generation*” OR “split generation*” OR “mixed generation*” OR transgeneration* OR trans-generation* OR cross-generation* OR “cross generation*” OR “age integration” OR “generation* gap”) AND (“skill* exchange*” OR “skill* transfer*” OR “skill* shar*” OR “knowledge* exchange*” OR “knowledge* transfer*” OR “knowledge* shar*” OR learn*). The reference lists of key texts were also searched.

Inclusion and exclusion criteria

This review included full-text, English language, scholarly articles published between 1995 and 2022. Qualitative, quantitative, and mixed-method studies were accepted; review papers or program profiles were not. Adolescent participants aged 11–18 years were included; studies with participants younger than 11 or older than 18 were considered if the mean age was between 11 and 18 years. Familial samples were not included. This review sought studies that actively engaged both younger participants (YP) and older participants

(OP) as equal contributors in IG engagement and excluded those that did not report measured outcomes of IG engagement for both groups.

Screening process

One reviewer (MW) screened titles and abstracts of results to assess against the eligibility criteria of this review. The full texts of selected citations were assessed independently by MW and KN. Disagreements were resolved by discussion; a third independent reviewer was not necessary.

Appraisal strategy and scoring

An adapted version of the Caldwell et al. (2011) framework assessed the methodological quality of papers as it was appropriate for use in assessing both qualitative and quantitative research. Sixteen critical appraisal questions were selected from this framework to assess study features including rationale, design, and methodology. Scores of 1–3 were assigned for each question, with 1 indicating low quality or little to no detail provided and 3 indicating highest quality or very detailed. Total scores ranged from 16 to 48: scores between 16 and 26 indicated a low-quality paper; 27–37 was moderate quality; and 38–48 was high quality. MW and KN independently appraised each study, and where scoring differences occurred, an average score was applied to achieve consensus. Please see [Appendix 1](#) for the appraisal template used.

Analysis

The reported outcomes of IG programs were coded and categorized into overarching themes by MW according to the research objectives. Themes were then discussed and agreed between MW and KN. Reported outcomes were grouped into outcomes of IG programs that were exclusive to YP, outcomes exclusive to OP, and shared outcomes.

Results

A total of 9013 papers were identified through database searching and hand searching reference lists of key texts. Initial screening of paper titles eliminated 8393 irrelevant papers, bringing database results to 620. The screening process at this stage was to read titles and abstracts to assess if results matched the inclusion criteria for this review; 114 papers were selected for further reading. Full-text articles were read by MW and KN, 101 were excluded, and 13 included in the final review. See [Figure 1](#) for searches and screening results, including reasons for excluding full-text papers.

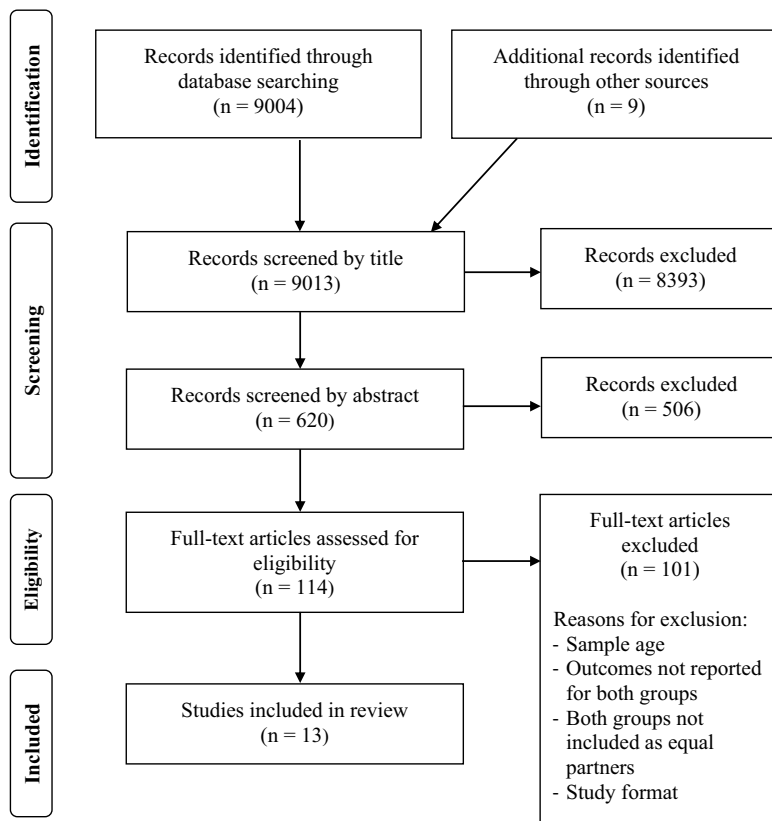


Figure 1. Flow diagram of search and screening processes. Adapted from Page et al. (2021).

Study characteristics

Of the 13 papers, six presented qualitative data (DeSouza, 2007; Dipardo & Schnack, 2004; Jones et al., 2004; Leek & Rojek, 2021; Öberg, 2007; Portman et al., 2010), three presented quantitative (Kessler & Staudinger, 2007; Kranz et al., 2021; Meshel & McGlynn, 2004), and four were mixed method (DeMichelis et al., 2015; Gamliel & Gabay, 2014; Lai & Burchett, 2021; Orte et al., 2018). Qualitative study designs included grounded theory ($n = 3$), phenomenology, descriptive, and collective case design. Quantitative studies were quasi-experimental pre-post design, experimental pre-post, and experimental post-only. All mixed-method studies employed a pre-post design. No randomized controlled trials (RCTs) were included, and three studies specified inclusion of control groups (Kessler & Staudinger, 2007; Kranz et al., 2021; Meshel & McGlynn, 2004). However, control samples were not always available for both groups of participants (Meshel & McGlynn, 2004). Total sample sizes varied across studies: three papers had fewer than 20 participants; three had between 20 and 50; two had between 50 and 100, and five papers had 100+ participants. Of the papers that provided a gender breakdown of their sample,

seven had mostly female participants and two had female participants only. Four papers provided either an incomplete gender breakdown, i.e., gender disclosed for YP but not older, or failed to include this information. Participants engaged in various activities, including shared life or storytelling; engaged reading; information and communications technology (ICT), educational, or language competency activities; collaborative cognitive or experience activities; and other interactive activities, e.g., talent show or games. All IG activities were scheduled within specific time periods, which ranged from 90 minutes to 1 year. One study employed a single intervention session, nine employed multiple sessions ranging from 3 weeks to 1 year, and three papers provided incomplete information. Eight papers generated measurement instruments and one paper did not specify the details of the questionnaire used. Further information on study characteristics is detailed in [Appendix 3](#).

Outcomes for older participants

Improved wellbeing

IG programs provided older participants opportunities to impart wisdom and guide a younger generation. Older adults modeled positive social behavior to YP, engendering pride, fulfillment, and appreciation of feeling useful via meaningful interactions and experiences (DeSouza, 2007; Dipardo & Schnack, 2004; Jones et al., 2004; Portman et al., 2010). In an experimental condition that required YP and OP to consider a life challenge that placed OP as the expert, stronger generativity was reported among OP compared to control conditions that either had single generation groups or placed the YP as the expert (Kessler & Staudinger, 2007). Through open communication and shared life experiences, OP felt they contributed to the development and success of a younger generation (Lai & Burchett, 2021; Leek & Rojek, 2021).

Physical and mental health

Perceived current life satisfaction significantly improved among OP following IG engagement, as did empowerment, self-efficacy, and confidence (Gamliel & Gabay, 2014; Meshel & McGlynn, 2004). Structured activities offered respite from monotonous daily routines, facilitating a sense of purpose, hope, rejuvenation, and reduced isolation (Portman et al., 2010). Mental and physical health markers improved following IG engagement (Lai & Burchett, 2021), including self-value (DeSouza, 2007), and observed affect among OP who had experienced chronic depression (Jones et al., 2004).

Cognitive and social engagement

IG programs provided opportunities for OP to participate in engaged cognitive activities (Dipardo & Schnack, 2004), instigating improved mental alertness (Lai & Burchett, 2021) and increased engagement with activities they deemed

challenging, e.g., Internet searching (Gamliel & Gabay, 2014). Cognitive performance and cognitive-affective complexity, i.e., “*the ability to view events and persons in an open, tolerant, and complex fashion by focusing on the negative as well as the positive side of the self and others*” (Kessler & Staudinger, 2007, p. 695), were significantly improved in OP in experimental conditions compared to control groups (Kessler & Staudinger, 2007). Social interactivity and feeling connected to society improved among OP who previously felt disengaged and lacking confidence in their social skills (DeSouza, 2007; Gamliel & Gabay, 2014; Jones et al., 2004; Lai & Burchett, 2021; Leek & Rojek, 2021).

Outcomes for younger participants

Identity formation

IG programs offered adolescents opportunities to develop self-awareness and experience personal growth via cooperative engagement with older adults who shared a wealth of knowledge and wisdom (DeMichelis et al., 2015). Prosocial behavior, i.e., “*voluntary behavior intended to benefit another*” (Eisenberg et al., 2006, p. 646), was observed in significantly more adolescents in an IG experimental condition that facilitated identity formation compared to control conditions (Kessler & Staudinger, 2007). The YP reported heightened confidence in their abilities to negotiate life’s challenges and enhanced comfort within themselves (DeMichelis et al., 2015; Portman et al., 2010).

Skill development

YP enjoyed adopting management and leadership roles during the IG activities (DeSouza, 2007; Gamliel & Gabay, 2014) as it offered them control over their educational materials (Lai & Burchett, 2021) and increased confidence in their teaching abilities and achievements (Gamliel & Gabay, 2014). Pre-engagement training prepared them for their new roles and engaging with their IG partners (Gamliel & Gabay, 2014), and benefits extended into their traditional learning endeavors (Lai & Burchett, 2021). Social contact and perceived acceptance from OP facilitated improved social and practical life skills among the YP (DeSouza, 2007; Jones et al., 2004). This included English language speaking and writing (Lai & Burchett, 2021) and adaptation of Internet usage for practical means, such as booking medical appointments (Leek & Rojek, 2021).

Shared outcomes

Attitudes and stereotypes

Baseline preconceptions held by each generation toward the other were heterogeneous. Öberg (2007, p. 36) found that both generations held stereotypical assumptions about the other prior to IG interaction, including negative

perceptions of older adults as “*old-fashioned*” and younger people as “*disrespectful*”, yet Meshel and McGlynn (2004) reported generally positive attitudes and stereotypes. YP believed that both OP and society held negative perceptions about adolescents, labeling them as “*lazy, irresponsible*” (DeSouza, 2007, p. 51), which some OP admitted to (Dipardo & Schnack, 2004). However, Kranz et al. (2021) found that both generations held more favorable stereotypes of youth than of older age. OP expressed concerns that YP held negative attitudes toward them and would not be engaged in IG work; however, these were overcome (DeSouza, 2007).

Adolescents rated the OP’s learning skills significantly lower following collaborative engagement using a computer but did not negatively affect their attitudes toward them (Gamliel & Gabay, 2014). Comparatively, older adults improved their attitudes of adolescents’ knowledge and teaching skills following IG engagement (Gamliel & Gabay, 2014; Meshel & McGlynn, 2004). Post-program and follow-up stereotyping improved for both generations in an experimental group that discussed existential life questions compared to a control condition, with more positive ratings recorded on the bipolar adjectives unfriendly-friendly, pessimistic-optimistic, idle-busy, and dependent-independent (Kranz et al., 2021).

The YP realized how similar the OPs’ outlooks and abilities were to their own, which diminished judgmental attitudes and previously held stereotypes (Dipardo & Schnack, 2004; Orte et al., 2018; Portman et al., 2010). Direct engagement with YP largely challenged negative preconceptions held by OP (DeSouza, 2007; Jones et al., 2004; Meshel & McGlynn, 2004) but some older men remained unsettled at the informal way YP interacted with them (DeSouza, 2007). Younger and older participants welcomed the opportunity to debunk stereotypical assumptions of their own generation, and as such, provided a reliable source to base their perceptions on each other, facilitating improved understanding and attitudes (DeMichelis et al., 2015; Dipardo & Schnack, 2004; Jones et al., 2004; Öberg, 2007; Orte et al., 2018).

Closing the generational gap

Younger and older participants admitted to feeling anticipatory nerves before introductions (DeMichelis et al., 2015; Dipardo & Schnack, 2004; Orte et al., 2018), and OP expressed disbelief that adolescents would be interested in hearing about their lives (Portman et al., 2010). Program activities, including cooperative learning training, were proactive in easing nerves and bridging the generational gap (DeMichelis et al., 2015; DeSouza, 2007; Orte et al., 2018). IG interactions facilitated meaningful and unifying experiences (DeMichelis et al., 2015; Orte et al., 2018; Portman et al., 2010) that allowed both generations to learn about each other’s values and re-examine their own (DeMichelis et al., 2015; Öberg, 2007). As such, mutual benefits were experienced, including reciprocal curiosity, understanding, and group cohesiveness (Dipardo &

Schnack, 2004; Jones et al., 2004; Leek & Rojek, 2021), which improved IG familial relations and social capital (DeSouza, 2007; Jones et al., 2004; Öberg, 2007; Orte et al., 2018).

Solidarity

IG activities permitted both generations to work collaboratively and discuss morals, family, physical ability, and media representations of IG relationships. Participants identified several shared experiences, which included identification of unfavorable perceptions of the other as perpetuated via the media (Dipardo & Schnack, 2004) and a shared sense of vulnerability within society (Öberg, 2007). Consequently, any perceived initial distance between the groups gave way to solidarity. It was not exclusively age-related factors that participants felt connected on. For example, discussions on gender equality reduced the generational gap, as women expressed more contemporary, liberal opinions compared to the male participants (Öberg, 2007). Leek and Rojek (2021) found that collaborative working using ICT facilitated rapprochement between generations in terms of shared attitudes toward ICT. Participants at a female retreat found solidarity via their life experiences as women and both generations emerged feeling closer; the OP expressed “*pride in the progress of women*” following their time with the YP (Portman et al., 2010, p. 100). Closeness between generations was reported in several studies, and participants developed friendships with members of the other group (Dipardo & Schnack, 2004; Lai & Burchett, 2021; Öberg, 2007).

Methodological quality

Assessment rated two papers as moderate quality (Öberg, 2007; Orte et al., 2018) and eleven of high quality (DeMichelis et al., 2015; DeSouza, 2007; Dipardo & Schnack, 2004; Gamliel & Gabay, 2014; Jones et al., 2004; Kessler & Staudinger, 2007; Kranz et al., 2021; Lai & Burchett, 2021; Leek & Rojek, 2021; Meshel & McGlynn, 2004; Portman et al., 2010). No papers were rated as low quality. Quality appraisal scoring is reported for each study in [Appendix 2](#), column one.

Facilitators and barriers for effective IG engagement

Methodology and design

Data collection periods and the time that participants spent in direct contact with each other differed between studies, including solitary IG sessions and extended year-long engagement. High design variability indicated the suitability of IG programs across frameworks and research questions. Participants often expressed the desire to continue with their study partners long term, and

authors considered the potential benefits of longitudinal programs (DeMichelis et al., 2015; DeSouza, 2007; Gamliel & Gabay, 2014; Jones et al., 2004; Kessler & Staudinger, 2007; Leek & Rojek, 2021).

Qualitative, quantitative, and mixed-method studies were included in this review and only three studies specified inclusion of control groups (Kessler & Staudinger, 2007; Kranz et al., 2021; Meshel & McGlynn, 2004). Some papers employed an experimental design, and randomization was evident in selection and design efforts (DeSouza, 2007; Kessler & Staudinger, 2007; Meshel & McGlynn, 2004). Nevertheless, high heterogeneity was evident across included studies, thus rendering comparisons challenging.

Staffing or scheduling issues

During program implementation, Jones et al. (2004) had trouble establishing cohesion between groups, which reduced the time spent in productive engagement, and a lack of funding and available facilitators negated program longevity. Other practical issues, such as transportation for participants and adverse weather, required adaptation and flexibility from facilitators (Jones et al., 2004; Orte et al., 2018). Conversely, coordinators who provided inconsistent guidance were perceived by participants as interrupting the natural flow of interaction and stifling spontaneous exchanges (DeSouza, 2007). As such, the necessity for efficient and engaged facilitators was highlighted.

Reciprocity

Reciprocity has been important in facilitating active learning and improved outcomes between generations (Mannion, 2012), and this review included studies that engaged both YP and OP as equal participants. This was reported as both groups adopting and switching roles of teacher and learner or both learning from a third party in an exchange triad. The equal status afforded to all participants improved understanding, challenged preconceptions, and enhanced skill development.

Sample

Total sample sizes varied, from <20 to 100+. Many studies reported homogenous samples for both generations, consisting of mainly female and self-selecting participants. The motivation of participant engagement was pivotal in the success of IG activities (Leek & Rojek, 2021). Positive outcomes were reported in highly educated samples (Kessler & Staudinger, 2007; Kranz et al., 2021; Lai & Burchett, 2021) and marginalized or vulnerable groups (Jones et al., 2004; Leek & Rojek, 2021). Small sample size was often reported, recruitment rarely randomized, and descriptions of the wider population infrequently provided, therefore

diminishing the ability to generalize findings (DeMichelis et al., 2015; DeSouza, 2007; Gamliel & Gabay, 2014; Kranz et al., 2021; Lai & Burchett, 2021).

Summary

Overall, high variability was evident across studies, including design, methodology, and sample characteristics. Evidence supported benefits for both YP and OP engaged in IG activities across settings, including response to developmental requirements, physical and mental health, and skill development. Heterogeneity rendered comparison challenging yet highlighted the adaptability of IG programs.

Discussion

This paper reviewed studies of IG exchange between non-familial adolescents and older adults, identifying outcomes, facilitators, and barriers of effective IG exchange, to inform recommendations for future programs. Engagement between generations elucidated the developmental challenges that each experienced and revealed how they complemented and responded to each other. Development of personal values and identity formation in YP was addressed by older adults who had life experience and wisdom. In turn, curiosity and awareness from YP toward OP reinvigorated a sense of purpose among OP and permitted them to relive and share their own experiences and anecdotes, further encouraging validation and generativity. Post-intervention attitudes toward the other were not universally improved; nevertheless, resounding feedback was that IG engagement facilitated mutually beneficial interactions between generations, stimulated relationship development and improved understanding. The participants found solidarity via shared experiences and feelings of comparability and affinity.

Both generations were equal contributors, which eliminated power imbalances and facilitated cooperation toward achieving common goals. Improved attitudes and understanding occurred, particularly where friendships developed, as purported by intergroup contact theory (Allport, 1954; Pettigrew & Tropp, 2008). This supports Galbraith et al. (2015) who found that positive outcomes of IG programs were more contingent on a setting that facilitated meaningful interactions and relationship development than the type of activity performed. Pre-engagement education on the other generation or training relating to study activities reduced anxiety and boosted confidence among participants (Gamliel & Gabay, 2014; Orte et al., 2018). Similar findings have been reported with recommendations to engage participants and facilitators prior to IG activities commencing to facilitate engagement and study success (Galbraith et al., 2015; Gerritzen et al., 2020).

The effectiveness of the IG interventions was positively influenced by participant demographics, including high literacy and educational achievements (Canedo-García et al., 2017). Potential bias toward engaged and studious female participants may be evident in this review, as OP were recruited who enjoyed engaged reading and volunteering with YP (Dipardo & Schnack, 2004), as were adolescents who attended the highest academically achieving schools (Kessler & Staudinger, 2007; Kranz et al., 2021; Lai & Burchett, 2021). Nonetheless, vulnerable groups were also represented in this review and feedback was similarly positive (Jones et al., 2004; Leek & Rojek, 2021), indicating the transferability of IG programs across contexts and populations. An imbalance of mostly female participants has been reported in the IG literature (Canedo-García et al., 2017; Krzeczowska et al., 2021), suggesting that they may be more open to participating in voluntary or research activities. Engaging in activities that benefit others has been associated with healthy development of autonomy and agency in adolescents (Fulgini, 2019) and improved wellbeing and quality of life in older adults (Owen et al., 2022).

The findings of this review indicated that male adolescents and older adults may miss out on these benefits. Cohen-Mansfield (2022) found that initial motivations to participate in IG activities were altruism or gaining valuable experiences for YP and receiving support or filling spare time for OP. These motivations were shown to align once IG engagement commenced, and both generations experienced satisfaction and IG friendships as motivational factors to continue the activities. Men's Sheds have facilitated mutual personal growth for IG groups of men via mentorship and skill development activities (Wilson et al., 2018). Further advancement of IG programs that attract male participants would benefit the literature.

Echoed throughout the studies in this review were participants' desires for IG engagement to continue long term, but practical and methodological challenges affected the sustainability of programs. Martins et al. (2019) purported that the primary predictor of program effectiveness was the length of time that participants were in contact, which highlighted a need within IG research for empirically sound long-term projects. Future studies may consider extending the interactions between participants using digital platforms, as proposed by Canedo-García et al. (2017). This will assist in overcoming practical challenges, permit program sustainability, and encourage empowerment, self-confidence, and skill acquisition (Peterat & Mayersmith, 2006).

Integral to a successful and sustainable program is a skilled facilitator who possesses good communication skills, enthusiasm, commitment, and knowledge of both generations (Jarrott, 2011; Jarrott et al., 2019). Facilitators must carefully shape the program with intent and purpose, incorporating short – long-term goals and maintain communication between participants, facilitators, and researchers, so that expectations align (Gamliel & Gabay, 2014; Orte et al., 2018). Ineffective management

Table 1. Recommendations for best practice of intergenerational exchange programs.

<ul style="list-style-type: none">• Provide training for program facilitators and other key stakeholders on how to plan, implement, and sustain IG studies, paying particular attention to:<ul style="list-style-type: none">◦ Align content with the developmental age of participants.◦ Achieve a balance of engaged facilitation while leaving space for natural relationship development between participants.• Provide training and education for participants prior to commencement of IG activities, targeting skill development and awareness building.• Consider including in the program design time for participants to get to know each other before documented IG engagement commences.• Consider the use of longer-term IG programs.• Ensure that both generations are included in IG activities as equal contributors.• Document efforts to include diverse samples, e.g., gender, socioeconomic status, or educational achievements.• Consider flexible and iterative frameworks to structure, implement, and assess future programs.
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of sessions hindered spontaneous interactions (DeSouza, 2007), and YP thrived when offered responsibility and control (DeSouza, 2007; Gamliel & Gabay, 2014; Lai & Burchett, 2021). As such, facilitators and researchers should strive to achieve a balance between structured and hands-off management. Training for IG facilitators that is flexible and tailored to the research objectives and the participants' abilities will facilitate improved engagement and individual outcomes (Galbraith et al., 2015).

Pertinent issues affecting adolescent and older adult populations were highlighted in this review. Variable study design and assessment alluded to a lack of continuity regarding impact measurement, which was reported elsewhere (Houghton et al., 2022). Nonetheless, the adaptability and provision of high-quality IG programs is highlighted, echoing findings of Jarrott et al. (2021) that identified evidence-based IG practice across methodological frameworks. It is recommended that IG activities are voluntary and flexible (Jarrott et al., 2019); possibly rendering RCTs as unsuitable. Improved research rigor conducted at a community level would be feasible and advantageous. Frameworks and guidelines for planning, implementing, and assessing IG programs will add value and create persuasive power to inform policy and practice. Participatory research methods offer a flexible, iterative framework that promotes inclusive exploration of pertinent social issues (Israel et al., 1998) and have facilitated IG benefits, including improved IG relations, wellbeing, and physical health (Anderson et al., 2016; Schroeder et al., 2017). Recommendations for best practice of IG programs are summarized in Table 1.

Strengths and limitations

This review is not without limitations. The search criteria identified IG programs that included adolescent and older adult participants and reported intervention effects for both groups. These specifications may have excluded high-quality studies that were conducted with samples beyond these parameters or that focused outcomes on one generation. Furthermore, this review

reported only on studies that were published in the English language, which may have excluded relevant papers.

High variability was evident across almost all features of IG studies in this review and throughout the IG literature (Canedo-García et al., 2017; Martins et al., 2019). The lack of uniformity between papers made comparison difficult; however, this highlighted the suitability of IG engagement across contexts. Challenges obscured the longevity of programs and samples were often small or gender-specific, thus diminishing the generalizability of findings. Nevertheless, methodologically strong studies were found, and reported outcomes were relatively homogenous, indicating universal benefits.

Conclusion

This review has provided a synthesis of the literature documenting non-familial IG programs between adolescents and older adults. Benefits were evident: improved physical, psychosocial, and cognitive status for older adults, and heightened self-awareness and skill acquisition by adolescents. Improved ability to respond to age-specific developmental concerns, including generativity and identity formation, was evident in older adults and adolescents, respectively, as was improved social cohesion and attitudes.

IG programs can promote improved social connectedness between generations by bringing together groups who infrequently interact in modern society. Age-friendly community policy programs and education systems will promote IG and lifelong learning. Without this contact, the benefits of social capital will be lost, and groups will display underdeveloped social and practical skills, creating a disharmonious society. As communities continue to age and generations become more distant, the value of IG programs becomes more prominent.

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References

- Allport, G. W. (1954). *The nature of prejudice*. Addison Wesley.
- Anderson, S., Fast, J., Keating, N., Eales, J., Chivers, S., & Barnet, D. (2016). Translating knowledge: Promoting health through intergenerational community arts programming. *Health Promotion Practice*, 18(1), 15–25. <https://doi.org/10.1177/1524839915625037>
- Antonucci, T. C., & Jackson, J. S. (1989). Successful aging and life course reciprocity. In A. M. Warnes (Ed.), *Human aging and later life* (pp. 83–95). Edward Arnold.
- Barnard, D. (2014). Through our eyes: A pastoral care bridge linking the generations. *Journal of Religion, Spirituality & Aging*, 26(2–3), 122–135. <https://doi.org/10.1080/15528030.2013.826161>
- Bertram, A. G., Burr, B. K., Sears, K., Powers, M., Atkins, L., Holmes, T., Kambour, T., & Kuns, J. B. (2018). Generations learning together: Pilot study for a multigenerational program. *Journal of Intergenerational Relationships*, 16(3), 243–255. <https://doi.org/10.1080/15350770.2018.1477402>
- Beynon, C., & Lang, J. (2018). The more we get together, the more we learn: Focus on intergenerational and collaborative learning through singing. *Journal of Intergenerational Relationships*, 16(1–2), 45–63. <https://doi.org/10.1080/15350770.2018.1404405>
- 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. <https://doi.org/10.2105/AJPH.2019.305123>
- Caldwell, K., Henshaw, L., & Taylor, G. (2011). Developing a framework for critiquing health research: An early evaluation. *Nurse Education Today*, 31(8), e1–e7. <https://doi.org/10.1016/j.nedt.2010.11.025>
- Canedo-García, A., García-Sánchez, J. N., & Pacheco-Sanz, D. I. (2017). A systematic review of the effectiveness of intergenerational programs. *Frontiers in Psychology*, 8(1882), 1–13. <https://doi.org/10.3389/fpsyg.2017.01882>
- Cohen-Mansfield, J. (2022). Motivation to participate in intergenerational programs: A comparison across different program types and generations. *International Journal of Environmental Research and Public Health*, 19(6), 3554. <https://doi.org/10.3390/ijerph19063554>
- Cohen-Mansfield, J., & Muff, A. (2022). Comparing community-based intergenerational activities in Israel: Participants, programs, and perceived outcomes. *Journal of Gerontological Social Work*, 65(5), 495–511. <https://doi.org/10.1080/01634372.2021.1983683>
- DeMichelis, C., Ferrari, M., Rozin, T., & Stern, B. (2015). Teaching for wisdom in an intergenerational high-school-English class. *Educational Gerontology*, 41(8), 551–566. <https://doi.org/10.1080/03601277.2014.994355>
- DeSouza, E. (2007). Intergenerational interaction through reminiscence processes. *Journal of Intergenerational Relationships*, 5(1), 39–56. https://doi.org/10.1300/J194v05n01_04
- DeVore, S., Winchell, B., & Rowe, J. M. (2016). Intergenerational programming for young children and older adults: An overview of needs, approaches, and outcomes in the United States. *Childhood Education*, 92(3), 216–225. <https://doi.org/10.1080/00094056.2016.1180895>
- Dipardo, A., & Schnack, P. (2004). Expanding the web of meaning: Thought and emotion in an intergenerational reading and writing program. *Reading Research Quarterly*, 39(1), 14–37. <https://doi.org/10.1598/RRQ.39.1.3>
- Drury, L., Abrams, D., & Swift, H. J. (2017). Making intergenerational connections: What are they, why do they matter and how to make more of them. Age UK. <https://www.ageuk.org>

- uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/rb_2017_making_intergenerational_connections.pdf
- Drury, L., Abrams, D., & Swift, H. J. (2022). Intergenerational contact during and beyond COVID-19. *Journal of Social Issues*, 78(4), 860–882. <https://doi.org/10.1111/josi.12551>
- Drury, L., Hutchison, P., & Abrams, D. (2016). Direct and extended intergenerational contact and young people's attitudes towards older adults. *British Journal of Social Psychology*, 55(3), 522–543. <https://doi.org/10.1111/bjso.12146>
- Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Volume 3: Social, emotional, and personality development* (6th ed., pp. 646–718). John Wiley & Sons, Inc.
- Erikson, E. H. (1959). *Identity and the life cycle: Selected papers*. International Universities Press.
- Erikson, E. H., & Erikson, J. M. (1998). *The life cycle completed (extended version)*. W. W. Norton.
- Fair, C. D., & Delaplane, E. (2015). “It is good to spend time with older adults. You can teach them, they can teach you”: Second grade students reflect on intergenerational service learning. *Early Childhood Education Journal*, 43(1), 19–26. <https://doi.org/10.1007/s10643-014-0634-9>
- Franz, J., & Scheunpflug, A. (2016). A systematic perspective on intergenerational learning: Theoretical and empirical findings. *Studia Paedagogica*, 21(2), 25–41. <https://doi.org/10.5817/SP2016-2-3>
- Fulgini, A. J. (2019). The need to contribute during adolescence. *Perspectives on Psychological Science*, 14(3), 331–343. <https://doi.org/10.1177/1745691618805437>
- Galbraith, B., Larkin, H., Moorhouse, A., & Oomen, T. (2015). Intergenerational programs for persons with dementia: A scoping review. *Journal of Gerontological Social Work*, 58(4), 357–378. <https://doi.org/10.1080/01634372.2015.1008166>
- Gallagher, C., & Fitzpatrick, A. (2018). “It’s a win-win situation” - intergenerational learning in preschool and elder care settings: An Irish perspective. *Journal of Intergenerational Relationships*, 16(1–2), 26–44. <https://doi.org/10.1080/15350770.2018.1404403>
- Gamliel, T., & Gabay, N. (2014). Knowledge exchange, social interactions, and empowerment in an intergenerational technology program at school. *Educational Gerontology*, 40(8), 597–617. <https://doi.org/10.1080/03601277.2013.863097>
- Gerritzen, E. V., Hull, M. J., Verbeek, H., Smith, A. E., & de Boer, B. (2020). Successful elements of intergenerational dementia programs: A scoping review. *Journal of Intergenerational Relationships*, 18(2), 214–245. <https://doi.org/10.1080/15350770.2019.1670770>
- Giraudeau, C., & Bailly, N. (2019). Intergenerational programs: What can school-age children and older people expect from them? A systematic review. *European Journal of Ageing*, 16(3), 363–376. <https://doi.org/10.1007/s10433-018-00497-4>
- Houghton, C., Hennessy, M., Smyth, S., Hennelly, N., Smalle, M., Jordan, F., Jones, C. H., Quinn, M., Casey, D., & Teahan, Á. (2022). The experiences and perceptions of young people and older people living with dementia of participating in intergenerational programmes: A qualitative evidence synthesis. *Dementia (London, England)*, 21(7), 2144–2171. <https://doi.org/10.1177/14713012221112385>
- Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*, 19(1), 173–202. <https://doi.org/10.1146/annurev.publhealth.19.1.173>
- Jarrott, S. E. (2011). Where have we been and where are we going? Content analysis of evaluation research of intergenerational programs. *Journal of Intergenerational Relationships*, 9(1), 37–52. <https://doi.org/10.1080/15350770.2011.544594>

- Jarrott, S. E., Scrivano, R. M., Park, C., & Mendoza, A. N. (2021). Implementation of evidence-based practices in intergenerational programming: A scoping review. *Research on Aging*, 43(7–8), 283–293. <https://doi.org/10.1177/0164027521996191>
- Jarrott, S. E., Stremmel, A. J., & Naar, J. J. (2019). Practice that transforms intergenerational programs: A model of theory- and evidence-informed principles. *Journal of Intergenerational Relationships*, 17(4), 488–504. <https://doi.org/10.1080/15350770.2019.1579154>
- Jones, E. D., Herrick, C., & York, R. F. (2004). An intergenerational group benefits both emotionally disturbed youth and older adults. *Issues in Mental Health Nursing*, 25(8), 753–767. <https://doi.org/10.1080/01612840490506329>
- Kaplan, M. S. (2002). Intergenerational programs in schools: Considerations of form and function. *International Review of Education*, 48, 305–334. <https://doi.org/10.1023/A:1021231713392>
- Kessler, E. M., & Staudinger, U. M. (2007). Intergenerational potential: Effects of social interaction between older adults and adolescents. *Psychology and Aging*, 22(4), 690–704. <https://doi.org/10.1037/0882-7974.22.4.690>
- Knight, T., Skouteris, H., Townsend, M., & Hooley, M. (2014). The act of giving: A systematic review of nonfamilial intergenerational interaction. *Journal of Intergenerational Relationships*, 12(3), 257–278. <https://doi.org/10.1080/15350770.2014.929913>
- Korupp, S. E., & Szydlik, M. (2005). Causes and trends of the digital divide. *European Sociological Review*, 21(4), 409–422. <https://doi.org/10.1093/esr/jci030>
- Kranz, D., Thomas, N. M., & Hofer, J. (2021). Changes in age stereotypes in adolescent and older participants of an intergenerational encounter program. *Frontiers in Psychology*, 12, 1–15. <https://doi.org/10.3389/fpsyg.2021.658797>
- Krzeczkowska, A., Spalding, D. M., McGeown, W. J., Gow, A. J., Carlson, M. C., & Nicholls, L. A. B. (2021). A systematic review of the impacts of intergenerational engagement on older adults' cognitive, social, and health outcomes. *Ageing Research Reviews*, 71, 101400. <https://doi.org/10.1016/j.arr.2021.101400>
- Lai, A., & Burchett, R. (2021). Involving retired citizens in ESL education: Case study of a secondary school program. *Journal of Intergenerational Relationships*, 19(2), 249–271. <https://doi.org/10.1080/15350770.2020.1739588>
- Leek, J., & Rojek, M. (2021). ICT tools in breaking down social polarization and supporting intergenerational learning: Cases of youth and senior citizens. *Interactive Learning Environments*, 31, 1–16. <https://doi.org/10.1080/10494820.2021.1940214>
- Lepianka, D. (2015). How similar, how different? On Dutch media depictions of older and younger people. *Ageing and Society*, 35(5), 1095–1113. <https://doi.org/10.1017/S0144686X14000142>
- Litwin, H. (2004). Intergenerational exchange and mental health in later life – the case of older Jewish Israelis. *Aging and Mental Health*, 8(3), 196–200. <https://doi.org/10.1080/13607860410001669723>
- MacCallum, J., Palmer, D., Wright, P., Cumming-Potvin, W., Brooker, M., & Tero, C. (2010). Australian perspectives: Community building through intergenerational exchange programs. *Journal of Intergenerational Relationships*, 8(2), 113–127. <https://doi.org/10.1080/15350771003741899>
- Mannion, G. (2012). Intergenerational education: The significance of reciprocity and place. *Journal of Intergenerational Relationships*, 10(4), 386–399. <https://doi.org/10.1080/15350770.2012.726601>
- Martins, T., Midão, L., Martínez Veiga, S. M., Dequech, L., Busse, G., Bertram, M., McDonald, A., Gilliland, G., Orte, C., Vives, M., & Costa, E. (2019). Intergenerational programs review: Study design and characteristics of intervention, outcomes, and

- effectiveness. *Journal of Intergenerational Relationships*, 17(1), 93–109. <https://doi.org/10.1080/15350770.2018.1500333>
- McKee, L. L., & Heydon, R. M. (2015). Orchestrating literacies: Print literacy learning opportunities within multimodal intergenerational ensembles. *Journal of Early Childhood Literacy*, 15(2), 227–255. <https://doi.org/10.1177/1468798414533562>
- Meshel, D. S., & McGlynn, R. P. (2004). Intergenerational contact, attitudes, and stereotypes of adolescents and older people. *Educational Gerontology*, 30(6), 457–479. <https://doi.org/10.1080/03601270490445078>
- Newman, S., & Hatton-Yeo, A. (2008). Intergenerational learning and the contributions of older people. *Ageing Horizons*, 8(10), 31–39. https://www.ageing.ox.ac.uk/files/ageing_horizons_8_newmanetal_ll.pdf
- Norouzi, N., Chen, J. C., & Jarrott, S. E. (2015). Intergenerational explorations: Where everyone has a purpose. *Journal of Intergenerational Relationships*, 13(3), 260–265. <https://doi.org/10.1080/15350770.2015.1058282>
- NSPCC. (2021). *Childline Raise Concerns About Mental Health as Counselling Sessions Delivered to Children Passes 50,000*. <https://www.nspcc.org.uk/about-us/news-opinion/2021/childline-press-release/>
- Öberg, B. M. (2007). Meeting the other: A way of fighting age discrimination? A discussion circle with young and old participants in Sweden. *Journal of Intergenerational Relationships*, 5(2), 27–44. https://doi.org/10.1300/J194v05n02_03
- Orte, C., Vives, M., Amer, J., Ballester, L., Pascual, B., Gomila, M. A., & Pozo, R. (2018). Sharing intergenerational relationships in educational contexts: The experience of an international program in three countries (Spain, Poland and Turkey). *Journal of Intergenerational Relationships*, 16(1–2), 86–103. <https://doi.org/10.1080/15350770.2018.1404414>
- Owen, R., Berry, K., Brown, L. J. E., & Heyn, P. C. (2022). Enhancing older adults' well-being and quality of life through purposeful activity: A systematic review of intervention studies. *The Gerontologist*, 62(6), e317–e327. <https://doi.org/10.1093/geront/gnab017>
- Page-Gould, E., Mendoza-Denton, R., & Tropp, L. R. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology*, 95(5), 1080–1094. <https://doi.org/10.1037/0022-3514.95.5.1080>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S. . . . Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Peterat, L., & Mayersmith, J. (2006). Farm friends: Exploring intergenerational environmental learning. *Journal of Intergenerational Relationships*, 4(1), 107–116. https://doi.org/10.1300/J194v04n01_12
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751–783. <https://doi.org/10.1037/0022-3514.90.5.751>
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38(6), 922–934. <https://doi.org/10.1002/ejsp.504>
- Portman, T. A. A., Bartlett, J. R., & Carlson, L. A. (2010). Relational theory and intergenerational connectedness: A qualitative study. *Adultspan Journal*, 9(2), 88–102. <https://doi.org/10.1002/j.2161-0029.2010.tb00074.x>
- Pstross, M., Corrigan, T., Knopf, R. C., Sung, H., Talmage, C. A., Conroy, C., & Fowley, C. (2017). The benefits of intergenerational learning in higher education: Lessons learned from

- two age friendly university programs. *Innovative Higher Education*, 42(2), 157–171. <https://doi.org/10.1007/s10755-016-9371-x>
- Sabater, A., Finney, N., & Graham, E. (2019). *House Prices Push Old and Young into Separate Neighbourhoods*. Economic & Social Research Council Evidence Briefing. Economic & Social Research Council. <https://esrc.ukri.org/files/news-events-and-publications/evidence-briefings/house-prices-push-old-and-young-into-separate-neighbourhoods/>
- Sabater, A., Graham, E., & Finney, N. (2018). *(Un)affordable housing and the residential separation of age groups*. ESRC Centre for Population Change. (Briefing 45). http://www.cpc.ac.uk/docs/BP45_UnAffordable_housing_and_the_residential_separation_of_age_groups.pdf
- Schroeder, K., Ratcliffe, S. J., Perez, A., Earley, D., Bowman, C., & Lipman, T. H. (2017). Dance for health: An intergenerational program to increase access to physical activity. *Journal of Pediatric Nursing*, 37, 29–34. <https://doi.org/10.1016/j.pedn.2017.07.004>
- Social Integration Commission. (2014). *Social Integration: A Wake-Up Call*. Social Integration Commission. <https://the-challenge.org/cms/uploads/a-wake-up-call-social-integration-commission.pdf>
- Springate, I., Atkinson, M., & Martin, K. (2008). *Intergenerational practice: A review of the literature*. (LGA Research Report F/SR262). NFER. <https://www.nfer.ac.uk/media/1968/lig01.pdf>
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Nelson-Hall.
- UNESCO. (2011). *What is Intangible Cultural Heritage?*. <https://ich.unesco.org/en/what-is-intangible-heritage-00003>
- United Nations. (2019). *World Population Ageing 2019: Highlights*. United Nations, Department of Economic and Social Affairs, Population Division. (ST/ESA/SER.A/430). <https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Highlights.pdf>
- Wilson, N. J., Cordier, R., Ciccarelli, M., MacCallum, J., Milbourn, B., Vaz, S., Joosten, A., Buchanan, A., McAuliffe, T., & Stancliffe, R. J. (2018). Intergenerational mentoring at Men's sheds: A feasibility study. *Journal of Applied Research in Intellectual Disabilities*, 31(1), e105–e117. <https://doi.org/10.1111/jar.12338>

Appendix 1

Caldwell et al. (2011) adapted quality appraisal checklist.

-
- Does the title reflect the content?
 - Does the abstract summarize the key components?
 - Is the rationale for undertaking the research clearly outlined?
 - Is the literature review comprehensive and up to date?
 - Is the aim of the study clearly stated?
 - Are all ethical issues identified and addressed?
 - Is the methodology identified and addressed?
 - Is the design clearly identified and a rationale provided? (Quantitative studies)
 - Are philosophical background and study design identified and rationale for design evident? (Qualitative studies)
 - Is there an experimental hypothesis clearly stated and are the key variables identified? (Quantitative)
 - Are the major concepts identified? (Qualitative)
 - Is the population identified? (Quantitative)
 - Is the context of the study outlined? (Qualitative) i.e., where they were recruited/where it was run
 - Is the sample adequately described and reflective of the population? (Quantitative)
 - Selection of participants described and sampling method identified? (Qualitative)
 - Is the method of data collection valid and reliable? (Quantitative)
 - Is the method of data collection auditable? (Qualitative)
 - Is the method of data analysis valid and reliable? Must be described and justified. Any statistical test used must be appropriate (Quantitative)
 - Is the method of data collection credible and confirmable? (Qualitative)
 - Are the results presented in a way that is appropriate and clear?
 - Do the discussion and conclusion discuss the findings of the paper/reflect the purpose of study?
 - Are the results generalizable?
-

Appendix 2

Additional information on the included studies

Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
DeMichellis et al. (2015) 42	Canada	Younger participants (YP): $n=13$, no age range ($M=18$, $SD=27$). Older participants (OP): $n=10$, aged 60–89. No gender breakdown. Nationality, religiousness, religious preference.	YP recruited from high-school English class. OP were volunteers at a senior's health care facility and living in the community. High school classroom.	Mixed method, pre-post. Not specific but appears that they were all in one class together.	For 1.5 hours a week for 3 weeks and led by English teacher, OP and YP engaged in class discussions about the book Angela's Ashes, which involves IG themes. Prior, all wrote an autobiographical essay outlining their expectations then completed reflective and additional autobiographical assignments.	All completed two measures pre and post: <ul style="list-style-type: none">Self-assessed wisdom scaleTemporal satisfaction with life scaleReflections and assignments coded for wisdom according to 5 SAWS dimensions and grounded theory approach adopted to reveal sub-dimensions.	Impact of IG engagement: <ul style="list-style-type: none">Sig decreases in OP's estimation of their own critical life experiences and humorOP Increased past life satisfactionNo repeated-measures effects for YP Qualitative: <ul style="list-style-type: none">Mostly presented similarities and differences between groupsImpact for both:<ul style="list-style-type: none">IG classroom stimulated them both to reexamine their own values and beliefs.They both learned from the discovery of shared experiences.Psychological benefits reported by both.

(Continued)

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
DeSouza (2007) 41	Brazil	YP: <i>n</i> =111, aged 12–18. OP: <i>n</i> =32, aged 60+ No gender breakdown for participants but majority F focus groups (see measurement, analysis). No additional information.	YP assigned from five 7&8 th grade classes in one secondary school & OP from this catchment area. City selected due to low-income urban characteristics and high proportion of migrants, predisposing to poor social cohesion. High school classroom.	Qualitative, grounded theory. Random selection of all participants using random number tables.	Larger groups of average 30 YP, split into approx. 10 YP and minimum 2 OP shared life stories for 2 hours per week for 5 months, completing a mean of 14 sessions.	Qualitative focus groups, all single-sex and single-age: <ul style="list-style-type: none">• OP: four groups (3F), average <i>n</i>=6 attendees• YP: 10 groups (5F), average <i>n</i>=9 attendees Grounded theory analysis; implementation of SDRT (see outcomes).	Blended theory developed as framework to support findings: Social Learning, Dialogical and Reflective Theory (SDRT). OP: <ul style="list-style-type: none">• Improved attitudes toward YP in women but not men YP:• All showed improved attitudes toward older adults

(Continued)

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Dipardo and Schnack (2004) 42	United States	YP: $n=23$ ($n=16F$), aged 8 th grade (13–14). OP: $n=23$ ($n=18F$), no ages provided. Social class, ethnicity.	YP recruited from an 8 th grade language arts class and OP were all community volunteers. Home setting.	Qualitative, phenomenology One YP to one OP, remaining in these pairs throughout.	A year-long study, consisting of two five-week reading cycles (one in autumn and one in spring). IG pairs read each book at the same time while corresponding in weekly dialogue journals. YP have free choice of first book and the second is from a selection focusing on Holocaust and WW2 topics. Participants meet face to face three times; during two joint interviews and at the concluding party.	<div>Individual inter-views with all</div> <div>Joint interviews with focal pairs</div> <div>Dialogue journals</div> <div>Field notes</div> <div>Participants' written comments on partnership</div> <div>Other data include interview with director of program, miscellaneous written artifacts, and other field notes</div>	<div>OP:</div> <div>Improved ability to converse with adolescents</div> <div>Enhanced mental alertness via reading and writing</div> <div>Pride in providing model to their partners</div> <div>YP:</div> <div>Antidote to the "intensified and sometimes lonely lives of today's adolescents" (p31)</div> <div>Both:</div> <div>Focused search for commonalities</div> <div>Praise from OP to YP and appreciation from YP to OP</div> <div>Developing friendships</div> <div>Enhanced understanding of the other generation</div> <div>Countering negative perceptions of the other</div> <div>Mind expanding and enjoyable opportunity to get to know each other via shared reflection on books</div> <div>Reciprocal curiosity about each other</div>

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Gamliel and Gabay (2014) 39	Israel	YP: <i>n</i> =32, aged 11–12. OP: <i>n</i> =29, aged 66–77. No gender breakdown. Socioeconomic status, ethnicity.	Schools selected according to similarity on eight features, including locality and socioeconomic situation. Primary school classroom.	Mixed method, pre-post. YP and OP paired. No indication of how pairs were assigned.	Initial pre-collaboration workshop for YP, then for two hours once a week, during one school semester (3 months; program is run twice during the school year, once per semester) IG pairs engage in computer activities together, deciding themselves on specific topics. A leading teacher runs and oversees implementation. Program concluded with a ceremony and all participants receive a certificate.	Quantitative: <ul style="list-style-type: none"> Closed-ended questionnaires collected during face-to-face interviews Pre: YP: <i>n</i>=29, OP: <i>n</i>=25; Post: YP: <i>n</i>=27, OP: <i>n</i>=24. Questionnaires devised from a mixture of vali- dated and author- generated items Qualitative: Observations and unstructured interviews. Information exchange pro- cesses measures via class follow- ups; communica- tion observation; event logging; monitoring reports; and web- site content monitoring. 	Knowledge exchange: <ul style="list-style-type: none"> Sig improved OP's assessment of YP's contribution and teaching skills. Continuous praise from OP to YP. Increase in YP's self- confidence and teaching abilities and achievements. Displays of initiative and control Sig decrease in YP's assessment of OP's learning skills. Observations saw extra efforts required by YP, but this did not affect attitudes toward OP or teaching.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Empowerment:							<ul style="list-style-type: none">• Sig increase in all measures by both• Strongest increase was for OP on communal involvement• OP improved more on self-efficacy (strongly associated with YP's contribution)• YP improved more on self-confidence• Pre-measured differences between groups were eliminated in post-results• OP's empowerment associated with closeness to YP• YP empowerment associated with their own skills• Supported by qualitative feedback Attitudes: <ul style="list-style-type: none">• Strongest improvement in perceived closeness to each other• YP's perception of OP's inclusion in the computer world also improved

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Jones et al. (2004) 39	United States	YP: $n=5$ ($n=3F$), aged 12–17, with emotional or behavioral problems), OP: $n=8$ ($n=6F$), aged 51–94, low-income. Ethnicity, education, medical diagnoses, frequency of IG contact outside of study, living grandparent/child, family situation, living arrangement, important activities.	Convenience sample of volunteers from two support groups (a group for well older adults to facilitate socialization and reduce isolation, and a group for YP to assist in dealing with emotional difficulties). Independent living facility for older adults.	Qualitative, descriptive. Whole group as well as one-to-one activities. Originally, the entire group consisted of 10 OP and 10 YP. However, after OP dropout due to YP hyperactivity, YP $n=5$, and cohesiveness developed over time.	They met bi-monthly for 11 months (22 sessions in total, roughly 45 minutes each) and engaged in various activities including discussions, games, talent shows and outings. Activities were designed around Yalom (1985) 12 therapeutic factors.	<ul style="list-style-type: none">• Demographic questionnaire for each group, developed by researchers• Revised Critical Incidence Questionnaire• Yalom's (1985) Therapeutic Factors• Open-ended question about attitude toward other• ObservationsAll data collected during structured interviews ($n=3$).	<ul style="list-style-type: none">• More socially active• Improved mental affect YP: <ul style="list-style-type: none">• Improved social skills• Better understanding of themselves and others Both: <ul style="list-style-type: none">• 70% of the older adults and all adolescents reported improved attitudes toward the other.• 7 out of 12 therapeutic factors mastered.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Kessler and Staudinger (2007) 43	Germany	YP: $n=90$, aged 14–15. OP: $n=90$, aged 70–74. 100% F. Previous occupation, education.	OP recruited through newspaper articles describing life span research. YP recruited via Gymnasium school. University Behavioral Science Laboratory.	Quantitative, posttest experiment. Random assignment to one of three groups: experimental and 2 control groups. Participants worked in dyads and did not know each other. Experimental group: mixed generation, expert role assigned to OP (OP-LP). Control condition 1: mixed generation group, expert status assigned to YP (YP-MP). Control condition 2: same generation group. (OO-LP/YY-LP).	One 90-minute session, which included individual introduction to task, introduction to partner, warm-up, task completion, individual performance measurement, debrief. Expert role determined according to role in a collaborative task. A difficult life problem (LP) served to place OP in expert role and media problem (MP) placed YP in expert role.	Sociodemographic and psychological questionnaires completed at home after testing session to avoid stereotyping bias or interference. Exact study details not revealed before participation. YP: <ul style="list-style-type: none">• prosocial behavior measured via decision-making task• communion goals measured via sentence completion• cognitive-affective complexity measured via reaction to text• cognitive performance determined via speed, word fluency, and logical reasoning measures. Test instructions modified to minimize the threat of age stereotyping.	YP: <ul style="list-style-type: none">• sig more prosocial behavior in OY-LP than OY-MP condition• sig fewer prosocial behaviors in YY-LP than OY-LP• no sig differences in no of communal to agentic coding between OY-LP and OY-MP and between OY-LP and YY-LP• OP:<ul style="list-style-type: none">• higher cognitive-affective complexity in OY-LP than OY-MP (approaching significance)• sig higher complexity in OY-LP than OO-LP• OP in experimental condition outperformed those in OY-MP on speed and word fluency but not in OO-LP condition. No diff between groups on logical reasoning• Participants in experimental condition expressed higher generativity (OP) and identity formation (YP) than control.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Kranz et al. (2021) 44	Germany	Life Story Encounter Program (LSEP) group: YP: $n=59$ (86%F), aged 14–20 ($M=16.69$, $SD=1.04$). OP: $n=62$, aged 67–98 ($M=83.42$, $SD=7.27$). Control group: YP: $n=345$ (43%F), aged 14–19 ($M=6.22$ (reporting error?), $SD=$ 0.86). OP: $n=140$ (70% F), aged 64–96 ($M=84.79$, $SD=6.96$). Educational level, cognitive impairment (OP only).	OP preselected by nursing home staff based on age and health. Participants first contacted at school (YP) or in nursing home (OP). Nursing homes for older adults.	Quantitative, quasi- experimental, longitudinal pre-post. Participants who showed initial interest in LSEP were invited to the program condition, which consisted of groups of $\sim n=5$ YP, $n=5$ OP and $n=2$ moderators. The remainder of the sample were nonrandomly assigned to the control condition.	Program group: YP had initial meeting to prepare for attending nursing home and engaging with OP. Then, $n=10$ weekly LSEP sessions in nursing homes, lasting roughly 90 minutes, which include welcome and introduction, icebreakers leading into group discussions on existential life questions based on biographical memories, and ending with a session review. Stereotype assessments completed by both groups at baseline (T1), post- program (T2) and at follow-up (T3). Control group: participants were included for comparison purposes with no program participation and completed assessments at the same T1 and T3 as LSEP participants.	Stereotype measures: <ul style="list-style-type: none"> • Aging Semantic Differential (ASD) German translation, shortened version • T1: Younger age version and older age version • T2 and T3: only version with focus on other generation • Level of IG comfort and learning experience measured on 5-point scales after each LSEP session 	Baseline differences in age stereotyping: <ul style="list-style-type: none"> • Younger age stereotype more favorable than older age stereotype. Advantage was larger among older adult group but statistically significant in both groups. This is only evident in older adult control group. <ul style="list-style-type: none"> • Stereotype scoring of the other generation did not differ between YP or OP program or control groups.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities Measurement, Analysis	Outcomes
						Program effects on cross- generational age stereotyping (CGAS): <ul style="list-style-type: none">● Post-program and follow-up CGAS scores were more positive for both generations in program group.● Older adults consistently provided more positive stereotypes of YP than YP did of OP.● CGAS remained stable across time points for the control group.● More positive age stereotypes among program group participants than the control group.
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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Comfort and learning:							<ul style="list-style-type: none">● Both generations rated the LSEP very highly on both comfort and learning dimensions.● Higher comfort than learning scores was reported and older adults reported more benefits than yp.● Those who benefited from IG learning showed more positive stereotypes of other generations following LSEP (T1-T2). This positive effect was only significant when comfort was low.● Those who reported higher comfort showed more positive age stereotypes (T1-T3). This significant positive effect was only evident for yp.
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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities Measurement, Analysis	Outcomes
Additional control analyses: <ul style="list-style-type: none">● LSEP as a control variable did not impact scores.● Inclusion of participants with low attendance also did not impact CGAS scores.● Demographic variables, educational level, and cognitive ability were unrelated to stereotype scores.						
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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Lai and Burchett (2021) 43	China	YP: $n=25$, school forms 3 and 4 (ages 14–16). OP: $n=15$, aged 57–69, fluent English-speaking retirees. No gender breakdown. OP previous occupations listed.	The English department at a band one (academically top tier) secondary school contacted the primary researcher to explore opportunities for students to practice English as a second language (ESL). Following collaborative program design, recruitment seminars were conducted for YFP (in school) and OP (via the Institute of Active Ageing at the Hong Kong Polytechnic University), consisting of promotional seminars, written invitations and distribution of recruitment materials. Secondary school classroom.	Mixed method, pre-post. Samples selected from the first to complete enrollment (YP) or agree to participate (OP). Participants organized into $n=12$ groups consisting of 1–2 OP and 2–4 YP. No control group.	Each group initially selected from a toolbox containing 52 activity cards and established related learning objectives. Activities were designed to be interactive and to promote collaborative goal-sharing. Game-based activities were also integrated into sessions. The program consisted of twelve weekly sessions lasting 2 hours each. OP positioned as 'equal learning partners' and therefore additionally participated in ongoing weekly one-hour workshops emphasizing theoretical issues, program-related issues and feedback.	Quantitative: Oral and written English skills: • Before and after measures derived from the Hong Kong Diploma of Secondary Education Examination (HKDSE) Program evaluation: • 5-point Likert scales, specific to YP and OP Qualitative: • Ethnographically inspired journals written by primary researcher, containing video recordings, photographs, and session observations. • Open-ended survey questionnaires anonymously completed by participants	Program value – student participants: • Average improvement of 18% in both English speaking and writing proficiency. • Provision of valuable opportunities to develop ESL skills. Program value – enhancing the ESL learning environment: • Feedback indicated a stimulating and educational program. • Program value – mentor (OP) participants: • Positive social and educational values, increased sense of IG connectedness and emotional balance. Program value – IG contacts: • Educational and developmental benefits for both generations. • Enhanced learning environment, facilitation of YP ESL learning activities, and OP personal development.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Leek and Rojek (2021) 42	Germany, Spain, Sweden, UK	YP: immigrant youth aged 12–16, who moved to Europe with family from mainly Syria and Afghanistan up to 3 years previously. OP: native citizens who had been living in the area for 10+ years, aged 62–73. Baseline: YP: $n=95$ ($n=72F$), OP: $n=64$ ($n=49F$). Endline: YP: $n=63$ ($n=49F$), OP: $n=41$ ($n=35F$). No additional information.	The research team visited schools to recruit YP and contacted day care centers to recruit OP. Participants selected from schools and day care centers in the same community to guarantee repeatability. Online setting.	Qualitative, collective case design. Maximum variation sampling of cases of IG digital tools courses run by immigrant YP for OP. Details of course activities not provided.	Digital courses developed and conducted by YP during which both generations used digital tools with internet connection, aiming to reduce digital exclusion of OP, limiting school dropout among YP, and support IG integration. The courses ran over twelve weekly meetings within one school semester, lasting 12–15 weeks.	Online questionnaires containing both open-ended and closed questions: <ul style="list-style-type: none">• Baseline focused on course expectations and working with the other generation• Endline explored experiences during courses within the context of IG learning.	ICT as learning facilitator: <ul style="list-style-type: none">• Rapprochement between generations in attitudes to ICT.• Digital tools facilitated mutual interaction and learning. ICT as tool for learning: <ul style="list-style-type: none">• Improved language and communication skills among YP via IG use of digital tools.• Both generations reported mutual understanding and opportunities to learn about each other and share knowledge and skills.• Opportunity for OP to offer YP “life wisdom”• ICT as objects of learning:• Reduction of IG distance and facilitation of IG cooperation.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Meshel and McGlynn (2004) 38	United States	YP: $n=63$ ($n=34F$), aged 11–13, 21 per group. OP: $n=17$ ($n=12F$), aged 75+ ($n=8$); 66–75 ($n=2$). No additional information.	YP randomly selected from 687 th grade classes in same school. Voluntary participation. OP volunteers from senior citizen center located within same public middle school. Setting not specified.	Quantitative, pre-post experiment. YP random assignment to: • Contact group (engaging in intimate and reciprocal enjoyable activities), Four triads (2YP:1OP) and 13 dyads (1YP:1OP) • Didactic control group (measure role of increased knowledge of OP) • Control group (no activity) All OP assigned to contact group.	1 hour per week for 6 consecutive weeks. Contact: • Getting to know each other, story sharing, painting with music, IG lunch, all leading to a talent show, followed by debrief and posttest measures. Didactic: • Educational knowledge and awareness of aging and OP, including sharing personal experiences, imagining themselves as older, collage making, aging simulation, discussions of myths and beliefs of aging, and of death and dying. Control: • Watching unrelated education movies and free time playing games	YP: Pre-test: • Demographic questionnaire • Belief-elicitation • Attitude measure • Life satisfaction scale (SWALA); age adjusted Satisfaction with Life Scale (SWLS) 1 day following pretest: • Rate items generated during belief-elicitation OP: Pre-test: • Demographic questionnaire • Attitude measure • SWLS. Post-test: • Same measures for all groups, except demographic questionnaire. • Activity evaluations • Program rating regarding equal status	YP: Attitudes: • Positive pre attitudes toward OP • Positive attitude change in contact group (not significant) • Significantly more negative attitudes posttest in control group • No significant change in didactic Life satisfaction: • High levels pre and post Stereotypes: • Mostly positive pretest • Significant change to more negative at posttest – same for all three groups – absence of significant interactions OP: • Positive pre attitudes toward YP • Significantly more positive attitudes toward YP posttest • Sig more positive life satisfaction pre to posttest

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Öberg (2007) 32	Sweden	YP: $n=5$ ($n=4F$), aged 16–21. OP: $n=5$ ($n=3F$), aged 66–85. No additional information.	Senior advisory groups, made up of retired individuals of all ages and associated with The Research Centre of Ageing, proposed the topic and project. No mention of how YP were recruited. Research Centre of Ageing and several community settings, including a bowling hall and local newspaper editorial office.	Qualitative, grounded theory. For five discussion circles, all participants were grouped together. One bowling activity saw them split into mixed-age groups to compete against each other.	Word association tasks and discussions around topics relating to attitudes, age, etc. commenced this project. Groups then met 5 further times to watch a film together, read a book, go bowling, see a play, and visit a local newspaper. During each meeting, they debated relevant topics in a discussion circle, as the purpose of the project was to lessen negative attitudes held by one generation toward the other.	Qualitative: all discussions recorded, and methods were informed by grounded theory. Detailed descriptions of observed group conversations and dynamics.	Main themes: Stereotypes: <ul style="list-style-type: none">• Negative stereotypes exist toward each generation• Older adults associated with physical flaws, loneliness, knowledge, wisdom• YP associated with disrespect and non-caring Grounds for solidarity <ul style="list-style-type: none">• Age/generation is only one of the many means through which people can experience solidarity• Old and new ways of thinking. Through extended time spent together in discussion, stereotypes were able to be challenged and the social capital of each group increased. They identified that both groups are vulnerable within society.

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Orte et al. (2018) 32	Spain, Poland and Turkey	YP: aged 11–12. OP: aged 65+ (Spain), 50+ (Poland and Turkey) Total numbers not provided for each country. Turkey, $n=1$ primary school; Spain $n=3$ primary schools ($n=4$ classes); Poland, $n=1$ extracurricular program. No gender breakdown. No additional information.	Schools recruited based on accessibility to the community and adoption of methodologies in line with IG work. Older adults with social skills and an interest in learning. Primary schools and an organization providing extracurricular activities.	Quantitative, pre-post program evaluation. One OP per 6–8 students, chosen to work together by class tutor. $N=3-4$ OP per group/class.	Sessions last roughly 70 minutes and follow the format of: opening activity; main activity; review activity; proposal of activity for next session; and (self) assessment.	Pre/post survey: Initial: <ul style="list-style-type: none"> Standard survey assessing IG relationships (perceptions, attitudes) Satisfaction survey (professors, seniors, and students) Final: <ul style="list-style-type: none"> IG survey Satisfaction survey (YP and OP) Final discussion groups (senior students and tutors) During: <ul style="list-style-type: none"> Questionnaires were completed by students, seniors, professors, and external observers following each session. $N=168$ per school (Spain: $n=672$). 	Pre/post: OP: <ul style="list-style-type: none"> Significant changes regarding interpersonal relations between OP and YP. Improved satisfaction posttest with relations with grandparents and other older adults (non-significant) Program feedback: <ul style="list-style-type: none"> YP & OP both improved self-confidence and desire to learn Group work diminished perceptions of differences between groups Students appreciated being at the center of their own learning process Initial training helped OP overcome fear of entering the classroom

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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
							Feedback reported during discussion groups: <ul style="list-style-type: none">• Benefits for teaching staff, including improved language and digital skills, new intercultural knowledge, and experience of and skill development in managing educational projects. Benefits for university students: <ul style="list-style-type: none">• Facilitation of networking, cooperation, and development of new professional relationships.
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Author(s), Year, and Quality Score	Country	Participant Information	Recruitment, Sampling, Setting	Methodology, Study Design	Study Length, IG Activities	Measurement, Analysis	Outcomes
Portman et al. (2010) 41	United States	YP: <i>n</i> =7 (100%F), aged 13–15. OP: <i>n</i> =5 (100%F), aged 62–80. Family situation, living arrangement, economic status, education.	Purposive sampling used to recruit participants who would be keen to share their stories. YP recruited via churches, school counselors, and author personal contacts. OP recruited via religious institutions, retirement community, and housing neighborhood. Mountaintop lodge.	Qualitative, grounded theory. All participants stayed at a mountaintop retreat together for one weekend. Some structured group activities, but mostly open interactions.	Overall data collection lasted 3 months, including a 2-day retreat. Retreat lasted one weekend (Friday–Sunday) and followed a schedule, i.e., story time (60–90mins), discussing topics relating to female development; icebreakers; working in small groups to process the retreat; further discussion in larger group; watching movies; lectures; activities such as yoga, dance, skill sharing; and unstructured time.	Three in-depth interviews (the third interview took place 6 weeks after the retreat), video recordings, case notes, and reflection journals (collected at the same time as the second interview). Inductive analysis used to code and analyze data from transcriptions and recordings.	YP: <ul style="list-style-type: none"> • Respected and listened to OP • Challenged stereotypes • Common experience with diverse women their age • Increased self-confidence, comfort with self, openness with others, and risk taking OP: <ul style="list-style-type: none"> • Less judgmental toward others who are different Both: <ul style="list-style-type: none"> • Pride, hope, risk taking, and rejuvenation • Unique atmosphere of single-gendered experience. Felt free to express themselves • Open environment enhanced by participants not being family members

Yalom, I. D. (1985). *The theory and practice of group psychotherapy* (3rd ed.) Basic Books.

Appendix 3

Characteristics of the included studies (n = 13)

Sample		
Overall size	<20: n=3	(Jones et al., 2004; Öberg, 2007; Portman et al., 2010)
	20–50: n=3	(DeMichelis et al., 2015; Dipardo & Schnack, 2004; Lai & Burchett, 2021)
	50–100: n=2	(Gamliel & Gabay, 2014; Meshel & McGlynn, 2004)
	>100: n=5	(DeSouza, 2007; Kessler & Staudinger, 2007; Kranz et al., 2021; Leek & Rojek, 2021; Orte et al., 2018)
Gender	Majority female: n=7	(DeSouza, 2007; Dipardo & Schnack, 2004; Jones et al., 2004; Kranz et al., 2021; Leek & Rojek, 2021; Meshel & McGlynn, 2004; Öberg, 2007)
	Exclusively female: n=2	(Kessler & Staudinger, 2007; Portman et al., 2010)
	Incomplete or missing data: n=4	(DeMichelis et al., 2015; Gamliel & Gabay, 2014; Lai & Burchett, 2021; Orte et al., 2018)
Methodology	Qualitative: n=6	(DeSouza, 2007; Dipardo & Schnack, 2004; Jones et al., 2004; Leek & Rojek, 2021; Öberg, 2007; Portman et al., 2010)
	Quantitative: n=3	(Kessler & Staudinger, 2007; Kranz et al., 2021; Meshel & McGlynn, 2004)
	Mixed method: n=4	(DeMichelis et al., 2015; Gamliel & Gabay, 2014; Lai & Burchett, 2021; Orte et al., 2018)
Design	Qualitative:	
	Grounded theory: n=3	(DeSouza, 2007; Öberg, 2007; Portman et al., 2010)
	Phenomenology: n=1	(Dipardo & Schnack, 2004)
	Descriptive: n=1	(Jones et al., 2004)
	Collective case design: n=1	(Leek & Rojek, 2021)
	Quantitative:	
	Quasi-experimental pre-post: n=1	(Kranz et al., 2021)
	Experimental pre-post: n=1	(Meshel & McGlynn, 2004)
	Experimental post-only: n=1	(Kessler & Staudinger, 2007)
	Mixed method:	
	Pre-post: n=4	(DeMichelis et al., 2015; Gamliel & Gabay, 2014; Lai & Burchett, 2021; Orte et al., 2018)
Data Collection Measures		
Qualitative studies	Focus groups: n=1	(DeSouza, 2007)
	Joint interviews: n=3	(Dipardo & Schnack, 2004; Jones et al., 2004; Portman et al., 2010)
	Observations: n=1	(Jones et al., 2004)
	Journals: n=2	(Dipardo & Schnack, 2004; Portman et al., 2010)
	Video recordings: n=1	(Portman et al., 2010)
	Audio recordings: n=1	(Öberg, 2007)
	Discussion groups: n=1	(Öberg, 2007)
	Field notes: n=1	(Dipardo & Schnack, 2004)
	Case notes: n=1	(Portman et al., 2010)
	Author-generated scales: n=2	(Jones et al., 2004; Leek & Rojek, 2021)
	Adapted scales: n=1	(Jones et al., 2004)

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Quantitative studies	Validated scales: $n=2$	(Kessler & Staudinger, 2007; Meshel & McGlynn, 2004)
	Adapted scales: $n=2$	(Kranz et al., 2021; Meshel & McGlynn, 2004)
	Author-generated scales: $n=2$	(Kranz et al., 2021; Meshel & McGlynn, 2004)
	Experimental behavior and cognitive tests: $n=1$	(Kessler & Staudinger, 2007)
	Activity evaluations: $n=1$	(Meshel & McGlynn, 2004)
Mixed method studies	Qualitative measures:	
	Unstructured interviews: $n=1$	(Gamliel & Gabay, 2014)
	Discussion groups: $n=1$	(Orte et al., 2018)
	Observations: $n=2$	(Gamliel & Gabay, 2014; Lai & Burchett, 2021)
	Surveys: $n=1$	(Orte et al., 2018)
	Open-ended survey questionnaires: $n=1$	(Lai & Burchett, 2021)
	Video recordings: $n=1$	(Lai & Burchett, 2021)
	Photographs: $n=1$	(Lai & Burchett, 2021)
	Website content monitoring: $n=1$	(Gamliel & Gabay, 2014)
	Event logging: $n=1$	(Gamliel & Gabay, 2014)
	Reflections: $n=1$	(DeMichelis et al., 2015)
	Assignments: $n=1$	(DeMichelis et al., 2015)
	Quantitative measures:	
	Author-generated scales: $n=3$	(Gamliel & Gabay, 2014; Lai & Burchett, 2021; Orte et al., 2018)
	Validated scales: $n=2$	(DeMichelis et al., 2015; Gamliel & Gabay, 2014)
	Adapted scales: $n=2$	(Gamliel & Gabay, 2014; Lai & Burchett, 2021)
Data Collection Period	Single session: $n=1$	
	90 minutes	(Kessler & Staudinger, 2007)
	Multiple sessions: $n=9$	
	3 weeks	(DeMichelis et al., 2015)
	6 weeks	(Meshel & McGlynn, 2004)
	10 weeks	(Kranz et al., 2021)
	12 weeks	(Lai & Burchett, 2021)
	12–15 weeks	(Leek & Rojek, 2021)
	3 months	(Portman et al., 2010)
	5 months	(DeSouza, 2007)
	11 months	(Jones et al., 2004)
	One year	(Dipardo & Schnack, 2004)
	Ongoing, undefined or missing data: $n=3$	(Gamliel & Gabay, 2014; Öberg, 2007; Orte et al., 2018)
Primary Outcomes	Psychosocial changes: $n=6$	(DeMichelis et al., 2015; Gamliel & Gabay, 2014; Kessler & Staudinger, 2007; Meshel & McGlynn, 2004; Orte et al., 2018; Portman et al., 2010)
	Relationship building: $n=6$	(Dipardo & Schnack, 2004; Gamliel & Gabay, 2014; Jones et al., 2004; Öberg, 2007; Orte et al., 2018; Portman et al., 2010)
	Learning/mentoring opportunities: $n=6$	(DeMichelis et al., 2015; Dipardo & Schnack, 2004; Gamliel & Gabay, 2014; Lai & Burchett, 2021; Leek & Rojek, 2021; Orte et al., 2018)
	Attitude change: $n=5$	(DeSouza, 2007; Jones et al., 2004; Meshel & McGlynn, 2004; Öberg, 2007; Orte et al., 2018)

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Program feedback: <i>n</i> =4	(Gamliel & Gabay, 2014; Lai & Burchett, 2021; Leek & Rojek, 2021; Orte et al., 2018)
Improved social behavior/ interactions: <i>n</i> =3	(Jones et al., 2004; Kessler & Staudinger, 2007; Öberg, 2007)
Intergenerational engagement: <i>n</i> =2	(Lai & Burchett, 2021; Leek & Rojek, 2021)
Age stereotype change: <i>n</i> =1	(Kranz et al., 2021)
Cognitive improvements: <i>n</i> =1	(Kessler & Staudinger, 2007)
Active engagement in society: <i>n</i> =1	(Lai & Burchett, 2021)