



Benefits of an intergenerational program in the early years

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ABSTRACT: Intergenerational programs unite the young and old in shared activities to foster positive relationships across generations, reducing loneliness caused by living in residential care and improving children's attitudes toward the elderly. This study evaluated an intergenerational program in 2019 between an Early Learning Centre (ELC) associated with a metropolitan university in Melbourne, Australia, and a residential aged care facility. The program provided opportunities for the children to engage and participate in their society, increase the social connections within communities, and develop their social emotional skills. This study explored 4- and 5-year-olds' attitudes towards older people, empathy, prosocial behaviour, and coping strategies through a multimethod approach. 32 children from the intergenerational program and 25 children from a regular ELC group were interviewed about their experience with older people while their teachers completed empathy and coping questionnaires. Results showed children in both groups had positive attitudes towards older people. Children enjoyed making friends, singing songs together, building social connections, and learning about the older adults' life stories; they were encouraged and supported to see themselves as citizens of a community. The paper explores the value of qualitative interviews with participating teachers, children, and parents for a more informative evaluation.

Keywords: *intergenerational, coping, empathy, social emotional learning*

Introduction

Due to increases in the average life expectancy, the global population is aging and the number of people over 60 years old is expected to double by 2050 (Bongaarts, 2009). As such, an increasing number of older adults are residing in aged-care homes, 40% of whom never receive visitors and face growing loneliness and isolation (Yaxley, 2017). Additionally, children's negative attitudes towards older people result in discrimination and detrimental effects on the aging process and health outcomes (Abrams et al., 2009; Levy, 2009; Nelson, 2005).

Intergenerational (IG) programs have had growing traction to encourage interpersonal relationships for residents in care and the children who visit them. IG programs unite older adults (those over 65) and young people under 21 in activities that are mutually beneficial (Gigliotti et al., 2005). Typically, programs involve children in their early years (1-4 years old) or pre-pubescent years (5-12 years old). They allow older adults to enjoy socially appropriate activities in a structured environment, while enabling children to develop positive attitudes towards older people and the aging process through exposure and forming relationships (Dunham & Casadonte, 2008). Published evaluations of IG programs reveal positive effects for the social and emotional development of participating children, including greater empathy (Hayes, 2003), self-regulation (Femia et al., 2008), personal growth (Zeldin et al., 2005), self-confidence and self-efficacy (Gamliel & Gabay, 2014), reduced anxiety (Marx et al., 2004), better behaviour in school (Rebok et al., 2004), and academic growth (Lokon et al., 2012). Additionally, they improve the wellbeing of the older adults through mood, life satisfaction, physical activity, self-confidence, self-efficacy, social connectedness, and decreased depression (Flora & Faulkner, 2007; Gamliel & Gabay, 2014; Hong & Morrow-Howell, 2010; Jarrott & Bruno, 2003).

Key outcomes of IG programs – Attitudes toward older people and empathy

Negative attitudes towards older people result in discriminatory behaviours, such as elder abuse, exclusion, and stigma towards aging. They can affect children's self-concept, behaviour, development, and acceptance as they themselves get older (Galbraith et al., 2015; Gilbert & Ricketts, 2008). Seefeldt and colleagues (1977) argued children as young as three years old have negative stereotypic views of older people as sick, tired, and ugly, though more recent literature has been mixed, with both positive and negative attitudes (Jarrot & Savla, 2016; Lineweaver et al., 2017; Okoye, 2004; Robinson et al., 2015; Thompson & Weaver, 2016). Reviews suggest, however, the negative stereotyping of older adults begins in childhood (Cuddy et al., 2005; Gilbert & Ricketts, 2008; Levy, 2009; Robinson & Howatson-Jones, 2014).

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Limited knowledge of and contact with older people may contribute to the development of ageism and negative attitudes towards aging and older people. As society becomes increasingly age-segregated, there is less opportunity for meaningful interactions across generations (Bales et al., 2000). Grandparents are commonly the only older adults children see, and evidence suggests this contact is on average only once a month (Dunifon & Bajracharya, 2012). By increasing children's exposure to older adults through IG programs, their overall attitudes towards older people tend to improve. For example, after a year-long IG program in an Early Learning Centre (ELC) involving small and large group activities, 38 pre-school children used more positive descriptors in relation to older people, had a broader knowledge of aging, and had less biased perceptions towards older people because they had seen them in human roles and were more educated about the aging process (Holmes, 2009). More specifically, using a modified version of a semantic differential subtest from the Children's Attitudes Toward the Elderly Scale (CATE; Jantz et al., 1977), children's attitudes towards older people from a shared-site IG program (i.e. an ELC within a nursing home) were compared to children from a traditional ELC (Heyman et al., 2011). The shared site allowed frequent opportunities for interactions between generations across the day, such as through using the same entrance and lobby, adults visiting children, children visiting adults, and organised IG programs in small and large groups 3 times a month. This resulted in pre-schoolers with more positive attitudes towards older people compared to children in single-generational programs. Generally, IG program studies have found that positive changes in children's attitudes towards older people remain significant up to 5 years after the program (Aday et al., 1993; Aday et al., 1996; Heyman et al., 2011; Lokon et al., 2012).

A lack of exposure to older people may contribute to difficulty empathising with older adults due to their vast age difference (Lloyd et al., 2018). This is important to note because few IG studies have explicitly included an assessment of contact between children and their grandparents, which could influence their attitudes and empathy towards older people (Medonça et al., 2019). Empathy is the ability to take another person's perspective, to visualise their inner world, and to reflect on their thoughts and feelings (Gillberg, 1992). Consequently, empathy forms an important part of social and emotional development in children and underpins important social skills (Beceren & Özdemir, 2019). Empathy fosters social interactions, self-regulation, and prosocial behaviours (Belacchi & Farina, 2012). Children with high levels of cognitive and affective empathy are less likely to bully or be bullied and are more likely to intervene, mediate, or help in bullying situations (van Noorden et al., 2015). On the other hand, pre-school children low in cognitive empathy are more likely to have antisocial behaviour and conduct problems compared to children with higher empathy (Georgiou et al., 2018).

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Since empathy is related to being more accepting of individual differences, it is likely that increasing empathic tendencies in children may reduce negative stereotypes towards older people (Petkova, 2015). Indeed, in Schwalbach and Kiernan (2002)'s IG program, 22 4th grade students visited 12 nursing home residents weekly for 5 months and engaged in activities designed to promote the guidance and language arts curriculum of the district, such as shared card and board game playing, shared educational games (geographical bingo), shared reading, shared creations (painting, cookies), shared talents (musical instruments or juggling), and shared life experiences (oral histories from the residents). At the end of the program, students' attitudes towards older people improved as their levels of empathy increased, measured by a modified version of the Children's Views on Aging questionnaire (CVOA; Newman & Marks, 1997), observational data, and use of first person in interviews. These findings suggest that IG programs are beneficial to children's empathy development in pre-school years, particularly because empathic behaviour is primarily learned through social experiences (Eryaman, 2008). Participating in activities with older adults teaches children to exercise patience and delay their needs to care for the other person first, encouraging them to think about other people's needs and behave accordingly (Femia et al., 2008). For example, one program utilising weekly 45-minute sessions in music, cooking, teamwork, and arts and crafts increased pre-school children's prosocial and empathic behaviours as they assisted, helped, or provided support to the older adults aged 63-95 years old without being asked by teachers after just 5 sessions (Hayes, 2003). Additionally, children who had previously participated in a pre-school IG program were more likely to express empathy towards older adults than children without this experience, as measured by parent, teacher, and self-report (Femia et al., 2008).

Intervening in the early years

Many negative stereotypic attitudes towards older people and aging are formed during the early years of childhood, through frequent exposure to age stereotypes in language, humour, and the media (Levy, 2009). For example, negative stereotypes are purported in fairy tales and children's stories, such as ugly old witches and hags who are usually the 'bad guy' (Pinquart et al., 2000). Social learning theory dictates that behaviours are learnt through observing others perform the same behaviour; perhaps children learn negative attitudes towards older people and the associated discriminatory behaviours through observing this from their parents and other adult family members (Bandura, 1962; Gilbert & Ricketts, 2008). Introducing IG programs with an experienced and dedicated teacher models positive behaviour among and towards older individuals, creating a new cycle of social learning. From early childhood onwards, teachers are at the forefront of children's development, and as such their perceptions and attitudes are likely to impact the efficacy

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of programs, and the perceptions and attitudes the children develop in response (Farquhar, 2003).

Further, the ability to cope effectively to life stressors such as aging is a skill that develops in the early years. Coping refers to how an individual manages their emotions, thoughts, and behaviour to respond to stress (Compas et al., 2001). Pre-schoolers have been found to utilise three different styles; positive coping, negative coping-emotional expression, and negative coping-emotional inhibition (Yeo et al., 2014). When children use adaptive/positive coping strategies they are more likely to have positive behavioural, emotional, and academic outcomes (Frydenberg et al., 2014; Kiernan et al., 2017). Additionally, pre-schoolers rated lower on an anxiety measure were more likely to engage in positive coping behaviours than those rated higher (Yeo et al., 2014). Consequently, programs that assist in the development of managing anxiety, building resilience and adaptive coping styles in early childhood, are likely to help children deal with future stressors and promote positive mental health. IG relationships between children and older adults may result in an improved ability to cope with difficult circumstances, but to date this has not been investigated.

Finally, key learning outcomes in the Australian national early childhood curriculum involve the development of resilience, learning to interact in relation to others with care, empathy, and respect, and developing a sense of belonging to groups and communities, all of which can be achieved through interaction with older adults in an IG program (Department of Education and Training, 2019). Thus, intervening with IG programs in the early years is likely to result in greater long-term benefits for the participating children.

To date, IG programs have been conducted with children and young people ranging in age from early childhood through to college/university children in a range of different settings including aged-care centres, schools, and in the community. The programs also target older adults ranging between 50-100 years old with various physical and mental health conditions including dementia (Martins et al., 2019). However, the variability in sample, program design, and variables used to measure outcomes suggest these results may not be generalisable to all settings.

Aims of the current study

The current study evaluated an IG program that commenced in 2016 between children from an Early Learning Centre (ELC) associated with a metropolitan university in Melbourne, Australia, and residents from a geographically proximal but un-associated aged care centre. The program aims to increase social connections within communities through enhancing relationships, sharing knowledge, increasing skills, develop interest in

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culture and history, foster empathy across groups, and challenge stereotypical views (Stirling, 2020).

As such, the goal of this study was to determine if the program met the above objectives, through a quantitative assessment of empathy, coping skills, and attitudes towards older people of participating children compared with non-participating children, in addition to qualitative face-to-face interviews with the participating children and teacher. It was expected that children in the IG program would show more positive attitudes towards older people, more empathy and prosocial behaviours and have more positive and less negative coping styles than children in the comparison group. The study also explored whether gender or frequent exposure to grandparents influenced the effects of the program.

Method

The settings and participants

The ELC serves 180 3-5-year-old children enrolled either full time or part time over the year. There are 89 children across five classrooms per day. One of these groups participated in the IG program. The aged care centre (MP) houses approximately 75 older adults, ranging from 65 to 100 years old, with varying physical or cognitive disabilities. Approximately six to twelve adults participated in the IG program on any one day.

A total of 57 pre-school children from the ELC were recruited through convenience sampling during drop-off and pick-up times, see Table 1. ELC parent data from 2018 indicated that of 91 children, 74% had European background, 12% Asian, and 14% Australian/Asian. Such demographics were unable to be achieved with this sample as parent data was not collected.

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TABLE 1 Participant demographics

	<i>IG PROGRAM (N = 32)</i>		<i>COMPARISON GROUP (N = 25)</i>	
	<i>NUMBER</i>	<i>%</i>	<i>NUMBER</i>	<i>%</i>
Gender				
Male	15	47	13	52
Female	17	53	12	48
Contact with Grandparents				
Less than Average	11	39.29	9	37.50
Average or Above	17	60.71	15	62.50
	<i>MEAN (SD)</i>	<i>RANGE</i>	<i>MEAN (SD)</i>	<i>RANGE</i>
Age in years	4.84 (0.31)	4.25-5.42	4.81 (0.32)	4.25-5.33

The program

The IG program was designed to connect the children with older adults through activities emphasising cooperation and interaction. The lead teacher designed the program curriculum to focus on developing relationships quickly and early in the year, to foster respect, collaboration, mutual trust, and connection. The program involved one-hour fortnightly visits between the children and residents, who they refer to as their 'neighbours'. Activities included playing bingo, gardening, storytelling, singing, and music performances. Sessions were usually a mix of structured and unstructured activities. For example, teachers would run a structured game like bingo, with children and neighbours working together to win. While the game was happening, teachers also encouraged conversations between the children and their neighbours by suggesting stories linked to the bingo prompts. Reciprocal visits also occurred, as one child explained; "*sometimes they come here... we show them the things we brought and what we could do on the playground.*" These sessions were less structured and allowed natural 'show and tell' type conversations between the children and neighbours while teachers just observed. The visits provided an opportunity for the children to develop social and emotional skills, with explicit teaching for social etiquette, manners, and politeness. For example, before, during, and after visits, the group would engage in group discussions and role plays to reinforce how to greet neighbours, have simple conversations, thank the neighbours for having them, and the need to project their voice, be respectful if neighbours are sleeping in their chair, be spatially aware and not go too close to injured neighbours, and other skills that presented themselves depending on the requirements of the older adults. Three teachers from the ELC facilitated the program and liaised with two Lifestyle Coordinators from the aged care centre (Stirling, 2020).

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Teacher-completed measures

The primary teacher, who had been with the children for two terms, completed a questionnaire packet for each child to assess their coping and empathy.

Coping behaviours were measured by the teacher-rated Children's Coping Scale – Revised (CCS-R; Deans et al., 2010), a 29-item scale using a 3-point Likert scale (0 = *never*, 1 = *sometimes*, 2 = *a lot*). Higher scores indicated higher use of coping strategies. Subscales of positive coping (PC; e.g. “chat to friends”, “hope”; $\alpha = .754$), negative coping-emotional expression (NEE; e.g. “cry or scream”, “get angry with others”; $\alpha = .767$), and negative coping-emotional inhibition (NEI; e.g. “do nothing”, “keep feelings to self”; $\alpha = .631$) were attained through taking the sum of corresponding items according to the three-factor model with internal consistency validated in past research on pre-school children (Pang et al., 2015; Pang et al., 2018; Yeo et al., 2014). Three items (“give up”, “get sick”, and “get stomach aches...”) from the NEI scale were removed to improve the reliability coefficient.

Empathy was measured by the Empathy Questionnaire Toddler Version (EmQue; Rieffe et al., 2010), a 20-item scale using a 3-point Likert scale (0 = *never*, 1 = *sometimes*, 2 = *a lot*). Higher scores indicated higher empathy. The EmQue and the subsequent three factors affective empathy (AE; e.g. “when another child cries, this child gets upset too”; $\alpha = .834$), cognitive empathy (CE; e.g. “when this child sees other children laughing, he/she starts laughing too”; $\alpha = .870$), and prosocial behaviour (PB; e.g. “when another child gets upset, this child tries to cheer him/her up”; $\alpha = .689$) has shown strong reliability and validity in previous studies (Grazzani et al., 2016; Ketelaar et al., 2013). One item (“When another child makes a bad fall...”) was removed from the AE scale to improve reliability.

A semi-structured interview was conducted with the teacher of the IG program for additional understanding into the program, including questions relating to their experience of the program, how the adults enjoyed it, and what the children learnt.

Child interviews

A semi-structured interview was conducted with each child. Answers were written verbatim during the interview and were voice recorded to facilitate accurate transcriptions. Following transcription of the recorded interviews, the responses were coded according to the themes that emerged. A peer researcher independently coded 25% of interview responses to achieve substantial interrater reliability of 74% (O'Connor & Joffe, 2020). Children were asked about their frequency of contact with older adults (e.g. “do you know any old people? Who do you know?”, “how many grandparents do you have?”, “when do you usually see them?”). Attitudes towards older people were measured

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through questions adapted from the Children’s Attitudes Toward the Elderly Scale (CATE; Jantz et al., 1977), the predominant outcome measure in past evaluations of IG programs with established good reliability and validity (Seefeldt, 1987; Middlecamp & Gross, 2002). In the Word Association subtest, children were asked open-ended questions that indicated the child’s cognitive, affective, and behavioural components of attitudes towards aging and older people (e.g. “which person do you think is the oldest?”, “what can you tell me about old people?”). An image of an old man was used to supplement the questions and help indicate the age-group in question. In the Semantic Differential subtest, children were given one adjective (e.g. “fun”, “friendly”) and were asked whether they thought old people were like that word, along a 4-point scale (1 = *not at all*, 2 = *tiny bit*, 3 = *kinda*, 4 = *really/a lot*) anchored by four smiling faces, see Figure 1. Four of the items were negatively worded and were thus reverse scored so that higher values reflected a more positive attitude. Three items (“Busy”, “Fragile”, “Ugly”) were removed from the scale to improve internal consistency, $\alpha = .750$.

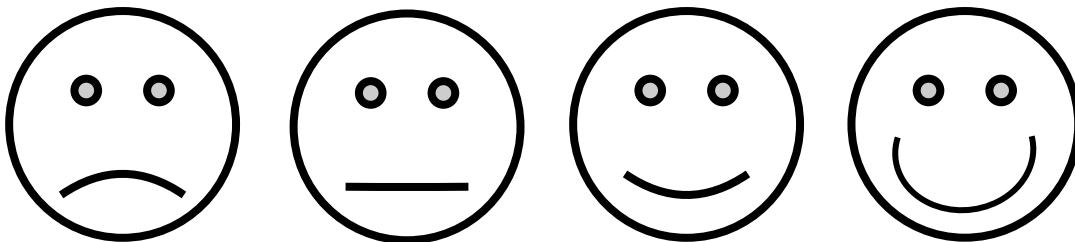


FIGURE 1 Visual Anchors for the 4-point Semantic Differential Scale

Children from the IG group were asked follow-up questions about the program to gain their perspective of and learnings from the program. Questions focused on ascertaining their concept of the program (e.g. “what is MP?”, “why do you go to MP?”, “what do you do there?”), their response to the program (e.g. “how did you feel when you first went to MP?”, “how do you feel about going there now?”, “what do you like about going to MP?”), and what they have learnt from the program (e.g. “what have you learnt at MP”, “what do you think about old people since going to MP?”.)

Procedure

The current study was approved by The University of Melbourne Human Ethics Committee (Ethics ID: 1648411.5). Children were recruited by the lead researcher through individual invitation on-site. Parents were informed of the research project via a plain language statement and asked to provide consent on behalf of their children. Children were individually asked to participate in the interviews with the right to accept or decline their participation. Interviews were conducted face-to-face in the classroom or

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outside and took an average of 6:39 minutes, and 11:11 minutes when including the questions about the IG program. ELC teachers were given hardcopy questionnaires to complete for each child who had parental consent.

Due to practical considerations, data was collected at the end of Term 2 approximately halfway through the year-long program to demonstrate a snapshot in time. The children had participated in five sessions across the two terms. This was less than expected due to excursion restrictions placed on the ELC during the semester.

Design and data analysis

The current study utilised a multimethod, quasi-experimental, single time-point design with a control group. Children could not be randomised into the IG program as participation was based on classroom enrolment. The comparison group was drawn from the same ELC and had similar socioeconomic background and the same overall high-quality curriculum as the other group. Comparison groups have rarely been used in previous evaluations of IG programs, although are important for understanding how the results are achieved by the program rather than other confounding effects (Martins et al., 2019). Outcome variables were measured through both quantitative and qualitative data used in parallel and integrated during interpretation with equal emphasis on both sources of data (Bazeley, 2006; Brewer & Hunter, 2006). This approach allowed an in-depth evaluation of the program and investigation of children's knowledge, understanding, thoughts, and feelings unobtainable by using one method alone (Braun & Clarke, 2006; Seidman, 2013).

The quantitative data was analysed through IBM Statistical Package for the Social Sciences (SPSS) Version 26. Two children from the IG group and one child from the comparison group were not interviewed, so their teacher questionnaire data was excluded from analyses. Two multivariate outliers were identified and subsequently removed from analysis. The independent variable was group while the dependent variables were attitudes towards older people (ATOP), cognitive empathy (CE), affective empathy (AE), prosocial behaviour (PB), positive coping (PC), negative coping emotional-expression (NEE), and negative coping-emotional inhibition (NEI). Responses to the interview questions "when did you last see your grandparents?" and "when do you usually see your grandparents?" were taken together and coded into frequency of contact (FOC) coded as 0 (below average) and 1 (average or more), based on the national average amount 4-5-year-old children see their grandparents cited as once a month (Dunifon & Bajracharya, 2012). A 2(group: IG, comparison) X 2(FOC: below average, average or more) multivariate analysis of covariance (MANCOVA) and a 2(group: IG, comparison) X 2(gender: male,

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female) MANCOVA were performed to measure differences in the outcome variables between the two groups moderated by frequency of contact with grandparents and gender, controlling for age.

The qualitative data was analysed through thematic analysis, whereby answers to interview questions were examined to identify patterns or themes relating to the research questions (Braun & Clarke, 2006). Responses to questions were combined and organised into categories of similar answers and then grouped into broader themes. As such, themes were influenced by the questions asked. Quotes were included to assist the description of the data.

Results

In this study both quantitative and qualitative results are considered. The quantitative results focus on attitudes towards older adults, empathy skills, and coping skills, with a comparison between children in the intergenerational program and the control group, genders, and frequency of contact with their grandparents. The qualitative results particularly focus on the children's response to the program and success of the program outcomes.

Quantitative data – Comparing between groups

Descriptive statistics on the outcome variables according to their group, frequency of contact with grandparents, and gender are presented in Table 2. As there were less than 20 cases in each level, it is likely there was not enough power to detect significant differences between groups (Tabachnick & Fidell, 2013).

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TABLE 2 Means and standard deviations across intervention and comparison groups, frequency of contact with grandparent groups, and gender

VARIABLE	IG PROGRAM					COMPARISON GROUP				
	<i>M (SD)</i>					<i>M (SD)</i>				
	<i>LESS THAN AVERAGE</i>	<i>AVERAGE OR MORE</i>	<i>MALE</i>	<i>FEMALE</i>	<i>TOTAL</i>	<i>LESS THAN AVERAGE</i>	<i>AVERAGE OR MORE</i>	<i>MALE</i>	<i>FEMALE</i>	<i>TOTAL</i>
<i>N</i>	11	17	12	16	28	9	15	12	12	24
Attitudes Towards Older People	3.31 (.37)	3.27 (.60)	3.09 (.62)	3.43 (.37)	3.29 (.51)	2.75 (.88)	3.24 (.70)	3.06 (.74)	3.05 (.88)	3.05 (.79)
Cognitive Empathy (CE)	.00 (.00)	.24 (.56)	.33 (.65)	.00 (.00)	.14 (.45)	1.44 (1.51)	2.27 (2.02)	.83 (.72)	3.08 (1.98)	1.96 (1.85)
Affective Empathy (AE)	.00 (.00)	.06 (.24)	.09 (.29)	.00 (.00)	.04 (1.89)	1.44 (1.51)	2.27 (2.02)	.83 (.72)	3.08 (1.98)	1.96 (1.85)
Prosocial Behaviour (PB)	3.45 (1.75)	3.18 (2.07)	2.58 (2.02)	3.81 (1.72)	3.29 (1.92)	4.67 (2.60)	4.60 (2.32)	3.58 (2.43)	5.67 (1.88)	4.63 (2.37)
Positive Coping (PC)	18.00 (2.24)	20.18 (3.45)	19.00 (2.92)	19.56 (3.43)	19.32 (3.18)	16.89 (3.30)	19.00 (3.36)	16.08 (3.23)	20.33 (2.06)	18.21 (3.43)
Negative Coping Emotional Expression (NEE)	2.18 (1.66)	2.12 (1.73)	2.75 (2.09)	1.69 (1.14)	2.14 (1.67)	3.89 (2.15)	2.73 (2.89)	2.67 (2.90)	3.67 (2.39)	3.17 (2.65)
Negative Coping Emotional Inhibition (NEI)	1.36 (1.21)	1.82 (1.47)	1.50 (1.51)	1.75 (1.29)	1.64 (1.37)	1.44 (1.59)	1.40 (1.60)	2.25 (1.66)	.58 (.90)	1.42 (1.56)

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TABLE 3 Summary of results for each dependent variable

	GROUP		FREQUENCY OF CONTACT		INTERACTION GROUP*CONTACT		GENDER		INTERACTION GROUP*GENDER		COVARIATE AGE	
	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2
Attitudes Towards Older People	2.52	.05	1.27	.03	2.23	.05	.99	.02	.75	.02	.43	.01
Empathy Combined	9.68***	.39##	1.05	.07#	.83	.05	9.13***	.38##	6.69***	.31##	2.64	.15##
Cognitive Empathy (CE)	21.70***	.32##	2.18	.04	.52	.01	10.37**	.18##	19.25***	.29##	.37	.01
Affective Empathy (AE)	25.57***	.35##	1.76	.04	.91	.02	13.44***	.22##	16.89***	.26##	1.06	.02
Prosocial Behaviour (PB)	4.47*	.09#	.13	.00	.06	.00	40.96**	.18##	.58	.01	.72	.02
Coping Combined	1.45	.09#	2.31	.13#	.41	.03	3.33*	.18##	4.59**	.23##	.74	.05
Positive Coping (PC)	1.56	.03	5.57*	.11#	.01	.00	8.54**	.15##	4.84*	.09#	.13	.00
Negative Coping Emotional Expression (NEE)	3.39	.07#	.97	.02	.70	.02	.003	.00	2.93	.06#	.05	.00
Negative Coping Emotional Inhibition (NEI)	.15	.00	.12	.00	.21	.00	3.46	.07#	6.33*	.12##	2.0	.04

Note. #medium effect size, ##large effect size (Cohen, 1988)

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

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Coping skills

The MANCOVA testing whether coping styles varied between groups showed no significant difference between the two groups in coping skills when controlling for frequency of contact with grandparents and age, as shown in Table 3. However, children with the average amount of contact with their grandparents or more had significantly higher PC than children with less than average contact in the overall sample.

Additionally, tests were conducted to examine differences due to gender, revealing significant main and interaction effects on coping. Overall, females had significantly higher levels of PC than males, and males in the IG program had higher levels of PC than males in the comparison group. Males in the comparison group showed higher NEI than males in the IG group, however females in the IG group showed higher NEI than females in the comparison group.

Empathy

The MANCOVA testing whether empathy varied between groups revealed that the combined empathy variables were significantly related to group when controlling for age with a large effect size. Children in the IG group had significantly lower levels of CE, AE, and PB than those in the comparison group. There were no significant main or interaction effects of frequency of contact, but the combined coping variable was significantly related to gender with a large effect size. Overall, females had significantly higher levels of CE, AE, and PB than males.

Attitudes toward older people

A two-way ANCOVA tested whether attitudes toward older people varied between groups. There was no significant difference between the two groups in their attitudes towards older people when controlling for age, frequency of contact with grandparents, or gender.

Similarities between the groups were also evident in the way children described older people in their interviews. 89.3% of children in the IG program and 91.7% of children in the comparison group correctly identified the oldest person from the series of images. Children from the IG program (32%) had more difficulty articulating a reason for their selection than the comparison group (8%). Most children chose the correct picture because he looked old (26.5%) or because he was bald or had grey/white hair (20%). Other children identified the eldest person by his wrinkles/“old skin”, or because he “looks sick”, “looks like a grandpa”, or “looks rich”.

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In the Word Association subtest, 15% of children said old people cannot walk or need a wheelchair/walking stick, 13.8% said old people will die soon, and 12% said they are bald or have grey hair. Other responses defined old people by liking to meet up and see people, losing teeth, having no memories, sleeping lots, talking funny, having wrinkles or looking old, playing or having fun, or cooking/eating a specific food. Children identified they could help an older person by helping them to walk or pushing their wheelchair (36%), playing with them (11%), or doing an activity together such as making things, reading, or doing a puzzle (24%).

Qualitative data – Response to the IG program

Children who participated in the IG program were also asked about their experience and enjoyment of the program. When commenting retrospectively on how they felt at the start of the program, 42.9% ($N = 12$) children said they were happy or excited the first time they went to MP, while 14.3% ($N = 4$) children recalled feeling shy or scared. 7.1% ($N = 2$) children indicated negative feelings at the start of the program. Over time, children became more comfortable with the neighbours and all but two children felt positively about participating in the program at the time of interviewing, although these children had difficulty adjusting to the ELC setting all year. 85.7% ($N = 24$) of the children found the program interesting.

Data from interviews also identified three main themes that explain the success of the program; singing songs, learning from each other, and forming relationships. Most responses indicated enjoyment of the program through reference to singing songs to the neighbours and/or playing games with them. Each session began and ended with a performance by the children. According to the teacher, residents “*love the singing with the children*”. It was clear this was the most memorable and enjoyable aspect of the program for both parties.

Children enjoyed learning “*the back stories*” of the neighbours and “*what they did when they were little*” and were able to repeat two key stories shared by the neighbours. Children wanted to “*ask [the neighbours] more about what they do in their early days*” and “*learn about old people*”. Clearly, these stories were engaging, entertaining, and unforgettable for the children. The teacher observed that her children had also learnt about historical events, social changes, historical artefacts, and a different repertoire of music. Additionally, one child reported that she had learnt “*to be kind*”, suggesting development of social-emotional skills. The teacher observed progress in the children’s politeness and social skills such as greeting the neighbours, projecting their voice, looking at the person they are talking to, and being aware of the neighbours’ needs. The teacher

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reported feedback from parents indicating previous children learnt about death through the program, through writing cards to the neighbours when a neighbour died during the year.

The program created positive relationships between the children and neighbours, evident through the way children talked about them. For example, *“I like seeing Lily and I like seeing Nancy”* (names changed for privacy), *“we like our neighbours”*, and *“how lovely they are”*. Children reported having fun with the neighbours and enjoyed seeing and visiting them. This was echoed by the teacher, who noted the children demonstrated *“a greater competence in approaching the neighbours for conversation...increasing confidence in their relationships in the space and with the neighbours”*. These relationships were just as important to the residents, who relished the companionship according to the teacher; *“seeing the children is like being able to see their own children”*.

Finally, while data collection in this study focused on the children, the teacher indicated the aged-care residents also benefitted from the companionship and singing. Children taught the neighbours what they had been learning in the curriculum and offered the opportunity to compare and discuss changes in technologies and social relationship over time. She further reflected:

When there are moments the residents open up about their lives to me and I can see that it is important for them to have visitors because some of them haven't seen family members for years and I don't know if they get visitors.

Moreover, during one of the sessions, a resident was overheard saying *“I enjoy them coming, they make me feel younger.”*

Discussion

The present study evaluated a current IG program in an Australian pre-school context through exploring whether the teacher's aims had been met. Specifically, the study's goal was to assess empathy, coping skills, and attitudes towards older people of participating children compared with non-participating children, in addition to qualitative face-to-face interviews with the participating children and teacher. In doing so, evaluation of whether the IG program outcomes were achieved was possible.

There was no significant difference between the two groups in their scores on the Semantic Differential scale or in Word Association responses. These findings align with Baker and colleagues' (2017) findings of no change in children' self-reported attitudes towards elders immediately after the Avondale IG Design Challenge or at 3-months follow

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up. Attitudes towards older people were generally positive across both groups, with an average of 3.18/4 across the ELC cohort. This corroborates recent literature in the area (e.g. Lineweaver et al., 2017; Robinson et al., 2014; Thompson & Weaver, 2016) suggesting that pre-schoolers' attitudes towards older people are not as negative as Seefeldt and colleagues (1977) initially purported. Given the already relatively positive attitudes towards older people, it may take a larger sample and more power to detect any small increases due to the program.

It was found that children in the IG program showed significantly less empathy and prosocial behaviours than children in the comparison group. However, it was not possible to collect baseline data prior to the commencement of the program and these results could be due to different questionnaire interpretations between the teachers. Positive attitudes towards older people were significantly positively correlated with cognitive empathy and affective empathy, suggesting that an increased ability to take the perspective of others and share in other people's emotional experiences is associated with less ageism and discrimination. Thus, increasing empathic behaviours may be an effective way to reduce negative stereotypes in society more broadly (Petkova, 2015; Schwalbach & Kiernan, 2002).

Females showed higher empathic behaviours on average than males, consistent with other recent findings and long-standing literature highlighting differences between genders across the lifespan (Beceran & Özdemir, 2019; O'Brien et al., 2012; Thompson & Voyer, 2014; Van der Graff et al., 2018). However, within the IG group, males had higher empathic behaviours than females. It could be suggested that males benefitted from the program more than females due to their lower empathic predisposition (Christov-Moore et al., 2014), or it gives further support to the unreliability of this distribution of scores.

The two groups were similar in their use of positive and negative coping styles. One could argue the effects of the IG program are comparable to that of other SEL programs. Females had significantly higher levels of positive coping compared to males, consistent with previous findings (Saunders et al., 1999). Additionally, males in the IG program had higher levels of positive coping than males in the comparison group, suggesting that given males had lower positive coping to start with, they showed higher gains from participating in the IG program. Finally, females in the IG program showed a trend towards lower levels of emotional expression and higher levels of emotional inhibition than females in the comparison group. This indicates IG contact may promote internalisation and reduce externalisation of emotions, mirroring the behaviour of older adults (Birkeland & Natvig, 2009; Greenglass et al., 2006).

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A trend revealed that children who saw their grandparents once a month or more had more positive attitudes towards older people, higher cognitive and affective empathy, and more positive coping strategies than children who did not see their grandparents as often. Children with the least exposure to older people had the most negative attitudes towards older people and higher use of emotional expression coping. This suggests that exposure to older people and diversity may be related to the ability to better empathise and take other people's perspectives, resulting in less negative attitudes (Bales et al., 2000; Femia et al., 2007; Lloyd et al., 2018), and may influence the development of positive coping styles, perhaps because older adults tend to use adaptive coping strategies themselves (Aldwin et al., 1996; Birkeland & Natvig, 2009; Choi et al., 2008).

The children benefitted from the program through their enjoyment of making friends and building relationships with the neighbours, facilitating social connections, and encouraging the young children to see themselves as citizens of a community around them. Consequently, the program appears successful thus far in creating meaningful relationships between the pre-school children and the aged-care residents, even in this short time frame. Through their answers, children shared what they had learnt about their neighbours' life stories and historical and cultural events and found this, along with singing songs and playing games, the most memorable aspects of the program. Play has a key role in children's development and underpins all learning at this age (Brooker & Woodhead, 2013). Furthermore, encouraging play in older adults promotes physical and cognitive capabilities, self-esteem, social interaction, positive wellbeing, positive emotions, learning, challenge and success, achievement, and fun (McLaughlin et al., 2012). Play also improves perceived closeness and positive affect in platonic relationships, thus facilitating meaningful IG relationships in this program (Baxter, 1992). Children in the program also improved their visible social and emotional skills such as politeness, projecting their voice, and being kind, which were not assessed in the questionnaire measures. Thus, the program fulfilled the teacher's aims in these areas.

Limitations

One clear limitation of this study was the lack of a baseline comparison. This made it difficult to attribute differences between the groups to the program implementation. Additionally, the qualitative data was more effective than the broad empathy and coping measures in assessing the program's aims. The subtests used from the CATE are limited in that they only assessed the children's behavioural intentions rather than actual behaviours and conflate attitudes towards the ageing process and towards older people (Medonça et al., 2019). Therefore, a larger scale project should include third-party observer measures of behaviour towards older adults to assess program outcomes in the

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future, such as those used by Baker and colleagues (2017), Gigliotti and colleagues (2005), and Hayes (2003). These show valid and objective results, however, were not feasible in this project.

Despite best efforts to minimise disruption to the program, children received only half the planned sessions, about five hours of exposure and contact, due to constraints placed on the ELC during one of the terms. Since the amount of time spent together is an important factor for an IG program to achieve its goals (Martins et al., 2019), the infrequent exposure in this program may not have been enough to trigger observable gains in standardized outcome measures. Incorporating a longitudinal design would assist in exploring a trajectory of change and allow for increased IG contact. This ELC also has a strong social emotional focus embedded throughout the setting, where caring for others, respect, empathy, and positive coping are emphasised and taught regularly. Larger gains may have been evident if the IG program was compared to an ELC that places less value on integrated social emotional learning. Finally, the current findings suggest that teacher-report measures may not be the most reliable, effective, or time-sensitive procedure in assessing an educational program and highlights the benefits of interview, observational data, and evaluation tools that focus on interaction and engagement.

Conclusion

The IG program at the ELC set out to form relationships and encourage the sharing of knowledge between generations in a way that facilitated the social and emotional development of the children. Results from the current study suggest the program partially achieved these aims even in the short time frame assessed, as children enjoyed making friends with the neighbours, singing songs, and building social connections. They developed an interest in history and culture, demonstrated an increase in knowledge, and saw themselves as citizens of a community in these early years of schooling. Whilst attitudes towards older people were stereotyped but not overly negative in a modern Australian metropolitan context, exposure to older adults, either through regular contact with grandparents or through IG relationships, may promote empathy and positive coping skills. This study suggests the future of IG programs is promising and demonstrates the benefit of incorporating IG programs into an early childhood setting in a systemic, curriculum-based way. Future research should focus on interviews with children, parents, teachers, and older adult participants to provide a broader evaluation of this specific program to inform implementation in other early childhood settings.

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