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Improving children's attitudes towards older people's competences: a weekly intergenerational summer camp

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Abstract

Background Older people are the object of negative stereotypes, especially regarding their competences. As intergenerational activities are a good practice of reducing ageism, an intergenerational summer camp at the premises of a local association became a pilot study to verify whether children's attitudes towards older people, especially those regarding competences, improved after a week of intergenerational activities. In addition, to ensure the effectiveness of this project, the impact of intergenerational activities on the well-being of older people was also investigated.

Methods For this purpose, 26 children and 10 older people responded to an in-person survey on their attitudes towards older people (children) and their well-being (older people) at the beginning and at the end of their summer camp experience. As the summer camp is a weekly event, the children participated in the final survey after one week, whereas the older people, as they were volunteers for the entire summer camp, participated in the final survey after one month. Descriptive analysis and the Wilcoxon signed-rank test were performed.

Results Results showed an improvement in children's attitudes towards older people, including stereotypes about their competences, and an increase in older people's well-being.

Conclusions Findings from this study confirmed the positive effects of intergenerational projects and proposed the design of short-term ones in community settings. Future studies and considerations for intergenerational programmes suggested by this study are discussed.

Keywords Intergenerational programs, Stereotypes, Ageism, Well-being

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Background

Although ageing is a natural and lifelong process and the age of the population is increasing [1], older people are defined as sick, irrelevant, slow, incapable [2], judged as incompetent, seen as a burden on society and treated in an abusive, prejudiced or neglectful way [3]. This phenomenon, known as “ageism” [4] has negative consequences for older people’s physical health [5] and psychological well-being [6] and measures to reduce it, such as intergenerational activities, are strongly recommended by the World Health Organisation [7]. Based on these considerations, the present study aimed to investigate the role of intergenerational activities in improving children’s attitudes towards older people, especially attitudes towards older people’s competences.

Children’s ageism

Negative age-related stereotypes emerge early in individuals’ life. Preschool children, for example, endorse a negative view of older people [8, 9], and show more reliance on mutual exclusivity with younger than older people [10]. Consistently, primary school children define older people as less active, slow and weak [11], express a preference for spending time with younger (as opposed to older) people [12], and also show a positive bias towards younger people in an implicit association test [13]. In contrast, other studies have found positive stereotypes in pre-school children [14] as well as in primary school children and adolescents [15, 16]. For example, Sacan et al. [17] showed that 8–11 year old children endorse positive attitudes towards older people, and the presence of grandparents in their life has a positive impact on their opinions and behaviour towards them. The coexistence of these contradictory findings can be explained by the Stereotype Content Model [18]. According to this model, stereotypes towards other groups are based on two dimensions, warmth and competence. The first refers to the other group’s intentions in the social context, i.e. their morality, trustworthiness, sincerity, kindness, and friendliness. The second includes characteristics such as skill, intelligence, confidence and creativity, to define their perceived ability to carry out intentions. Thus, in the same way that members of a social group can be defined by their perceived intentions and abilities, the same applies to older people. They are considered as very warm (e.g. kind, wise) but less competent (e.g. memory, performance). Consistent with this, Flamion et al. [14] found that preschool children had negative perceptions of older people only in terms of physical ability and competences, and Vauclair and colleagues [19] reported the same findings in a sample of primary school children. Other researchers found this difference only from adolescence onwards [20], suggesting a possible change over time. Indeed, Lineweaver et al. [21] found that first graders

endorsed more positive and stereotypical representations of older people than did eighth graders, and that context played a role in the endorsement of attitudes. The strong association between relationships in the social context and attitudes towards older people have been confirmed by other authors: for example, Baumeister [22] found that shared experiences with older people favoured positive attitudes in children, while Robinson and Howatson-Jones [23] showed that familiarity with older people promoted positive attitudes towards them. Thus, social context may play an important role in age-related stereotypes, and intergenerational activities may provide a valuable opportunity with regard to this.

Intergenerational activities and ageism

Intergenerational activities have positive effects on older people [24]: they improve older adults’ health and health-related quality of life [25], psychological well-being [26, 27] and satisfaction or confidence in their abilities [28]. In addition, intergenerational activities can have an indirect effect on the health of older people, as negative stereotypes affect both their physical and mental health [5, 6], and intergenerational activities are one of three recommended practices to reduce ageism in society [29]. Indeed, several studies involving young adults [30], adolescents [25, 31, 32] and children [25, 33] have shown their effectiveness in reducing negative age-related stereotypes, especially when intergenerational activities are combined with educational programmes aimed at increasing knowledge about ageism [34–36].

Over time several different types of intergenerational programmes have been developed with school-age children [37]. Some of them differ according to the role of the participants, as older people can have a higher status than younger ones, e.g. science teachers in school [38], or can be equal to children, e.g. paired to do the same activity. Although children increased their positive attitudes towards older people after both kinds of interaction, more research supports the second type. Indeed, children who participated in collaborative activities with older people (e.g. journal writing, art, storytelling, musical activities, games, computer lessons) endorsed more positive attitudes [37, 39, 40], showed a reduced distance [39] and there was an increase in constructive behaviour, conversation and frequency of smiling during intergenerational interactions [41]. Consistently with this, the PEACE (Positive Education about Aging and Contact Experiences) Model [42] suggests that intergenerational activities are more effective when the experiences promote equality and cooperation.

No specific difference in children’s attitudes towards older people emerged when considering the setting. Intergenerational activities implemented in schools, especially in classrooms [38, 43, 44], in nursing homes

[45] or both [46] seem to be equally able to improve children's attitudes towards older people. Instead, the duration of programmes seems to play an important role. Long-term programmes, i.e. those lasting several years [11] or one school year [45, 47], are positively related to the reduction of ageism and are considered to be more effective [48]. However, also short-term intergenerational programmes can bring about positive changes. Projects lasting about six months [43], three months [38] or about one month [39, 44] improve children's attitudes towards older adults as well.

In conclusion, despite some conflicting results [11, 49], different types of intergenerational programmes have a positive effect on children's attitudes towards older people [37, 50]. However, further studies are necessary to understand their potential.

The present study

Based on the need to reduce ageism and increase the healthcare of older people [29], the present research is a pilot study aimed at testing the effect of an intergenerational summer camp on children's ageism.

According to the first hypothesis, this short-term intergenerational summer camp can improve children's attitudes towards older people. In fact, as the intergenerational programme consists of joint activities between older and younger people, it was expected to trigger the same mechanism explained by the Allport's contact theory [51]. According to this theory, the interaction between two groups, under optimal conditions of equality, shared goals, authority support, and absence of competition, can lead to a reduction in prejudice. Its efficacy has been supported by several studies which dealt with different types of prejudice [52], from ethnicity and religion to sexual orientation, and it can be successful for ageism as well. Literature also showed that young people are more sensitive to the contact effect [51, 53], thus they can benefit from this kind of interaction. Additionally, some good practices in intergenerational activities, such as the PEACE model [42] suggest that shared experiences with older adults, based on individualised and cooperative actions that are supported by context, represent one of the key elements in reducing children's negative stereotypes about ageing.

A consequent and related hypothesis affirms that attitudes towards older people's competences can be also significantly improved. In fact, involving older people as teachers could represent a counter-stereotypical model [54], i.e. it could offer a different image of older people, in contrast with the most negative trait usually attributed to them, i.e. incompetence, and contribute to developing a different attitude towards the older population.

In addition, the present study aims to test whether this intergenerational summer camp can also benefit older

people. Specifically, because the opportunity to pass on their skills to participating children could lead older people to achieve a sense of generativity [55] as well as self-integrity [56], it was hypothesised that older people would improve their well-being at the end of the summer camp.

Methods

Participants and procedure

The intergenerational summer camp was organised by a local association and targeted primary school children. It was promoted through social media, using a flyer with some basic information and two phone numbers to call for more details. Only primary school children were involved. Children with severe cognitive disabilities were also included in the summer camp, but they were not considered participants in the study (e.g. a child with autistic spectrum disorder who did not verbalise was not included in the study sample). The site was located in a historic but peripheral neighbourhood, close to both the historic centre and the countryside, in a small town in the hills of the Marche region (Italy). The intergenerational camp lasted for a month, but was run on a weekly basis so that children could register for individual weeks. At the time of registration, parents were informed about the research project associated with the summer camp and all gave their consent by completing the informed consent and data treatment form. Children also gave their consent verbally. On the first day of the camp, before starting the practical activities, a researcher explained that she was interested in knowing their opinion about older people and the summer camp, and asked for permission to ask some questions at the beginning and at the end of the week. A researcher conducted an in-person survey with each child to find out about their experiences with their grandparents and their attitudes towards older people. At the end of the week, before they left, they answered the same questions a second time. All children were thanked and appreciation was expressed for their contribution.

During the week, intergenerational activities took place for 2 h a day, facilitated by an educator. The first moment of the camp was for introductions: after the participants had said their name and favourite things (e.g. song, food, film, city...), the children tried to guess the older people's age and previous occupation, while the older people asked the children questions to get to know them better. The educator and the children called the older people "grandmother" or "grandfather". Each day a small group of older people did a specific activity: cooking, reading books or the news, doing gymnastics, free-hand drawing, painting, embroidery, needlepoint, woodwork or other crafts. The older people explained the activities and worked with the children to complete the task. In

fact, every day, each child was able to take a product that had been made under the guidance and instruction of the older people.

The older adults who were retired and members of the association or trusted people (inclusion/exclusion criteria) were involved in the project before the intergenerational summer camp was advertised. They agreed to participate as volunteers for the whole duration of the summer camp. Each of them carried out their activities once a week, with a total of 4 appointments and 8 h. Using the in-person survey, they gave their consent for participation and data treatment and completed a questionnaire at the beginning and at the end of the intergenerational camp with questions about their personal experiences with children and their level of well-being.

Measures

Measures adopted with the children

In-person surveys were used to collect personal information and personal experiences and attitudes towards older people.

Personal data The children provided information about their age, gender and ethnicity by answering open-ended questions. This information was also checked with their parents.

Personal experiences with older people and grandparents The children indicated how often they met their grandparents (from 0, i.e. never, to 4, i.e. every day) and the number of older people they knew (from 1, i.e. less than 5, to 5, i.e. more than 15).

Attitudes towards older people The children said the first five words that came to mind when they thought of an old person, as in Flamion and colleague study [15]. Then, each word was rated as positive, negative or neutral by three independent reviewers. Words with positive valence refer to content that expresses good qualities, e.g. “loving”, “calm” or “creative”; conversely, negative words indicate bad or undesirable qualities, e.g. “boring” or “slow”; whereas neutral words are nouns or adjectives that are not associated with this valence (e.g. “glasses”, “bald” or “rose”). Disagreements were resolved by majority vote and/or by involving another researcher. For each response, the ratio between the total number of words and the number of words rated as positive (positive index), negative (negative index) and neutral (neutral index) was calculated. For each index, the values ranged from 0 to 1. Values close to 0 indicated low valence in all three categories, whereas values close to 1 indicated high valence in all three. Lastly, the same method was used to describe all the words in order to identify those related to competences, i.e. words that express people’s abilities, skills, expertise

and power. If the words had a positive valence, each one was scored + 1. If they had a negative valence, each one counted – 1. If they had a neutral valence, their value was 0. For each child, the value corresponding to the competence of the words was added together and the resulting total was divided by the total number of words said by the child. This was the competence index.

Measures adopted with the older adults

In-person surveys were used to collect information on personal data (age, gender, marital status, level of education), personal experience with children and well-being. Specifically, the study used the following instruments.

Personal experiences with children The older participants indicated the number of grandchildren they had and how often they met them (from 1, i.e. never, to 5, i.e. every day).

Well-being Individual well-being was measured using the 5-item World Health Organisation Well-Being Index, WHO-5 [57]. Participants indicated how they felt in the past month by answering from 0 (never) to 5 (always): I feel cheerful and in good spirits; I feel calm and relaxed; I feel active and energetic; I wake up feeling fresh and rested; my daily life is filled with things that interest me. Each response was re-coded by multiplying each response by four. The results were added together and the final score (called a percentage score) ranged from 0 to 100. In order to measure the change in well-being from the initial to the final score, the difference between the percentage scores was calculated: according to Ware [58], a difference of 10 indicates a significant change.

Statistical analyses

All statistical analyses were performed using IBM SPSS 27 software. Frequencies, means, standard deviations and bivariate correlations were conducted. A non-parametric test, the Wilcoxon signed-rank test, was used to compare the different indices of children’s attitudes towards older people. As the study design provided for an initial (T1) and a final evaluation (T2), the Wilcoxon signed-rank test was used to observe changes in children’s attitudes as well as in the well-being of older people. In addition, changes in well-being were also monitored according to Ware’s criteria [58].

Results

Sample characteristics

The sample consisted of 26 children (10 boys and 16 girls; $Min-Max_{age} = 6-12$ years old; $M_{age} = 9.23$; $SD = 1.58$) and by 10 older people (4 men and 6 women; $Min-Max_{age} = 61-85$ years old; $M_{age} = 72.71$; $SD = 6.84$). The number of children per week ranged from 5 to 10. All of them lived

Table 1 Positive words and frequencies

	Frequency		Value	Competence
	T1	T2		
Active	0	2	Positive	Competence
Affectionate	3	2	Positive	
Always playful	2	1	Positive	
Beautiful	2	2	Positive	
Can do many things	2	3	Positive	Competence
Capable	1	4	Positive	Competence
Cheerful	1	2	Positive	
Clean	1	1	Positive	
Clever	2	4	Positive	Competence
Considerate	2	0	Positive	
Creative	1	4	Positive	Competence
Energetic	0	2	Positive	Competence
Friendly	0	2	Positive	
Funny	5	4	Positive	
Generous	2	0	Positive	
Good	2	2	Positive	
Happy	1	5	Positive	
Helpful	2	1	Positive	
Kind	10	15	Positive	
Loving	2	1	Positive	
Nice	4	6	Positive	
Patient	0	6	Positive	
Pretty	0	3	Positive	
Strong	0	2	Positive	Competence
Sweet	1	1	Positive	
Wise	2	0	Positive	Competence

Note: The table shows words with a total frequency greater than 2. The total frequency corresponds to the sum of words that the children said at T1 and T2 that were greater than or equal to 2

in the same neighbourhood as the summer camp. The children reported that they met their grandparents about once a week or every day ($M=3.50$; $SD=0.09$) and that they knew between five and ten older people ($M=1.84$; $SD=1.18$). The older people reported having one grandchild ($M=1.17$; $SD=1.44$) and spending time with them on average once a month ($M=2.20$; $SD=1.98$). 8 older people were married, while 2 participants were widowed or widowers. 5 of them had completed high school, 2 had completed lower secondary school and 3 had completed primary school. All the children and the older people were European.

Children’s attitudes towards older people

The number of words used by the children to describe older people were 104 at the start (T1) and 107 at the end (T2) of the summer camp. There were 90 different words. Specifically, 61 positive words (T1) and 93 (T2), 22 neutral words (T1) and 5 (T2), whereas 21 negative words (T1) and 9 (T2). The number of words related to competences were 23 (T1) and 31 (T2). The most frequent words are shown in Table 1 for positive words

Table 2 Negative words and frequencies

	Frequency		Value	Competence
	T1	T2		
Fragile	3	0	Negative	Competence
Annoying	1	1	Negative	
Boring	2	2	Negative	
Can write little	1	0	Negative	Competence
Cannot turn on	1	0	Negative	Competence
Can’t hear	2	0	Negative	Competence
Insistent	2	0	Negative	
Lame	0	1	Negative	Competence
Name the rules	0	1	Negative	
Old	3	1	Negative	
Passive	1	0	Negative	Competence
Repetitive	1	1	Negative	
Slow	4	2	Negative	Competence

Table 3 Neutral words and frequencies

	Frequency		Value	Competence
	T1	T2		
At first strange	0	1	Neutral	
Baby sitter	1	0	Neutral	
Bald head	1	0	Neutral	
Beard	1	1	Neutral	
Cement mixer	1	0	Neutral	
Chatterbox	1	1	Neutral	
Corrects drawings	1	0	Neutral	
Farmers	1	0	Neutral	Competence
Glasses	2	0	Neutral	
Grey hair	1	1	Neutral	
Likes to watch TV	1	0	Neutral	
Old and not	1	0	Neutral	
Old people	4	0	Neutral	
Recognisable	1	0	Neutral	
Rose	1	0	Neutral	
Short	1	0	Neutral	
Silent	1	0	Neutral	

and in Tables 2 and 3 for negative and neutral words, respectively.

Other positive words referring to competence that were mentioned only once were attentive, cook for you, fast, they make dinner and lunch (at T1) and agile, athletic, brave, invent everything, masters, teach, they make beautiful things (at T2).

Data collected at the beginning of the summer camp showed that a positive index was equal to 0.61 ($SD=0.34$), a negative index corresponded to 0.18 ($SD=0.24$), whereas a neutral index was 0.10 ($SD=0.27$). The Wilcoxon signed-rank test showed that the positive index was significantly greater than the negative ($p=.001$) and neutral ($p=.003$) ones. No difference was found between negative and neutral index ($p=.820$). The competence index was 0.07 ($SD=0.25$). No significant correlations were found between children’s attitudes, children’s

age and their personal experiences with grandparents or older people.

The positive, negative, neutral and competence indices measured after one week of the summer camp were 0.87 ($SD=0.24$), 0.08 ($SD=0.16$), 0.04 ($SD=0.14$) and 0.26 ($SD=0.17$). The Wilcoxon signed-rank test showed that these differences were significant (see Table 4).

Older people and well-being

The older people's well-being improved significantly after the intergenerational summer camp ($p=.025$). In fact, their initial well-being ($M=74.00$; $SD=18.40$) was lower than their final well-being ($M=91.20$; $SD=2.52$). According to the Ware's criteria [58], 7 out of 10 improved their well-being, while one person experienced a decline (see Table 5).

Discussion

This pilot study showed that a short-term intergenerational camp improves children's attitudes towards older people and, at the same time, increases older people's well-being. These findings are consistent with previous research on positive effects of intergenerational activities involving primary school children and older people, and represent a new contribution to the literature, both in terms of findings and project design.

Children's attitudes towards older people

Results from this study confirmed the positive attitudes towards older people in children [14–17]. However, it also emerges that children viewed older adults as having low competences, one of the dimensions indicated by Stereotype Content Model [14, 18]. This supports the multidimensional nature of stereotypes and suggests considering this theoretical framework to explain some of the contrasting findings in the literature about children's ageism [8–19].

In addition, similar to previous researches [7, 34, 37, 50], intergenerational activities conducted during this summer camp further improved children's attitudes towards older people. In fact, at the end of the intergenerational week, children used more positive, less neutral and less negative words to refer to older people than at the beginning.

Nevertheless, the most innovative finding of this study is the increase in positive attitudes towards older people's competences, the main underestimated dimension in older adults [15, 18]. Indeed, their involvement in the summer camp and their opportunity to express their skills may have represented a counter-stereotypical view of older people that leads children to change their attitudes [54]. The Festinger's cognitive dissonance theory [59] explains that people can reorganise their representation when they perceive a contradiction in the

Table 4 Wilcoxon signed-rank test children's attitudes

	Children's attitudes at T1	Children's attitudes at T2	Difference between children's attitudes
Positive Index	0.61 (0.34)	0.87 (0.24)	$p=.001$
Negative Index	0.18 (0.24)	0.08 (0.16)	$p=.023$
Neutral Index	0.10 (0.27)	0.04 (0.14)	$p=.042$
Competence Index	0.07 (0.25)	0.26 (0.17)	$p=.001$

Note. Mean and standard deviation values are reported in the first and in the second column. The last one indicates the statistical difference between children's attitudes expressed in terms of p -value.

Table 5 Older participants' well-being

	Well-being at T1	Well-being at T2	Difference between well-being at T2 and T1
Participant 1	60	92	+32
Participant 2	64	92	+28
Participant 3	96	88	-8
Participant 4	44	88	+44
Participant 5	80	92	+12
Participant 6	100	88	-12
Participant 7	76	92	+16
Participant 8	72	92	+20
Participant 9	56	92	+36
Participant 10	92	96	+4

Note. The first and the second column report the participants' level of well-being at T1 and T2 respectively. The third column indicates the difference between well-being at T2 and T1 and positive values indicate an increased level of well-being whereas negative values suggest a well-being reduction.

environment, and the children's changes in their attitudes can represent further evidence of this model. Furthermore, changes in attitudes represent also new evidence of the Allport's contact theory [51] and it is consistent with all subsequent studies that promote direct, imagined or extended contact between people from different groups in order to reduce prejudice [52]. Indeed, this intergenerational summer camp seems to have met the different conditions that, according this theory, promote good contact and all its positive effects. In fact, children and older people cooperated in the same activity (e.g. doing a craft), they had the same goal (e.g. making something to take-home) and they were institutionally supported in their interaction (e.g. parents chose this project for their children and an association decided to organise this type of summer camp). A missing condition seems to be equal status, as the older people had a higher position in terms of knowledge and competences, and this could have created an imbalance in terms of roles. However, since both the children and the older adults were participants in the summer camp whose actions were mediated by an educator, the balance between roles may have been respected. Furthermore, the interactions took place in an informal context where there was no pressure to perform and

where competences, which might have created a difference in social status, were of secondary importance, as the relational dimension was the main purpose.

To conclude, a combination of a counter-stereotypical model [59] and everyday-shared experiences with older people [51] can represent the good practice revealed by this summer camp to counteract ageism in childhood and to support younger people in developing, in line with the self-fulfilling principle, also a positive image of themselves as future older people [60].

Older People's well-being

Another finding of this study is the increased well-being of older people [24–27]. In line with previous investigations, intergenerational activities have a positive effect on older people's health and health-related quality of life [25], well-being [26, 27], and self-satisfaction [28] and, as they are useful in counteracting ageism [7], they may also have an indirect buffering effect on older people's health [5, 6]. Therefore, intergenerational activities can be seriously considered as a possible strategy to promote successful ageing and enrich literature regarding positive ageing. According to one of the classic theories of ageing, the model of Rowe and Khan [61], successful ageing depends on the absence of disease, good physical and cognitive abilities and involvement in social life. It is precisely this last condition that this intergenerational programme seems to respond to. As this summer camp was held in a community space, it could also be an opportunity for older people to socialise and start to actively participate in the life of the association. In addition, interaction with younger generations and participation in community life may have provided an opportunity to address older people's psychosocial development tasks [56]. Indeed, the possibility of expressing their knowledge and competence or contributing to the community can respond to Erikson's stage of generativity and self-integrity [55] and also to Stevernik and Lindenberg [62]'s social need. According to Erikson's psychosocial theory, adults and older people develop their psychosocial resources when they feel they are making a contribution to society and when they have a positive view of their whole life. Similarly, Stevernik and Lindenberg [62] underlined that the well-being of older adults depends on the possibility to satisfy their needs. One of these is the need of status, i.e. the need to feel respected and recognised for their own abilities.

In this sense, this summer camp offered a possibility to promote the well-being of older people. Indeed, the positive relationships developed during the intergenerational activities and the strengthening of the older people's competences may have met some of their psychological needs, by representing an opportunity for positive ageing.

Intergenerational summer activities

The results of this study also provide important considerations for the design of intergenerational programmes. Firstly, intergenerational activities of this summer camp are in line with the recommendations of the PEACE model [42]. In fact, just as the PEACE model suggests individualised interaction, working together towards the same goals, equal status, and sharing personal information, this project used a small group organisation, children and older adults working together towards the same goal, and there was an initial moment to introduce themselves and share personal experiences. In contrast to this model, no educational activities were carried out on ageism, although combining information on ageing with intergenerational activities is effective in reducing ageism [36, 42]. These educational activities were not considered appropriate for the context of this intergenerational summer camp, as it took place in an informal environment, far from formal and institutional experiences. However, the fact that the results showed positive changes in attitudes towards ageing, even without informative activities, shows that face-to-face intergenerational experiences impact on primary school children in the same way as a combined educational and direct interaction project [35]. Secondly, as intergenerational programmes are usually carried out in schools or nursing homes [38, 43–46], the present camp took place in a community setting, i.e. on the premises of a local association. On this site, the activities were carried out by an educator who was responsible for the interaction between the children and the older people, an element that represents a good practice for intergenerational activities recommended by Jarrott and colleagues [63]. Thirdly, although several intergenerational programmes have a short duration, this is the first to have a weekly duration for children and one of the few to have a monthly duration for older people. The results are equally positive and, contrary to the consideration of Christian et al. [48], have shown that even without a long-term project, it is possible to create positive attitudes towards older people in school-age children.

Limitations, strengths and future directions

This pilot study presents several limitations, but also offers many opportunities for development.

Firstly, as there is a small survey sample size, this reduces statistical power, and it is not possible to generalise the results. However, the use of a non-parametric test is adequate to analyse small samples and to interpret their statistical valance [64], and the adopted well-being questionnaire [57] can be interpreted also in an individual way, i.e. considering its clinical cut-off. Thus, despite the small number of participants, outcomes from this study can be considered both significant and useful. Secondly, the study did not have a control group, which limits the

possibility to relate the positive effect of the intergenerational summer camp and to consolidate the validity of this type of activity. Nevertheless, participants do not experience other significant events during the summer camp period and this information may be useful to eliminate some possible confounding effects [65] and partially overcome the lack of a control group. In addition, the promising results of this pilot study may encourage further investigation with a larger sample of participants, which would allow for an experimental design study. Thirdly, this study did not consider the long-term effects of the intergenerational summer camp, although understanding its effects over time is a very important point for planning a project to counter age discrimination. In addition, long-term effects can also be considered in terms of children's self-image as future older people [60], as promoting a positive image of themselves as older people is also important from a preventive health point of view. Fourthly, children's attitudes towards older people were measured using explicit attitudes, which have the limitation of being subject to social desirability bias [66]. The use of different types of measures, such as those used by Suberry et al. [67], who explored changes in attitudes and knowledge in middle school students, or by Babcock et al. [13] who used implicit measures, would have made it possible to reduce this effect.

Future studies could further enrich the scientific literature on intergenerational programmes by confirming previously studied outcomes, e.g. perceptions of social support, civic responsibility, self-esteem, well-being [26, 50, 54], but also by exploring new possible outcomes (e.g. attention or inhibitory skills, awareness or self-compassion). Further research could also focus on community level effects, for example by examining the impact of community-based intergenerational programmes on participants and residents' sense of community. In addition, future research should not only examine the immediate effect of intergenerational activities at the end of the project, but also the long-term effects. Indeed, knowing the persistence of attitudinal change over time, and identifying the intergenerational programme that can better lead to this goal, would provide some useful information for planning intergenerational projects in the future. Furthermore, a larger sample could lead to consideration of the role of possible moderators. These could be people's characteristics (e.g. gender, previous experience with children or older people, quality of intergenerational family relationships) as well as the type of activities (e.g. art activities, lectures, computer activities). Further studies could also investigate the effects of intergenerational activities with other generational groups: for example, adolescents and young adults may also benefit from intergenerational programmes [36, 67, 68] as may people with dementia [69]. Further research could be helpful in

supporting intergenerational interactions with these specific groups and in identifying useful strategies to support people's developmental tasks, well-being and health [70]. Furthermore, intercultural differences in intergenerational topics can be useful to explore. For example, the words "quiet" or "farmer", which have been considered neutral and positive respectively, might be evaluated differently in another context. New adjectives may be used to define older people in different cultures, and other practices can be more useful in other settings. Therefore, cross-cultural studies could further enrich this research area.

The importance of intergenerational activities can encourage schools, educational institutions and local associations to collaborate in projects aimed at promoting intergenerational relations and reducing age-related segregation in daily activities. To this end, training programmes aimed to develop intergenerational educators can be very important. In fact, trained professionals will be able to create the ideal conditions to favour a constructive dialogue between generations [71]. In addition, not only formal settings but also informal contexts of intergenerational relationships should be promoted. Political institutions should not only support this kind of projects, but also promote intergenerational places that can represent an opportunity for the "contact" [72]. For example, the choice to build a new school near a nursing home, or vice versa, and to use a common garden can represent an opportunity of socialization. Similarly, creating social housing for younger and older people can reduce the sense of isolation in older adults and represent a beneficial network for younger generations [73]. Thus, formal and informal opportunities of intergenerational dialogue should be seriously taken into consideration.

Conclusions

In conclusion, this pilot study showed that this intergenerational project was effective in improving children's attitudes towards ageing, especially about competences, as well as promoting the well-being of older people. Therefore, educational and social institutions should promote this kind of programme in community settings and organise training courses to develop professional skills in designing and managing intergenerational activities. The project presented and tested in this study has shown that even a short-term intergenerational project has positive results for both generations. This suggests that this kind of practice should be seriously considered, even for a short period of time.

Acknowledgements

The author thanks Circolo Acli Castelnuovo-aps (Recanati, MC) for having welcomed the research project and Cristina Cantarini, educator in the intergenerational summer camp, for her collaboration. She thanks Anna Palotto and Siria Casoni for having supported data collection as part of their

master thesis work discussed at the University of Macerata in the Spring Session 23/24. She is also grateful to Prof. Carlo Tomasetto for his feedback on the first draft of the manuscript and to Prof. Paola Nicolini and the master students Gihad Bouzouita and Samuele Pelucchini for their collaboration in defining the words' valence.

Author contributions

The author has ideated and designed the study, planned the research methodology, analysed and interpreted results and written the manuscript.

Funding

This work has been funded by the European Union - NextGenerationEU under the Italian Ministry of University and Research (MUR) National Innovation Ecosystem grant ECS00000041 - VITALITY - CUP D83C22000710005.

Data availability

The data that support the findings of this study are available on request from the corresponding author.

Declarations

Ethical approval and consent to participate

The study was conducted in accordance with the Ethical Code by the Italian Association of Psychology, which is based on the Constitution of the Italian Republic, the Universal Declaration of Human Rights, the Charter of Fundamental Rights of the European Union, and the Declaration of Helsinki. The study was approved by the Research Ethics Committee of the University of Macerata (no. 0091872/2023). All participants (or their parents) provided informed and data treatment consent.

Competing interests

The author is a member of the association that organized the intergenerational summer camp. In the first edition, she collaborated as psychologist in defining and implementing the intergenerational summer camp. In the second edition, the author designed a study to investigate the effects of intergenerational summer camp on older people and children as researcher at University of Macerata. This work has been funded by the European Union - NextGenerationEU under the Italian Ministry of University and Research (MUR) National Innovation Ecosystem grant ECS00000041 - VITALITY - CUP D83C22000710005.

Consent for publication

Not applicable.

Received: 19 June 2024 / Accepted: 27 April 2025

Published online: 22 May 2025

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