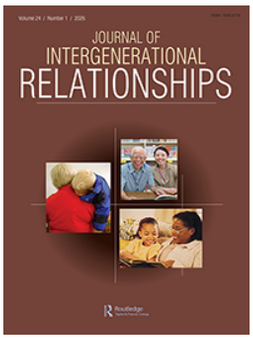

Routledge
Taylor & Francis Group

Journal of Intergenerational Relationships

ISSN: 1535-0770 (Print) 1535-0932 (Online) Journal homepage: www.tandfonline.com/journals/wjir20

Generations in Shape: A Community-Based Intergenerational Physical Activity Programme

Mathilde Hyvärinen & Jennifer Wegrzyk

To cite this article: Mathilde Hyvärinen & Jennifer Wegrzyk (15 Jan 2026): Generations in Shape: A Community-Based Intergenerational Physical Activity Programme, Journal of Intergenerational Relationships, DOI: 10.1080/15350770.2026.2614502

To link to this article: https://doi.org/10.1080/15350770.2026.2614502

JOURNAL OF INTERGENERATIONAL RELATIONSHIPS
https://doi.org/10.1080/15350770.2026.2614502

Routledge
Taylor & Francis Group

Generations in Shape: A Community-Based Intergenerational Physical Activity Programme

Mathilde Hyvärinen and Jennifer Wegrzyk

HESAV School of Health Sciences - Vaud, HES-SO University of Applied Sciences and Arts Western Switzerland, Lausanne, Switzerland

ABSTRACT

Generations in Shape (fr: Générations en Forme) is an intergenerational physical activity programme piloted in the Canton of Vaud, Switzerland, aiming to improve health, social cohesion, and well-being among older adults. The seven-week programme engaged children, adults, and senior participants in shared physical activities in urban parks. Within the scope of a broader aging strategy (*Vieillir2030* policy), a mixed-methods feasibility study compared Generations in Shape with an established seniors-only programme and a control group. Findings showed significant improvements in physical activity level and muscle strength and a trend toward reduced loneliness in Generations in Shape, increased motivation in seniors-only programme and no meaningful changes in the control group. Qualitative data highlighted the value of interaction, playfulness, and social cohesion. This article details the programme's key design components and preliminary outcomes, contributing evidence on the potential of intergenerational programmes to reach less active seniors and promote healthy aging.

KEYWORDS

Intergenerational; physical activity; older adults; social cohesion; health

Introduction

Promoting healthy aging has become a priority for governments in response to demographic shifts (World Health Organization, 2020). In Switzerland, the Canton of Vaud has launched the *Vieillir2030* policy to strengthen social cohesion and enhance the quality of life of older adults (Beuret, 2021). Physical activity is widely recognized as a major determinant of healthy aging, reducing the risk of chronic diseases, falls and social isolation (World Health Organisation, 2019). Yet inactivity and loneliness remain widespread. In the Canton of Vaud, a significant proportion of older adults (38%) do not meet recommended physical activity guidelines (Pahud & Zufferey, 2019), and many experience frequent loneliness (8%) and social isolation (40%) (Beuret, 2021).

CONTACT Jennifer Wegrzyk jennifer.masset@hesav.ch HESAV School of Health Sciences - Vaud, HES-SO University of Applied Sciences and Arts Western Switzerland, Avenue de Beaumont 21, Lausanne 1011, Switzerland
Supplemental data for this article can be accessed online at https://doi.org/10.1080/15350770.2026.2614502

Regular physical activity contributes to mental and physical well-being, including fall prevention (Bull et al., 2020). Furthermore, moderate to high level of physical activity have been associated with a 30% reduced likelihood of social isolation among older adults (Musich et al., 2022), highlighting the potential of physical activity programmes to improve both physical and psychosocial health. However, sustaining engagement in physical activity remains difficult. Most interventions achieve only modest, short- to medium-term increases in physical activity levels and clinical outcomes (Gasana et al., 2023; Grande et al., 2020; Taylor et al., 2021).

Beyond promoting physical activity, intergenerational interaction offers an opportunity to enhance both physical and psychosocial well-being by bring together younger and/or adults and older (Zhou et al., 2024). Evidence suggests intergenerational programmes reduce stereotypes, strengthen cohesion, and offer older adults meaningful roles that enhance purpose and belonging (Sánchez-Cazalla & Gutiérrez-Domingo, 2025). These benefits align with the aims of the *Vieillir2030* policy and guided the programme design. Research further indicates that intergenerational physical activity programmes may alleviate depressive symptoms and anxiety and improve autonomy and enjoyment (Buonsenso et al., 2021; Krzeczkowska et al., 2021; Minghetti et al., 2021; Petersen, 2023). Yet, research on intergenerational physical activity interventions remains limited, particularly regarding long-term effectiveness and implementation strategies (Grande et al., 2020; Taylor et al., 2021; Zhou et al., 2024).

The Generations in Shape (fr: Générations en Forme) was developed as a low-threshold, inclusive initiative integrating children, adults and seniors in community-based physical activity sessions in urban parks. This article details the programme's key components, feasibility, preliminary outcomes among older adults, providing insights for broader community applications and evidence-based practices.

Methods

Study design

This study comprised two consecutive phases: (1) the co-development of the Generations in Shape programme through participatory methods, and (2) a mixed-methods evaluation comparing the new intergenerational programme with an existing seniors-only programme, Seniors in Shape (fr. *Seniors en Forme*), and a control group.

The evaluation used a quasi-experimental, mixed-methods pre-post design combining quantitative and qualitative approaches. The study aimed to assess the feasibility and preliminary health and well-being outcomes of Generations in Shape under real-world conditions, consistent

with its planned integration into cantonal healthy aging strategies (*Vieillir2030*). The project was funded through a competitive cantonal call supporting small-scale, innovative initiatives on healthy aging. Data collection and analysis focused solely on older adult participants. For budgetary reasons, the assessment among younger people was not retained.

Phase 1: programme development (co-design process)

The Generations in Shape programme was co-developed by the School of Health Sciences - Vaud (HESAV), the City of Lausanne, Pro Senectute Vaud, and older adults. The goal of this phase was to adapt the existing Seniors in Shape programme to include intergenerational components promoting physical activity and social interaction.

The co-design process followed three steps:

(1) Focus groups with older adults ($n = 12$) explored expectations, preferences, and concerns regarding intergenerational physical activity. Discussions were guided by literature on barriers and facilitators to older adults' participation in intergenerational physical activity (Zhou et al., 2024). Participants expressed interest in intergenerational sessions but preferred activities involving younger adults rather than children, citing concerns about managing interactions with children and adolescents. They emphasized the importance of engaging in physical activity for themselves without feeling responsible for childcare and valued flexibility without mandatory registration. However, they indicated interest in participating in intergenerational physical activity, highlighting the potential benefits of social contact across generations, including physical, mental, and social stimulation (Hyvärinen et al., 2024).
(2) A member of the research team completed a two-day training with the Hopp-là Foundation, the Swiss national center for intergenerational physical activity promotion (https://www.hopp-la.ch/fr/).
(3) Three online workshops were conducted with adapted physical activity professionals experienced in delivering Seniors in Shape sessions. These workshops aimed to ensure programme fidelity and safety while adapting exercises for mixed-age groups through playful, cooperative activities fostering intergenerational interaction.

The outputs of this three-step phase informed the final structure of Generations in Shape, implemented and evaluated in the second phase.

Phase 2: programme implementation

Generations in Shape and Seniors in Shape were delivered simultaneously in public parks in Lausanne during the summer holidays of 2024. Each

programme was composed of two weekly sessions held from 9:00 to 10:00 am, free of charge, with minimal equipment and no registration required to ensure accessibility and inclusivity. Both programmes were open to everyone in the community.

Each 60-minute session included aerobic, strength, and balance activities led by adapted physical activity professionals and supported by trained instructors. A voice amplifier was used almost systematically to ensure adequate audibility for all, as group sizes typically exceeded 20 participants.

No standardized programme was provided to adapted physical activity professionals. However, the framework, criteria and examples developed jointly were provided in advance to ensure that the core components (endurance, strength, balance exercises) were included in both programmes, while distinguishing between the methods used to deliver the exercises (individual exercises vs. exercises involving interaction through games and group exercises). A team of four instructors gave both programmes. Each instructor filled in the template with the exercises they had done with the Generations in Shape or Seniors in Shape groups. The instructors also observed each other during the first sessions to ensure consistency. The criteria and session template are available in Supplementary File 1.

Generations in Shape incorporated intergenerational elements such as cooperative games and team-based activities (e.g., paired squats, playful ball exercises). Most of exercises integrated interactions between participants and generations. An example of a 6-week programme is available in Supplementary File 1 as a video in French (https://vimeo.com/1095600369?fl=pl&fe=sh).

Seniors in Shape maintained a traditional format with individual exercises performed in a group setting. Most exercises were delivered in a front-facing group format, with the instructor positioned at the front and participants following individual movements, similar to a typical group exercise class. Some exercises were done in pairs. A video in French is available (https://youtu.be/lOUpUSxRiBE).

The control group consisted of older adults who did not participate in structured physical activity during the summer, as most group activities for seniors in Lausanne are suspended during this period.

Participants

Community-dwelling older adults were recruited through field partners (City of Lausanne and Pro Senectute Vaud) using newsletters, local media, and flyers. Inclusion criteria were: (1) being aged 65 years or older, and (2) absence of medical contraindications for physical activity. These participants were different from those in the co-design phase 1.

A total of 45 participants were enrolled and self-selected into one of three groups: Generations in Shape ($n = 21$), Seniors in Shape ($n = 14$), or control (n

= 10). Participants were required to attend at least five of seven sessions to be included in analyses. Participation was voluntary, and all participants were informed about the study objectives and procedures. Those completing the evaluation received a voucher for a one-year Pro Senectute club membership (CHF 70) and were invited to a closing event with programme partners and researchers.

The sample was recruited through convenience sampling and was not randomized, which may limit generalizability. However, this reflects real-world conditions, where people choose what they want to do. Moreover, both programmes were open to the general public, including seniors, adults, and children who did not participate in the evaluation part, but only to the physical activity sessions.

Ethical considerations

All study participants provided written informed consent prior to participation. The programme was considered a public health initiative and was therefore exempt from formal review by the Human Research Ethics Committee of the Canton of Vaud (CER-VD). All procedures adhered to ethical standards for research involving human participants. Personal and health-related data was intentionally limited to ensure confidentiality.

Evaluation protocol and data collection

A mixed-methods approach assessed feasibility and preliminary outcomes on physical and psychosocial health. Feasibility indicators included attendance, retention, and participant satisfaction. Primary outcomes included physical activity level, muscle strength, loneliness. Secondary outcome included motivation for physical activity, fear of falling, and quality of life.

Quantitative data among the 45 participants of the study were collected one week before and one week after the physical activity programmes using handgrip test for muscle strength (Quattrocchi et al., 2024) and validated French-language questionnaires for physical activity level (IPAQ-Short) (Craig et al., 2003), motivation for physical activity (EMAPS) (Boiché et al., 2019), feeling of loneliness (ESUL) (De Grâce et al., 1993), fear of falling (FES-I) (Yardley et al., 2005), and quality of life (OQoL-7) (Henchoz et al., 2015). Socio-demographic variables included age, gender, education level, household composition, number of children and grandchildren, and satisfaction with family relationships. Attendance and oral feedback were recorded at each session.

Qualitative data were collected through four focus groups (two for Generations in Shape and two for Seniors in Shape) held one week after programme completion. Of the 45 participants, 17 of 21 from Generations in Shape and 7 of 14 from Seniors in Shape participated. Focus groups explored satisfaction (concerning session content and organization), perceived

benefits, and suggestions for improvement. No focus groups were conducted with the control group.

Data analysis

Descriptive statistics (mean, standard deviation, frequencies) were calculated for socio-demographic and baseline variables. Group comparability was tested using non-parametric analyses (Kruskal – Wallis for continuous variables; Chi-square for categorical variables). Within-group pre – post comparisons were conducted using Wilcoxon signed-rank tests ($\alpha = 0.05$) in R (v4.2.0). Given the small and unequal group sizes, non-parametric methods were applied; results are reported as medians and interquartile ranges (IQR).

Qualitative data were analyzed thematically in six phases following Braun and Clarke's guidelines (Braun & Clarke, 2013). Themes were aligned with quantitative findings (e.g., satisfaction, perceived benefits) and additional domains (e.g., group dynamics, accessibility). A thematic tree illustrated the analytic structure, and representative quotes were included. Quantitative and qualitative results were integrated within a convergent mixed-methods framework (Dowding, 2013).

Results

Participants

As to the attendance of the general public, the Generations in Shape programme averaged 46 participants per session (628 seniors/adults and 21 children over 14 sessions), while Seniors in Shape averaged 22 participants per session (305 seniors over 14 sessions).

Table 1 summarizes baseline characteristics of the study sample ($n = 45$). Participants were predominantly female (76%), with a mean age of 73.5 years (range 65–90). Most had vocational or lower educational level (60%) and lived alone (56%). Baseline profiles indicated high quality of life (mean = 89/100), low fear of falling, medium to high motivation for physical activity (5/7) and moderate (30%) to high (65%) physical activity level. Most reported satisfactory family relationships (mean = 4/5) and had children (73%) and grandchildren (51%). No statistically significant differences were observed between groups for socio-demographic characteristics or baseline questionnaire measures, indicating that the groups were comparable at the start of the study.

Satisfaction

Programme satisfaction is reported in Table 2. Both programmes received high ratings; all Generations in Shape study participants (100%) and most Seniors in Shape study participants (85.7%) would recommend the programme. Overall satisfaction was comparable (4.48

Table 1. Socio-demographic characteristics of participants by group.

Variables	Control ($n = 10$)	Generations in Shape ($n = 21$)	Seniors in Shape ($n = 14$)	Total ($n = 45$)
Gender (n, %)				
Female	7 (70)	17 (81)	10 (71)	34 (75.6)
Male	3 (30)	4 (19)	4 (29)	11 (24.4)
Age (mean, standard deviation)				
	76.6 (±8.9)	72.9 (±6.5)	72.3 (±5.1)	73.5 (±6.8)
Family situation (n, %)				
Single	4 (40)	2 (9.5)	2 (14.3)	8 (17.8)
Concubinage, married	5 (50)	10 (47.6)	6 (42.9)	21 (46.7)
Divorced, widowed	1 (10)	8 (38.1)	5 (35.7)	14 (31.1)
Other	0 (0)	1 (4.8)	1 (7.1)	2 (4.4)
Level of education (n, %)				
Compulsory school	0 (0)	1 (4.8)	1 (7.1)	2 (4.4)
Secondary school	0 (0)	2 (9.5)	3 (21.4)	5 (11.1)
Vocational training	4 (40)	9 (42.9)	7 (50)	20 (44.4)
Universityeducation	6 (60)	9 (42.9)	3 (21.4)	18 (40)
Number of children (n, %)				
0	4 (40)	6 (28.6)	2 (14.3)	12 (26.7)
1–2	4 (40)	10 (47.6)	11 (78.6)	25 (55.6)
3–4	2 (20)	5 (23.8)	1 (7.1)	8 (17.8)
Number of grandchildren (n, %)				
0	6 (60)	11(52.3)	5 (35.7)	22 (48.9)
1–3	1 (10)	6 (28.6)	8 (50)	15 (33.3)
4 or more	3 (30)	4 (19.1)	1 (14.3)	8 (17.8)
Number of people in the household (n, %)				
0	5 (50)	14 (66.7)	6 (42.9)	25 (55.6)
1	4 (40)	5 (23.8)	8 (57.1)	17 (37.8)
2 or more	1 (10)	2 (9.5)	0 (0)	3 (6.6)
Family satisfaction (mean, standard deviation)				
0–5	3.8 (±1.69)	4.0 (±1.16)	4.4 (±0.76)	4.1 (±1.19)

Table 2. Participant satisfaction (0–5 scale) for Generations in Shape and Seniors in Shape.

Variables	Generations in Shape (n = 21)	Seniors in Shape (n = 14)
Would recommend the programme (n, %)	21 (100)	12 (85.7)
Overall satisfaction (mean, standard deviation)	4.48 (0.81)	4.50 (0.76)
Organizational satisfaction (mean, standard deviation)	4.86 (0.36)	4.46 (0.75)
Content satisfaction (mean, standard deviation)	4.38 (0.74)	4.36 (0.93)
Exercise modality satisfaction (mean, standard deviation)	4.48 (0.75)	4.29 (0.99)
Intensity satisfaction (mean, standard deviation)	4.33 (1.11)	4.79 (0.43)
Perceived intensity (n, %)		
Light	3 (14.3)	0 (0)
Moderate	16 (76.2)	11 (78.6)
Vigorous	2 (9.5)	3 (21.4)
Sociability satisfaction (mean, standard deviation)	4.48 (0.81)	4.43 (1.34)

vs. 4.50) with higher organizational satisfaction in Generations in Shape. Most participants perceived the physical activity programmes as moderate intensity, consistent with recommendations and characterized by being slightly out of breath while still able to talk.

Table 3. Pre-post outcomes among seniors participating in two different 7-week physical activity (PA) programmes and a control group ($n = 45$).

	Generations in Shape (n = 21)			Seniors in Shape (n = 14)			Control (n = 10)		
Scores	Pre	Post	p	Pre	Post	p	Pre	Post	p
PA level (MET-min/week)	4194 (2154–5337)	5652 (2159– 11,191)	**.03**	4386 (2322–9711)	3222 (1788–6053)	.23	5654 (2399–7159)	4906 (2841– 11,907)	.19
Muscle strength (kg)	27 (24–38)	30 (25–40)	**<.01**	29 (25–32)	31 (26–34)	.07	28 (26–31)	28 (25–32)	.44
Feeling of loneliness (16–64)	36 (32–43)	34 (29–41)	.07	37 (32–39)	35 (31–41)	.94	35 (31–47)	34 (30–44)	.47
Fear of falling (16–64)	19 (18–21)	20 (18–22)	.72	19 (18–21)	21 (19–22)	.08	18 (17–21)	19 (18–20)	.95
Quality of life (0–100)	139 (125–146)	136 (130–146)	.89	138 (130–141)	138 (133–145)	.67	138 (132–144)	136 (127–144)	.25
Motivation for PA (0–7)									
Self-determined motivation	5.1 (5–5.4)	5.2 (4.7–6)	.86	5.6 (4.8–6.3)	6.9 (5.0–6.9)	**.02**	5.1 (4.2–6.1)	5.9 (5.1–6.8)	.26
Controlled motivation	2.5 (2.1–3.2)	2.7 (2.2–3)	.48	2.7 (2.1–3.3)	3 (2.7–3.3)	.22	3 (2–3.3)	3 (2.5–3.41)	.06

PA level = total physical activity score of IPAQ[17] includes light to vigorous intensities (e.g. 400 min of light, 120 min of moderate, and 45 min of vigorous ≈5000 MET-min/week), muscle strength = best handgrip strength[18]; feeling of loneliness = ESUL score[20], fear of falling = FES-I score[21], quality of life = weighted global score of OQoL-7[22], and motivation for PA = EMAPS scores[19]. Results reported as medians (IQR) with Wilcoxon signed-rank p-values. Significant results ($p < .05$) in bold.

Quantitative results

Pre-post results for primary and secondary outcomes are presented in Table 3.

In the Generations in Shape group, total physical activity level (IPAQ) increased significantly ($p = .03$). Muscle strength (handgrip strength) also improved significantly ($p < .01$). A non-significant trend suggested reduced feeling of loneliness ($p = .07$). No significant changes were observed for fear of falling (FES-I), quality of life (OQoL-7), or motivation for physical activity (EMAPS).

In the Seniors in Shape group, self-determined motivation for physical activity increased significantly ($p = .02$). Handgrip strength showed a positive trend ($p = .07$). Other outcomes did not change significantly.

In the control group, no statistically significant changes were observed. Controlled motivation tended to increase slightly ($p = .06$).

Qualitative results

Themes and exemplar quotes are synthesized in the Table 4.

For satisfaction, participants in both programmes described a positive experience. In Generations in Shape, sessions were perceived as playful, engaging, and emotionally uplifting linked to interactions and laughter. In Seniors in Shape, participants emphasized the pleasant and well-structured sessions of more traditional classes. Instructors were appreciated in both programmes for their warmth and motivation. Group dynamics fostered commitment and belonging; Generations in Shape participants highlighted contagious energy and mutual encouragement, while Seniors in Shape participants valued regular scheduling and continuity during summer. Accessibility was appreciated, particularly the park setting and free participation.

For aspects to improve, participants in both programmes suggested minor adjustments to session content and organization. Generations in Shape participants asked for more balance exercises and home-based materials, while Seniors in Shape participants requested clearer explanations of exercise objectives and greater instructor engagement. Both groups suggested enhancing informal social exchanges and addressing logistical issues such as large group size and limited personal feedback.

For perceived benefits, both programmes yielded perceived physical, psychological, social, and behavioral benefits. Generations in Shape participants reported reduced pain, improved physical condition, mood and social connection as well as greater confidence in daily movement. Seniors in Shape participants described maintenance of physical condition, mental and social well-being. Overall, Generations in Shape was experienced as energizing and socially stimulating, whereas Seniors in Shape was perceived as a means of maintaining physical condition and socially supportive.

Table 4. Thematic tree with illustrative quotes for Generations in Shape and Seniors in Shape.

Theme	Sub-theme	Generations in Shape	Seniors in Shape
Satisfaction	Global experience	"Ultimately, it's blissful not to think, to just let yourself live … like children." (group 1, person 7)	"For me, it went very well, it was very pleasant." (group 1, person 4)
	Session quality	"It was diverse, it was fun, and there was also an aspect of laughing, which was fundamental." (group 1, person 8)	"It was quite varied. Each instructor did their own programme, and it was good, there were no accidents." (group 2, person 1)
	Instructor relationship	"I found the atmosphere wonderful; I found it very good. A very warm welcome from all the instructors, if I may say so; a little less so from the only male instructor, who was a little too 'bossy' and too quick in explaining the exercises." (group 1, person 3)	"It's great, it's fun. There's a good atmosphere, the instructors are great, and the exercises are good for us." (group 1, person 1)
	Group dynamics	"The group effect too. If others can do it, so I can." (group 2, person 2)	"There were never crowds, let's say, there were always about 25 people, which was nice. The people who came were motivated. There was always a good atmosphere. You could chat with people." (group 2, person 2)
	Accessibility	"The great thing about the park in Milan is that there's a café. Whereas in the park in Valency, one day we wanted to go for a coffee, but we ended up not doing it because we didn't know where to go." (group 1, person 10)	"I like the fact that it's free." (group 1, person 3)
	Programme-related component	"It was very playful. And at the same time, we could see that behind the scenes, it was also a way of getting us to exercise without realising it. So, I really appreciated that too." (group 1, person 10). "What I found quite extraordinary was that we arrived, said hello, and then started with the colour game or the name game, for example, and we turned to someone and, bang, we saw smiles lighting up our faces. The more the exercises progressed, the bigger the smiles became, the easier it became" (group 1, person 10). "I liked that they kept us playing games. Because that was kind of my goal, I came to "Generation in Shape" and not "Seniors in Shape." And I think it's pretty cool that the exercises "force" us, in a good way, to engage with each other. It turned out there weren't many [children], but that's okay. I still enjoyed my time. Children push us to do different things that we don't usually do." (Group 2, person 2)	"I think it's an excellent idea to organize groups like this, but I think more should be done to encourage socializing at the end of the group session. Often, you're alone and you don't know anyone, so you leave without meeting anyone, like puppets, you move around and then you leave." (group 1, person 6) "It was varied, the instructors each had their own exercises, but it was still basically gym class. Some offered exercises that were a little more physical than others. Those who did a little more physical exercise offered an exercise for those who were struggling." (group 2, person 2).

(*Continued*)

Table 4. (Continued).

Theme	Sub-theme	Generations in Shape	Seniors in Shape
Aspects to Improve	Session content	"I find that there aren't enough specific exercises for balance. And also, possibly a sheet of things we could do at home." (group 1, person 11)	"When we do an exercise, they should explain why we are doing it, what effect it will have, etc." (group 2, person 1) "What I'm saying may be a bit harsh, but I think his class was boring. I found it very boring compared to the others. I often thought to myself, 'I'm going to stop because I'm bored." (group 1, person 5)
	Organization	"We could suggest that people come 15 minutes early to chat and then stay for 15 minutes or go for a coffee, like at the park of Milan" (group 2, person 1).	"It would be to get together for a drink afterwards, or something where we could socialise" (group 1, person 6).
	Logistics	"I think the group was a bit too big." (group 1, person 3)	"Sometimes there were about twenty of us, so we couldn't see everything. That's why it's important to have someone around who really gets involved, who really goes up to people and corrects their position. I think that's very important, and it was missing." (group 1, person 5)
Perceived Benefits	Physical	"My hip was hurting a few weeks before we started, I thought, damn, I'm going to need a prosthesis. We started exercising, and now it doesn't hurt anymore." (group 1, person 8)	"I was already quite stable. That was already good. But it's true that these exercises help maintain that stability." (group 1, person 1)
	Psychological	"Sometimes, we think we can't do it. And when we succeed, we feel good about ourselves too. That helped me a lot. And then there are those moments of laughter and sharing, which are like vitamins, especially when you're isolated." (group 2, person 4)	"So physically, I didn't feel any huge benefits, since I'm already very active, but where I did feel the benefits was in my head, from participating in something with other people." (group, person 2)
	Social	"Two people have suggested that we meet up again. We've already arranged dates, which makes me glad. It makes me happy." (group 1, person 8)	"I was born abroad, so I no longer have any friends here. In the summer, everything I do during the rest of the year stops. That's why I need other social contacts in the summer." (group 1, person 6)
	Behavioral	"It reminded me that I should stand on my tiptoes several times a day. I now do this at home to improve my balance." (group 1, person 9)	"I realized that I had lost a lot of muscle mass since I had quit fitness training five years ago. At the time, I had stopped because of a physical problem. I haven't started again since." (group 1, person 3)

Integration of quantitative and qualitative results

Quantitative and qualitative findings revealed distinct profiles and experiences across the groups (Table 5).

In the Generations in Shape group, participants described tangible improvements and a positive transfer to daily life, consistent with the improvement in quantitative findings. This group appeared to include individuals who were initially less active and primarily motivated by opportunities for social interaction rather than physical exercise. They joined the programme seeking social engagement but ultimately experienced both social and physical benefits through the exercise sessions and shared activities.

In the Seniors in Shape group, participants emphasized maintenance, reflecting a profile of already active and autonomous older adults looking for a structured programme during the summer break, consistent with the no change in quantitative findings. Their main interest lay in maintaining physical condition and health benefits rather than enhancing social connections, although they still appreciated the opportunity for social contact. This may explain why self-determined motivation for physical activity improved significantly in this group, as they were exposed to new information in this programme that differed from what they were used to during the rest of the year. This information raised their motivation to do physical activity for health benefits.

Overall, Generations in Shape participants demonstrated greater improvements and perceived benefits, while Seniors in Shape participants mainly maintained their existing habits, highlighting distinct profiles across the two groups.

The integration of quantitative and qualitative findings informed a set of practical recommendations for implementing intergenerational physical activity programmes in community settings. Drawing on feasibility results and participant and instructor feedback, we identified key components to support effective and sustainable delivery. These recommendations, summarized in Table 6, derive from lessons learned during the Generations in Shape pilot and are intended to guide practitioners and policymakers seeking to replicate or adapt the programme beyond the research context. They address essential aspects such as target population, recruitment, accessibility, location, scheduling, social activities, content design, equipment, supervision, evaluation, and budget. A methodological guide in French is available in the website of *Veillir2030* (*https://www.vd.ch/fileadmin/user_upload/themes/social/Vieillir2030/HESAV_Generations-en-Forme_Guide_VERSION_FINALE.pdf*). The guide is designed to be flexible and adaptable to local contexts, allowing communities to tailor implementation according to their resources, settings, and target populations. The most important consideration is to reproduce the key components of the physical activity programme detailed in the Supplementary File 1 to ensure fidelity and effectiveness of the intergenerational sessions.

Table 5. Integrated quantitative and qualitative primary outcomes of two different 7-week physical activity programmes.

Outcome	Generations in Shape			Seniors in Shape			Control	
	Quantitative		Qualitative	Quantitative		Qualitative	Quantitative	
Physical activity level	+34.8%, $p = .03$	↑ Significant change	"I now do this at home."	−26.5%, $p = .23$	↔ No change	"I'm already very active."	−13.2%, $p = .19$	↔ No change
Muscle strength	+11.1%, $p < .01$	↑ Significant change	"Now it doesn't hurt anymore."	+6.9%, $p = .07$	↑ Trend	"These exercises help maintain that stability."	0%, $p = .44$	↔ No change
Feeling of Loneliness	−5.6%, $p = .07$	↓ Trend	"Two people have suggested that we meet up again"	−5.4%, $p = .94$	↔ No change	"You could chat with people."	−2.9%, $p = .47$	↔ No change

Percentage change reflects medians; statistical interpretation based on full distributions.

Table 6. Practical recommendations for community-based intergenerational physical activity programme.

Category	Component	Practical Recommendations
Target Population	All generations (children, adults, seniors)	Minimum age 5 years for outdoor sessions without equipment. Based on partners and context "only" two generations is also appropriate
Recruitment	Community outreach, include local partners, particularly those with access to vulnerable populations	Use flyers, newsletters, social media, and local partnerships. 20–40 participants are a good number to have several people in each generation and not too many people to do games.
Accessibility	Free and open access	No registration, remove logistical and financial barriers.
Location	Urban parks or multipurpose halls, accessible on foot, by public transport and for people with reduced mobility	Flat, open space for 20–40 participants; shade or shelter preferred; no storage needed.
Schedule	45–60 min sessions, once or twice weekly, at least 6 weeks	During holidays or during the school year (adapted to school calendar and schedule). Finding a time convenient for different group of age is challenging. Could be easier, if there are only adults and seniors. Seniors liked it to do it in the morning (9:00–10:00am)
Social activity	Informal gathering after each session	15–20 min coffee/snack time to encourage interaction.
Content	Exercises with interaction, games and group exercises	Combine aerobic, strength, and balance activities; ensure mixed-age pairing and interaction in the modalities of exercises (Supplementary File 1)
Equipment	Minimal, provided by organisers	Participants bring nothing; instructors supply all materials. Physical environment could be used.
Supervision	Led by adapted physical activity professionals or equivalent.	At least two instructors for groups > 15 participants.
Evaluation	Quality control assessment for a community programme	Attendance, satisfaction at the end of the programme and/or simple health perception scale surveys pre/post. If a more in-depth assessment is desired, this requires collaboration with a research team.
Budget	Instructors' payment, snacks, minimal equipment.	Approx. CHF 180/session for one session with two instructors. Salaries in Switzerland are high and accounted for most programme costs. Professionals with a master's degree are typically paid between CHF 70 and CHF 110 per hour. Costs could be reduced by involving other types of professionals; however, we chose to employ highly trained instructors because the programme required considerable flexibility and adaptability. The number of participants was not known in advance, the groups were potentially very heterogeneous, and the same instructors delivered both types of programmes, necessitating a broad range of skills. Snacks could be offer by organization or paid by participants (going to a coffee or doing a picnic).

Discussion

This mixed-methods pilot study indicates that participation in Generations in Shape, a community-based intergenerational physical activity programme, was associated with significant increases in physical activity level and muscle strength among older adults, alongside a trend toward reduced loneliness. These results suggest potential benefits for both physical and psychosocial well-being. In contrast, Seniors in Shape, a seniors-only programme, led to a significant increase in self-determined motivation for physical activity but did not produce significant physical or social improvements. No changes were

observed in the control group, supporting the interpretation that observed effects are attributable to programme participation.

These findings align with previous research demonstrating that physical activity interventions can improve physical performance and psychosocial outcomes among older adults with short programme (Bull et al., 2020; Musich et al., 2022), while highlighting the added value of intergenerational formats (Petersen, 2023). Intergenerational programmes have been shown to foster social cohesion, reduce stereotypes, and enhance enjoyment and belonging (Buonsenso et al., 2021; Sánchez-Cazalla & Gutiérrez-Domingo, 2025). The present results confirm that such programmes can also promote measurable physical benefits, potentially by enhancing engagement through playfulness, cooperation, and mutual support. The significant increase in muscle strength further suggests that even brief, low-threshold outdoor interventions can improve functional fitness, consistent with evidence from community-based physical activity studies (Grande et al., 2020). The observed trend toward reduced loneliness in Generations in Shape supports prior findings linking intergenerational contact with improved social well-being (Krzeczkowska et al., 2021; Minghetti et al., 2021).

Finally, Generations in Shape seems effective to engage seniors who are less active and represent an innovative strategy to reach those least likely to participate in conventional exercise initiatives. Intergenerational physical activity programmes may represent a promising and innovative strategy to engage less active populations, with social interaction acting as a key motivational driver. This type of community-based initiative requires few resources, does not need extensive standardization, and can demonstrate positive effects within a short period of time. It therefore represents a valuable opportunity for promoting health and social well-being among individuals who are often the hardest to reach.

Strengths and limitations

The study's strengths include its real-world implementation, participatory co-design process, and integration of quantitative and qualitative data. These elements enhance ecological validity and provide insights for replication in community contexts. However, limitations include small and unequal group sizes, non-randomized group allocation, and short intervention and evaluation duration. These factors limit statistical power and generalizability. Moreover, while qualitative data enriched interpretation, the absence of long-term follow-up precludes assessment of sustained behavioral change. Finally, as the programme aimed to promote intergenerational interaction, children's and adults' participation was fundamental to the intervention design but not included in outcome measurement. This limits interpretation of reciprocal intergenerational effects.

Conclusion

The Generations in Shape programme led to significant improvements in physical activity levels and muscle strength, with a trend towards reduced feelings of loneliness. These findings demonstrate that intergenerational physical activity can be both feasible and effective in engaging older adults who might not be attracted to conventional exercise formats. The integration of play, cooperation, and group exercises appears to facilitate motivation and participation, particularly among less active individuals. For practitioners, ensuring accessible, free, and socially engaging settings may be key to sustaining attendance. Future studies should employ larger, randomized samples and longitudinal designs to evaluate maintenance effects and scalability. Integrating such programmes within local health policies, such as the *Vieillir2030* policy, strengthens community-based approaches to active and socially connected aging.

Author contributions

MH led the writing of the initial manuscript, with JW contributing significantly to its development. Both authors served as principal investigators for the community project and approved the final manuscript.

Acknowledgments

We would like to thank our community partners Muriel Chenaux Mesnier, Senior citizens' delegate of the City of Lausanne and Isabelle Maillard Head of Physical Activity and Health Unit of Pro Senectute Vaud. We also acknowledge the support provided by the City of Lausanne Sports Services.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Canton of Vaud (*Vieillir2030 policy*), Switzerland.

Data availability statement

The data that support the findings of this study are available from the corresponding author, [JM], upon reasonable request.

Contribution to the field

This paper introduces and evaluates an intergenerational physical activity programme in urban parks. It contributes by:

(1) Presenting a scalable, community-based model for intergenerational health promotion.
(2) Defining key design components for programme replication.
(3) Providing empirical evidence that such programmes enhance older adults' physical activity level, muscle strength and social well-being.

Ethics approval and consent to participate

Ethical review and approval were waived for this study due to The Human Research Ethics Committee of the Canton Vaud (CER-VD) (Req- 2022–01440) which has certified that this study protocol falls outside of the field of application of the Swiss Federal Act on Research Involving Humans. Informed consent was obtained from all subjects involved in the evaluation part.

References

Beuret, B. (2021). Veillir 2030-portrait des seniors dans le canton de Vaud. *Département de la santé et de l'action sociale (DSAS)*. https://www.vd.ch/fileadmin/user_upload/themes/social/Vieillir2030/20210924_Portrait_Seniors_final.pdf

Boiché, J., Gourlan, M., Trouilloud, D., & Sarrazin, P. (2019). Development and validation of the 'Echelle de Motivation envers l'Activité Physique en contexte de Santé': A motivation scale towards health-oriented physical activity in French. *Journal of Health Psychology*, *24* (3), 386–396. https://doi.org/10.1177/1359105316676626

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE.

Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J.-P., Chastin, S., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., & Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*, *54*(24), 1451–1462. https://doi.org/10.1136/bjsports-2020-102955

Buonsenso, A., Fiorilli, G., Mosca, C., Centorbi, M., Notarstefano, C. C., DiMartino, G., Calcagno, G., Intrieri, M., & DiCagno, A. (2021). Exploring the enjoyment of the intergenerational physical activity. *Journal of Functional Morphology and Kinesiology*, *6*(2), 51. https://doi.org/10.3390/jfmk6020051

Craig, C. L., Marshall, A. L., Sj?Str?M, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E., Pratt, M., Ekelund, U., Yngve, A., Sallis, J. F., & Oja, P. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & Science in Sports & Exercise*, *35* (8), 1381–1395. https://doi.org/10.1249/01.MSS.0000078924.61453.FB

De Grâce, G.-R., Joshi, P., & Pelletier, R. (1993). L'Échelle de solitude de l'Université Laval (ÉSUL): Validation canadienne-française du UCLA Loneliness Scale. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, *25*(1), 12–27. https://doi.org/10.1037/h0078812

Dowding, D. (2013). Best practices for mixed methods research in the health sciences *John W. Creswell, Ann Carroll Klassen, Vicki L. Plano Clark, Katherine Clegg Smith for the Office of*

Behavioral and Social Sciences Research; qualitative methods overview *Jo Moriarty*. *Qualitative Social Work*, *12*(4), 541–545. https://doi.org/10.1177/1473325013493540a

Gasana, J., O'Keeffe, T., Withers, T. M., & Greaves, C. J. (2023). A systematic review and meta-analysis of the long-term effects of physical activity interventions on objectively measured outcomes. *BMC Public Health*, *23*(1), 1697. https://doi.org/10.1186/s12889-023-16541-7

Grande, G. D., Oliveira, C. B., Morelhão, P. K., Sherrington, C., Tiedemann, A., Pinto, R. Z., & Franco, M. R. (2020). Interventions promoting physical activity among older adults: A systematic review and meta-analysis. *The Gerontologist*, *60*(8), e583–e599. https://doi.org/10.1093/geront/gnz167

Henchoz, Y., Meylan, L., Goy, R., Guessous, I., Bula, C., Demont, M., Rodondi, N., & Santos-Eggimann, B. (2015). Domains of importance to the quality of life of older people from two Swiss regions. *Age and Ageing*, *44*(6), 979–985. https://doi.org/10.1093/ageing/afv130

Hyvärinen, M., Maillard, I., Chenaux Mesnier, M., & Wegrzyk, J. (2024). Favoriser l'activité physique entre générations? *Reiso Revue d'Information Sociale*. https://www.reiso.org/document/13070

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

Minghetti, A., Donath, L., Zahner, L., Hanssen, H., & Faude, O. (2021). Beneficial effects of an intergenerational exercise intervention on health-related physical and psychosocial outcomes in Swiss preschool children and residential seniors: A clinical trial. *PeerJ*, *9*, e11292. https://doi.org/10.7717/peerj.11292

Musich, S., Wang, S. S., Schaeffer, J. A., Kraemer, S., Wicker, E., & Yeh, C. S. (2022). The association of physical activity with loneliness, social isolation, and selected psychological protective factors among older adults. *Geriatric Nursing*, *47*, 87–94. https://doi.org/10.1016/j.gerinurse.2022.07.006

Pahud, O., & Zufferey, J. (2019). Rapport de base sur la santé pour le canton de Vaud: Exploitations standardisées des données de l'Enquête suisse sur la santé 2017 et d'autres bases de données. *Observatoire suisse de la santé*. https://www.obsan.admin.ch/sites/default/files/obsan_rapport_12-2019-vaud_0.pdf

Petersen, J. (2023). A meta-analytic review of the effects of intergenerational programs for youth and older adults. *Educational Gerontology*, *49*(3), 175–189. https://doi.org/10.1080/03601277.2022.2102340

Quattrocchi, A., Garufi, G., Gugliandolo, G., De Marchis, C., Collufio, D., Cardali, S. M., & Donato, N. (2024). Handgrip strength in health applications: A review of the measurement methodologies and influencing factors. *Sensors*, *24*(16), 5100. https://doi.org/10.3390/s24165100

Sánchez-Cazalla, V., & Gutiérrez-Domingo, T. (2025). Impact of intergenerational programmes on older adults for active ageing. A systematic review. *Archives of Gerontology and Geriatrics Plus*, *2*(3), 100176. https://doi.org/10.1016/j.aggp.2025.100176

Taylor, J., Walsh, S., Kwok, W., Pinheiro, M. B., De Oliveira, J. S., Hassett, L., Bauman, A., Bull, F., Tiedemann, A., & Sherrington, C. (2021). A scoping review of physical activity interventions for older adults. *International Journal of Behavioral Nutrition and Physical Activity*, *18*(1), 82. https://doi.org/10.1186/s12966-021-01140-9

World Health Organisation. (2019). *Global action plan on physical activity 2018-2030. More active people for a healthier world*. Organisation Mondiale de la Santé, licence : CC BY-NC-SA 3.0. IGO. https://apps.who.int/iris/bitstream/handle/10665/327168/9789242514186-fre.pdf

World Health Organization. (2020). *Un decade of healthy ageing: Plan of action 2021-2030*. https://cdn.who.int/media/docs/default-source/decade-of-healthy-ageing/decade-proposal-final-apr2020-en.pdf?sfvrsn=b4b75ebc_28&download=true

Yardley, L., Beyer, N., Hauer, K., Kempen, G., Piot-Ziegler, C., & Todd, C. (2005). Development and initial validation of the Falls efficacy scale-international (FES-I). *Age and Ageing*, *34*(6), 614–619. https://doi.org/10.1093/ageing/afi196

Zhou, F., Zhang, H., Wang, H. Y., Liu, L. F., & Zhang, X. G. (2024). Barriers and facilitators to older adult participation in intergenerational physical activity program: A systematic review. *Aging Clinical and Experimental Research*, *36*(1), 39. https://doi.org/10.1007/s40520-023-02652-z