

BMJ Open Circumstances that promote social connectedness in older adults participating in intergenerational programmes with adolescents: a realist review

Jessica Simionato,¹ Hassan Vally,² Daryll Archibald ^{1,3}

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¹Department of Public Health, La Trobe University, Melbourne, Victoria, Australia

²Institute for Health Transformation, Deakin University, Burwood, Victoria, Australia

³School of Health Sciences, University of Dundee, Dundee, UK

Correspondence to

Dr Daryll Archibald;
D.Archibald@latrobe.edu.au

ABSTRACT

Objectives Limited social connectedness in older adults is a risk factor for poor physical and mental health. Older adults who are socially isolated, lonely and disconnected have a higher risk of chronic illness, depression and premature death. Current literature suggests that improved social connectedness reduces these risks. Intergenerational programmes are an effective way to improve health outcomes. Despite this, there is yet to be a review using realist review methods that seeks to identify the circumstances that promote social connectedness in older adults participating in intergenerational programmes with adolescents.

Design A realist review methodology was chosen to account for the complexity of intergenerational interventions. Nine studies were included. In line with realist review methodology, iterative data extraction and analysis was conducted to identify the specific contexts, mechanisms and outcomes of the programmes. Specific circumstances were identified to develop theories relating to improved social connectedness in older adults.

Data sources MEDLINE, PsycINFO, CINAHL were searched using English language limitation.

Eligibility criteria Included participants were aged 65 and over (older adults) and between 13 and 19 years (adolescents) participating in intergenerational programmes from non-familial generations. Studies had to be published in English between 2000 and 2020 and could be quantitative, qualitative or mixed-methods primary research studies.

Data extraction and synthesis Two independent reviewers used a bespoke data extraction form. All authors were involved in the synthesis process which used the extracted data to illuminate the contexts, mechanisms and outcomes that underpinned reviewed programmes.

Results The nine included studies were set in different contexts, including community organisations, schools and aged care facilities. They used an array of interventions including reminiscence therapy, craft or space for conversation. Despite study heterogeneity, the parallels in psychosocial development between older adults and adolescents were shown to be a likely driver for improved social health outcomes. Programmes most likely to improve social health outcomes were those that acknowledged psychosocial development, were delivered

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This is the first realist review to investigate the circumstances that promote social connectedness in older adults participating in intergenerational programmes with adolescents.
- ⇒ Comprehensive searches were undertaken with the aim of identifying all relevant published and grey literature.
- ⇒ A logic model has been developed to support the design and development of intergenerational programmes involving adolescents to improve social connectedness in older adults.
- ⇒ The evidence base is limited for participants living in rural locations and participants with cognitive impairment.

in community settings, leveraged pedagogical frameworks, used trained facilitators and supported participants to build relationships through shared purpose.

Conclusions This review contributes a logic model to support the design and development of intergenerational programmes involving adolescents to improve social connectedness in older adults. Future research to test the logic model in practice is needed.

INTRODUCTION

Limited social connectedness is a risk for poor health and wellbeing in older adults.^{1–4} Older adults (over 65 years) are at particular risk of social disconnectedness and loneliness because of frailty and chronic illness, which may limit opportunities for social interaction.^{5 6} In addition, modern society has altered family structures, geographically dispersed the family unit and made maintaining intergenerational and family connections challenging, adding to social health vulnerability in older people.^{7–10} Many older adults move into residential aged care facilities, away from familiar community supports, which may impact social connectedness.

Social disconnectedness, loneliness and social isolation can be as damaging to health and wellbeing as smoking and obesity.^{4 7 11 12} Poor health due to acute or chronic conditions, cognitive decline or frailty influences an older person's ability to carry out personal, domestic, social or community activities and in turn increases their risk of social disconnectedness.^{1 13 14} Older adults who remain socially connected without episodes of isolation or loneliness have lower rates of mental and chronic illnesses such as depression and cardiovascular disease.^{7 11 15-17}

Support for older adults, particularly post retirement or when faced with cognitive or physical impairment, is essential in maintaining individual social identity and social connectedness with family, friends and the community.^{4 11} The WHO has challenged communities to provide age-friendly communities. This global movement is demonstrating the power of building social capital and engaging older adults through community programmes and social and environmental infrastructure to support community access.¹⁸ Intergenerational programmes have emerged as a popular and beneficial option for bolstering community connections and improving the health and wellbeing of older people.^{11 19 20}

Intergenerational programmes are programmes where two generations experience mutual benefit through shared experiences^{19 21} and are a known mechanism for improving social connectedness¹⁹ and providing a sense of inclusion and empowerment in older adults.²² Intergenerational programmes bring together and benefit both generational groups²²⁻²⁶ and have been adopted in a variety of contexts and age groups. These include the use of pedagogical frameworks with school age children,²² service-learning interventions with university students^{27 28} and in familial groups.²⁵

Several previous reviews have been undertaken on intergenerational programming. For example, systematic reviews by Gualano *et al*¹⁹ and Zhong *et al*²⁹ focused on quantitative studies of older adults aged 50 and over and younger people 30 and below undertaken in educational settings. Gualano *et al*¹⁹ found that intergenerational programmes benefit older people in terms of keeping active and fighting social isolation, while Zhong *et al*²⁹ found that intergenerational programmes with young children may bring the greatest health benefits to older people across physical, mental and social domains. Further systematic reviews by Giraudeau and Bailly³⁰ and Martins *et al*³¹ included primary research studies of any type focusing on adults over 60³⁰ and 65³¹ in a variety of community, assisted living, education and nursing home settings. Giraudeau and Bailly³⁰ found that intergenerational programmes bring mental health benefits for older people, while Martins *et al*³¹ reported that intergenerational programmes can lead to reaffirmation of value, greater life satisfaction and improved self-esteem for older adults.³¹

In terms of impacts on children, both Martins *et al*³¹ and Giraudeau and Bailly³⁰ focused on preschool and primary school children and found that intergenerational

programmes improved children's perceptions of older people. In addition, Martins *et al*³¹ further found that for children, intergenerational programmes led to higher self-esteem, better academic performance, improved social skills and a greater motivation to learn. Gualano *et al*¹⁹ also found that intergenerational programmes improved younger people's perceptions of older people. Of these systematic reviews only Giraudeau and Bailly³⁰ outlined circumstances that may lead to a successful intergenerational programme model, stating that to be successful, intergenerational programmes should provide all the participants with a sense of being useful and competent and take time to prepare younger and older people by encouraging communication between the groups before the programme begins.

A further relevant review undertaken in this area is a recently published realist review by Phang *et al*.³² This work focused on digital intergenerational programmes explicitly geared towards reducing loneliness or social isolation in older adults undertaken in residential or community settings. The review identified four circumstances by which digital intergenerational programmes may reduce loneliness and social isolation for older adults. For community-dwelling older adults, training in digital technology and support from nurses helped to reduce loneliness. Phang *et al*³² further found that a video call with a student or family reduced loneliness among older adults residing in long-term residential care facilities, while videoconferencing with a lay coach may also reduce loneliness in adults who are lonely.

The above shows that while there is substantial evidence supporting intergenerational programmes as an effective strategy to achieve improved physical and social health and wellbeing in older adults, there is yet to be a review of programmes that involve adolescents specifically. Intergenerational programmes involving older adults and preschool or young children have been reported in the primary research literature,^{14 21 22 28} however, those that pair adolescents (individuals aged 13–19) and older adults are less known.³³ Pairing older adults and adolescents through intergenerational programmes is modelled on Erikson's theory of psychosocial development.^{34 35} According to Erikson's theory, adolescents and older adults are both facing a period in their psychosocial development focused on identity. Adolescents, emerging from childhood are looking to their peers to fit in and to understand society through the eyes of others. Older adults, particularly the recently retired, are trying to maintain their identity, with a desire to contribute to society.³⁶ This motivation to pass on wisdom to the next generation is termed generativity^{34 35} and is important for the wellbeing of older adults as well as broader social health.⁴ Intergenerational interactions through family or a formal programme support the development of generativity.^{34 35 37} The likely benefits of this generational pairing in an intergenerational programme context are yet to be reviewed in depth.

This realist review aims to identify the circumstances in which social connectedness is optimised for older

adults when taking part in intergenerational interventions with adolescents. The question underpinning the review is—which circumstances promote social connectedness in older adults participating in intergenerational programmes with adolescents.

METHODOLOGY

A realist review methodology was undertaken in line with the RAMESES publication standards.³⁸ The RAMESES checklist for this study is available in online supplemental file 1. Realist review provides a framework for understanding complex interventions and why they deliver the outcomes they do.³⁹ A protocol for the review was developed following the stages outlined by Pawson⁴⁰ and included (1) locating existing theories, (2) searching for evidence, (3) selecting articles, (4) extracting and organising data and (5) synthesising the evidence and drawing conclusions. This is available in online supplemental file 2.

A realist review is an approach used for systematic evidence review that utilises secondary data to understand the reasons why a particular set of contexts, mechanisms and outcomes lead to a particular result. Contexts are the circumstances in which the programme is delivered and how these interact with the programme mechanisms. Mechanisms are the programme resources, and the way participants interact with them. The result of context and mechanism interaction is what drives a particular outcome to occur. Realist review uses generative understanding to iteratively build a priori theories that are then tested and refined. The a priori theories are initially drawn from available literature and through stakeholder consultation. Realist review uses the lenses of context, mechanism and outcome to appraise, synthesise and then test the recommendations that are constructed through the analysis process.^{38 39}

Step 1: a priori theory development

The development of a priori theories was an iterative, two-part process^{38 39 41} and was undertaken by JS and DA. This included stakeholder engagement and a scoping search of the peer-reviewed and grey literature on the subject, followed by development of a priori theories that were tested against the literature and information from initial stakeholder meetings. Ethics approval was not required for this study.

Search strategy

A literature search was undertaken between May and July 2019 by JS and DA. An updated search was completed in June 2020. The search strategy was developed with the support of a La Trobe University librarian. MEDLINE, PsycINFO, CINAHL were searched using English language limitation.

The search terms were (Aged OR “older adult” OR senior OR elder* OR geriatric OR “old* person*”) AND (“intergenerational relation*” OR “intergenerational

program*” OR “intergenerational activit*” OR “intergenerational practice” OR “intergenerational learning” OR “intergenerational service learning” OR “intergenerational relations” OR intergenerational) AND (“social connect*” OR “social isolation” OR “social interact*” OR loneliness OR “social participation”) AND (“adolescent”). MeSH terms used were “Aged” OR “Aged, 80 and over) and “Intergenerational relations”.

Google Scholar was used to supplement the search using a simplified search terms list. A grey literature search used the same search terms and was accessed via relevant government and non-government websites including Australian Federal and State Government agencies, not-for-profits and the WHO. Reference list searching was also used. The full search strategy is available in online supplemental file 3.

Patient and public involvement

No patients or members of the public were involved in this research.

Stakeholder engagement

The idea for this review came from a collaboration involving the authors, a municipality in regional Victoria, Australia and a high school located within that municipality. Originally, the collaboration was centred on the development and evaluation of a pilot intergenerational digital literacy programme involving adolescent school pupils and older community-dwelling individuals. However, during the initial stages of designing the programme, the authors identified there was an absence of review-level evidence regarding intergenerational programmes involving adolescents and older people. A decision was made to undertake a realist review on this topic. Municipal and high school collaborator stakeholders, namely senior teachers, municipal project officers and positive ageing ambassadors, were involved in the process of generating a priori theories by contributing information on the need and opportunity for intergenerational programmes in the school.

Study selection

Study selection was undertaken independently by two reviewers, JS and DA. The inclusion and exclusion criteria were applied by JS and DA to ensure the included studies met the aim of the review. Included participants were aged 65 and over (older adults) and between 13 and 19 years (adolescents) as these age ranges are agreed as defining older adults and adolescents³⁴ in early theories from Erikson on psychological development. Other studies addressing intergenerational programmes use Erikson’s theory, so this was chosen to align with the current literature.³¹ To be included in the review, studies had to report on intergenerational programmes with participants from non-familial generations. Studies had to be published in English between 2000 and 2020 and could be quantitative, qualitative or mixed-methods primary research

studies. The full inclusion and exclusion criteria can be viewed in online supplemental file 4.

A priori theory development

JS and DA developed six a priori theories and tested these against the literature before conducting a final literature search to check for new evidence.

Step 2: data extraction and evidence synthesis

In step 2, data extraction and evidence synthesis from the nine included studies was undertaken.

Data extraction

A data extraction form (online supplemental file 5) was developed by DA and JS and included the a priori theories identified in step 1. The data extraction form covered several domains including bibliographic information, aims and methods, participant details, intervention details, results and findings. The form also provided for a priori theory testing including extraction of evidence that proved, disproved or refined the theory. The data extraction process was completed by JS and DA.

Quality appraisal

A realist review method supports the inclusion of qualitative, quantitative and mixed-methods studies.^{38 42} To understand the quality of included articles, we consulted critical appraisal literature.^{43 44} A tool comprising eight quality assessment criteria was developed focusing on the methodological quality and reporting quality of the included studies (online supplemental file 6). Quality appraisal was conducted by JS and DA with any conflicts managed via team discussion.

Synthesis

All authors were involved in the evidence synthesis process using extracted data to illuminate the contexts, mechanisms and outcomes that underpinned reviewed programmes. The process then involved identifying evidence combinations and testing them against the a priori theories to develop context mechanism outcome configurations (CMOC). The development of the CMOC presented a variety of emergent issues that were continually tested against the a priori theories and the known evidence. This process identified new theories and the CMOC were further refined.

RESULTS

Four hundred and thirty-four records were identified through database searching with 80 full text articles screened for eligibility. Subsequently, nine studies were included in the review. Data from the included studies were synthesised to generate eight theories relating to characteristics of intergenerational programmes likely to optimise social connectedness for older adults. The components of these theories are combined to form CMOC and a logic model to support answering the question—which circumstances promote social

connectedness in older adults participating in intergenerational programmes with adolescents? **Figure 1** provides the results of the literature search. Nine studies were included in the review. Five were qualitative, two quantitative and two were mixed methods. The overall participant characteristics were a mix of male and female older adults and adolescents, living in the community and participating in weekly or monthly programmes over a set period. The settings in which the programmes took place varied, including schools, aged care facilities and community group spaces such as Men's sheds.

The characteristics of the included studies are provided in **table 1**. In phase 2 of the review, data were analysed to (1) confirm the degree to which the a priori theories identified in phase 1 (see **box 1**) were supported and (2) generate the contexts, mechanisms and outcomes from the included interventions.

Quality assessment

In line with recommendations for realist reviews,⁴⁰ no studies were excluded following quality assessment, rather each study was ultimately assessed for its contribution to theory development and CMOC. The quality assessment of each included study concluded with an overall estimate of how valuable the study was to the review (low, medium or high), a criterion based on Question 10 of the Critical Appraisal Skills Programme qualitative quality assessment tool.⁴⁵ The assessment concluded that seven out of nine studies were found to be of high value to the review.^{15 33 35 37 46–48} These studies were rated as highly valuable due to the age range of participants fitting directly with the aims of this review and because they reported on intergenerational programmes in detail and provided ample evidence to support their findings, facilitating the analytical process for this review. The Biggs and Lowenstein⁴⁹ and Hernandez and Gomez⁵⁰ studies were rated as medium value to the review. Biggs and Lowenstein's study⁴⁹ was assessed as lacking in detail with regard to the reporting of the findings, whereas Hernandez and Gonzalez⁵⁰ had limited age group relevance to the review aims as the younger age group had an average age of 19.

When coupled with the a priori theories generated from phase 1, CMOCs were developed. The CMOCs are eight circumstances deemed optimal for the delivery of intergenerational programmes involving older adults and adolescents and are hypothesised to improve outcomes in social connectedness. These are summarised in **table 2**.

CMOC 1: understand the participant's psychosocial development phase and attitudes towards each other to foster generativity and connection

In the included studies, preprogramme psychometric measurement,^{33 35 37 50} focus groups or interviews⁴⁷ and informal gatherings at the beginning of the programme^{15 33 35 47 48 50} were used to understand the demographic and psychosocial characteristics of participants. Psychometric scales that measured attitudes towards ageing, social connectedness, loneliness, generativity and

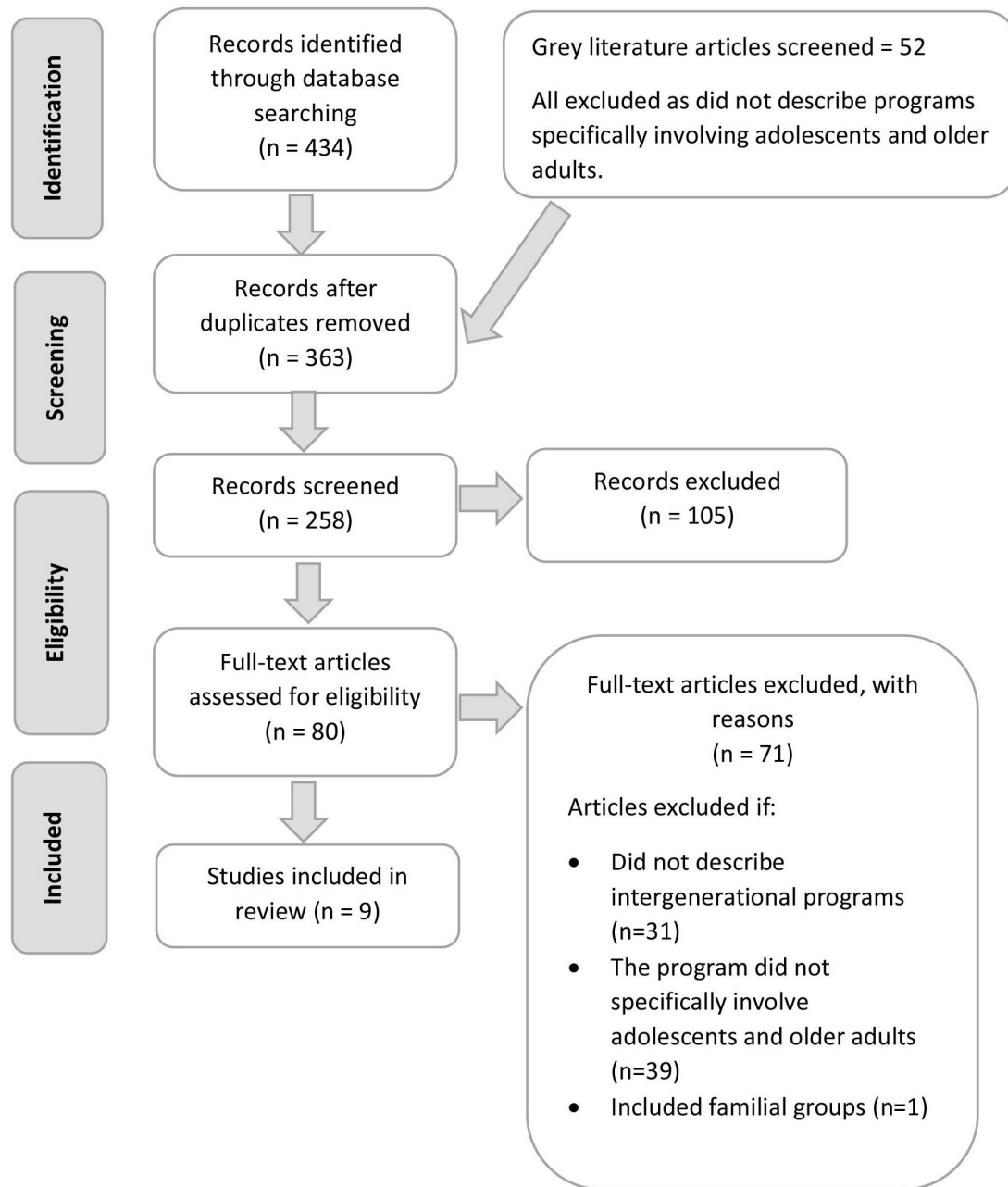


Figure 1 Flow diagram.

presence of depression were completed preintervention and postintervention.^{33 35 37 50} Preprogramme focus groups and interviews were used with both groups^{33 47 48} to understand participant skills and motivations. This information was used to align participants based on skills and expectations, understand participant relationships with other generations, their attitudes towards ageing and their perceptions of self.⁴⁸ Understanding baseline attitudes helped structure programmes to promote alternate views of an older person's capability, foster dialogue and enhance learning between generations.

Evidence from the included studies indicates that using preprogramme measures to understand participant demographics, including their psychosocial phase and cognitive and physical abilities leads to a more

likely match in participant capability and outcomes that improve social connectedness and generativity.

CMOC 2: use a pedagogical framework to trigger generativity, intercommunity connections and deliver social health outcomes

Pedagogical or service-learning frameworks support participants to learn together in a real-world context^{5 51} and featured in six of the included studies.^{33 35 47 48 50 52} Studies that involved school students were aged between 13 and 19 years with 15 years the average age across studies.^{33 35 46–48} Two studies^{35 48} involved students completing a report or a community presentation, while others involved students completing a small woodwork project.^{33 47} These tasks were curriculum linked,³⁵ motivating adolescent

Table 1 Included study characteristics

Included study	Study details	Study aim	Sample characteristics	Summary of findings	Use of a facilitator	Preprogramme training	Data collection and analysis
de Souza ⁴⁶	Qualitative; school (Brazil); older adult participants shared life experiences with students in a classroom environment.	Intergenerational programme evaluation from participant viewpoint.	84 randomly selected students; age 13–19 years; 26 older people; age 60+ years; male and female groups.	The intergenerational activity based on reminiscence improved social interaction and community wellbeing for older adults.	Unclear	No	Focus group interviews followed by thematic analysis
Kessler and Staudinger ³⁷	Quantitative; laboratory (Germany); interaction between an older person and younger person, two older people or two younger people addressing a 'life problem' or a 'media problem'.	To understand if intergenerational interactions have the potential to facilitate psychological functioning in both adolescent and old age.	Older women aged 70–74 n=90 and girls aged 14–15 n=90	Improved cognitive performance, reduced negative age-related stereotypes and triggered generative behaviours.	No	No	Data collected by a series of survey, psychometric and cognitive tests. Analysis completed using planned comparisons
Hernandez and Gonzalez ⁵⁰	Quantitative; local council social centre (Spain); weekly recreational activities (talks, excursions, cultural events). 32 interactive session 'movement programme'.	To investigate the effect of an intergenerational programme on stereotyped attitudes towards elderly people and the wellbeing of older adults.	101 elderly people; across two groups, age M=74 (SD=7.7) and M=75 (SD=5.21); 179 university students; age M=19 (SD=0.93); both male and female participants.	Improved outcomes in depression measures in older adults who participated in an intergenerational exercise group.	Yes	Yes—adolescents only	Pre and post sessions that included questionnaires and geriatric depression scale. Analysis via repeated measure analysis of variance
Wilson <i>et al</i> ⁴⁷	Qualitative; Men's shed (Australia); 10-week intergenerational mentoring programme with older male mentors offering support to younger at risk males	To explore the experiences and perceptions of mentors involved in an occupation skill focused programme with teenage boys.	9 teenage boys; age ~15 years; 6 older male mentors; Age 60–75; a project facilitator and a youth worker. All participants were male.	Intergenerational programmes involving older adults with a strong sense of generativity were shown to be a valuable resource to communities.	Yes	Yes—both groups	Pre and post individual interviews and focus groups with both groups however only reported on data from older adult participants using constant comparative method of grounded theory
Biggs and Knox ⁵²	Qualitative; residential care/ assisted living (USA (Texas)); Girl Scout meetings held in assisted living facility	To identify impact of an intergenerational programme for Girl Scouts (young people and residents (older people) on quality of life, social interaction and personal attitudes.	Focus groups comprised of parents=8, residents=5, staff=10, children (scouts and daisies) 5–12 years=9; content essay participants ages 6–16; n=18; all participants female.	Intergenerational programmes using social workers and community volunteers strengthened intergenerational relationships.	Yes	No	Focus group interviews with both groups and submitted essays from the younger participants followed by thematic analysis

Continued

Table 1 Continued

Included study	Study details	Study aim	Sample characteristics	Summary of findings	Use of a facilitator	Preprogramme training	Data collection and analysis
Knight <i>et al</i> ⁸⁵	Mixed methods; residential aged care setting (Australia); development of a life story review book by adolescent students partnered with an older adult.	To pilot and test the feasibility of an intergenerational programme 'My Life Story'.	Adolescents n=24; age M=14.56 (SD=0.5); older adults n=12; age M=90.58 (SD=3.59); gender of participants not stated	Improved social connectedness and community engagement resulted from an intergenerational programme using reminiscence.	Yes	Yes—both groups	Qualitative data collected (post) using semi-structured interviews and quantitative data collected (pre and post) using a series of items followed by thematic analysis and paired t-tests.
Østensen <i>et al</i> ¹⁵	Qualitative; residential care facility or private home (Norway); sessions over a 12-month period with volunteer adolescents supporting older adults to learn use of a tablet device.	To explore a new model of care that supports older people to participate by introducing technology and mobilising volunteer services.	Older adults n=15 (5 withdrew due to illness, death and hospitalisation); adolescents n=not stated; age 54–94 years; both male and female participants.	Reduction in anxiety and increase in social activity for older adults followed an intergenerational programme supporting older adults to use an iPad.	Yes	Yes—adolescents only	Individual semi structured interviews repeated over a 12-month period with the older adults only followed by thematic analysis
Santini <i>et al</i> ⁴⁸	Qualitative; residential aged care facility (Italy); intergenerational activity based meetings with aged care residents, older adult community volunteers and adolescents.	To understand if creating community space and planning activities where adolescents, older adults and active older volunteers meet and interact will improve health outcomes for older adults.	14-year-old students n=25 (18 males and 7 females) and three teachers; 16 older residents; age M=83; three social workers; 16 older volunteers; age M=70	The intergenerational programme improved the wellbeing of institutionalised older adults.	Yes	Yes—both groups	Individual and focus groups interviews with students; individual interview with older adults; focus groups with volunteers before, during and after the intervention followed by content analysis
Wilson <i>et al</i> ⁶³	Mixed methods; Men's shed (Australia); intergenerational mentoring programme with older adults and young adults with intellectual disability.	To examine the feasibility of a novel Men's Shed intergenerational mentoring intervention for young adults with intellectual disability.	5 mentees (average age 16); older adult mentors n=12; age M=69.5 (SD=8.53); all participants were male.	Intergenerational mentoring interventions for youth with intellectual disability at community Men's Sheds were shown to be feasible and appropriate.	Yes	Yes- older adults only	Quantitative data via preintervention and postintervention outcome measures and descriptive data of mentees' functional skills. Qualitative data collected at end of project via individual interviews with mentees and mentors. Used realist evaluation method

**Box 1 A priori theories identified after step 1**

- ⇒ Intergenerational programmes involving adolescents and older adults improve social connectedness in the older adult group.
- ⇒ Intergenerational programmes conducted in educational contexts result in positive outcomes in social connectedness for one/both groups.
- ⇒ Because they are at a similar point in psychosocial development, adolescents and older people are likely to be mutual beneficiaries of intergenerational programmes.
- ⇒ Intergenerational programmes help support meaningful connections for older people who may be socially disconnected within the community, with individuals outside of their normal age and social demographic.
- ⇒ Greater generativity is formed through participation in intergenerational programmes.
- ⇒ Intergenerational programmes conducted in educational contexts build community connections between generations and across structural community assets like schools.

participants to complete the task. Older adults reported they felt needed when they were contributing to adolescent's learning and acknowledged the adolescent's contribution to their own learning—'they can teach us the computer and their new language'.⁴⁸

Through the use of a pedagogical framework, results showed improved understanding and respect for the other generation^{47 52} and older adults gained a sense of pride in being able to pass on their knowledge and wisdom. These findings provide evidence that in pedagogical contexts, where reciprocity is formed, it is likely that an improvement in perceived social connectedness and wellbeing will occur for the older adult.

CMOC 3: design the programme to be frequent and have a clear structure to support participation and improved social connectedness

Frequency and duration of sessions

Programmes that used a pedagogical framework were usually linked to a school term or semester.^{33 46–48 50} These programmes ranged from 6 to 12 weeks blocks, often repeating over school terms and were held weekly,^{15 33 35 47 50} fortnightly^{46 48} or bimonthly.⁵² Biggs and Knox⁵² reported less frequent sessions were chosen to avoid overwhelming the participants, compared with other studies where participants requested more frequent and extended programme sessions so they could spend more time together.^{33 46–48}

Structure of sessions

A clear programme structure that included pretraining and time for 'breaking the ice'^{33 47} was reported as beneficial. Typically, studies used the session to engage and introduce participants or complete training and the following weeks to cover different topics or questions relating to the aim of the study. In the study by Østensen *et al.*,¹⁵ older adults raised learning goals that formed the structure for the week ahead. Overall, evidence suggests that having a structured programme that allows frequent interaction

between generational participants is more likely to result in improved social connectedness and optimised health and wellbeing.

CMOC 4: conduct the programme in community settings to support social health outcomes and build social capital

Intergenerational programmes that occur in community settings provide a platform for building social capital.^{49 26}

Four studies conducted programmes in residential care facilities using existing community connections such as local youth clubs and schools that were geographically close by^{15 35 48 52} and two others^{33 47 50} leveraged local community programmes (volunteer groups). Evidence suggested that community-based programmes had greater potential in enhancing social health outcomes for older adults and generating social capital in the broader community. In the Biggs and Knox⁵² study, older adult participants began attending church with the families of the adolescents, demonstrating connections beyond the programme. Similar results were reported in the de Souza⁴⁶ study with older participants reflecting improved mood, physical wellbeing and a 'feeling of freedom' (*p.* 467), through their opportunities to get out of the facility and spend time with the adolescents in the community. The location, existing relationships between community organisations and activities that support participants to observe the other generation playing a role in the community are all positive predictors of a likely improvement in individual and community social connectedness and wellbeing.

CMOC 5: deliver preprogramme training and support to participants to 'break the ice'

Preprogramme training was provided in six of the nine included studies. Training was offered to older adults and the adolescents,^{33 35 48} to older adults only³³ or to adolescents only.^{15 50} Training included programme orientation or the opportunity to learn about the other generation.

Where training was provided to both the adolescents and older adults, this appeared to foster social connections. For example, the adolescents shook the hands of the older male at the beginning and end of each session. This positive social behaviour was felt by the older men to be respectful and demonstrated social connectedness between the groups.⁴⁷ However, in the Santini *et al.*'s⁴⁸ study, despite the preprogramme introductory material, students reported that they required support from teachers and older adult volunteers to overcome their emotions when they met with the older adults for the first time.

Wilson *et al.*'s³³ programme provided training to the older adult mentors only. This training provided the mentors with disability awareness training via videos. Despite this, it was highlighted by the older adults that they would have liked to have been more prepared for working with the adolescents with intellectual disability. Two studies provided training to adolescents only,^{15 50} however, did not report on the impact of this training.

Table 2 Summary of context mechanism outcome configurations (CMOCs)

CMOC label and summary-level description	References of included studies
<p>CMOC 1 Understand the participants psychosocial development phase and attitudes towards each other to foster generativity.</p> <p>Adolescents and older adults are at a similar crossroads in the formation and maintenance of their identity³⁴ (context). Understanding the developmental phase and held attitudes of the participants (context) supports the design of programme training activities (mechanism) and ‘ice breakers’ (mechanisms) that foster reciprocity (mechanism) and are more likely to trigger generativity (outcome) between the generational groups and improve social connectedness (outcome).</p>	All included studies
<p>CMOC 2 Use a pedagogical framework to trigger generativity, intercommunity connections and deliver social health outcomes.</p> <p>Pedagogical frameworks (context) motivate the adolescent to participate in intergenerational programmes and achieve a result.^{35 46 52} Similarly, the older adult is motivated to transfer skills and wisdom and provide support to the adolescent so as they can achieve their goal (mechanism). As a result, social connectedness and attitudes towards the other generational group improve (outcomes).</p>	All included studies
<p>CMOC 3 Design the programme to be frequent and have a clear structure to support participation and improved social connectedness.</p> <p>Pedagogical frameworks (context) provide structure. Programmes that are codesigned and scheduled frequently allow relationships to form through shared goals and activities (mechanisms). Frequent and carefully structured programmes allow for improved social connectedness, and sustainable health and community benefits (outcomes).</p>	All included studies
<p>CMOC 4 Conduct the programme in community settings to support social health outcomes and build social capital.</p> <p>Community settings including educational institutions, care homes or existing community groups provide a foundation for engagement (context) when delivering intergenerational programmes. Programmes that showed a strong connection to the community through their facilitators (mechanism) or the physical environment (mechanism) showed improved sustainability and generalisability for the participants and the broader social capital of the community (outcome).</p>	15 33 35 46–48 50
<p>CMOC 5 Deliver preprogramme training and support to participants to ‘break the ice’.</p> <p>Using existing community settings (contexts) and knowledge of psychosocial development (contexts), preprogramme training (mechanism) and activities that support participants to connect on a more informal level (mechanism) may bridge gaps between the generations (outcome).</p>	15 33 35 46–48 50
<p>CMOC 6 Identify shared goals between programme participants to build reciprocity and support programme engagement.</p> <p>Through use of pedagogical frameworks and existing community links (contexts), the identification of shared goals builds reciprocity (mechanism) between the participants and in turn may trigger benefits including a greater sense of generativity (outcome), improved wellbeing (outcome) and social connectedness (outcome).</p>	15 33 35 46–48 50
<p>CMOC 7 Include a trained facilitator to promote programme participation.</p> <p>In a variety of contexts, the inclusion of a programme facilitator (mechanism) may support improved social connectedness (outcome). The other key function of a facilitator is to ensure that the participants have had the opportunity to ‘break the ice’ (mechanism) through preprogramme training and informal opportunities such as morning tea times.</p>	33 35 46–48 50
<p>CMOC 8 Plan inclusive activities that trigger generativity and improve physical, cognitive, psychological and social outcomes.</p> <p>When programmes use existing community connections, include relationship-based activities with a shared goal (mechanisms) and are grounded in a pedagogical framework (contexts), there is improvement in health and social wellbeing (outcome) and a sense of generativity for the older adult group (outcome).</p>	15 33 35 37 46–48 50

In studies where no formal preprogramme training was provided, results were mixed in relation to the impact on programme outcomes. In the Kessler and Staudinger³⁷ study, the randomised control trial methodology required preprogramme blinding. In the Biggs and Knox⁵² study, the participants were already involved in an existing Scouts programme, so it is assumed that preprogramme education was included in Scout club activities, however, this was not reported by the authors. Parents of the adolescents in the Biggs and Knox⁵² study raised concern about their children’s reactions to residents with dementia or if a resident died. There were

also reports from the residents and parents that boundaries and behaviours were not respected by the adolescent participants. These examples indicate a role for pre-programme training to reduce fears and provide education. Where training or opportunities to interact were suboptimal or missing, participants highlighted limited opportunities to ‘get to know’ each other or feel prepared for the programme.^{33 46} If comfort or confidence in the programme is not established, participants may not participate⁴⁶ or be reluctant to participate again.³³ This has broader implications for the sustainability of programme outcomes, particularly those that



aim to enhance social capital or galvanise links between community groups.

CMOC 6: identify shared goals between programme participants to build reciprocity and support programme engagement

By understanding the shared aims of participants, reciprocity is nurtured, participants are more motivated, and generativity is triggered. Where participants were involved in programme design^{48 50} and iteratively throughout the course of the programme,^{15 52} it was more person centred, reciprocal behaviours were enhanced and there were overall improved outcomes.

Santini *et al*'s⁴⁸ study used an action participatory research approach with active older adult volunteers, social workers and teachers. Hernandez and Gonzalez⁵⁰ used a codesign approach with adolescent students designing an exercise programme for older adults that was delivered with support from lecturers and trained facilitators over 32 sessions. Both generations benefited in these programmes, with results indicating a positive shift in age-related stereotypes when older adults and adolescents interacted as part of the programme.

In programmes where there was a shared goal from the outset there was greater improvement in social connectedness,^{33 35 47 52} reduced markers for depression⁵⁰ and improved stereotypical attitudes towards the older generation.⁵² The included studies demonstrate that creating reciprocity drives generative behaviour. Reciprocity and generativity combined leads to improved social connectedness and health and wellbeing outcomes for the individual and the community broadly.

CMOC 7: include a trained facilitator to promote participation

Facilitation is the act of supporting and enabling a group to meet its objectives (and realise its full potential) by fostering conditions that respect and encourage contributions by all members of the group.⁵³ Facilitation was used in seven of the included studies. The facilitators were trained professionals including teachers,^{35 48} university staff,⁵⁰ fitness instructors,⁵⁰ health professionals,^{15 33 52} community leaders⁵² and youth workers.⁴⁷ In the Santini *et al*'s⁴⁸ study, active older volunteers also played a facilitation role. Studies that included a facilitator resulted in greater participant interaction and improved programme outcomes.^{33 47 48} In the Wilson *et al* study, the youth worker that facilitated the programme was described as responsible for '*keeping us on track*'⁴⁷ and was pivotal in prompting participation between the groups, for example, at afternoon tea breaks.

In the study involving Girl Scout groups,⁵² the troop leaders were trained social workers. While their individual experiences were not reported in the findings, the role they played in bringing together individuals connected to existing community settings in Girl Scouts, residential aged care and volunteer groups was fundamental in the programme longevity and results. In four studies, active adult^{33 47 48} and adolescent¹⁵ volunteers were recruited

from local community volunteer groups and provided additional programme facilitation support that likely enhanced positive outcomes in community engagement and social connectedness.

Conversely, in studies where the facilitation was reported as being suboptimal³³ or absent,⁴⁶ the participants and the authors highlighted that greater support from the teachers, researchers or monitors would have enhanced interactions between the generational groups. If facilitation is absent or lacking, participants may feel frustrated or unsupported, in turn causing participant disengagement, attrition or an unintended triggering of age-based stereotypes or perceived loneliness.⁴⁸ Trained facilitation supports improved connectedness between participants and when delivered within community and pedagogical contexts, favourable outcomes in generativity, social connectedness and social capital.

CMOC 8: plan inclusive activities that trigger generativity and improve physical, cognitive, psychosocial and social outcomes

Included studies reported on programmes that provided relationship-based inclusion^{35 46 48 52} and activity-based inclusion^{15 33 47 50} opportunities for participants.

Relationship-based inclusion

If there is limited opportunity for relationship-based inclusion, adolescents and older adults may not experience meaningful social connection.³⁵ Feeling included by peers and the broader community promotes generativity and in turn improves wellbeing in both age groups.^{23 35} Several programmes^{35 46 48 52} used relationship-based inclusion activities such as reminiscence (sharing old photos or learning about what jobs older people used to do) to create reciprocity between older adults and adolescents. This was also a mechanism to improve physical, cognitive and psychological health, and in turn, social connectedness. A marker of sustained relationships was demonstrated by the adolescents continuing to connect with older adults after the programme,^{35 48} including volunteering at a local community organisation with older people.

Activity-based inclusion

Studies that used activity-based inclusion such as exercise programmes,⁵⁰ digital literacy training with an iPad¹⁵ or woodwork construction^{33 47} also reported improved outcomes in physical, cognitive, psychological and social domains, including social connectedness. In the studies set in Men's Shed's the young adults were mentored by the older men in occupational activities, with both groups reporting the activities provided the opportunity to connect, while learning new skills and doing '*something with our hands*'.⁴⁷ Young adults with intellectual disability commented that the Men's Shed was a unique learning environment—'*they made me feel like part of the group*' and that they '*felt accepted*'.³³ Older adults supported to use a tablet device¹⁵ demonstrated improved social outcomes

as they were able to connect with family in other locations or the outside community through news applications or by tracking weather. Nurses in the care facility reported a change in social behaviour in the participants using iPads, taking more initiative, presenting as less anxious and being more socially active. In the Hernandez and Gonzalez⁵⁰ study, the interaction between adolescents and older people showed statistically significant improvement in depression scores and stereotypical attitudes in the older adult group. A comparison group led by the adult trainer resulted in a less significant change in depression scores in the older adults (group 1 with adolescents= $p<0.001$; group 2 led by adult trainer= $p<0.008$). The control group (who attended the local social centre but did not interact with the adolescents or participate in exercise sessions) showed a statistically significant increase in depressive symptoms ($p<0.001$). The evidence supports activities that provide the participating generations with the opportunity to share time, reminisce and develop relationships are powerful mechanisms for triggering generativity and social connectedness.

Logic model

The aim of this review is to identify the circumstances in which social connectedness is optimised for older adults when taking part in intergenerational programmes with adolescents. The logic model below represents the relationships between programme activities and improved social connectedness for older adults. As demonstrated through the CMOC, the act of two generations coming together in familiar community-based contexts with a shared purpose, resulted in strengthened relationships and community connections. Several participants in the included studies spoke about the benefit of having an opportunity to 'meet and greet', for example, by sharing an afternoon tea as part of the programme.^{33 35 47 48 52}

This logic model (presented in figure 2) uses a nested visual to represent an optimal intergenerational

programme to improve social connectedness in older adults. The circumstances being the outer circle, with the mechanisms within that, driving the outcomes at the core.

DISCUSSION

Evidence from the included studies reveals how inter-generational programmes involving adolescents can address issues of social disconnectedness in older adults. This review identifies how and why intergenerational programmes work, for whom and in what circumstances. Broadly, the CMOC cover four main themes—(1) psychosocial and mental health, (2) physical and cognitive health, (3) programme design and structure and (4) community engagement and social capital.

Psychosocial and mental health

Providing opportunities for older adults to participate, without being infantilised or inequitably treated is highlighted by the included studies and others as a mechanism for improving reciprocity and generativity.^{20 37 54} The opportunity to participate in an intergenerational programme saw older adults improve their own self-image and stereotypical view of old age and prove to themselves that they still had something to offer the community and the younger generation.^{46 48 50} Included programmes that created opportunities for informal, relationship-based activities which triggered generativity, for example, promoting conversation between the generational groups, were of greatest benefit to psychosocial health.^{35 46 48}

Physical and cognitive health

The impact of intergenerational programmes on broader health outcomes, including cognitive health has been previously reported.^{14 55} The connections between social, cognitive and physical health are well known, particularly in high-risk populations such as older adults.^{56–58}

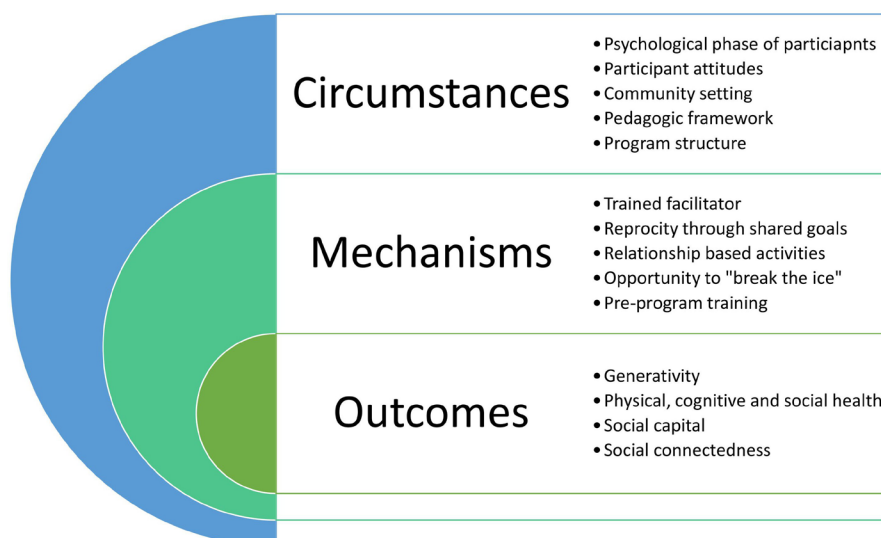


Figure 2 Logic model

In this review, interventions that promoted the older adult as wise or expert^{33 35 37 47 52} showed improvement in both perceived and measured cognitive performance. Kessler and Staudinger³⁷ showed improvement in speed of processing and word fluency when older adults were paired with an adolescent and asked to solve a life problem. Qualitative evidence from included studies reported improved physical health in older adults as a result of their involvement in the intergenerational programme, including increased energy³³ reduced pain⁴⁸ and increased movement.⁴⁶

Programme design and structure

A range of designs and structures are reported in the intergenerational programme literature. Intergenerational programmes embedded within pedagogical contexts are supported by existing literature^{26 59 60} and were featured in many of the included studies. Several studies support the need for in depth, sustainable and accessible intergenerational programmes to address social health issues.^{19 61} As highlighted by Cattani *et al*,⁶² programmes that engage adults in the planning and design of the interaction are most effective. This was seen in the Østensen *et al*,³¹ study and the Wilson *et al*,³³ study that highlighted the use of codesign to optimise outcomes. Martins *et al*,³¹ in a review of intergenerational programmes, also highlighted the benefit of weekly or fortnightly intergenerational meetings to create bonds between participants.

Several of the included studies highlighted the importance of informal and formal programme structures to build a foundation for connection. Several interventions leveraged existing local community connections and preprogramme training was shown to support participation.^{33 46 48} However, where complex demographics exist, additional programme support may be required.^{33 46 48}

Community engagement and social capital

Programmes set in the community that leveraged existing community connections were more likely to promote social connectedness. Individuals already engaged with the community in a volunteer capacity were participants, and in some cases facilitators of the programme. Other reviews²¹ support the inclusion of volunteers as it is a cost effective way to deliver programmes and promote volunteerism—a key element for enhancing social capital. Volunteers were used in the included studies to support programme delivery and participant recruitment via community organisations such as Rotary or Scouts.^{15 33 47 48 52} Adolescents also witnessed volunteer models and were interested in volunteerism beyond the programme.^{15 35 48}

Strengths and limitations of this review

This realist review explored intergenerational programmes that specifically involved adolescents and their impact on social connectedness in older adults and developed inclusion and exclusion criteria to reflect this aim. While these criteria generated a targeted group of studies for review,

there may have been additional studies missed. The included studies showed some collective limitations including a lack of participant diversity in regard to gender and rurality. From the information reported, most studies were conducted in metropolitan environments. The importance of building capacity in rural communities to protect the social health of older adults is supported by Hodgkin *et al*⁶ and this lacking insight is one limitation of this review. In regard to gender, three studies specifically recruited based on gender given they were located in Men's sheds^{33 47} or focused on girls scouts,⁵² however, in other studies where gender did not appear to be a structural factor, there was a greater proportion of women over men who participated. This is a possible limitation of the review along with the limited participation of older adults with cognitive impairment, particularly in quantitative measurement.^{15 35 52} There were also noted limitations in the quality of some studies with a paucity of evidence from the intervention, however these studies remained included in the review given their value to the overall review question and the commitment in realist methodology not to exclude solely based on quality of evidence.³⁸ An additional limitation is that only studies published in English were considered.

This review is however strengthened by its specific focus and that it is the first realist review to explore the impact of intergenerational programmes specifically involving adolescents on social connectedness in older adults. In addition, the review included a variety of study methods including one randomised control trial. The inclusion of evidence developed using a variety of methods is supported by the realist review methodological standards as it provides a broad view of existing literature and evidence is included based on its value and contribution to the review aim, rather than singularly on methodological type. As a result, the included studies report on a variety of different programmes from several major continents. While this heterogeneity may be viewed as a limitation, the realist method supports using a wide range of evidence to understand the circumstances in which complex interventions deliver an intended outcome. The review may have been further strengthened by the opportunity to test the programme theories and logic with stakeholder groups.

Implications for practice and future research

This review has provided a logic model that is ready to be used by clinicians, programme managers and policy-makers in the design and implementation of community-based intergenerational interventions. This review has implications for targeting physical, social and mental health in older adults, as well as exploring opportunities for the role of intergenerational programmes in adolescent health. Furthermore, the programme theory provides a suggested approach for designing programmes with a broader system lens. Previous literature has also supported the use of intergenerational programmes,⁶³ in particular those with a social health focus, to counter loneliness,⁶⁴ influence age-related health outcomes¹⁷ and reduce costs associated with increased care needs in older age.^{15 65}

The review also provides support for the inclusion of intergenerational programmes into the curriculum to

influence adolescent career choices and to improve attitudes towards older people.^{35 46 48} Included studies also called for intergenerational programmes to be a 'systematic component of care provision'⁴⁸ for older adults living in residential aged care, including additional resources, changes to models of care and staff training.¹⁵

Future research where intergenerational interventions are (1) designed using the programme theory as articulated within the logic model and (2) tested with stakeholders, may support further understanding of what works for whom, and in what circumstances. Realist evaluation or other published frameworks such as the six steps in quality intervention development (6SQuID) model^{66 67} are methodological options for future projects. This style of participatory research generates community will and engagement and supports sustainability without major resource investment, as the community itself 'owns' and is committed to the intervention they have designed. Future research would also benefit from addressing the same theory in comparative or specific settings,³⁹ such as in aged care settings or community groups like Men's Sheds.

CONCLUSION

This review has identified the circumstances in which social connectedness is optimised for older adults when taking part in intergenerational interventions with adolescents. Findings have provided a logic model outlining how intergenerational programmes involving adolescents are likely to improve social connectedness for older adults and builds on the evidence that social connectedness and social networks are protective for immunity, reduced depression rates and a reduced risk of frailty.^{16 56 68}

In addition to the psychosocial development theory, this review has uncovered the optimal circumstances that promote social connectedness for older adults. These include setting programmes in the community, including a trained facilitator, leveraging a pedagogical framework and finding shared goals between participants. Structural elements such as preprogramme training and frequency of sessions was shown to be important in delivering relationship bonds between older adults and adolescents, that trigger generative behaviours and greater perceived social connectedness. Intergenerational programmes involving adolescents are a possible solution for enhancing social connectedness and health outcomes for older adults.

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ORCID iD

Darryl Archibald <http://orcid.org/0000-0002-2836-2332>

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