CONNECT 60+A wellness program for older adults delivered from a community hub

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Submitted 27 October 2021, revised 13 March 2022, accepted 22 April 2022.

ABSTRACT

Background: Community hubs offer a pragmatic approach to address the wellness needs for older adults at risk of social isolation and declining physical activity.

Objective: The current study evaluated the effectiveness of a wellness program delivered from a community hub (either in person or online) on exercise and social connections of community-dwelling older adults living in Australia during a time of social isolation imposed by COVID-19.

Methods: A single group pre-post quasi-experimental study was conducted online and in person from a community hub. The 9-week program (CONNECT60+) was designed using a community-based participatory approach. It consisted of weekly group exercises led by a health professional and a wellness activity that aligned with active ageing guidelines, such as education, book club, and nature walks. Participants were encouraged to complete daily wellness activities and record these in a workbook. Data were gathered at pre-test and 10-weeks post-test using questionnaires.

Results: A total of 47 participants completed the program. Most participants were aged between 64-74 (61.7%) years; 82.9% were female. Thirty-five participants (74.5%) attended the program in person, and 12 (25.5%) attended online from home. Preliminary findings showed participants prioritized social connections during the week and increased the duration [median (IQR) min] of exercise completed per week [pre-test: 285 (246, 567); post-test: 346 (150, 415), $p < .01$].

Conclusion: The study endorsed the wellness program delivered in person and online from a community hub to enable older adults to complete wellness activities, including exercise and socially connecting during a time of self-isolation due to the COVID-19 pandemic.

Keywords: community-based participatory research; community hubs; older adults; online; wellness.

Introduction

Aging across the global population has seen an increased focus on the development of innovative community based programs and the adoption of public health policies to maximize the health and social participation of older adults living in the community.[1, 2] Shifting healthcare from acute health centers to the community provides an opportunity to reduce health costs and emphasizes health and prevention of age-related decline back into the hands of older people and their informal community supports.[3] However, there is limited evidence regarding the effectiveness of community based wellness programs as behavioral interventions targeting community-dwelling older adults.

Recent evidence has shown that functional decline and frailty indicators are potentially amenable to wellness activities and that these should begin at an earlier age to halt or reverse poor health outcomes in older age.[4] Exercise is a central wellness activity,[5] however, globally less than 30% of older adults meet current exercise guidelines of at least 150 minutes per week.[1]

The nature of the COVID-19 pandemic has forced older adults to self-isolate at home rather than follow recommended wellness messages of getting out into the community and being physically and socially active.[6] A growing body of evidence suggests that the association between social isolation and health is comparable with risk factors of smoking and low physical activity levels.[7] In addition, social isolation increases mortality, dementia, falls, and rehospitalization.[8,9]

Community hubs have been transformative for a wide range of communities in Australia (National Community Hubs Program https://www.communityhubs.org.au/) and the United Kingdom (My Community https://www.my-community.com) in providing multi-purpose services that reflect the needs of the local community. Community hubs also offer a practical approach to address the wellness needs of older adults living in the community,

which may lead to less functional decline, hospitalization, and intensive rehabilitation. Furthermore, wellness programs that link evidenced-based interventions such as exercise and social support programs to existing community structures may improve adoption, implementation, and sustainability.[2,10] Research evidence is needed to determine how innovative implementation of a community based wellness program could compensate for the sudden separation from community health and social supports experienced by older people who are isolated at home due to illness, functional disability, or COVID-19.[11]

The Partnership

Connect Victoria Park was established as an organization 60 years ago and formed a community hub in 2018. It consists of a strong base of contributing members and volunteers who live in the local urban community and offers an outlet for wellness activities based on member interests. Connect Victoria Park was seeking partner organizations with health and research expertise to develop an innovative wellness program for people aged 60 years and over who may have been isolated in their homes due to health conditions, declining mobility, or the COVID-19 pandemic.

The research partner consisted of a team of implementation scientists with outstanding clinical research impacts in the area of older people and physical activity, education and behavioral change. One of the researchers (CN) was affiliated with the partner organization Independent Living Assessment Inc (ILA), a Western Australian based community development organization that offers information to older individuals and care providers about healthy ageing in the community.

The unique partnership between the research team, ILA, and Connect Victoria Park adopted a community-based participatory research (CBPR) approach with a collective intent to achieve a common goal of health and wellness for the local community by linking research with local action.[12] The partnership called for mutual trust and genuine collaboration from the

outset of the project and throughout each phase by including all partners and community hub staff, local volunteers, government representatives, and hub members to gain insights, disseminate, and build on community strengths.[13] The CONNECT 60+ program aimed to facilitate engagement of the local older community stakeholders in wellness activities that aligned with the physical and psychological domains recommended in the International Council on Active Ageing Guidelines.[14]

The current study evaluates the effectiveness of the 9-week wellness program (CONNECT 60+) delivered from a community hub (either in person or online) for older adults living in the community on their exercise and social connections during a time of social isolation due to restrictions imposed by the COVID-19 pandemic.

Methods

Study Design

A single group pre-post quasi-experimental study design was implemented. Participants (*n*=47) were older adults residing in metropolitan Perth, Western Australia. Ethics approval was obtained from the Human Research Ethics Committee, Curtin University in Perth, Western Australia. All participants had the ability to provide written informed consent.

Participants and Setting

The target population were those older adults (n=47) living at home in the community. They may have been already receiving formal or informal social supports, such as assistance with their activities of daily living. They may have had a variety of medical conditions and may have ambulated independently with or without an aid. The sample size was a convenience sample based on room capacity of the community hub imposed due to the COVID-19 pandemic, and number of members who expressed an interest in attending the wellness program either in person or online from home.

Connect Victoria Park community hub advertised the program among their current membership base and flyers and online advertisements were disseminated to the local community. Older adults who had registered an expression of interest were contacted and those who met inclusion criteria received plain language statements and contact details of researchers for any questions or for additional information. All participants provided written informed consent prior to commencing the program.

Inclusion and Exclusion Criteria

This study's inclusion criteria were adults aged 60 years or older, living in the metropolitan community who may have been self-isolating due to COVID-19 pandemic from April 2020 to

November 2020. In addition, participants had functional cognitive capacity (scored greater than 7/10 using the Abbreviated Mental Test Score[15]), and competent spoken English to understand the intervention and operate the online technology. If participants had sensory impairments that limited their ability to use of a telephone and remote technology, they were excluded from the study, however it was envisaged that since technology allows for visual and auditory adjustment participants with some levels of these impairments were eligible to register. The program required that participants had good static and dynamic standing balance to be able to complete the exercise and other wellness activities. If participants were unable to transfer into standing from a chair independently, and unable to walk independently with a walking aid, they were excluded from the study. Participants attending online were required to have a working computer or laptop or smart phone and an internet connection.

Intervention: CONNECT 60+: Community-based Participatory Research Approach

CONNECT 60+ was a pragmatic and novel wellness program that was designed using a community-based participatory research approach (CBPR).[16] This was incorporated at the community level by involving Connect Victoria Park community hub local older members and local government members to collaborate on the goals of the wellness program, the overall content, and draw on local strengths by inviting local facilitators to present some of the program events. As the program aimed to promote wellness through engagement, program events incorporated interventions based on community member preferences and motivations.[12,13] Open, clear, and accessible communication occurred amongst all partners throughout intervention design, launch, implementation, and at program completion (10 weeks).[12] Strategies included roundtable decision-making amongst partner representatives face to face at the beginning of the project during planning and design, then at a larger open forum during program launch, and later at program completion (10 weeks). In addition,

partners were present during implementation both virtually and in person to maintain open communication amongst participants and program facilitators.

Unlike the medical model where good health is defined by the absence of disease, wellness is multidimensional and incorporates individual values for living.[17] Wellness has been integrated to the International Council on Active Ageing Guidelines,[14] and encompasses 7 domains (social, occupational, spiritual, physical, intellectual, environmental, and psychological) that interconnect to represent the whole person.[17] The core interventions of the wellness program focused on a weekly exercise group in addition to a wellness event that focused on one wellness domain each week. The program of wellness events addressed community member interests such as ballroom dancing, nature walks, tai chi, meditation, creative writing, watercolor, drawing, Pilates, choir, and book club.

Attendance of local government representatives at the launch of CONNECT 60+ advocated power-sharing between older community members, community support organizations, and policy makers, and highlighted wellness as a community issue.[12,13] CBPR approach was integrated at implementation with participants when content was discussed both as a group and individually. To internalize the wellness principles and then contribute to the development of their daily wellness activity plan, participants were provided cues to action that incorporated elements of behavioral therapy, positive psychology, and behavioral change theory.[17] Action plans considered individual preferences for wellness activities, and opportunity to access social supports within their home and community.[12] Cues to action were developed whereby participants understood when to engage in weekly activities either remotely or in person, and how they would be able to complete these daily independently or with some support. Participants were then encouraged to check their wellness activities and to keep a weekly diary in their workbook.

Participants had a choice to attend the program either online or in person at the community hub one day per week for 3-hours over 9-weeks. Every week, the program included a 60-minute exercise group and a 60-minute wellness activity, with the opportunity to socialize over morning tea. Whether attending online or in person, all participants could connect through a large projection screen in the main room where all activities including morning tea took place. The exercise program was led by a trained instructor and reflected evidenced-based strength and balance interventions delivered to older populations.[18,19] The online delivery of the program was facilitated by a research assistant who was based at the community hub.

Outcomes

The outcomes for CONNECT 60+ were engagement in wellness activities measured using a quantitative survey completed either in person or using the online platform, conducted by a research assistant at pre-test and at 10-week post-test (program completion).

The primary wellness activities were highlighted to participants and intrinsic to the program outlined in the workbook. Wellness activities included:

i. *Exercise* that was measured according to frequency and duration. Types of exercise included general strengthening, stretching, or balance exercises performed either independently or supervised by a health professional. For example, a group exercise class completed at the community hub, a dance class, bellringing with a group, attendance at the local gym, yoga classes, Pilates exercises, tai chi, physiotherapy exercises and strengthening work, swimming, or walking. The frequency was recorded as the number of exercises per day and then summarized as total number per week. The duration was summarized as the total number of minutes of exercise completed per day and then summarized as the total number of activities per week.

ii. *Instrumental Activities of Daily Living (IADLs)*, such as gardening, cleaning, or shopping, were recorded as the number of activities per day, summarized as total number per week, and the duration recorded as minutes per day and summarized as the amount of time per week.

iii. *Social connections* were interactions with family and friends measured by frequency (number per day, summarized by total number each week).

The secondary outcomes gathered at pre-test and at 10-week post-test were participant balance and mobility measured with the Timed Up & Go (TUG) measure,[20] and health-related quality of life (HRQoL) measured using the EuroQol five-dimension (EQ-5D).[21] The TUG uses the time that a person takes to rise from a chair, walk three meters, turn around 180 degrees, walk back to the chair, and sit down while turning 180 degrees. A time of 10 seconds or less indicates normal mobility.[20] The EQ-5D is a self-reported measure of current health using five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression), to provide index values that range from 0 (indicating no health) to 1 (full health).[21] The EQ-5D also includes an EQ-Visual Analogue Scale (VAS) where an individual rates their own health 'today' on a scale from 0 (worst health) to 100 (best health).[21]

Demographic data gathered at pre-test included age, gender, living situation (home alone, with partner, other circumstances), outdoor mobility and use of walking aids, presence of depression (measured using Geriatric Depression Scale),[22] polypharmacy, functional ability measured using Lawton's Scale,[23] history of falls, and outdoor mobility determined by use of any walking or assistance aids.

Data Collection and Procedure

Following screening for eligibility and provision of consent to enroll, participants were given a choice to attend the wellness program either online or in person. Pre-test and 10-week post-

test assessments were completed at the community hub for those attending in person. Those attending online were provided with written and verbal instructions to connect to Zoom, a remote online platform. Prior to gathering pre-test data, the research assistant provided up to 2 technical practice connection sessions (total of 60-minutes allowed) to ensure participants were confident and proficient in using the technology. During training sessions, the research assistant used the telephone to talk the participant through the set-up step and application of individual tablet or computer use for this project. The website http://www.skillfulsenior.com/ was referred to as necessary to address the technological learning and support needs of participants. The trained research assistant then conducted pre-test assessment for outcomes via Zoom. A workbook was delivered to participants, and completion of diaries was monitored weekly by the trained research assistant.

The program delivery commenced with an information session that all partners, participants, and community-hub staff attended either in person at the hub or online using the online platform. The program content was explained including where to find the timetable of activities in the workbook, how to record their attendance, and who to contact if there were any problems in attending. The research assistant discussed the program content individually with all attendees. Instructions regarding weekly attendance to the exercise and wellness activities were provided with cues to action for participants to complete wellness activities throughout the week independently. The participant used a diary to record their attendance at group programs, social connections with other participants, family and friends, and independent engagement in home-based activities daily. This diary was collected weekly in person or online via email by the research assistant. Upon completion of the program in week 10, the research assistant administered a post-test structured survey either in person or online.

Data Analysis

Data were analyzed using Stata version 16.1 ((Stata Corp. 2019. Stata Statistical Software: Release 16. College Station, TX: Stata Corp LLCs). Data were summarized using descriptive statistics. Data measuring the primary outcomes of levels of engagement in wellness activities were categorized according to type (exercise, IADLs, social), frequency (number per week), and duration of exercise and IADLs (minutes per week) and summarized using descriptive statistics and compared using non-parametric tests (Wilcoxon rank-sum). Within groups comparisons, for those who attended online or in person, were conducted using non-parametric tests. Secondary outcomes of HRQoL and time taken to complete TUG were analyzed using negative binomial regression to account for the over dispersion in these data. Results were reported as predicted mean differences and 95% confidence intervals (CI). The significance level for analysis was set at $p < .05$.

Results

Demographics

There were 50 people who registered an expression of interest to attend the program, and 3 people were excluded, leaving a total of 47 participants who enrolled and completed the 9-week CONNECT 60+ wellness program. Pre-test characteristics of the 47 participants are presented in Table 1. Over 80% of the cohort were female and more than half aged between 60-74. Three quarters of participants (n=35, 74.4%) chose to attend the wellness program in person at the community hub compared to online from home (n=12, 25.6%). Participant flow through the study is presented in Supplementary Figure 1. There were no dropouts at 10-week post-test.

Engagement in Wellness Activities

Participant engagement in wellness activities at post-test compared to pre-test are presented in Table 2. There were no significant differences in the frequency of exercise activities (number per week); however, there was a significant increase ($p<.02$) in the duration (minutes/week) of exercise at post-test. Frequency [median (IQR)] of social connections were significantly reduced at post-test [15 (7.5, 24)] compared to pre-test [19 (13, 27)], and subgroup analysis revealed the reduction was significant for those who attended in person compared to those who attended online [median (IQR)] [pre-test: 20 (13,27); post-test 16 (7,24), $p<0.01$, Table 3]. There were no significant differences in the frequency or duration of IADL activities completed at post-test compared to pre-test for the whole group.

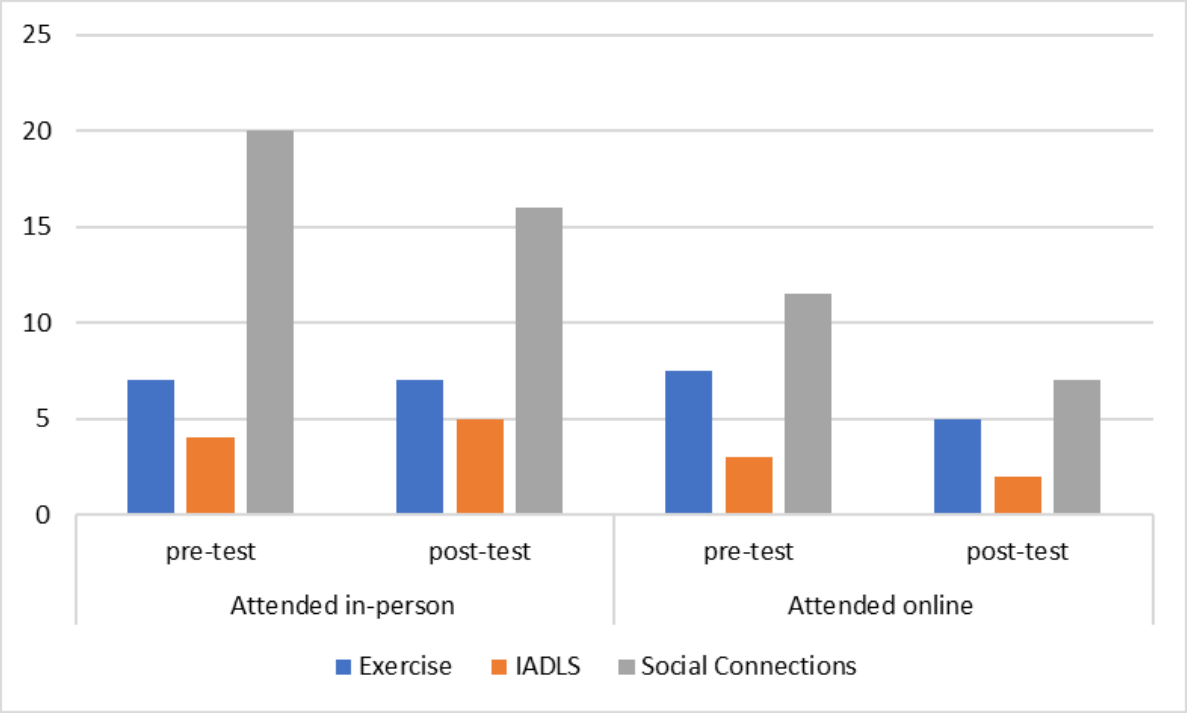
Table 3 presents engagement in wellness activities from pre-test to post-test within groups. There were no significant changes in the number of IADL activities over time for both groups (online and in person). However, participants who attended the program in person reported spending significantly more time exercising at post-test ($p<.01$) compared to pre-test.

Figure 1 presents the frequency of wellness activities by category type (exercise, IADL, social connection) completed at pre-test and post-test by each group (online and in person). Although there was a significant reduction in the frequency of social connections (number per week) at post-test compared to pre-test, Figure 1 illustrates that social connection activities were more frequently completed per week in both groups at pre-test and post-test compared to exercise and IADLs.

Supplementary Figure 2 presents the duration of time online and in person attendees engaged in exercise and IADL activities at pre-test and post-test. In person attendees significantly increased the duration of time they exercised at post-test (Table 3, $p < .01$), (see Figure 1). Although not of statistical significance, there appeared to be a trend of increased engagement in the frequency and duration of time in person attendees spent on engaging in

IADL activities from pre-test to post-test. Those attending online spent more time exercising at post-test (Supplementary Figure 2), and they completed this in a reduced number of weekly sessions at post-test compared to pre-test (Figure 1).

Figure 1. Frequency (number) of wellness activities completed per week for those who attended in-person and online



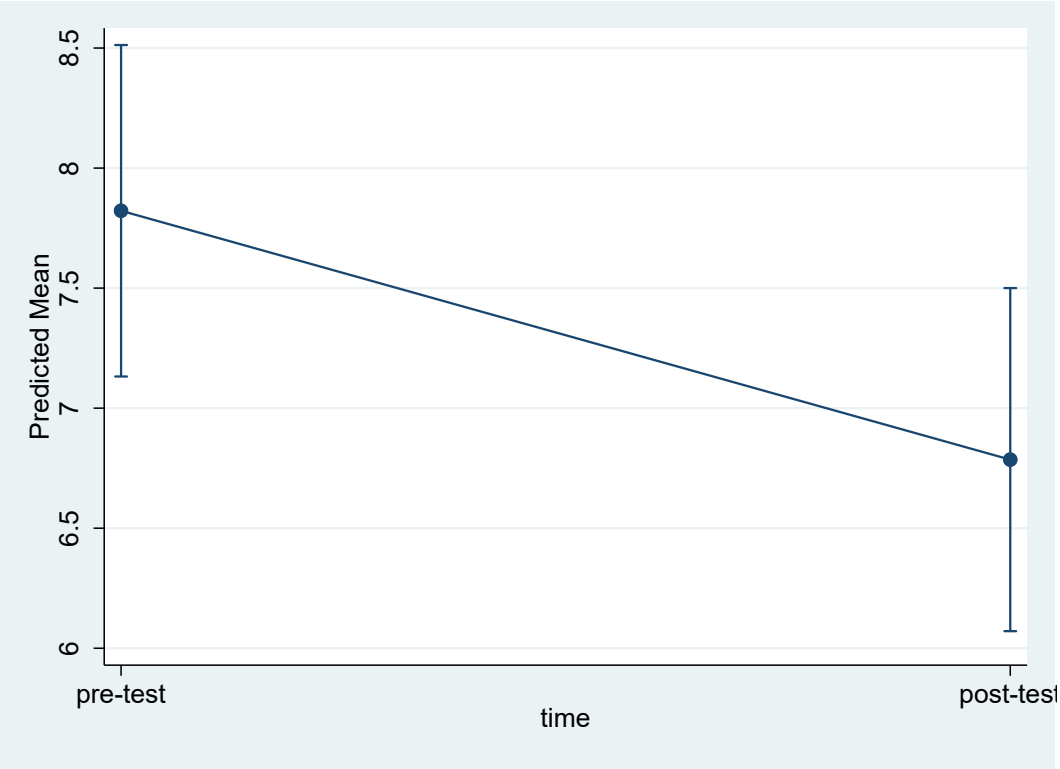
Notes pre-test at week 1 **post-test** at week 10 **IADLs** Instrumental Activities of Daily Living

Health-related Quality of Life and Mobility

When measured at the group level HRQoL EQ-5D scale scores did not significantly change from pre-test to post-test (Supplementary Table 1, Supplementary Figure 3); however, there was a significant increase in EQ-5D VAS index scores (Supplementary Table 1 and Supplementary Figure 4). In addition, participant TUG scores significantly improved for the whole group at post-test compared to pre-test (see Supplementary Table 1, Figure 2). Clinically this shows that participants increased the speed at which they completed the TUG

by a mean of 1 second for the group. The mean score was below 10 seconds and is indicative of good mobility.[24]

Figure 2. Timed Up & Go Predicted Mean Scores with 95%Confidence Intervals.



Notes: pre-test is week 1 **post-test** is week 10. A time of 10 seconds or less indicates normal mobility.[24]

Discussion

Community based wellness interventions offer a practical approach to ageing in place and extending the independence of older adults within their homes.[25] Exercise is known to benefit an individual's strength, flexibility, and balance.[1] It is a central wellness strategy that positively impacts older adults' quality of life and physical function.[5] However, older adults typically engage in low levels of exercise.[1] The World Health Organization has highlighted the urgent need to intensify investment in community-based programs that promote exercise to mitigate health risks, frailty, and social isolation for the global ageing population.[1] Connect Victoria Park took an active role to initiate this collaborative partnership with an intention to reach out to more community members through CONNECT 60+. There was an urgency to implement the wellness program with the emergence of self-imposed home isolation due to the COVID-19 pandemic. The study found there was 100% retention and that 75% of participants chose to attend in person while the remaining attended online. CONNECT 60+ built on the strengths of the community members who were willing to connect on a weekly basis, to share common wellness interest, and support one another. The choice to attend online was positively received by all participants. The program enabled all participants to connect with each other in real-time at the community hub whether online or in person through a large projection screen in the main room where all activities including morning tea took place. This study found that participants prioritized their weekly activities to include time for exercise and social connections. Further, the participants were also meeting the recommended level of exercise of at least 150 minutes per week,[18] compared to the reported less than half of the global older population.[1] Difficulties in attaining these recommended exercise levels have been associated with social barriers to accessing an exercise routine in the local community,[26] which this program circumvents.

Community hubs represent an innovative way to build, support, and involve the older person's informal social network to include friends, family, and neighbors in their health and wellbeing.[27] Older individuals who experience different states of health and wellbeing often present to health care systems in acute crisis,[28] resulting in lengthy hospitalization, and sustained disability once the person returns to their home.[29,30] Evidence has shown that early identification and management of health and wellbeing decline can mitigate and slow these crisis transitions.[31] Additionally, previous findings have highlighted a need for integration between health service providers and community support providers with support for self-management of health and wellbeing.[27] The findings of frequency of wellness activities provides some context to the way that participants used their time in the week to complete their preferred wellness activities. Although there was a reduction in the frequency of social connections at post-test compared to pre-test, social connections were more frequently completed by participants than other wellness activities. This finding confers with the evidence that older adults most commonly relate healthy ageing to social engagement.[32]

Strengths and Limitations

This study's strength was that the community hub-based wellness program aligned with international guidelines addressing healthy ageing and integrated care for older adults in the community.[26,33] The community-based participatory research approach was a strength of the current study as an effective means for implementing an intervention that encompassed the needs and motivations of the community around wellness and healthy ageing.[12] There was a commitment from all partners for a collective goal of promoting the wellbeing of the community, which generated genuine collaboration throughout all phases of the project.[16] All partners actively engaged with CONNECT 60+ from design, to implementation, and dissemination of findings at the main closing event, which empowered the role of older

community members, staff and volunteers toward the success of the program in meeting their needs.[16] The CBPA process enabled genuine rapport to develop between partners as the timeframe from planning to implementation and dissemination of findings occurred over a nine month period. Community-hub based programs have served migrant families and culturally and linguistically diverse populations.[2] A limitation of this study was it did not include populations with limited english proficiency and other marginalized populations.

The program represents an easily accessible approach for older adults who may be isolated in their homes to engage wellness activities, including exercise and social connections. The uneven group size is recognised as 75% of participants chose to attend in person, the program reached and retained all participants who had medical conditions and who traditionally encounter barriers in accessing the community and exercise.[26] For example, over a third of participants were older (75≥80 years of age), more than half lived alone, and had a history of falls in the previous year, as well as other falls risk factors.[34]

The choice to be trained and supported in utilizing online technology in this study was an aspect of the CBPA that enabled participants to fully engage in their wellness activities during imposed social isolation conditions due to the COVID-19 pandemic. The interaction of healthy ageing and technology represents an opportunity for all types of communities in various domains of urban and remote living to access the wellness program.[35] A limitation of the current study was the evidence was limited to post-test, without a longer follow-up to understand the sustained benefits of the wellness program using remote online technology in maintaining their health-related quality of life in the community.

Conclusion

Exercise and social connectedness have been highlighted as a priority to address health and wellbeing of the global ageing population. The CONNECT 60+ wellness program was

developed using CBPA through a unique partnership between a community service development organization (Independent Living Assessment, Inc), a local community hub (Connect Victoria Park) and tertiary education research (University of Western Australia). The community hub-based nature of the wellness program is a social investment in building and sustaining older adults to be active and engaged within their local community. Further exploration to understand the benefits of belonging to a community hub in undertaking wellness activities and the meaning of this experience might contribute to the future development of additional community support programs to meet local member needs, including for diverse communities living in rural and remote areas.

Declarations

Funding

AMH have received a grant from the National Health and Medical Research Council (Australia) to conduct a trial that investigated how to reduce falls and promote independence in older people after hospitalization (Project App no:1078918). CN received a postdoctoral income as part of the grant. This grant funding has not been received directly to the authors rather to the institutions they represent. SV research was funded through a 5-year Senior Research Fellowship from Curtin University. The authors have not received financial support for this study

Ethics approval and consent

Ethics approval was obtained from the Human Research Ethics Committee, Curtin University in Perth, Western Australia. All participants had the capacity to provide written informed consent.

Data availability

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

Author contribution statement

AMH, CN, JB, and SV conceptualized the current study design and research protocol with ongoing expertise and support from DX, HO, and LG. AMH and CN led trial management, including data collection and management and site procedure, in consultation with LG. AJ, AMH, and CN led statistical analyses. CN led the drafting of all sections of the manuscript in consultation with AMH, JB, SV, AJ, and DX. All authors critically revised the manuscript for important intellectual content and read and approved the final version of the manuscript.

Table & Figure Legends

Table 1. Characteristics of participants

Table 2. Engagement in wellness activities for the whole group (*N*=47) compared at pre-test (week1) and post-test (week 10)

Table 3. Engagement in wellness activities compared within groups at pre-test (week 1) and post-test (week 10) (*N*=47)

Supplementary Table 1. Secondary data: Health related quality of life and timed up and go scores for the whole group (*N*=47)

Figure 1. Frequency (number) of wellness activities completed per week for those who attended in person and online.

Notes: pre-test at week 1 and post-test at week 10 IADLs Instrumental Activities of Daily Living.

Figure 2. Timed Up & Go Predicted Mean Scores with 95%Confidence Intervals.

Notes: pre-test is week 1 post-test is week 10. A time of 10 seconds or less indicates normal mobility.[24]

Supplementary Figure 1. Participant flow through the study

Supplementary Figure 2. Duration of physical and instrumental activities of daily living per week compared within groups (attended online or in person) at pre-test and 10-week post-test

Supplementary Figure 3. Health related quality of life: EQ-5D Scale scores

Supplementary Figure 4. Health related quality of life: EQ-5D Index values

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Table 1. Characteristics of participants (N=47)

Variable [a]	**n=47 (%)**
Age	
60-74 years old	29 (61.7)
75-80+ years old	18 (38.3)
Gender, Female	39 (82.9)
Attendance	
In-person at community hub	35 (74.4)
Online	12 (25.6)
Depressed mood [b]	4 (8.5)
≥4 Medications	10 (21.3)
Highest education level attained	
Completed Junior and Senior School	18 (38.3)
Completed College or Diploma	16 (34.0)
Completed University	13 (27.7)
Fell in 1year prior	14 (29.8)
Living situation	
Home alone	29 (61.7)
Home with partner or family	18 (38.3)
Outdoor mobility	
No aid	46 (97.9)
Walking frame	1 (2.1)
Social Assistance [c]	
Formal [d]	11 (23.4)
Informal [e]	4 (8.5)
Both	3 (6.3)
IADL Function: Lawton [f], median (IQR)	8

Note. **a** all data is measured in n(%) unless otherwise stated **b** Geriatric Depression Scale Short Form, score ≥ 5 suggests depression **c** Assistance with instrumental activities of daily living such as cleaning and shopping **d** funded homecare provider **e** non-funded homecare provider such as family **f** Lawton's Instrumental Activities of Daily Living, range 0-8 greater score indicates more independence

Table 2. Engagement in wellness activities for the whole group (*n*=47) compared at pre-test (week1) and post-test (week 10)

Wellness activities	Pre-test (week1)	Post-test (week-10)	*p*-value [a]
Exercise [b]			
Frequency [c]	7 (5.5,10)	6 (5,10.5)	0.1
Duration [d]	306 (125, 491)	326 (206, 501)	0.02*
Instrumental ADLs [e]			
Frequency [a]	4 (2, 7)	4 (2, 7)	0.9
Duration [d]	187 (97.5, 295)	191 (90, 405)	0.9
Social Connections [f]			
Frequency [c]	19 (13, 27)	15 (7.5, 24)	<.01*

Note **a** level of significance set to ≤.05 **b** exercise including walking, attendance to group classes, and individual exercise program, physiotherapy, tai chi, yoga, dance, bell-ringing **c** measured using median (IQR) number per week **d** measured using median (IQR) minutes per week **e** instrumental activities of daily living such as cleaning, shopping, gardening **f** social connections with family and friends * level of significance reached

Table 3. Engagement in wellness activities compared within groups at pre-test (week 1) and post-test (week 10) (*N*=47)

Wellness activities	Attended in-person n= 35			Attended online n= 12		
	Pre-test (week1)	Post-test (week 10)	*p*-value[a]	Pre-test (week1)	Post-test (week10)	*p*-value[a]
Exercise [b]						
Frequency [c]	7 (5.5, 10.5)	7 (5, 11)	0.4	7.5 (5, 10)	5 (5, 7)	0.2
Duration [d]	285 (150, 415)	346 (246, 567)	<.01*	195 (162, 405)	238 (182, 486)	1.0
IADLS [e]						
Frequency [c]	4 (3, 7)	5 (3, 8)	0.7	3 (2, 5.5)	2 (1.5, 6)	0.1
Duration [d]	200 (90, 340)	265 (140, 412)	0.5	172 (142, 270)	120 (30, 150)	0.07
Social Connections [f]						
Frequency [c]	20 (13, 27)	16 (7, 24)	<.01*	11.5 (2.5,22)	7 (0.5, 15)	0.1

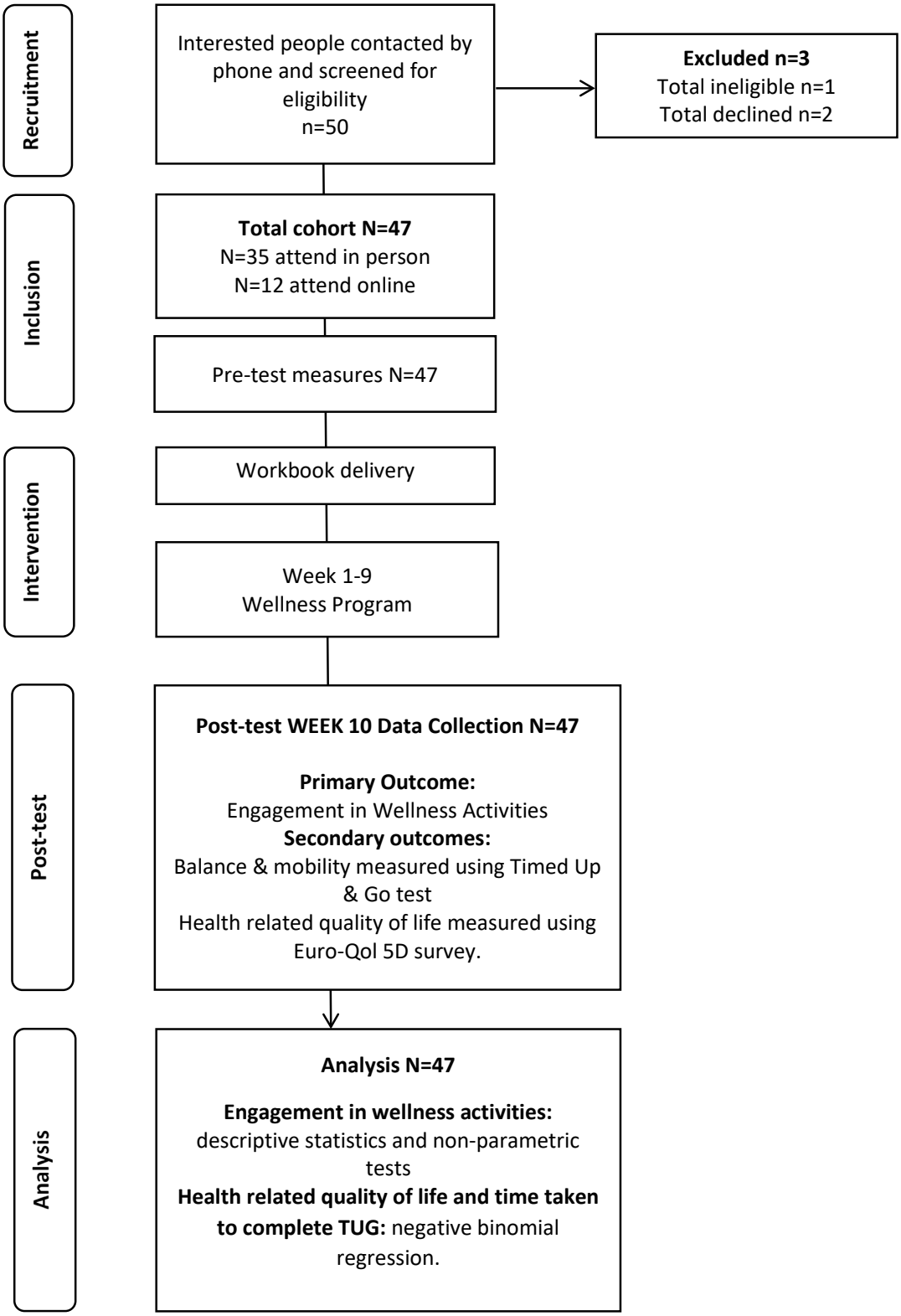
Note **a** level of significance set to ≤.05 **b** exercise including walking, attendance to group classes, and individual exercise program, physiotherapy, tai chi, yoga, dance, bell-ringing **c** measured using median (IQR) number per week **d** measured using median (IQR) minutes per week **e** instrumental activities of daily living such as cleaning, shopping, gardening **f** social connections with family and friends

Supplementary Table 1. Secondary data: Health related quality of life and timed up and go scores for the whole group (N=47)

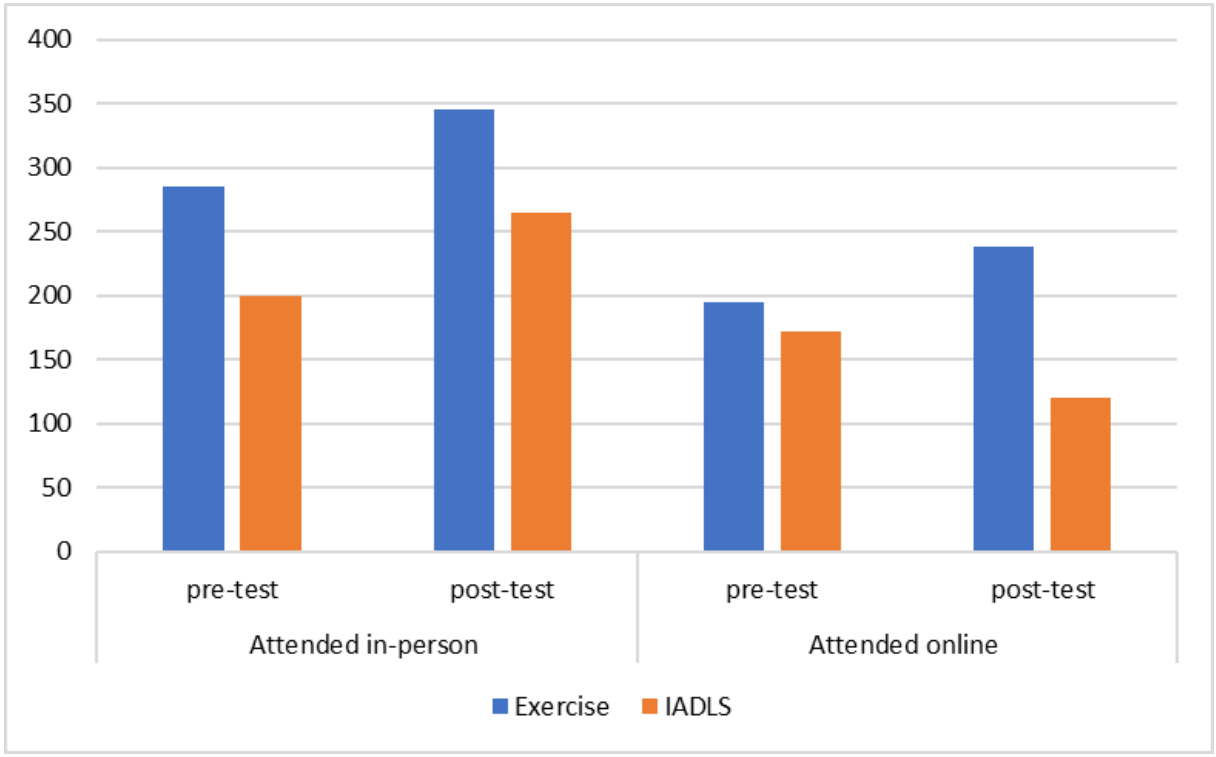
HRQoL Measure	Pre-test [a]	Post-test [b]	b-co-efficient [c] (95%CI)	*p*-value [d]
EQ-5D Scale [e]	84.4	85.9	1.5 (-2.9, 6.0)	0.5
EQ-5D Index [f]	0.82	0.89	0.07 (0.03, 0.1)	<.01*
TUG [g]	7.8	6.8	0.1 (-0.2, -0.004)	0.043*

Notes **a** baseline **b** 10-weeks **c** coefficient of change is the degree of change in the EQ-5D, determined using **d** level of significance set to ≤.05 **e** EuroQol 5D visual analogue scale scores records an individual's rating of their overall health-related quality of life, ranging from 100 'the best imaginable health state' to 0 'the worst imaginable health state'.[21] **f** EuroQol 5D index values that range from 0 (indicating no health/death) to 1 (full health).[21] **g** Timed up and go,[20] a time of 10 seconds or less indicates normal mobility.[24] *reached level of significance

Supplementary Figure 1. Participant flow through the study

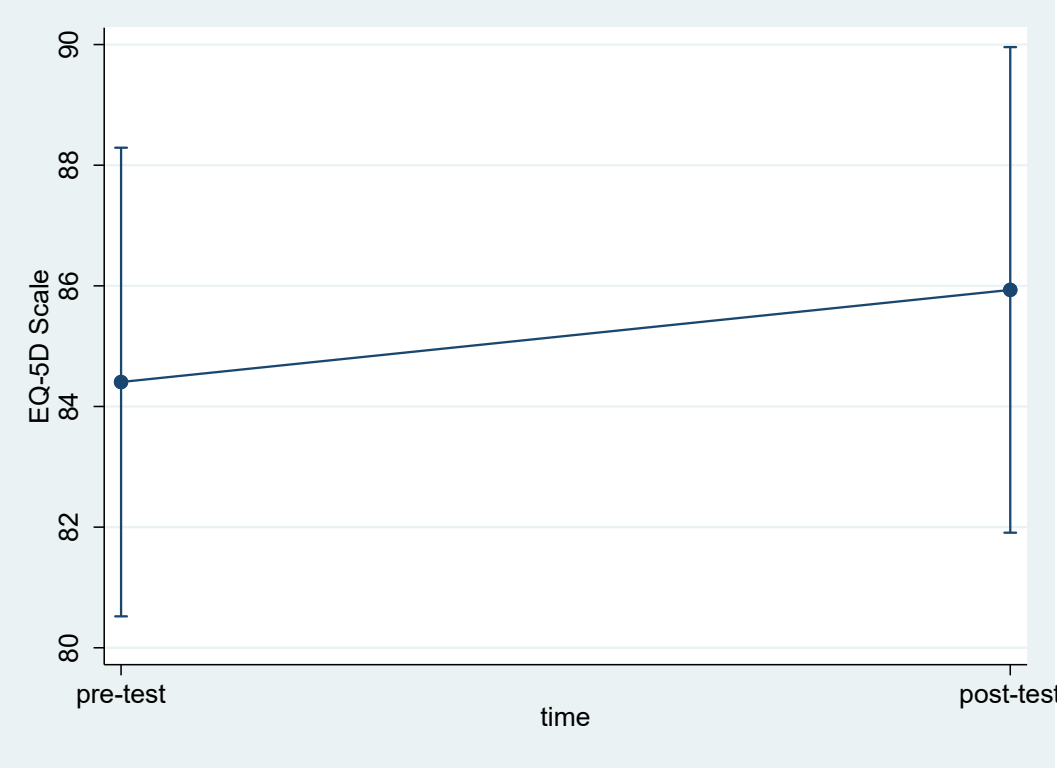


Supplementary Figure 2. Duration of physical and instrumental activities of daily living per week compared within groups (attended online or in-person) at pre-test and 10-week post-test



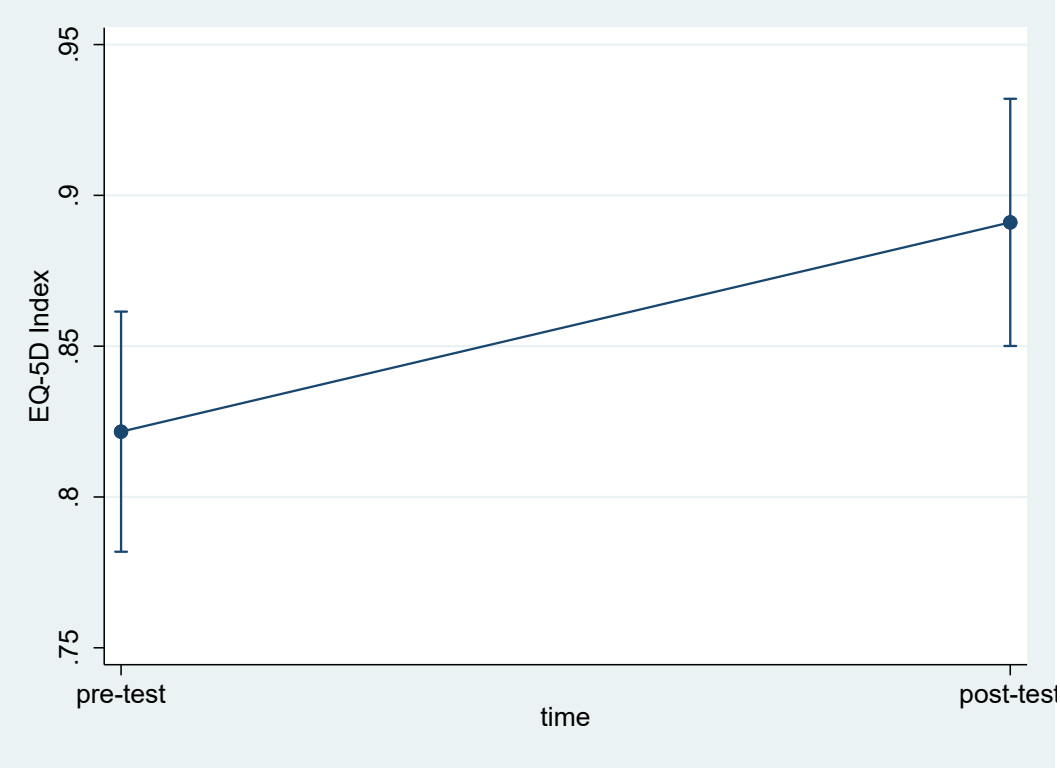
Notes: **pre-test** at week 1 **post-test** at week 10 **IADLs** Instrumental Activities of Daily Living

Supplementary Figure 3. Health related quality of life: EQ-5D Visual Analogue Scale scores



Note. pre-test is week 1 **post-test** is week **10 EQ-5D (**EuroQol 5D) visual analogue scale scores records an individual's rating of their overall health-related quality of life, ranging from 100 'the best imaginable health state' to 0 'the worst imaginable health state'.[21]

Supplementary Figure 4. Health related quality of life: EQ-5D Index values



Note. pre-test is week 1 **post-test** is week **10 EQ-5D (**EuroQol 5D) index values that range from 0 (indicating no health/death) to 1 (full health).[21]