**Positive ageing: The impact of a community wellbeing program for older adults**

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Positive ageing: The impact of a community wellbeing program for older adults

Abstract (200 words)

**Background:** The current studies test the feasibility and effectiveness of a community wellbeing project delivered by community partners in improving wellbeing, resilience, social connection and optimism in older adults from the general public (Study 1) and older adult carers (Study 2).

**Methods:** Participants from studies 1 and 2 participated in an eight-week community-based wellbeing program inclusive of training sessions, mentoring, and peer support. To determine effectiveness, self-selected participants and a natural control group completed the PERMA Profiler, the Brief Resilience Scale, a subset of the UCLA Loneliness Scale, and the Life Orientation Test – Revised.

**Results:** Older adults in Study 1 reported improvements in overall wellbeing, perceived social isolation, and accomplishment, but did not show any improvements in optimism, resilience, positive emotion, engagement, relationships, or meaning. The wellbeing intervention was particularly effective for older adult carers (Study 2), who demonstrated significant improvements in all observed outcomes: overall wellbeing, perceived social isolation, optimism, resilience, positive emotion, engagement, relationships, meaning, and accomplishment.

**Conclusion:** While results of a wellbeing intervention look promising for improving the wellbeing of older adults, and implementation using community partners was feasible, studies with more rigorous designs and extended follow-up measurements are required to consolidate these positive findings.

*Keywords*: positive ageing, PERMA, resilience, positive psychology intervention, wellbeing program

*Abbreviations*: PERMA = Seligman’s (2011) PERMA-framework of wellbeing, consisting of Positive emotion, Engagement, Relationships, Meaning, and Accomplishment. UCLA = University of California, Los Angeles.

Practitioner points:

* A multi-component, group-delivered, wellbeing intervention program targeting older adults is effective in increasing overall wellbeing and decreasing feelings of perceived social isolation.
* Carers, a group with generally low wellbeing, were particularly responsive to the wellbeing intervention program, showing improvements in all aspects of wellbeing, as well as resilience, optimism and perceived isolation.
* While using community and public organisations to implement wellbeing interventions is feasible and effective, practical implementation may pose problems for robustness of associated research findings.

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Major improvements in longevity over the past 50 years (Christensen, Doblhammer, Rau, & Vaupel, 2009) have led to increased research and policy focused on the benefits of ageing to individuals and society. This field is referred to as ‘successful’, ‘healthy’, and/or ‘positive’ ageing (Bloom, 2011; Merriam & Kee, 2014; Vaillant, 2004), and seeks to reorient concepts of ageing away from the traditional negative implications of ageing (Anderson & Hussey, 2000; Christensen et al., 2009). Currently, ageing is conceptualised as an adaptive process where biological, lifestyle, and environmental factors interact over time to produce long-term positive outcomes in older age (Strawbridge, Wallhagen, & Cohen, 2002; Villar, 2012). Wellbeing is one such outcome that is now attracting focused attention and research as an important construct for older adults’ physical, psychological and emotional health (Ryff, 2014). The current literature reports that wellbeing is associated with a wide range of positive physical and psychological outcomes, including lower levels of mental illness and psychopathy (Keyes, Dhingra, & Simoes, 2010; Lamers, Westerhof, Glas, & Bohlmeijer, 2015; Wood & Joseph, 2010), increased health status (Ngamaba, Panagioti, & Armitage, 2017), higher levels of self-reported optimism (Chang, 1998; Ferguson & Goodwin, 2010), higher levels of resilience (Mak, Ng, & Wong, 2011; Millear, Liossis, Shochet, Biggs, & Donald, 2008; Smith & Hollinger-Smith, 2015), and increased feelings of social connection (Adams, Leibbrandt, & Moon, 2011; Huxhold, Miche, & Schüz, 2013).

The large body of research on positive associations between wellbeing and health outcomes in the general population is complemented by emerging research investigating the impact of psychological wellbeing interventions. Weiss, Westerhof, and Bohlmeijer (2016) found that, on average, randomized controlled trials (RCTs) of psychological interventions aimed at promoting wellbeing reported significant post-intervention and six-month follow-up effect sizes (Cohen’s *d* = 0.44 and 0.22 respectively). Similarly, a systematic review and meta-analysis of 39 studies concluded that positive psychology interventions could increase psychological and subjective wellbeing, finding significant small effect sizes at immediate post-intervention measurement and at three to six months follow-up (Bolier et al., 2013).

 Intervention studies with older adults replicate these positive findings in both clinical and non-clinical populations, with marked improvements in psychological wellbeing (Cantarella, Borella, Marigo, & De Beni, 2017; Cesetti, Vescovelli, & Ruini, 2017; Friedman et al., 2017; Meléndez, Fortuna, Sales, & Mayordomo, 2015; Preschl et al., 2012), subjective happiness (Ho, Yeung, & Kwok, 2014; Proyer, Gander, Wellenzohn, & Ruch, 2014; Ramírez, Ortega, Chamorro, & Colmenero, 2014; Turner, Greenawalt, Goodwin, Rathie, & Orsega-Smith, 2017), and life satisfaction (Chiang, Lu, Chu, Chang, & Chou, 2008; Friedman et al., 2017; Ho et al., 2014; Meléndez et al., 2015; Ramírez et al., 2014; Turner et al., 2017). A recent review of eight wellbeing interventions using positive psychology techniques with older adults suggests that positive psychology interventions “provide promising tools for enhancing wellbeing, happiness, life satisfaction, and alleviating depressive symptoms in older adults” (Sutipan, Intarakamhang, & Macaskill, 2017, p.16). These changes in wellbeing are accompanied by improvements in self-esteem (Chiang et al., 2008; Meléndez et al., 2015; Preschl et al., 2012), quality of sleep (Cesetti et al., 2017; Friedman et al., 2017), better working memory (Cantarella et al., 2017), increased gratitude (Ho et al., 2014), decreased anxiety (Ramírez et al., 2014), higher levels of overall mindfulness (Turner et al., 2017), and improvements in self-reported feelings of depression and depressive symptoms (Friedman et al., 2017; Ho, Yeung, & Kwok, 2014; Meléndez et al., 2015; Preschl et al., 2012; Proyer et al., 2014; Ramírez et al., 2014; Turner et al., 2017). Given that older age is often associated with declines in physical function, psychological health, and general life satisfaction (Baird, Lucas, & Donnellan, 2010; Steptoe, Deaton, & Stone, 2015), the delivery of wellbeing interventions for this population presents a unique opportunity to improve the daily quality of life of these individuals.

 A sub-group of older adults that may particularly benefit from wellbeing interventions are older adults who provide care or support for people who live with disability, mental illness or chronic disease. Research indicates that older carers report lower wellbeing, decreased general health, and higher levels of depression and stress (Cummins, 2001; Savage & Bailey, 2004; Van den Berg, Fiebig, & Hall, 2014). Carers often neglect their own mental and physical health, live in relative social isolation, and deal with an overall restricted sense of personal freedom (O'Connell, Bailey, & Walker, 2003); problems that commonly increase with age, even in healthy populations (Luanaigh & Lawlor, 2008). Reaching this vulnerable, and often overlooked, group with a wellbeing intervention may offset some of the negative aspects associated with the caring role, improve their coping strategies and resilience, as well as positively impact those they care for.

In the following sections, we describe the implementation of a general wellbeing and resilience training and support program with two older adult populations. The first study targets non-clinical older adults from the general community, while the second study targets older unpaid carers of dependent people with a disability, mental illness or a chronic health condition. Both studies share identical objectives: to assess the ability of a general wellbeing and resilience program to improve wellbeing, resilience, and optimism, and reduce levels of perceived social isolation, as compared to a natural control group not receiving the wellbeing and resilience program.

**Method Study 1**

***Participants and setting***

With the support of the South Australian Health and Medical Research Institute’s (SAHMRI) Wellbeing and Resilience Centre (WRC), community care staff from a large outer-metropolitan council situated in Adelaide, Australia, recruited older residents (60 years or older) to take part in a wellbeing project consisting of a wellbeing measurement, skills training, and a support program. One hundred and ten participants responded (17 men, 93 women, *M*age = 70.00, *SD* = 7.17), with 61% (*n* = 67) indicating that they were born in Australia, and the remaining 39% (*n* = 43) being born outside of Australia in countries such as the United Kingdom, Germany, USA, and the Netherlands. Out of the 110 participants, 29 reported attending the wellbeing and resilience skills training, while 81 participants reported not attending the training and took part only in the wellbeing and resilience measurement. In order to ensure a 1:1 ratio in analysis, a random sample of 29 was drawn from the 81 participants, leaving 29 participants who were considered as the naturally occurring control group for this study. Participant consent was obtained, and both studies were approved by the Flinders University Ethics Committee (ID’s: PN7386 & PN 7350).

***Measures***

The PERMA Profiler (Butler & Kern, 2016) was used to determine the wellbeing of the participants. The Profiler measures wellbeing based on the PERMA (Seligman, 2011) model of wellbeing, stating that wellbeing is made up of five domains: Positive emotion, Engagement, Relationships, Meaning, and Accomplishment. The PERMA Profiler consists of 23 questions answered on a 0 (negative) to 10 (positive) scale, which produces an overall wellbeing score, as well as five domain specific scores. The domains measured were: Positive emotion (e.g. How often do you feel joyful?; internal consistency (α) for the Positive Emotion domain in Sample 1 (S1) was .85 and in Sample 2 (S2) was .89), Engagement (e.g. How often do you become absorbed in what you are doing?; S1α = .56, S2α = .63), Relationships (e.g. To what extent do you feel loved?; S1α = .85, S2α = .85), Meaning (e.g. To what extent do you lead a purposeful and meaningful life?; S1α = .91, S2α = .87), and Accomplishment (e.g. How much of the time do you feel you are making progress towards accomplishing your goals?; S1α = .76, S2α = .62).

Optimism was measured using the 10-item Life Orientation Test – Revised (Scheier, Carver, & Bridges, 1994) where participants answered on a 0 (I disagree a lot) to 4 (I agree a lot) scale (e.g. In uncertain times, I usually expect the best; S1α = .85, S2α = .74).

The six-item Brief Resilience Scale (Smith et al., 2008) was used to measure resilience; participants answered on a 1 (Strongly disagree) to 5 (Strongly Agree) scale (e.g. I tend to bounce back quickly after hard times; S1α = .89, S2α = .87).

Lastly, social isolation was measured using four items (out of 20) from the University of California, Los Angeles (UCLA) Loneliness Scale (Russell, 1996) Version 3; items 1, 13, 15, and 18 were used. Zavaleta, Samuel and Mills (2014) established these four items as a brief and sufficient measure of social isolation. Participants responded on a 1 (Never) to 4 (Always) scale (e.g. How often do you feel you can find companionship when you want it?; S1α = .77, S2α = .73).

***Intervention***

The intervention was an eight-week face-to-face wellbeing and resilience training program, delivered in groups, with one session a week. (The duration of each session ranged between 40 minutes and 2 hours.) These sessions aimed to teach the participants 10 evidence-based skills to improve personal wellbeing and resilience. The training was delivered using a train-the-trainer approach, where council workers were taught by the WRC to deliver the training directly to participants. In addition*,* participants received mentoring, coaching, and peer-to-peer support aimed at helping them implement and practise the learnt skills in their daily lives.

The training program is based on the TechWerks Resilience Training Program (www.technologywerks.com), with additional content derived from positive psychology interventions (Bolier et al., 2013) and psychological treatment methods such as Cognitive Behavioural Therapy (Butler, Chapman, Forman, & Beck, 2006) and Mindfulness (Gu, Strauss, Bond, & Cavanagh, 2015). Specifically, the 10 skills taught were:

1. *Growth Mindset*: Participants are taught that basic abilities and personal characteristics are not set, but can be developed through hard work and practice.
2. *Event-Thought-Reaction Connections*: This skill increases individual awareness of how thoughts drive reactions to events, and is used to determine if thoughts and reactions are helping individuals work towards their goals, act upon their values, improve their performance and strengthen their relationships.
3. *What’s Most Important*: This skill increases individual awareness of what influences unproductive reactions (emotional and/or physical) that may interfere with their performance, goals or relationships.
4. *Balance Your Thinking*: This skill helps individuals cognitively appraise situations in an accurate manner that is based upon evidence.
5. *Cultivating Gratitude*: This skill seeks to build optimism, positive emotion and resilience by bringing ongoing attention to gratitude as a cognitive process.
6. *Mindfulness*: This skill teaches individuals to regulate their attention in a focused, open and non-judgemental manner.
7. *Interpersonal Problem Solving*: This skill teaches individuals the elements to address interpersonal problems in a respectful manner with healthy and productive emotional expression, and use of compromise.
8. *Active Constructive Responding*: This skill increases awareness of communication patterns and responses that maintain, strengthen, and cultivate important relationships.
9. *Capitalising on Strengths*: This skill increases individual awareness of their and others’ personal strengths, and how to apply strengths across all life domains.
10. *Values-Based Goals*: This skill increases individual awareness of their values, and how to translate these values into actions and goals.

Additionally, both groups (intervention and control) received a personal wellbeing report outlining their scores in each of the PERMA wellbeing domains.

***Procedure***

Older adults were recruited from a Council database of individuals registered for the

Commonwealth Home Support Program, and through advertisements in the local paper. Potential participants were contacted via an introduction letter (sent to home addresses) outlining the wellbeing and resilience measurement, skills training, and support program. The letter contained a reply slip which could be returned using a pre-paid envelope for participants to register their interest. Interested participants were sent a paper questionnaire and invited to participate in the wellbeing and resilience program.

The study used a pragmatic train-the-trainer design, where community care staff were trained by WRC instructors to carry out the wellbeing and resilience training with community members, an approach designed to facilitate cost-effective scaling of the intervention to a wider population. Council community care staff participated in a five-day intensive training course and a one-day workshop that contextualised the skills to their local community context. All respondents of the first measurement, regardless of their training attendance, were sent a follow-up questionnaire.

Logistical challenges associated with implementing a new community project and confusion on the part of some participants regarding the purpose of the follow-up questionnaire resulted in an inability to perform a stringent pre-post assessment of training participants and subsequently link data from baseline to post-intervention. Therefore, the reported data set contained information only on whether an individual had undertaken the training program at the time the post-training measurement was completed. Individuals who indicated they did not know whether they had participated in the wellbeing and resilience skills training were excluded from the studies (*n* = 8). While this negatively impacts the robustness of the findings of the current studies, nonetheless, the available data gives initial insight into the efficacy and feasibility of a community wellbeing and resilience program for older community members.

***Data analysis***

Observations with more than 5% of data missing were removed from the data set (*n* = 2) and observations that appeared to have scored 10 for the majority of the PERMA Profiler were removed (*n* = 3) on suspicion of providing inaccurate responses. Additional missing values were replaced using Multivariate Imputation by Chained Equations, using the predicative mean matching imputation method (Van Buuren & Groothuis-Oudshoorn, 2011). As self-report wellbeing measurements are commonly heavily negatively skewed (OECD, 2013), normality of all outcome variables was tested in both samples using visual inspection of the variable’s distribution, QQ plots, and the Shapiro-Wilk Test of normality.

Comparisons between intervention and non-intervention groups were carried out using independent samples *t*-tests for parametric data and Mann-Whitney U tests for non-parametric data. Individuals were compared on all five PERMA domains of wellbeing, as well as optimism, resilience, and social isolation. Due to relatively low sample sizes, the Hedges *g* (Hedges, 1981) measure of effect size for parametric tests was estimated, as opposed to Cohen’s *d*. For non-parametric tests, the theta (θ) measure of effect size was estimated, as recommended by Grissom and Kim (Grissom & Kim, 2012). Effect sizes are accompanied by 95% confidence intervals and are reported such that positive values represent scores in favour of the intervention group, while negative values represent scores in favour of the control group.

**Results**

As Study 1 reports on post-intervention scores only, no information on baseline differences is available. Due to the non-normality of data and the presence of significant outliers, non-parametric Mann Whitney U tests were used for all domains on the PERMA Profiler. Results indicate a significant between-group difference for overall wellbeing, favouring the intervention group (mean rank = 34.09) versus the control group (mean rank = 24.91), *U* = 553.50, *z* = 2.07, *p* = 0.04, θ = 0.66, 95% CI [0.51, 0.78]. None of the PERMA sub-domains differed significantly between intervention and control groups, with the exception of Accomplishment: mean rank = 35.14 versus 23.86 respectively, *U* = 584.00, *z* = 2.55, *p* = 0.01, θ = 0.69, 95% CI [0.55, 0.81], see Table 1.

Insert Table 1.

Data for resilience, optimism, and social isolation did not violate assumptions for normality for the use of independent *t*-tests. Overall, the wellbeing and resilience training did not significantly improve resilience scores for the intervention group, nor did it improve optimism. The training, however, did significantly improve social isolation, where older adults who received the training reported significantly lower levels of social isolation (*M* = 7.66, *SD* = 8.00) versus those who were not trained (*M* = 9.24, *SD* = 2.44), *t*(56) = 2.76, *p* = 0.01, *g =* 0.71, 95% CI [0.18 to 1.24].

**Conclusion Study 1**

Older adults that were trained in wellbeing and resilience skills via a voluntary community program showed higher overall levels of wellbeing and felt lower levels of social isolation, with medium to large effect sizes for both differences respectively. While overall results were higher for all sub-domains of PERMA, none of these results reached statistical significance, with the exception of the domain of Accomplishment. The training did not lead to any between-group differences in resilience or optimism.

**Method Study 2**

***Participants and setting***

Participants in this study were older carers (60 years or older) who were members of a South Australian peak organisation providing support to unpaid carers of people with a disability, mental illness, or a chronic health condition. In total, the sample consisted of 85 participants (11 men, 74 women, *M*age = 70, *SD* = 7.39) of which 69% (*n* = 59) indicated they were born in Australia, with the remaining 31% (*n* = 26) being born outside of Australia, in countries including the United Kingdom, the Philippines, Italy, Germany, and Austria. Thirty-four participants reported attending the wellbeing program, and 51 participants reported not attending the wellbeing program, forming the natural control group.

***Procedure***

 Older carers were contacted by the care organisation to participate in an online wellbeing and resilience measurement that included the same assessment battery used in Study 1: The PERMA Profiler (Butler & Kern, 2016) to measure wellbeing, the Life Orientation Test – Revised (Scheier et al., 1994) to measure optimism, the Brief Resilience Scale (Smith et al., 2008) to measure resilience, and the UCLA Loneliness Scale (Russell, 1996) to measure loneliness. After completing the wellbeing and resilience measurement, all participants were invited to participate in the wellbeing skills training program, which was delivered in weekly workshops (40 minutes to two hours long) over a period of 8 weeks, and were provided access to mentoring, coaching, and peer-to-peer support strategies. All participants who took part in the initial measurement, regardless of taking part in the training, were invited to take the wellbeing and resilience measurement again post training. Again, due to the nature of the program, linked measurement data at an individual level was not available for this sample; only indications of training attendance were collected.

**Results**

 The wellbeing program resulted in significant improvements for all outcome variables compared to the control group who received no training, with medium to large effect sizes observed. Participants in the wellbeing and resilience intervention group reported significantly greater overall wellbeing scores: *t*(83) = -3.97, *p* = 0.00, *g* = 0.87, 95% CI [0.55, 1.19]; greater resilience *t*(83) = -3.39, *p* = 0.00, *g* = 0.74, 95% CI [0.15, 1.64]; less perceived social isolation *U* = 514.50, *z* = -3.19, *p* = 0.01, θ *=* 0.30, 95% CI [0.20, 0.42]; and greater optimism *t*(83) = -3.10, *p* = 0.00, *g* = 0.68, 95% CI [-0.02, 1.383]. All five individual sub-domains of PERMA were also significantly greater compared to the control group, see Table 2.

Insert Table 2.

**Conclusion Study 2**

Older carers significantly benefited from receiving wellbeing and resilience skills training, reporting higher scores on all measured outcomes of wellbeing, including all PERMA sub-domains, as well as resilience, isolation and optimism, as compared to those who did not participate in the wellbeing and resilience program. Figure 1 highlights the central difference between the studies. Study 1 shows less disparity in overall wellbeing between the control and training groups, compared to Study 2.

Insert Figure 1.

**General Discussion**

The current studies aimed to assess the feasibility and efficacy of an eight-week wellbeing and resilience program with two non-clinical samples of Australian older adults. The wellbeing and resilience intervention program was particularly effective for the older carers in Study 2, who reported greater levels on all outcome variables. The older adults in Study 1 also reported improvements in overall wellbeing and decreases in perceived social isolation, but did not show any improvements in optimism, resilience or any of the sub-domains of PERMA (except for Accomplishment). While these results are promising, we advise caution, as the observed differences between the two samples are constrained by the limitations of the study design and may be influenced by a number of extraneous variables.

The current investigation suggests that a wellbeing and resilience skills training program may be more beneficial for an older adult carers population, who may be under higher levels of daily stress and anxiety. Indeed, Weiss et al. (2016) suggest that wellbeing interventions are most effective for individuals suffering from psychological or somatic complaints. Carers of dependent people fit this description, with evidence suggesting they have a considerably higher risk of stress, clinical depression, and have a low quality of life (Cummins, 2001). Additionally, providing informal care has a negative impact on carer wellbeing (Van den Berg et al., 2014). For example, in Study 1, older adults from the general population and in the control group reported an overall wellbeing score of 6.28, whereas older adult carers in the Study 2 control group reported an overall wellbeing score of 6.06. It follows that older adults with higher levels of psychological stress can report greater changes in wellbeing compared to individuals with lower levels of stress, which additionally, may explain why resilience and an overall sense of optimism improved to a greater extent in Study 2 compared to Study 1. The concepts of resilience and coping, and the potential benefits of optimism may be more relevant to carers with higher levels of daily stress (Pottie & Ingram, 2008).

Those who completed the wellbeing and resilience program in both studies reported greater social connection, with both samples reporting similar differences and scores. Social isolation, and the related but separate construct of loneliness (de Jong Gierveld, 1998), is a well-known problem for older adults (Cornwell & Waite, 2009), and is associated with negative health outcomes (Cornwell & Waite, 2009). Increasing wellbeing via a wellbeing and resilience training and support program, which, in addition to stimulating positive thinking, targets interpersonal communication skills (e.g. active constructive responding and interpersonal problem solving) could complement existing intervention techniques for relieving social isolation in older cohorts (Cattan, White, Bond, & Learmouth, 2005; Dickens, Richards, Greaves, & Campbell, 2011), especially considering the relationship between wellbeing and social connection (Golden et al., 2009).

These data emphasise the need for further development and implementation of tailored wellbeing and reliance programs suited to the individual or cohort (Cantarella et al., 2017). Certainly, as Proyer and collogues (2015) suggest, the way individuals think about interventions, how they work with them, and how they react to them are centrally important to the lasting impact of a wellbeing intervention program. The notion that life-circumstance can have a significant impact on an individual’s receptivity to wellbeing also presents an interesting opportunity for future research.

This study was conducted to gather preliminary evidence on the implementation and efficacy of a wellbeing and resilience program with two samples of older adults in the Australian cultural context. As a result, the implications of this study are limited in a few ways. Working with community organisations not accustomed to the formal research processes was fraught with difficulties, and therefore the consistency of the data could not be controlled or insured. Additionally, some elderly participants in both studies struggled with the measurement process, further impacting the quality of the data. The self-report measurement technique used to categorise intervention and non-intervention participants, and the absence of a pre-post study design, limited the conclusions which can be drawn from these data. Additionally, the Cronbach’s alpha reported for the PERMA Profiler subscales of Engagement (in Studies 1 and 2) and Accomplishment (Study 2 only) did not meet the criterion level of 0.70 suggested by Tavakol and Dennick (2011). These low alpha levels may indicate poor inter-relatedness between the items or may be caused by the small number of items in the subscale; in any case, this limitation should be considered when interpreting the results. Further limitations include the use of self-report measures, and participant self-selection for the wellbeing and resilience program. The conclusions drawn above are done so cautiously; we readily advocate for the replication of our results with a more stringent research design and measurement techniques. Despite the design limitations, the effect sizes obtained in the current studies with the relatively small sample sizes suggest a promising future for research related to positive ageing.

Future research employing experimental and quasi-experimental designs to measure changes in wellbeing and other constructs over time will enable stronger conclusions to be drawn about the efficacy of this wellbeing and resilience program. As stated earlier, research is also needed to understand further how individual differences and/or population differences impact an individual’s receptivity to a particular wellbeing and resilience intervention, or, as Proyer et al. (2015) suggest, the person-by-intervention fit. Certainly, the evidence here suggests that considering the person-by-intervention fit may have a significant impact on the efficacy and impact of the intervention. Finally, we echo the call of Friedman et al. (2017) for the need of stringently controlled investigations with long-term follow-up.

This study provides an initial contribution to our understanding of wellbeing and resilience interventions with older adult populations in Australia. Specifically, it provides evidence that an eight-week wellbeing program is feasible and effective for both healthy older adult populations and for older adult populations (carers) who are likely to be under increased psychological stress. This study also highlighted the need for a deeper understanding of person-by-intervention fit when planning and evaluating the impact of a wellbeing and resilience intervention. Finally, the need to provide partner community organisations with more training in research methodologies and data collection was highlighted. Research and practice should continue to develop together to understand how to measure and build the wellbeing and resilience of older adults as, increasingly, it is becoming a central health indicator in both the research and policy of positive ageing.

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**Tables**

Table 1

*Descriptive Information and Significance Test Results for Study 1*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Wellbeing outcomevariables |   | Control group (*n* = 29) |   | Intervention group (*n* = 29) |   |  |  |  |
|  | *Mean* | *SD* | *Median* | *IQR* |   | *Mean* | *SD* | *Median* | *IQR* |   | Test statistic | Sig. | Effect size | 95% CI |
|  | Positive emotion |  | 6.09 | 1.95 | 6.00 | 2.67 |  | 6.60 | 1.71 | 7.00 | 2.00 |  | u = 484.50 | 0.32 | θ = 0.57 | 0.43 to 0.71 |
|  | Engagement |  | 6.38 | 1.46 | 6.67 | 2.00 |  | 7.20 | 1.50 | 7.33 | 2.33 |  | u = 543.50 | 0.06 | θ = 0.65 | 0.50 to 0.77 |
|  | Relationships |  | 6.38 | 2.20 | 6.67 | 2.83 |  | 7.09 | 1.97 | 7.33 | 2.83 |  | u = 505.50 | 0.19 | θ = 0.60 | 0.45 to 0.73 |
|  | Meaning |  | 6.32 | 1.81 | 6.33 | 2.67 |  | 6.94 | 1.74 | 7.00 | 2.00 |  | u = 495.50 | 0.24 | θ = 0.59 | 0.44 to 0.72 |
|  | Accomplishment |  | 6.18 | 1.55 | 6.33 | 2.17 |  | 7.16 | 1.23 | 7.33 | 1.67 |  | u = 584.00 | 0.01\* | θ = 0.69 | 0.55 to 0.81 |
|  | Overall wellbeing |  | 6.28 | 1.46 | 6.44 | 2.34 |  | 6.98 | 1.32 | 7.31 | 1.50 |  | u = 553.50 | 0.04\* | θ= 0.66 | 0.51 to 0.78 |
|  | Resilience |  | 18.83 | 4.95 | 20.00 | 7.50 |  | 19.14 | 5.10 | 18.00 | 7.00 |  | t = -0.24 | 0.82 | *g =* 0.06 | -0.45 to 0.58 |
|  | Isolation |  | 9.24 | 2.44 | 9.00 | 3.50 |  | 7.66 | 1.90 | 8.00 | 3.00 |  | t = 2.76 | 0.01\*\* | *g =* 0.71 | 0.18 to 1.24 |
|  | Optimism |  | 15.07 | 4.91 | 16.00 | 5.00 |  | 14.59 | 4.48 | 16.00 | 6.00 |  | t = 0.39 | 0.70 | *g =* -0.10 | -0.62 to 0.41 |
| *Note*: Effect size estimates used are Hedges *g* for parametric data and theta (θ) for non-parametric data. Significance values displayed in bold are statistically significant. *SD* = standard deviation, IQR = interquartile range, 95% CI = 95% confidence interval, sig = significance value. \* = p < .05, \*\* = p < .01.  |

Table 2

*Descriptive Information and Significance Test Results for Study 2*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Wellbeing outcomevariables |   | Control group (n=51) |   | Intervention group (n=34) |   |  |  |  |
|  | *Mean* | *SD* | *Median* | *IQR* |   | *Mean* | *SD* | *Median* | *IQR* |   | Test statistic | Sig. | Effect size | 95% CI |
|  | Positive emotion |  | 5.74 | 2.05 | 6.00 | 3.00 |  | 7.03 | 1.99 | 7.67 | 2.25 |  | u = 1,195.00 | 0.00\*\* | θ = 0.69 | 0.56 to 0.79 |
|  | Engagement |  | 6.01 | 1.70 | 6.00 | 2.00 |  | 7.54 | 1.40 | 7.67 | 1.92 |  | u = 1,329.00 | 0.00\*\* | θ = 0.77 | 0.65 to 0.85 |
|  | Relationships |  | 6.22 | 2.42 | 6.33 | 3.83 |  | 7.49 | 1.88 | 8.17 | 2.58 |  | u = 1,139.00 | 0.01\* | θ = 0.66 | 0.53 to 0.76 |
|  | Meaning |  | 6.27 | 2.03 | 6.33 | 2.67 |  | 7.69 | 1.62 | 8.00 | 1.92 |  | u = 1.233.50 | 0.00\*\* | θ = 0.71 | 0.59 to 0.81 |
|  | Accomplishment |  | 6.12 | 1.35 | 6.33 | 1.67 |  | 7.24 | 1.64 | 7.50 | 2.00 |  | u = 1,252.50 | 0.00\*\* | θ = 0.72 | 0.60 to 0.82 |
|  | Overall wellbeing |  | 6.06 | 1.58 | 6.12 | 2.22 |  | 7.39 | 1.41 | 7.50 | 2.05 |  | t = -3.97 | 0.00\*\* | g = 0.87 | 0.42 to 1.32 |
|  | Resilience |  | 18.20 | 4.50 | 18.00 | 6.00 |  | 21.35 | 3.72 | 21.50 | 6.00 |  | t = -3.39 | 0.00\*\* | g = 0.74 | 0.29 to 1.19 |
|  | Isolation |  | 9.06 | 2.28 | 9.00 | 4.00 |  | 7.53 | 1.89 | 7.50 | 2.00 |  | u = 514.50 | 0.01\*\* | θ = 0.30 | 0.20 to 0.42 |
|  | Optimism |  | 14.67 | 3.55 | 15.00 | 3.00 |  | 16.94 | 2.90 | 17.00 | 3.75 |  | t = -3.10 | 0.00\*\* | g = 0.68 | 0.23 to 1.13 |
| *Note*: Effect size estimates used are Hedges *g* for parametric data and theta (θ) for non-parametric data. Significance values displayed in bold are statistically significant. *SD* = standard deviation, IQR=interquartile range, 95% CI= 95% confidence interval, sig = significance value. \* = p < .05, \*\* = p < .01. |

Figure 1

