

Full title: Strengths in older adults: differential effect of savoring, gratitude and optimism on well-being

Running head: Savoring, gratitude and optimism on well-being

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Abstract

Objective: the present study aimed to compare the efficacy of three separate strengths training-based interventions – Gratitude, Savoring, and Optimism – in older adults. **Method:** the sample comprised 124 older adults, namely, 74 women and 50 men, non-institutionalized individuals who regularly attend day centers in the provinces of Jaén and Córdoba, southern Spain. Their ages ranged between 60 and 89 years. The measures used were Anxiety, Depression, Life Satisfaction, Positive and Negative Affect, Subjective Happiness, and Resilience. **Results:** training in Gratitude and Savoring increased scores in Life Satisfaction, Positive Affect, Subjective Happiness and Resilience, and reduced Negative Affect, whereas training in Optimism failed to produce a significant change in these variables. The Savoring and Optimism interventions decreased scores in Depression but, contrary to hypothesis, this was not the case for Gratitude. **Conclusion:** these results represent an important step in understanding what type of strengths work best when it comes to enhancing well-being in older adults and consequently helping them tackle the challenges of everyday life and recover as quickly as possible from the adverse situations and events that may arise.

Keywords: savoring, gratitude, optimism, positive interventions, older adults

Introduction

Successful aging is related to successfully adapting to changes in life circumstances without losing quality of life, and is characterized by three main components: low risk for disease, high physical and cognitive function, and engagement in meaningful social relations and activities (Rowe & Kahn, 1997). The latter produce positive affective experiences that can enhance older adults' well-being and happiness.

The majority of people include happiness as one of their primary goals in life. The paths to attain happiness may be different for each person and it remains unclear how people differ in this respect (Bergsma, 2008).

Several studies have shown that well-being can be improved by actively engaging people in positive activities (Boiler et al., 2013; Lyubomirsky, Sheldon, & Schkade, 2005; Sheldon & Lyubomirsky, 2006; Walsh, 2011). These activities have proven to be effective in older adults, although few studies have been conducted on this population (Jiménez, Izal, & Montorio, 2016; Layous, Nelson, & Lyubomirsky, 2013; Sin & Lyubomirsky, 2009; Sutipan & Intarakamhang, 2017). From this perspective, interventions of life review, gratitude and forgiveness increase psychological well-being and reduce depressive symptomatology (Ramírez, Ortega, Colmenero, & Chamorro, 2014). Also, training in developing a sense of humor has led to increased life satisfaction and reduced depression (Ortega, Ramírez, & Chamorro, 2015) and writing a gratitude journal has been found to bring down stress levels and increase levels of eudaimonic well-being (Killen & Macaskill, 2015). Furthermore, some studies report that people who tend to show gratitude and forgiveness exhibit higher quality of life levels, even when experiencing age-related physical chronic illnesses (Eaton, Bradley, & Morrissey, 2014). By bringing together a wide range of activities associated with gratitude, optimism, savoring, curiosity, courage, altruism and meaning of life, Ho, Young, and Kwok's

(2014) intervention managed to reduce the number of depressive symptoms and increase levels of life satisfaction, gratitude and happiness in a sample of older adults. Similarly, Proyer, Gander, Wellenzohn, and Ruch (2014) observed increases in happiness and decreases in depressive symptoms when training gratitude and the use of character strengths. However, few studies have **focused efforts** on training just one strength, which makes it difficult to know whether the benefits found are due to training in several strengths simultaneously or one in particular. Moreover, not all strengths may have the same effect on all populations, with some strengths **likely** proving more effective than others in the case of **older adults**. The present study seeks to determine which **types** of positive interventions are more effective and less effective at achieving well-being; enhancing protective factors in the face of adversity, much like in the case of resilience; and reducing negative affective states in older adults, all by comparing three different intervention strategies: one for savoring, another for gratitude, and one for optimism.

Taking into account the traits of older adults, being able to savor and be grateful for life's events can help more toward achieving and maintaining well-being than, for example, imagining a bright future by training optimism. In fact, the little empirical evidence available suggests that the ability to savor promotes happiness and life satisfaction and reduces depression (Smith & Hollinger-Smith, 2015). These benefits even appear to be greater when individuals experience fewer positive experiences (Hurley & Kwon, 2013), a circumstance that can occur with advancing age. In this respect, showing gratitude has a direct impact on well-being as well as an indirect impact, cushioning the negative emotions and states that individuals experience as they get older. Thus, and as suggested by McAdams and Bauer (2004), gratitude is especially important when it comes to helping people confront stage of their lives, resolving the crises that may arise.

However, the benefits that optimism brings to older adults are less clear. Carver and Scheier (2014) raise the possibility that the adaptive value of dispositional optimism decreases

depending on one's life circumstances. Wrosch, Jobin, and Scheier (2017) found that dispositional optimism protects emotional well-being during the early stages of older adulthood, but this effect diminishes with advancing age. In the same vein, Ortega-Martínez and Ramírez-Fernández (2017) conducted an exploratory study that compared a gratitude-based intervention with an optimism-based intervention to determine whether there was a differential effect for well-being measures as well as for emotional state in older adults. The results showed that a gratitude-based intervention yielded improvements in anxiety and depression levels as well as an increase in the psychological well-being self-acceptance dimension, whereas the optimism-based intervention led to no changes.

Therefore, the current study seeks to compare the functioning of three positive interventions that train savoring, gratitude and optimism separately in an older adult population. The aim is to determine which of these training approaches produces greater benefits for older adults with a view to not only maximizing the efficacy of interventions in this population, but also identifying whether these potential benefits can be maintained post-intervention and in the long term.

In light of the above, we expect that people who receive the gratitude- or savoring-based intervention will score higher in positive affect, happiness, resilience and life satisfaction, and lower in negative affect, anxiety and depression than participants undertaking the optimism-based intervention. Similarly, we expect control group participants to score lower in positive affect, happiness, resilience and life satisfaction, and higher in depression, anxiety and negative affect when compared with participants from any of the intervention groups, upon intervention completion. Finally, we expect the effects resulting from intervention to hold a month after intervention has ended.

Methods

Participants

The sample size required to perform the study was estimated based on a significance level of 0.05, a power of 0.80, and a medium–high effect size taking into account the results of other research undertaken among this population type. The calculation was carried out using R (prw), obtaining a sample size of 32 participants per group to which an additional 10% was added to account for potential attrition. Therefore, the initial sample consisted of 144 participants: 84 women and 60 men. non-institutionalized individuals who regularly attend day centers in the provinces of Jaén and Córdoba, southern Spain. The centers are similar in terms of their programmed activities and the users of them are comparable in age, educational level and health status. Over the course of the study period, fifteen participants had to drop out due to illness, four because of a change of address, and one participant passed away during this time.

The study's inclusion criteria were as follows: no cognitive impairment of any type (scores of 24 or more on the MEC, Spanish version of the Mini Mental State Examination); no serious physical illness that prevents the individual from undertaking the intervention activities (e.g., deafness, blindness); being a frequent user of older adult day centers; and giving their informed consent. No one was excluded from the study for not meeting these criteria. The participants received no reward or incentive for taking part.

Measures

The Goldberg Anxiety and Depression Scale (Goldberg, Bridges, & Duncan-Jones, 1988; Spanish version by Lobo, Montón, Campos, García-Campayo, Pérez-Echevarría, & GZEMPP, 1993). This is an 18-item self-report symptom inventory with 'yes' and 'no' response options. The scale includes two dimensions measuring anxiety and depression, but there is a high degree of correlation between both dimensions. Scores for each dimension are

created by summing the responses. The overall scale has a sensitivity of 83% and a specificity of 82%. The anxiety subscale shows a sensitivity of 72% and a discriminant capacity of 42%. The depression subscale has a sensitivity of 85.7% and a discriminant capacity of 66%.

The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; Spanish version by Vázquez, Duque, & Hervás, 2013) assesses participants' general level of satisfaction with their lives. The psychometric properties of the Spanish version have been widely established in the Spanish population, showing an internal consistency of 0.87 and 0.88 in our sample.

The Cognitive Mini-Test (Mini-Examen Cognoscitivo–MEC; Lobo, Ezquerra, Gómez, Sala, & Seva, 1979). This is the Spanish adaptation and validation of the 'Mini-Mental State Examination' (MMSE; Folstein, Folstein, & McHung, 1975). Six cognitive areas are assessed: temporal orientation, spatial orientation, immediate memory, attention and calculation, delayed recall, and language. It has a sensitivity of 92% and a specificity of 90%. The maximum possible score is 35 points, and no impairment is deemed to exist among the older adult population when scores higher than 24 are reached.

The Subjective Happiness Scale (Lyubomirsky & Lepper, 1999; Spanish version by Extremera, Fernández, González, & Cabello, 2009). This is a 4-item Likert scale that measures global subjective happiness using statements that invite respondents to assess themselves and compare themselves to other people in their environment. This scale shows a temporal stability (Pearson's r) of 0.61 and an internal consistency coefficient (Cronbach's α) of 0.78, the latter coming to 0.76 in our sample.

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988; Spanish version by Sandín, Chorot, Lostao, Joiner, Santed, & Valiente, 1999). This scale measures positive and negative affect and comprises 10 positive and 10 negative mood terms. Respondents are asked to rate, on a 5-point scale, the extent to which they have experienced

each particular mood in the last week. The response options are: 1 ‘very slightly or not at all’; 2 ‘a little’; 3 ‘moderately’; 4 ‘quite a bit’; and 5 ‘very much’. Its internal consistency, Cronbach’s alpha, ranges from 0.86 to 0.90 for the positive affect scale (0.88 in our sample) and from 0.84 to 0.87 (0.87 in our sample) for the negative affect scale.

The Resilience Scale (Wagnild & Young, 1993; Spanish version by Rodríguez, Pereyra, Gil, Jofré, Bortoli, & Labiano, 2009). This scale measures resilience and covers two factors, Personal Competence and Acceptance of Self and Life, through 25 Likert-type items (1 = Strongly disagree to 5 = Strongly agree). Its score is obtained by adding up the points for each item. The Alpha reliability coefficient is 0.81 and 0.80 in our sample.

Design and procedure

This study was performed using a quasi-experimental design with two factors: (1) a repeated measures factor – Time – covering three levels (pre-intervention, post-intervention, and a follow-up assessment one month after intervention completion); and (2) an inter-subject factor – Group – covering four levels corresponding to the three intervention groups (Gratitude, Optimism, and Savoring) and to the Control group, which did not receive any intervention.

First, detailed information was sent to the day centers regarding the study features, offering them the opportunity to take part in the study; therefore, convenience sampling was used. Once all required documentation had been obtained (favorable report from the bioethics committee and authorization from the centers approving the use of their facilities for the study program), a meeting was held at each day center to explain the research goals and procedure to the participants as well as to request their informed consent. Participant consent to collect and publish the study’s results was obtained in accordance with the Declaration of Helsinki and the country’s legal requirements.

All individuals who signed the informed consent document were entered into the study. Participants were randomly assigned to a group irrespective of their center of origin. Intervention for each group consisted of four sessions held at a venue set up for this purpose, which each group went to on a different day of the week. All groups were led by the same professional and participants attended all of the intervention and evaluation sessions.

Three evaluation sessions were carried out: one week before intervention, one week after intervention, and a month after intervention completion. The evaluators were blind to the participants' group membership. Ethical standards were met across all sessions, and mutual respect and trust was promoted between the group members and the professional who led all sessions for all groups. Each session lasted approximately 70 minutes.

Each type of intervention began with a presentation explaining to participants the strength that was going to be trained using clear, entertaining, and understandable language accompanied by audiovisual material (photographs, videos, etc.).

There are a range of positive activities available to train gratitude (Lomas, Froh, Emmons, Mishra, & Bono, 2014). The first activity assigned to the Gratitude group in this study was one entitled 'good things in my life' that have happened in the last six months. After this activity, participants were asked to choose the three things from their list that they felt were most relevant to comment on with the whole group in the sharing session that followed. The next activity trained the idea that "Gratitude is the building block of life"; here participants were encouraged to express all the feelings and thoughts that led them to be grateful to someone/people or a situation/s. The final activity sought to help participants become fully aware of all the aspects of life in the now that they should feel grateful for. To achieve this, they were asked to describe current aspects of their life (family-based, personal, etc.) that generated well-being and gratitude.

In the Optimism group, the first activity was to draw up a list of events that the participants hoped would happen to them in the near future. They then selected two events from the list and planned the steps they would take to achieve these goals. Another activity involved working through barrier thoughts, making participants aware of them, and helping them to not only restructure these types of automatic pessimistic thoughts that hinder optimism, but also acknowledge the great many positive aspects of their lives. Finally, the participants were asked to use humor to share something negative that had happened to them in the days leading up to the session; here they could make use of songs, dances, jokes, etc. These activities are compiled in different optimism-based interventions (Malouff & Schutte, 2017).

Regarding the Savoring activities, some taken from research conducted by Smith, Harrison, Kurt, and Bryant (2014) were used. In this intervention group, and prior to beginning the activities, participants were asked to bring in an object associated with a positive memory to train savoring, focusing on the past as a first activity. The personal items associated with positive memories that participants brought along with them were used to help them remember and enjoy the good times they had, explaining to the rest of the group what this object elicited in them and why they picked it. To train savoring by focusing on the present, each participant went on a pleasant walk by themselves that lasted approximately fifteen minutes, during which time each person appreciated the little details that often go unnoticed. Following this exercise, participants came together to share what they had experienced out on this walk. The final activity for this group sought to encourage the power of positive imagination by training savoring with a focus on the future. Participants imagined the positive events that could happen to them in the next week.

The control group members carried out the usual activities scheduled at their respective centers and only participated in the evaluation sessions.

Statistical Analysis

Data analysis was performed using the General Linear Model of repeated measures procedure, with type of intervention as the inter-subject factor. The goal was to examine whether any differences existed between the different interventions and whether significant changes occurred for the various dependent variables before, after and one month post-intervention. A posteriori comparisons were made using the Tukey's test. The extent of the effect was estimated through *partial eta squared* (η_p^2) and statistical decisions were taken at a significant level of .05 or lower.

Results

Sociodemographic variables

The final sample comprised 124 older adults: 74 women and 50 men. Although the term 'older adults' commonly refers to those over the age of 65, the age range in this study was 60 to 89 years ($M = 69.05$, $SD = 7.78$). Two participants were under 65; however, they were not excluded from this study as they were retired and had no children or other family dependents. They resembled all remaining participants and met the inclusion criteria.

A total of 44.35% were married, 47.58% were widowed, and 8.06% were single. Of the total sample, 90% showed comorbidity. The disorders were diabetes, osteoporosis and hypertension, medical conditions that did not stop them from performing the proposed activities. All participants were Caucasian, Catholic and 65% educated to elementary school and 35% compulsory secondary education.

Dependent variables

Descriptive statistics for the dependent variables corresponding to each group can be found on in Table 1.

The analysis of the scores obtained pre-intervention showed that there were no significant differences between the groups in any of the variables under consideration.

The ANOVA test carried out using the General Linear Model, repeated measures procedure, with depression scores (Goldberg scale), as a dependent variable, showed significant differences between the scores obtained before, after and one month post-intervention ($F[2,240]=89.51, p<.001, \eta_p^2=.427, 1-\beta = 1.00$). Similarly, the interaction Time x Group resulted significant ($F[6,240]=16.27, p<.001, \eta_p^2=.289, 1-\beta=1.00$). The analysis of this interaction showed, as can be seen in Figure 1, a significant difference between the depression scores pre- and post- intervention in the Optimism ($p<.001$) and Savoring ($p=.007$) groups. A decrease in depression heard one month after the intervention in the Optimism group. In the case of the Gratitude group, intervention did not have any effect, since no differences were found between the pre- and post- intervention assessments. Similarly, no significant differences were found in the Control group.

The analysis carried out on anxiety scores corresponding to the same scale did not show any effect on the two factors under study or on their interaction.

In the case of negative affect, data analysis showed a significant effect on the Time factor ($F[2,240]=10.604, p<.001, \eta_p^2=.108, 1-\beta = .999$) and on the interaction Time x Group ($F[6,240]=2.677, p=.016, \eta_p^2=.063, 1-\beta=0.860$). The analysis of this interaction evidenced a significant reduction in negative affect post-intervention for the Gratitude ($p=.014$) and Savoring ($p<.000$) groups, with this effect holding one month after the intervention. However, no significant differences were found between the pre- and post- intervention scores for either the Optimism group or Control group.

The analysis of positive affect showed a significant effect on the Time factor ($F[2,240]=34.411, p<.001, \eta_p^2=.223, 1-\beta = 1.00$), the Group factor ($F [3,120]=18.851, p<.001, \eta_p^2=.320, 1-\beta=1.00$) and the interaction Time x Group ($F[6,240]=7.246, p<.001, \eta_p^2=.153, 1-$

$\beta=1.00$). The interaction analysis showed that positive affect was significantly lower before the intervention than after in the groups that received a Gratitude ($p<.001$) and Savoring ($p<.001$) training, whereas no changes were found in the Optimism and Control groups (see Figure 2).

Life satisfaction also yielded the same results as positive affect. Data analysis showed a significant effect on the Time factor ($F[2,240]=40.120, p<.001, \eta_p^2=.251, 1-\beta = 1.00$); the Group factor ($F[3,120]=4.089, p<.001, \eta_p^2=.093, 1-\beta=.836$); and interaction ($F[6,240]=11.801, p<.001, \eta_p^2=.228, 1-\beta=1.00$). After analyzing this interaction, we found that life satisfaction increased significantly post-intervention in the Gratitude ($p<.001$) and Savoring ($p<.001$) groups, with this increase holding one month after intervention, whereas no effect was observed in the Optimism and Control groups.

The analysis carried out on the happiness variable scores showed a pattern of results similar to the two previous variables. Significant differences were found among scores obtained before, after and one month post-intervention for this variable ($F[2,240]=13.429, p<.001, \eta_p^2=.101, 1-\beta = .998$) and the interaction Time x Group was also significant ($F[6,240]=3.882, p<.001, \eta_p^2=.088, 1-\beta=.966$). Similarly, the Group variable had a significant effect ($F[3,120]=6.834, p<.001, \eta_p^2=.146, 1-\beta=.974$). Interaction analysis revealed significant differences pre and post intervention in the Gratitude ($p<.001$) and Savoring ($p<.001$) groups, resulting in increased happiness; this effect held one month after intervention in both groups. For the Optimism group, intervention had no effect, since no happiness differences were found between pre- and post- intervention. Similarly, no significant differences were found in the Control group.

Regarding resilience, a significant effect was found on Time ($F[2,240]=14.551, p<.001, \eta_p^2=.110, 1-\beta = .999$) and Group ($F[3,120]=4.719, p<.001, \eta_p^2=.107, 1-\beta=.889$) as well

as the interaction ($F[6,240]=7.887$, $p<.001$, $\eta_p^2=.167$, $1-\beta=1.00$). This analysis revealed significant differences between pre- and post-intervention scores in the Gratitude ($p<.001$) and Savoring ($p<.001$) groups, resulting in increased resilience. This effect failed to hold one month after intervention. No significant differences were found in the Optimism or Control groups.

Discussion

The results of this study show that those who received the Gratitude intervention experienced a decrease in negative affect and an increase in positive affect, life satisfaction, happiness and resilience, with these results holding a month after intervention completion across all variables except for resilience. Regarding the latter, scores decreased significantly during the month following intervention completion, although they never dropped as far as the initial values. Furthermore, training in Gratitude had no effect on depression or anxiety.

As for the group that received training in Savoring, reduced depression and negative affects levels and increased positive affect, life satisfaction, happiness and resilience levels were observed. These results held a month following intervention across all variables except in the case of depression, where values increased again but never reaching the initial levels. No effect was found for anxiety.

Training in optimism only had an effect on depression. Individuals belonging to this group exhibited a decrease in values corresponding to this variable once the intervention was over, and this effect held a month after intervention completion.

Thus, in overall terms, the results support the hypotheses put forward for all measures under assessment except in the cases of depression and anxiety.

Although it was hypothesized that training in optimism would prove less effective in older adults, its effect on depression corroborates existing evidence in this regard when taking

into account the general population (Toner, Haslam, Robinson, & Williams, 2012) and the findings from the few available studies on older adults when trained as part of a wider program (Ho et al., 2014). The gratitude-oriented activities did not bring about a reduction in depression, which contradicts the literature on this matter that clearly establishes a relationship between both variables (Lin, 2015; Petrochi & Couyoumdjian, 2016), although there are very few studies that have explored which variables may be mediating it. Gratitude could increase positive life events, and it would likely be this increase that allows us to predict declines in depressive symptoms, at least on a temporary basis (Disabato, Kashdan, Short, & Jarden, 2016). Lin (2015) found that self-esteem and psychological well-being play a mediating role in the reduced depression caused by gratitude. Similarly, some studies show that gratitude improves relationships with others and makes us less critical and more compassionate with ourselves, making it a protective factor against psychopathology that includes depression as well as anxiety (Petrochi & Couyoumdjian, 2016). The mediating variables differ across different population types, which may account for the lack of effect in our study. Furthermore, Tian (2016) observed how older adults with limited social support have low levels of self-esteem, and also found that self-esteem increases during adolescence, young adulthood and middle age, but decreases in old age (Mirucka, Bielecka, & Kisielewska, 2016; Orth, Maes, & Schmitt, 2015). We did not address any of these aforementioned factors in our study and given that they would have likely influenced the effect that gratitude had on depression, they should be taken into account in future research.

In the case of anxiety, the evidence, albeit limited, does also show how gratitude leads to decreased anxiety in older adults (Lau & Cheng, 2011; Ramírez, et al., 2014; Ortega-Martínez & Ramírez-Fernández, 2017). Furthermore, gratitude has been found to predict low levels of anxiety (Kerr, O'Donovan, & Pepping, 2015; Petrochi & Couyoumdjian, 2016) and that interventions in this strength reduced death anxiety (Lau & Cheng, 2011). As highlighted

by the previous authors, it is likely that both these interventions and other types of positive interventions generate emotional experiences that serve to encourage more constructive and profound changes at an emotional level. It is possible that our study failed to observe these changes given the brevity of our interventions and the types of measures used.

As for the remaining study variables, the interventions that yield the greatest benefits are the gratitude and savoring interventions. Gratitude is associated with low levels of negative affect (McCullough, Emmons, & Tsang, 2002) and increased life satisfaction, well-being, and quality of life (Killen & Macaskill, 2015; Proyer et al., 2014) in older adults, which corroborates our findings for these variables. Similarly, the data obtained from this study support the existing evidence that positive emotions generated by interventions of this kind, including gratitude and savoring, produce significant increases in psychological resilience levels (Navarro, Bueno, & Buz, 2013; Smith & Hollinger-Smith, 2015), which is a key factor for aging well (Wild, Wiles, & Allen, 2013).

The savoring intervention undoubtedly produced the strongest effect, as this was found across all variables and in the predicted direction. Savoring as the ability to regulate positive feelings in the present moment, directing attention toward positive experiences, can take place through three different approaches in time: recalling past experiences, savoring present experiences, and anticipating future experiences (Smith, Harrison, Kurtz, & Bryant, 2014; Bryant & Veroff, 2007). It has been associated with greater psychological well-being given that it increases happiness and life satisfaction (Bryant, 2003; Smith et al., 2015), although its study among the older adult population is very limited. Our research made use of the three time approaches, meaning that it would be interesting to identify, in future research, which of the savoring interventions are more effective and beneficial for older adults. It is likely that the interventions focused on reminiscing and savoring the moment are more effective among this

group than those focused on the future, especially if the individuals in question live in unstimulating environments or if they are currently lacking life experiences.

Our study has some limitations. First, although participants were randomly assigned to each group, sample selection was not random, which can make generalizing the results difficult. Second, follow-up was only done a month later, meaning that we are unable to determine the long-term effect. Given that studies tend to show the temporary nature of outcomes deriving from this type of intervention addressing emotional disorders and well-being, there is certainly a need to develop interventions that can even become a way of life, carried out on an ongoing basis; for example, monthly review activities (Mochon, Norton, & Ariely, 2008; Richards, 2011). Third, different activities were performed across the different interventions, so we cannot pinpoint the least and most effective with any certainty. This will need to be explored by independently administering these activities to different groups of individuals with similar characteristics. Lastly, only subjective measures were taken, meaning that future studies would have to include objective measures such as behavioral measures, the evaluation of facial expressions, and objective health measures.

The results of this study suggest that gratitude and savoring interventions show promise for enhancing well-being, happiness and life satisfaction, as well as for alleviating depressive symptoms and negative affective states. However, further work is needed to study the specific efficacy of each type of activity in individuals with specific characteristics in order to identify the underlying processes and mechanisms. The factors that can influence the efficacy of positive psychology-based interventions are currently being investigated. Different variables have been put forward (Layous & Lyubomirsky, 2014) that relate to the characteristics of the activity as well as to personal traits, while seeking a fit between both. Discussions are also underway about which mechanisms might be responsible for making people happier and for experiencing enhanced well-being when engaging in this type of activity (Nelson et al., 2016).

The proposed mechanisms include satisfying psychological needs and increasing positive emotions (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011; Lyubomirsky & Layous, 2013). As pointed out by Fredrickson, Brown, Cohn, Conway, and Mikels (2005), positive emotions can have a direct impact on one's health and well-being. The resulting expansion and growth effects build up and can even change individuals, making them healthier, more socially integrated, more efficient and resilient (Fredrickson et al., 2005). Positive emotions predict gains in well-being by broadening psychological resources. This could have helped the older adult participants in this study handle the events unfolding in their lives in a more positive way, given that the positive emotions generated by the activities can be a component of the coping process, in which the situations are seen more as challenges than as threats (Folkman, 2008).

Studies also suggest (Nelson et al., 2016; Layous & Lyubomirsky, 2014) that positive activities can enhance well-being because they promote the satisfaction of three basic psychological needs: autonomy, competence and relatedness. When there is an increase in satisfying the aforementioned needs, for example, by showing gratitude, well-being increases (Boehm, Peterson, Kivimaki, & Kubzansky, 2011). All of these mechanisms will need to be investigated, and while it is very important to demonstrate the efficacy of positive interventions in older adults, it is also crucial to determine what produces this efficacy in an attempt to increase it as much as possible.

This study represents an important and innovative step in aligning interventions with the specific needs and particularities of individuals and populations, and can contribute to enhancing well-being by helping older adults tackle the challenges and adversities of everyday life and recover from them as quickly as possible.

In line with our findings, positive interventions aimed at promoting successful aging should incorporate activities that enhance the ability to show gratitude and savoring, providing resources that protect against the negative effects deriving from stressful experiences that

people can encounter at this life stage. Older adults have the potential to savor positive experiences and reach adequate levels of well-being and, as such, is it of paramount importance to intervene in these aspects to ensure that individuals enjoy successful aging.

Disclosure of interest

The authors report no conflict of interest.

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Table 1 Means and standard deviations of the dependent variables at different times across the different groups

			Depression	Anxiety	Negative Affect	Positive Affect	Life Satisfaction	Happiness	Resilience
Gratitude (n= 36)	Pre	<i>M</i>	4.11	2.94	21.66	33.44	21.28	19.83	122.33
		<i>SD</i>	.43	.41	1.08	.66	.99	.69	4.95
	Post	<i>M</i>	3.78	2.94	18.17	39.33	29.39	22.83	146.72
		<i>SD</i>	.56	.44	1.28	1.08	.64	.43	3.90
	Month	<i>M</i>	1.11	2.77	15.28	40.28	29.11	23.05	144.16
		<i>SD</i>	.27	.46	.67	.99	.82	.58	3.24
Optimism (n= 28)	Pre	<i>M</i>	4.57	3.21	19.07	30.35	24.43	18.93	130.29
		<i>SD</i>	.54	.53	1.20	1.57	.91	.77	5.81
	Post	<i>M</i>	1.79	2.86	16.71	33.50	26.07	20.50	140.43
		<i>SD</i>	.43	.54	1.141	.67	.97	.55	2.50
	Month	<i>M</i>	1.86	3.07	16.21	33.71	25.14	20.93	141.28
		<i>SD</i>	.28	.35	.91	1.17	.79	.62	2.18
Savoring (n= 28)	Pre	<i>M</i>	4.36	3.00	19.07	28.00	22.57	19.85	135.64
		<i>SD</i>	.49	.54	.96	1.62	1.04	.73	3.92
	Post	<i>M</i>	.79	2.00	14.57	38.43	28.22	21.64	152.86
		<i>SD</i>	.28	.39	.72	1.89	1.07	.57	2.92
	Month	<i>M</i>	2.42	3.00	16.35	39.43	29.50	21.57	145.57
		<i>SD</i>	.50	.65	.92	1.33	.80	.57	2.83
Control (n= 32)	Pre	<i>M</i>	3.50	2.37	17.81	28.81	24.00	18.81	137.86
		<i>SD</i>	.58	.43	1.60	1.50	1.12	.77	2.73
	Post	<i>M</i>	2.38	3.00	16.62	29.62	23.87	18.94	135.66
		<i>SD</i>	.42	.48	1.03	1.30	1.15	.67	1.66
	Month	<i>M</i>	2.81	2.70	17.62	28.31	23.50	18.12	136.06
		<i>SD</i>	.37	.49	.84	1.22	1.05	.87	4.30
Total (n=124)	Pre	<i>M</i>	4.31	2.88	19.40	30.15	23.07	19.35	131.53
		<i>SD</i>	.26	.24	.63	.67	.52	.37	2.29
	Post	<i>M</i>	2.18	2.70	16.52	35.22	26.88	20.98	143.92
		<i>SD</i>	.23	.24	.58	.65	.48	.28	1.52
	Month	<i>M</i>	1.57	2.18	15.87	35.93	27.06	20.67	137.52
		<i>SD</i>	.18	.25	.42	.58	.44	.34	1.65

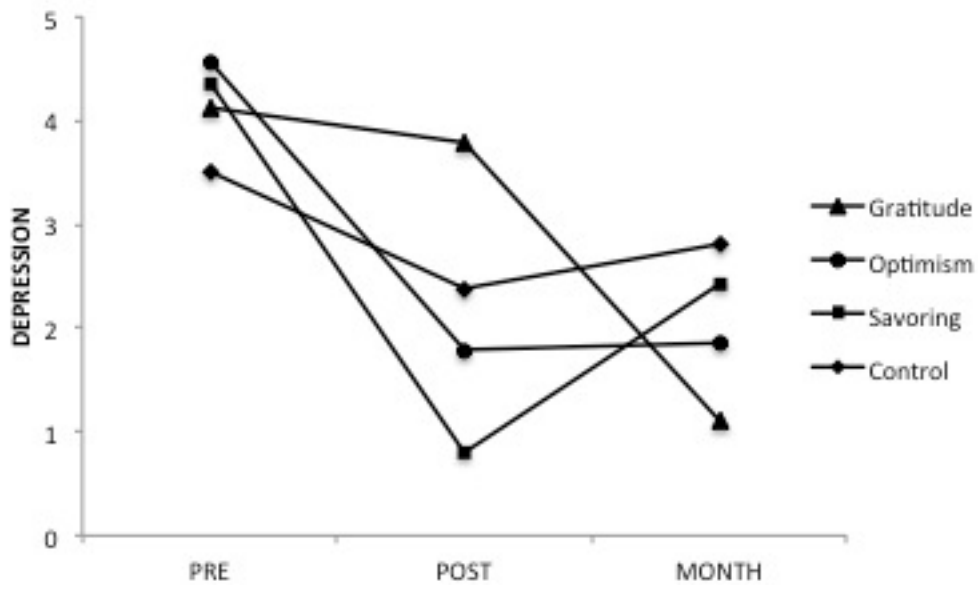


Figure 1 Depression means at different times across the different groups

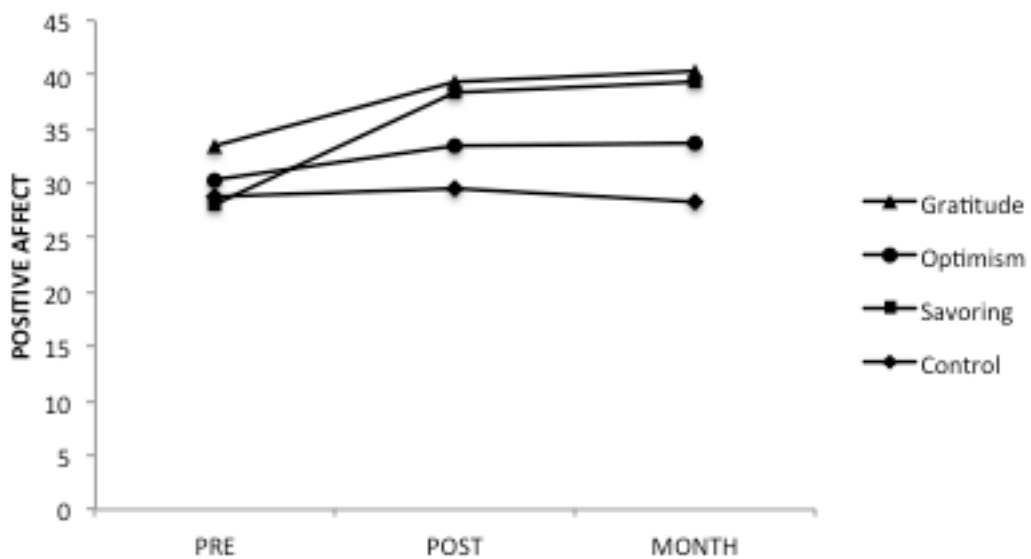


Figure 2 Positive Affect means at different times across the different groups