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Person-Centered Therapy and Older Adults' Self-Esteem: A Pilot Study with Follow-up

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Abstract

Objectives: A higher self-esteem (SE) is suggested by a reduced difference between ideal and real self. The present pilot study was designed to investigate if a brief eight-session individual person-centered therapy (PCT) intervention on older adults can promote their SE, as compared with a control group (waiting list). We hypothesized that participants randomized to PCT would report improvements in SE from pre- to post-intervention compared to those not attending PCT sessions.

Method: We recruited 81 persons aged between 65-82 years (M = 71.9, SD = 4.77) in the Great Lisbon area, in Portugal and randomized 40 to PCT and 41 to control group. The PCT intervention consisted of an eight weekly individual therapy. Measures were completed, including demographics and the Self-esteem Scale (SES) at the baseline, post-treatment and at the 12-month follow-up.

Results: Findings indicated that individual PCT with older adults may improve their SE. The difference between ideal self and real self, evidenced at follow-up (M = 1.251, SD = .524) by the participants who had undergone PCT, was significantly lower (41.3%) in comparison to the baseline score (M = 2.131, SD = .799). Additionally, significant differences between the intervention group and the control group were found in the post-intervention and follow-up. Estimates were statistically significant at .05 level.

Conclusions: Results suggest that PCT is beneficial for improving SE. Clinical practice and program development in therapeutic settings may benefit from including PCT as an important component for promoting SE in older adults and for aging well.

Key words: Person-centered therapy; Control group; Follow-up; Older adults; Self-esteem

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INTRODUCTION

The aging of the world population is a phenomenon with biomedical, social, political and psychological implications. Europe is the oldest continent in the world. In 2004, Europeans over 65 were 75 million (Fernández-Ballesteros, 2007). Moreover, the Portuguese elderly constitute 18.1% of the total population, surpassing the amount of young people (16%). The expected percentage of old people in Portugal in 2050 is 31% of the population. (Instituto Nacional Estatística, 2005; World Health Organization Quality of Life Assessment Group, 2011). Worldwide, it is estimated by the United Nations that, by 2050, 16.5% of the total population will be 65 years old and older (Gavrilov & Heuveline, 2003). Thus, increasing life expectancy has led to higher expectations amongst people in the world to live longer with lower levels of morbidity and with a high well-being and adjustment to aging (Fernández-Ballesteros, 2007; von Humboldt, Leal, & Pimenta, 2012).

The psychological literature abounds in studies of self-

esteem (SE) (Baumeister, Campbell, Krueger, & Vohs, 2003; Branden, 1969; Crocker, & Park, 2004; Mecca, Smelser, & Vasconcellos, 1989; Mruk, 2006; Rodewalt & Tragakis, 2003; Rosenberg, 1965, Sedikides & Gregg, 2003). SE refers to an individual's sense of his or her value or worth, or the extent to which a person values, approves of, appreciates, prizes, or likes him or herself (Blascovich & Tomaka, 1991; Campbell, 1981; Diener & Diener, 1995; Greenberg, 2008; Rogers, 1959). Moreover, it is generally considered the evaluative component of the self-concept, a broader representation of the self that includes cognitive and behavioral aspects as well as evaluative or affective ones (Blascovich & Tomaka, 1991; Swann, Chang-Schneider, & McClarty, 2007). Early research in this area demonstrated that the correspondence between a person's ideal and actual self-concepts is positively linked to psychological well-being, specifically, SE (Rogers & Dymond, 1954). Likewise, discrepancies between actual-self characteristics and ideal-self characteristics have been linked to feelings of dejection and disappointment (Higgins, 1987, 1989). In the context of the person-centered approach, Rogers and Dymond (1954) proposed the discrepancy between ideal self and real self as an indicator of SE. Thus, a person who has high SE, experiences a reduced difference between real self and ideal self and a state of congruence exists (Rogers, 1959, 1980). Furthermore, this person has confidence and positive feelings about his or her self, faces challenges in life, accepts failure and unhappiness at times. Conversely, a person is said to be in a state of incongruence if some of the totality of their experience is unacceptable to her or him and is denied or distorted in the real self (Rogers, 1959, 1980). SE of aging individuals is threatened in a culture that strongly values youthfulness at the expense of old age (Gana, Alaphilippe, & Bailly, 2004; Staats, 1996; Westerhof, Barrett, & Steverink, 2003). Moreover, older adults often feel they are seen as asexual and useless, which can deeply affect their SE (Hamarat, Thompson, Steele, Matheny, & Simons, 2002). Nevertheless, they often perceive themselves as being still able to contribute, which is related to psychosocial characteristics including SE (World Health Organization, 2008). Furthermore, identifying with younger ages and maintaining a positive experience of one's own aging process can, thus, contribute to SE in this context (Westerhof, Whitbourne, & Freeman, 2012).

Previous studies analyzed the correlation between low SE and the low self-worth element of major depression (Burwell, & Shirk, 2006; Emler, 2001; Sedikides & Gregg, 2003; Kuster, Orth, & Meier, 2012; Orth, Robins, & Roberts, 2008). Moreover, some specific treatment programs for low SE have been described (Fennell, 1998; Hall & Tarrier, 2003). Furthermore, Rogers and Dymond (1954) suggested that the discrepancy between ideal self and real self can be reduced as a result of person-centered-therapy (PCT).

Despite the findings described above, little is known about SE in this population (Šmídová, Hátlová, & Stochl, 2008). Moreover, psychosocial research about PCT and its relation to older adults' SE is still lacking (von Humboldt & Leal, 2010).

Person-centered approach is a holistic, organismic theory that regards the individual as an integrated whole (Sanders, 2007). Instead of focusing on interpretation, the person-centered therapist seeks to understand older clients from within their own frames of reference and individual ways of experiencing and to find ways to promote growth and development with, rather than for, them (Pörtner, 2008).

Moreover, PCT provides the opportunity for deeply negative or despairing experience to be expressed, fully felt and received empathically as a reality of experience (Barrett-Lennard, 2007). In fact, humanistic and experiential theorists regard emotions as central to human functioning and transformations in clients' emotional experiencing is seen as core to the change process in psychotherapy (Watson & Lilova, 2009). Moreover, Prouty, Van Werde, and Pörtner (2002) suggest use of pre-therapy for older clients with cognitive impairment to re-establish and strengthen contact functions. Regardless of the therapist's and client's perspectives on the human life course, a person-centered approach is appropriate as personal growth and development, are desired outcomes for older adults, including those with significant age-related decline (Pörtner, 2008; von Humboldt & Leal, 2010).

To date, studies exploring PCT are still scarce in the literature of older adults and aging well. Therefore, with this paper we aim at contributing with a baseline for further research, focusing on SE in older adults who participated in an individual-based PCT intervention. Specifically, this is a randomized controlled pilot study, designed to explore the efficacy of an individual-based PCT intervention in SE. A smaller distance between the ideal self and the real self indicates a higher level of SE. Considering that the increment in SE is obtained by decreasing the ideal self and or by increasing the real self, we hypothesized that those assigned to PCT would report increases in SE, compared to control group.

METHODS

Sampling of Participants

Eighty-one eligible non-institutionalized community-dwelling participants were recruited from community and health centers, in the Great Lisbon area, in Portugal. Participants were eligible to participate if they: (1) were 65 years of age or older and (2) scored in the normal range on the Mini Mental Status Exam (MMSE) (>26) (Folstein, Folstein, & McHugh, 1975). All the participants were fluent in Portuguese and completed the questionnaires

and intervention in Portuguese. None of the participants had any history of psychiatric or neurological illness, or history of drug or alcohol abuse, which might compromise cognitive function. The final sample consisted of 81 participants: 40 were randomized to the PCT intervention and 41 to the control group (waiting list) using a 1:1 ratio method. This technique was used to ensure that there was a sufficient sample size for conducting analyses in the experimental condition. Participants were mostly women (60.5%) and had a mean age of 71.9 (*SD* = 4.77; range = 65-82). They were predominantly professionally active (61.7%). Most of the participants had a high school diploma (38.3%), with participants completing middle school (25.9%), primary school (23.5%) and graduate degree (12.3%). Moreover, most of the participants were married/in a relationship (37.0%), followed by being widowed (34.6%) and being single (28.4%). The majority perceived their health as good (60.5%) and most earned an average of €10,000 – €20,000 annually (42.0%). There were no changes in the status of any of the demographic variables across time.

Table 1 shows the characteristics of the participants.

Table 1
Distribution of the Study's Participants According to Socio-Demographic and Health-Related Characteristics

	PCT group		Control group		Total	
	N	%	***N***	%	***N***	%
N	40		41		81	
Age *(M; SD)*	71.6 (4.574)		72.2 (5.003)		71.9 (4.774)	
Gender						
Male	17	42.5	15	36.6	32	39.5
Female	23	57.5	26	63.4	49	60.5
Education						
Primary school	10	25.0	9	22.0	19	23.5
Middle school	8	20.0	13	31.7	21	25.9
High school	17	42.5	14	34.1	31	38.3
University degree or higher	5	12.5	5	12.2	10	12.3
Marital Status						
Married or in a relationship	15	37.5	15	36.6	30	37.0
Single	11	27.5	12	29.3	23	28.4
Widowed	14	35.0	14	34.1	28	34.6
Professional Status						
Active	24	60.0	26	63.4	50	61.7
Inactive	16	40.0	15	36.6	31	38.3
Family Annual Income						
≤10,000 €	10	25.0	10	24.4	20	24.7
10,001–20,000 €	21	52.5	13	31.7	34	42.0
20,001–37,500 €	4	10.0	12	29.3	16	19.8
≥37,500 €	5	12.5	6	14.6	11	13.5
Perceived Health						
Good	24	60.0	25	61.0	49	60.5
Poor	16	40.0	16	39.0	32	39.5

Note: Total sample: *n* = 81

Measures

One measure of SE, the Self-Esteem Scale (SES) and demographics were applied to comprehensively characterize the main outcomes of this study. The socio-demographic characteristics were evaluated through self-reported measures. Moreover, participants went through a cognitive screening assessment to determine eligibility. Therefore, cognitive abilities were assessed with the MMSE (Folstein, Folstein, & McHugh, 1975).

Self-Esteem

Rogers and Dymond (1954) pointed out the relevance of the discrepancy between ideal and the real self as an indicator of SE, to any study of psychotherapy and developed SES within person-centered approach for measuring SE. These authors performed Q-sort studies for analyzing if productive change in therapy coincided with a decreasing discrepancy between experienced self and ideal self, as more realistic relationships develop between one's attitudes and abilities and one's values and goals. For this purpose, the authors adapted an exercise in which respondents sorted two stacks of identical cards: one from the vantage point of their real self (how they perceived their self at the time) and the other from the perspective of the ideal self (how they would ideally like to be). The distance between the two was dubbed the self-discrepancy score, that is, the indicator of SE. In line with the fact that the intervention in our study was person-

centered, participants' SE was assessed with the SES as an alternative to the widely used Rosenberg Self-Esteem Scale (Blascovich & Tomaka, 1991; Rosenberg, 1965).

The SES is composed of 74 items asking participants to indicate their level of agreement on a five-point Likert-type scale ranging from "Strongly Disagree" to "Strongly Agree" to items such as "I am an optimist", "I have initiative" and "I am sexually attractive". Negative items were reverse scored so that higher scores on this scale indicate greater levels of ideal self and real self. The SE score is obtained by assessing the distance between the scores of the ideal and real self, so that the discrepancy between the placements of a given item on the real self sub-scale and the ideal sub-scale yield an indication of SE. In detail, a smaller discrepancy between the ideal self and the real self indicates a higher level of SE and a lower score resulting from this difference suggests a higher SE (Rogers & Dymond, 1954).

Rogers and Dymond's original study was adapted and validated for the Portuguese population. The internal consistency of the alpha coefficients has continually exceeded .70 (Rafael, 2003/2004; Rogers & Dymond, 1954; Tap, Hipolito, Nunes, & Santos, 2004). In the current study, the Cronbach alpha coefficients at baseline (t_1), post-intervention (t_2) and follow-up (t_3) were .818, .910 and .973 respectively. All reliability coefficients were 0.80 or higher, thus we considered them to have satisfactory levels of reliability.

Procedure

Data Collection

Potential participants were first given a brief description of the study, and then they underwent a phone and face-to-face screening to determine eligibility.

We collected data from the subjects at three different times, as shown in Figure 1. The first set of data was collected one week before the beginning of PCT sessions (or control condition) at baseline. At t_1, participants completed the informed consent, MMSE, the SES and demographics. After the baseline assessment, participants were randomly assigned to one of the two groups. One week after the intervention period, a second assessment was conducted. Follow-up was conducted 12 months after the end of the intervention (see Figure 1).

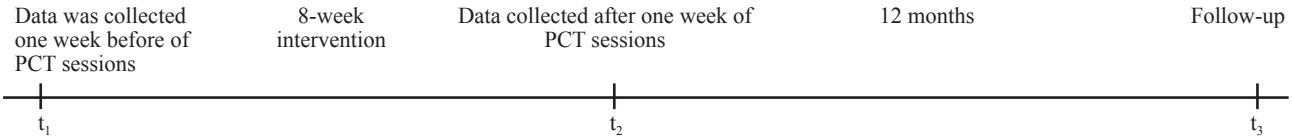

Figure 1
Data Collection

The PCT intervention consisted of an eight weekly individual therapy with 45-minute sessions, conducted in an adequate setting. Each PCT session placed much of the responsibility for the treatment process on the client, with the therapist taking a nondirective role and three interrelated attitudes: congruence; unconditional positive regard; and empathy (Pörtner, 2008; Sanders, 2007).

Figure 2 demonstrates participant flow through the study. Of 84 individuals initially meeting study criteria in the study, three were excluded for assorted miscellaneous reasons (e.g., scheduling and transportation problems, inability to commit to 8 weekly sessions). Of the remaining 81 who were randomized to PCT (n = 40) or control group (n = 41), there were 40 participants who integrated and completed the 8-week PCT and 41 who were on a waiting list for an equivalent amount of time. No participants were lost to follow-up (PCT, n = 40; control group, n = 41) resulting in a final sample of 81 that was used for statistical analyses.

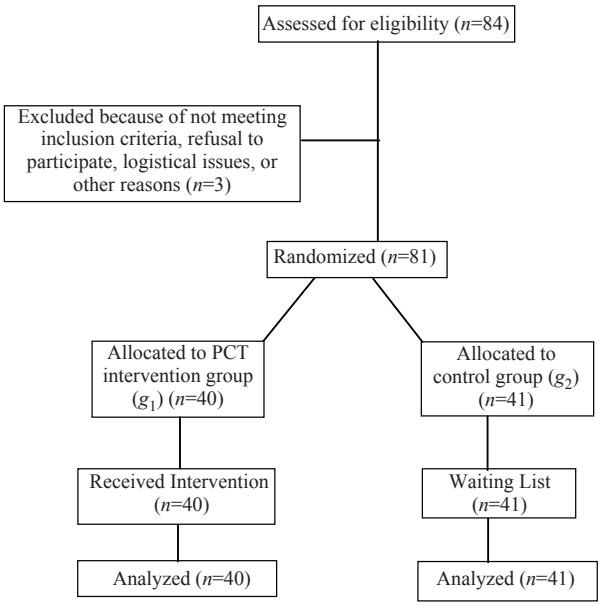

Figure 2
Participant Flow Through the Study

Statistical Analyses

Data was first analyzed to check for outliers and distribution forms. No missing value imputation was made. Second, to assess whether the variances in both groups (g_1 and g_2) differed significantly we performed the Modified-Levene Equal-Variance test. To explore if at t_1, t_2 and t_3 the two groups were homogeneous, ANOVA was used to compare both conditions, on the SE variable.

Additionally, comparisons between the three assessments (t_1, t_2 and t_3) for the two groups were done using repeated measures ANOVA. Post hoc LSD test for mean differences was used to compare the three assessments for the SE measure, in each group (PCT and waiting list). Data were analyzed using SPSS for Windows (version 19.0; SPSS Inc., Chicago, IL).

The Portuguese Foundation for Science and Technology (FCT) and ISPA - Instituto Universitário, approved the study. Informed consent was received from all participants and the study protocol was approved by the Research Unit in Psychology and Health's coordination.

Results

The pre-intervention (t_1), post-intervention (t_2) and follow-up (t_3) scores were the main outcome measures. Descriptive information for real self, ideal self and the difference between the cited concepts is provided in Table 2.

Table 2
Means and Standard Deviations on Self-Esteem Measure

	PCT group (g_1)	Control group (g_2)
Real Self t_1 *(M; SD)*	1.930(.295)	1.942(.284)
Ideal Self t_1 *(M; SD)*	4.061(.711)	4.075(.708)
Ideal Self – Real Self t_1 *(M; SD)*	2.131(.799)	2.134(.792)
Real Self t_2 *(M; SD)*	1.932(.295)	1.959(.279)
Ideal Self t_2 *(M; SD)*	3.195(.404)	4.108(.718)
Ideal Self – Real Self t_2 *(M; SD)*	1.263(.532)	2.149(.790)
Real Self t_3 *(M; SD)*	1.945(.288)	1.985(.273)
Ideal Self t_3 *(M; SD)*	3.196(.395)	4.110(.717)
Ideal Self – Real Self t_3 *(M; SD)*	1.251(.524)	2.123(.783)

Moreover, we used ANOVA to examine if the differences in SE in g_1 and g_2, in t_1, t_2 and t_3 were statistically significant. As shown in Table 3, the ANOVA results indicated that SE is not significantly different from zero for both groups (g_1 and g_2) in t_1. Moreover results indicated significant differences between the intervention group and the control group in t_2 ($F_{(1)} = 34.939$, $p < 0.01$) and in t_3 ($F_{(1)} = 34.595$, $p < 0.01$)

Table 3
Comparison of Participants Placed in Intervention (PCT) with Participants in Waiting List (WL) at Baseline Assessment (t_1), Post-Intervention (t_2) and Follow-up (t_3)

Variables	ANOVA		
	df	F	p
Ideal Self – Real Self t_1	1	.000	.988
Ideal Self – Real Self t_2	1	34.939	.000
Ideal Self – Real Self t_3	1	34.595	.000

To explore if the variables changed during the three assessments, within SE, PCT and waiting list groups were analyzed separately, after the verification of sphericity for all variables/groups with the Mauchly test. Results of the PCT group and control group are presented in Table 4.

Table 4
PCT Group and Control Group: Comparison Between Baseline (t_1), Post-Intervention (t_2) and Follow-up (t_3) Assessments for SE

Variables	t_1 n = 81 M(SD)	t_2 n = 81 M(SD)	t_3 n = 81 M(SD)	I	J	Mean difference I-J(SE)p	η^2p
Ideal Self – Real Self for PCT Group	2.131 (.799)	1.263 (.532)	1.251 (.524)	t_1	t_2	.868(.145).000	.482
					t_3	.880(.145).000	
				t_2	t_3	.011(.005).037	
Ideal Self – Real Self for Control Group	2.134 (.792)	2.149 (.790)	2.123 (.783)	t_1	t_2	-.015(.004).000	.257
					t_3	.010(.006).129	
				t_2	t_3	-.025(.004).000	

Additionally, ANOVA results revealed no significant between group differences in any socio-demographic variable (*P's* > .05) in t_1, t_2 and t_3 (see Table 5).

Table 5
Group Differences in Socio-Demographic Variables for Participants Placed in Intervention (PCT) with Participants in Waiting List (WL) at Baseline Assessment (t_1), Post-Intervention (t_2) and Follow-up (t_3)

Variables	ANOVA		
	F(df)p t_1	*F(df)p* t_2	*F(df)p* t_3
PCT Group			
Gender	2.280(1).139	.741(1).395	.786(1).381
Marital Status	1.390(3).261	.674(3).574	.748(3).531
Education	2.037(3).126	1.309(3).287	1.177(3).332
Professional Status	.072(1).790	.000(1).995	.001(1).982
Family Annual Income	1.550(3).218	.440(3).726	.472(3).703
Perceived Health	.028(1).867	1.238(1).273	1.136(1).293
Control Group			
Gender	1.138(1).213	.622(1).492	.698(1).543
Marital Status	1.607(3).204	1.638(3).197	1.592(3).208
Education	.316(3).814	.332(3).803	.341(3).796
Professional Status	.138(1).712	.182(1).672	.232(1).633
Family Annual Income	1.976(3).134	2.006(3).130	2.003(3).130
Perceived Health	.054(1).817	.055(1).816	.067(1).797

DISCUSSION

Considering that a higher SE is suggested by a reduced difference between ideal and real self (Rogers, 1980; Rogers & Dymond, 1954), the results of the present pilot study suggest that individual PCT with older adults may enhance their SE. In the present research, the difference between ideal self and real self, evidenced at follow-up (t_3) (M = 1.251, SD = .524), by the participants who had undergone PCT, was significantly lower (41.3%) in comparison to the baseline score (M = 2.131, SD = .799). Immediately, after the intervention, a significantly decrease of 40.7% (M = 1.263, SD = .532) was observed in the participants who did PCT (this reduction was maintained at follow-up). Conversely, participants in control group experienced a minor difference between ideal and real self between baseline (M = 2.134, SD = .792) and follow-up (M = 2.123, SD = .783) (that is, a mean 0.5% decrease of their score). However, this reduction was not statistically significant. Moreover, between baseline and t_2, the control group had a mean 0.7% increment of their score (M = 2.149, SD = .790).

These findings join with prior work showing that psychotherapy can increase SE, and health-related indicators. In particular, PCT can produce effects and those effects are the by-products of a relational process that consciously and deliberately strives to minimize influence upon or power over the client (Witty, 2005). Effective PCT is a process of developmental healing, through relational depth (Barrett-Lennard, 2007; Knox & Cooper, 2010; Mearns & Schmid, 2006), in which the client, with all of his/her personal differences, is acknowledged as a person having an "open future" (Schmid, 2002, p.193). PCT is essentially based on the experiencing and communication of attitudes and these attitudes (congruence, unconditional positive regard and empathy) cannot be packaged up in techniques. This is particularly true when working with older adults (Pörtner, 2008). Moreover, the interrelated attitudes on the part of the therapist are central to the success of PCT, to positive outcome in therapy (Patterson, 1984; Rogers, 1951, 1959) and to positive psychological changes, including SE (Kottler, Sexton, & Whiston, 1994; Sexton, 1996), an evidence that supports the results of the present research.

Furthermore, previous work by Asay and Lambert (1999) estimates that approximately 30% of the variance in outcome in PCT can be attributed to "common factors" which includes the relationship, with 40% relating to client factors such as social learning, health, etc., 15% relating to specific techniques, and 15% reflecting expectancy or hope for the success of therapy. This supports Rogers' necessary and sufficient conditions provided by a caring, genuine therapist who is attempting to understand are pivotal in terms of facilitating therapeutic personality change (Asay & Lambert, 1999). Rogers (1959, 1980) expressed the idea of the mechanisms of change -- under conditions of freedom, safety and understanding, which basically involve the client taking on the above cited therapeutic attitudinal conditions with the result of making better choices (Rogers, 1959, 1980). Moreover, interpersonal contexts that support the satisfaction of psychological needs, such as experiences of autonomy and competence, can reduce the perceived discrepancy between one's actual and ideal characteristics and thereby enhance subjective well-being (Higgins, 1989; Ryan & Deci, 2000).

Furthermore, findings indicated that participants in PCT experienced an adjustment between real self and ideal self, by increasing the first one by 0.8% and reducing the latter by 21.3%, and therefore, reflected a lower difference between ideal and real self, between baseline and follow-up. Although we expected that PCT decreased the discrepancy between real and ideal self, by increasing in most part, the real self in comparison to decreasing ideal self, results indicated that the increment in SE was mostly due to the decrease in the ideal self. Previously, Rogers and Dymond (1954) indicated that both real and ideal self can change as a function of PCT. In fact, psychological adjustment exists when the concept of the self is such that all the experiences of the organism are, or may be, assimilated on a symbolic level into a consistent relationship with the concept of self. Moreover, previous literature highlighted adjustment between ideal and real self, without specifying the degree to which each of these two components varies (Rogers, 1959, 1986; Rogers & Dymond, 1954; Rogers & Kinget, 1977). In opposition, between baseline and follow-up, the control group had a mean 2.2% increase of their real self score and a mean .05% increase of their ideal self score. Indeed, research points out that individuals who have widely discrepant ideal and real selves are prone to experience high levels of negative affect and low levels of well-being (Higgins, 1989; Lynch, La Guardia, & Ryan, 2009). This is particularly true for the elderly as old age entails a level of bio-cultural incompleteness, vulnerability and unpredictability (Baltes & Smith, 2003; Ford *et al.*, 2000; Pörtner, 2008). Despite the fact that no therapy is free of influence (Masson, 1994; Proctor, 2002), PCT empowers the client, through non-directiveness (Bozarth, 2002; Brodley, 1997; Witty, 2004), congruence and psychological adjustment towards decision-making (Cooper & McLeod, 2011) and full functionality (Levitt, 2005; Rogers, 1980). In the present study, these elements were part of the PCT intervention. Furthermore, these have been evidenced as important when addressing an older population, as they can contribute to an SE increase (Levitt, 2005; Pörtner, 2008; von Humboldt & Leal, 2010).

Results showed that SE is significantly different in both groups, after the intervention and in follow-up. Additionally, older adults performing PCT sessions reported an increase in SE whilst participants not involved

in PCT experienced a decrease in SE. This is in line with previous studies that suggested that the discrepancy between ideal self and real self can be reduced as a result of PCT (Rogers & Dymond, 1954). Moreover, prior research suggests that, a person is adjusted when the real self (a person's idea of one's self-concept) is congruent with the ideal self (the conception of how one's self-concept should be). Conversely, lack of adjustment reflects aspects of a person's life differing greatly from their ideal (Rogers, 1959, 1980).

Furthermore, previous literature suggests that SE has been related to health behaviors (Lih-Mei Liao, Hunter, & Weinman, 1995) and psychological well-being (Blascovich & Tomaka, 1991). Furthermore, Bernard, Hutchison, Lavin, and Pennington (1996) highlighted high correlations among SE, adjustment, self-efficacy, ego strength, hardiness, and optimism and all of these constructs were significantly related to health. Furthermore, a relationship between SE and general wellness behavior was found in previous studies (Abood & Conway, 1992; Hurd, 2000). Furthermore, previous studies suggested that SE accounted for a significant percent of the variance in mental health behavior, social health behavior, and total health behavior (Rivas-Torres & Fernandez-Fernandez, 1995). Conversely, Baumeister, Campbell, Krueger, and Vohs (2003) indicated that the benefits of high SE enhanced initiative and pleasant feelings and that SE had little association with health behavior. Additionally, research available provides an incomplete picture of older persons' concerns and feelings about mortality (Maxfield, Solomon, Pyszczynski, & Greenberg, 2010; Moody, 2010). Yet, Stamatakis and colleagues (2003) reported that no association between SE and mortality was observed after adjustment for other psychosocial characteristics, primarily hopelessness.

Despite the relevant findings from this study, a number of limitations must be considered. Given our small sample size, generalizability of results is in question. Selection bias may be a possible limitation as well given that participants were recruited through community and health centers. Moreover, perhaps the biggest limitation of all SE measures is their susceptibility to socially desirable responding. Most measures are self-report, and it is difficult to obtain non-self-report measures of such a personal and subjective construct. Also, scores tend to be skewed toward high SE, with even the lowest scores on most tests scoring above the mean and exhibiting fairly high levels of SE. As Blascovich and Tomaka (1991, p.123) note, however, "an individual who fails to endorse SES items at least moderately is probably clinically depressed", suggesting that even the restricted range of SE scores is useful among—and representative of—non-depressed individuals. It is unknown whether the results were found to persist beyond the follow-up period used in this study and whether it might have been helpful to have further sessions at the conclusion of the weekly intervention sessions. Furthermore, although significant differences were found between groups, their clinical relevance has yet to be determined. Therefore, these findings need to be interpreted for practical use in order to avoid overrating of differences, although the results showed statistical significance.

The present study focused on analyzing the potential role of an individual-based PCT intervention in older adults' SE and our findings suggest that PCT may increase SE. A full-scale trial should next test whether PCT produces parallel changes in other measures of well-being and aging well. In view of other work showing that PCT combined with active aging skills may be beneficial for SE, it is reasonable also to conduct further studies assessing a PCT approach.

Future work should focus on recruiting a larger sample and comparing the effects of PCT with those of well-established PCT-based interventions and other control conditions. Furthermore, we recommend utilizing more fine-grained analyses of SE by using other measures, such as a wide range assessment of subjective well-being, quality of life and life satisfaction. Because some participants were unable to commit to the 8-week structured program due to transportation and scheduling issues, it may also be optimal to develop and test other modes of delivering this and other forms of psychosocial interventions for this population.

In sum, the results of this pilot study indicate the feasibility and potential benefits of a PCT intervention for older adults on SE. Indeed, PCT with older adults can increase SE and restore the focus on the specific needs of older populations, in particular, by offering a self-regulatory approach to the SE, within a salutogenic approach focused on the well-being, adapted functioning of older adults and aging well.

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