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# THE PROMOTION OF OLDER ADULTS' SENSE OF COHERENCE THROUGH PERSON-CENTERED THERAPY: A RANDOMIZED CONTROLLED PILOT STUDY

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## RESUMEN

El objetivo del estudio que se informa fue explorar si una intervención individual de *terapia centrada en la persona* (TCP) en personas adultas mayores puede promover su sentido de coherencia, en comparación con un *grupo control* (lista de espera). Se plantea que los participantes asignados al azar a TCP informarían mejoras en SDC de pre y post-intervención en comparación con el grupo control.

Un grupo de 87 participantes de 65 a 86 años ( $M = 72.4$ ;  $DE = 5.15$ ) fue evaluado con la Escala de Sentido de Coherencia (ESDC) y el cuestionario sociodemográfico en tres momentos diferentes: al inicio del estudio ( $t_1$ ), post-tratamiento ( $t_2$ ) y a los 12 meses de seguimiento ( $t_3$ ).

Los resultados indicaron que los participantes en TCP evidenciaron un aumento significativo en cuanto a su SDC (16.7%), mientras que en el grupo control se encontró una disminución significativa (-2.7%), entre el inicio del estudio y el momento de seguimiento. El tamaño del efecto en el grupo TCP fue alto ( $\eta^2p = .776$ ). En concreto, tanto en la post-intervención como en el momento del seguimiento, los participantes que se sometieron a TCP tenían un SDC significativamente mayor ( $M = 3.84$ ,  $DE = .219$ ).

Se encontraron diferencias significativas entre el grupo de intervención y el grupo control en la post-intervención y en el seguimiento.

Se concluye que los cambios en SDC fueron positivos y mantenidos, por lo tanto, los resultados sugieren que la TCP es favorable a la mejora de SDC. Por otra parte, ya que la SDC se asocia con el bienestar relacionado con la salud de las poblaciones de mayor edad, hay que enfatizar el desarrollo de SDC en la vejez.

*Palabras clave:* Intervención breve; Grupo control; Adultos mayores; Terapia centrada en la persona; Sentido de la coherencia.

## ABSTRACT

*Sense of Coherence* (SOC) derived from the salutogenic approach and seems to be a health promoting resource, which strengthens resilience and develops a positive subjective state of health. Older adults' SOC is often challenged by specific issues in later adulthood such as grieving for losses, illness, feelings of worthless and solitude, retirement, disability and death, which require distinctive consideration. To our best knowledge, there are no previous studies that indicated the

relation between a *person-centered therapy* (PCT) and older adults' SOC. Therefore, this study aims to explore if a brief eight-session individual PCT intervention on *older adults* can promote their SOC, as compared with a *control group* (waiting list). Specifically, this is a randomized controlled pilot study designed to explore the promotion of SOC through an individual-based PCT intervention. We posited that participants randomized to PCT would report improvements in SOC from the pre- to the post-intervention moments when compared to those on the waiting list.

The Orientation to Life Questionnaire (OtLQ) and demographics were assessed at the baseline ( $t_1$ ), post-treatment ( $t_2$ ) and at the 12-month follow-up ( $t_3$ ), in a group of 87 participants between 65 - 86 years ( $M = 72.4$ ;  $SD = 5.15$ ), from community and health centers in the Great Lisbon area, in Portugal. Participants were mostly women (59.8%), married (65.5%) and professionally inactive (63.2%). The Cronbach's *Alpha* coefficients for SOCS were .878, .989, and .988, in the three moments, respectively.

Inclusion criteria determined their eligibility to participate in the study. No participant with a compromised cognitive function integrated the sample. All potential participants were given a brief description of the study and gave their informed consent. After the baseline assessment, participants were randomly assigned to one of the two groups. The eight-session intervention was conducted in an adequate setting and with a weekly frequency. Comparisons between the three assessments ( $t_1$ ,  $t_2$  and  $t_3$ ) for the two groups were done using Repeated Measures ANOVA. Post-hoc Fisher's Least Significant Difference (LSD) test for mean differences was used to compare the three assessments for the SOC, in each group (PCT and waiting list).

After the intervention, a significant increase of 17.3% ( $M = 3.86$ ,  $SD = .218$ ) was observed in the participants who did the PCT. The SOC evidenced at follow-up ( $t_3$ ) ( $M = 3.84$ ,  $SD = .219$ ) by these participants was significantly higher (16.7%) in comparison to the baseline score ( $M = 3.29$ ,  $SD = .245$ ). Conversely, participants in the control group experienced a minor decrease between baseline ( $M = 3.28$ ,  $SD = .236$ ) and follow-up ( $M = 3.19$ ,  $SD = .244$ ) (- 2.7%). The effect size in the PCT group was high ( $\eta^2 p = .776$ ). Significant

differences between the intervention group and the control group were found at the post-intervention and follow-up. Findings also showed that participants in PCT experienced an increment in the three dimensions of SOC. The highest increase was observed in the Comprehensibility dimension (71.2%). Manageability and Meaningfulness subscales showed an increase of 32.9% and 12.1%, respectively.

Changes in SOC were positive and maintained, thus, findings suggest that PCT is favorable to enhancing SOC. In particular, for the participants who did PCT, the significant increase of their SOC was mainly due to the high increase of the comprehensibility of events. This study contributed to filling a gap in gerontological literature and this intervention has the potential to offer a reasonably low-cost self-regulatory approach to the SOC. In this context, PCT is also a personal resource to promote SOC, in late adulthood. Moreover, since SOC is associated with health-related well-being among older populations, SOC development in old age should be stressed.

**Key words:** Brief intervention; Control group; Older adults; Person-centered therapy; Sense of coherence.

## INTRODUCTION

Europe is the continent with the oldest population in the world. By 2025, about one-third of Europe's population will be aged 60 or over, with greatest increase being among its oldest citizens (World Health Organization, 2002). Moreover, the health and well-being of older people was recognized as one of the most pressing and universal social issues of our time (Antonucci, Okorodudu, & Akiyama, 2002). In this way, psychological research is needed on the development of physical and mental health in late life, and on interventions that promote psychological and physical health of older adults (Fernández-Ballesteros, 2007).

The psychological literature abounds in studies of sense of coherence (SOC) (Amirkhan

& Greaves, 2003; Becker, Glascoff, & Felts, 2010; Dilani, 2008; Eriksson & Lindstrom, 2005, 2006; Lundberg & Nyström, 1994; Suominen, Helenius, Blomberg, Uutela, & Koskenvuo, 2001; Surtees, Wainwright, Luben, Khaw, & Day, 2003; Volanen, Lahelma, Silventoinen, & Suominen, 2004; Volanen et al., 2010). *Sense of coherence* refers to a global orientation expressing a person's pervasive, enduring though dynamic, feeling of confidence. Individuals with a strong SOC, perceive stimuli from their environment as making sense, structured and predictable (comprehensibility), as being under their own control or of others' (Manageability), and as being worthy of investment and engagement (Meaningfulness) (Antonovsky, 1979, 1987, 1993). The SOC derived from the salutogenic approach, that is, the search for the causes of health rather than the bases of disease (Palacios-Espinosa, & Restrepo-Espinosa, 2008). Thus, SOC seems to be a health promoting resource, which strengthens resilience and develops a positive subjective state of health (Eriksson & Lindstrom, 2006). In previous literature, SOC has been found to be positively associated with quality of life (Motzer & Stewart, 1996; Shiu, 2003), well-being (Söderberg, Lundman, & Nordberg, 1997; Petrie & Brook, 1992), subjective state of health (Palacios-Espinosa, & Restrepo-Espinosa, 2008, Suominen et al., 2001), health behaviors (Henje Blom, Serlachius, Larsson, Theorell, & Ingvar, 2010; Suominen et al., 1999; Vuori, 1994), self-esteem (Petrie, & Brook, 1992), emotional coping and optimism (Eriksson & Lindstrom, 2005) and negatively with morbidity and mortality (Poppius, Tenkanen, Kalimo, & Heinsalmi, 1999; Poppius, Tenkanen, Hakama, Kalimo, & Pitkanen, 2003; Surtees, Wainwright, Luben, Khaw, & Day, 2003; Virués-Ortega, Martínez-Martí, Luis, & Lozano, 2007). Furthermore, there has been a growing body of research about SOC in older populations (Lundman et al., 2010; Wiesmann, Niehörster, & Hannich, 2009). Indeed, previous research suggested a relationship between a high level of SOC and a positive self-perception about older adults' health status (Zamora, Sánchez, & Olvera, 2010), and

decreased mortality (Virués-Ortega et al., 2007). Moreover, the protective effect of SOC towards illness in late adulthood was also identified (Vásquez, 2007).

Person-centered approach pulls against the whole idea of dividing into *body* and *mind* and further into elements of mind such as *personality* and even *self*. Instead it focuses in human growth, development and full functionality (Schmid & O'Hara, 2013; Segrera, 1997). Moreover, person-centered therapy (PCT) places a high value on the individual's psychological independence and integrity (Sanders, 2007). Furthermore, it focuses on understanding older clients from within their own frames of reference and individual ways of experiencing and on finding ways to promote growth and development with, rather than for, them (Pörtner, 2008).

Whilst therapeutic skills related to ethical and legal issues, end-of-life decision-making, abuse and self-neglect, cultural diversity and self-reflection, as well as a method for the understanding of the social and psychological dynamics of the aging process are important in a model for PCT with older adults, critical for the PCT, are the therapeutic attitudinal conditions brought to the encounter with the older adult (Pörtner, 2008; Washburn & von Humboldt, 2013).

Common themes when working with older adults, such as grieving for losses, illness, feelings of worthless and solitude, retirement, disability and death, influence SOC and require distinctive consideration when deciding on the manner in which the older adults are approached (Bugelli, 2008; Hamarat, Thompson, Steele, Matheny, & Simons, 2002). Praxis traditions of PCT are particularly suited to older adults, whose personhood is sometimes unacknowledged by others but whose losses are balanced by gains and growth (Bohart & Tallman, 1999; Cooper & McLeod, 2011; Freire, 2013).

In this context, PCT provides the opportunity for a deeply negative or despairing experience to be expressed, fully felt and received empathically as a reality of experience (Asay & Lambert, 1999; Barrett-Lennard, 2007, Cain, 2013; Freire, 2013), through relational

depth (Knox & Cooper, 2010; Mearns & Schmid, 2006), congruence (Levitt, 2005; Rogers, 1959, 1980) and non-directiveness (Bozarth, 2002; Brodley, 1997; Witty, 2004).

Researchers regard transformations in clients' emotional experiencing as core to the change process in psychotherapy (Kottler, Sexton, & Whiston, 1994; Watson & Lillova, 2009) and a positive outcome in therapy (Patterson, 1984; Rogers, 1951, 1959). Specifically in late adulthood, changes may affect older adults' worldview and thus their SOC (Antonovsky, 1987; Wiesmann et al., 2009).

Considering that PCT focuses on the potential for positive change towards full functionality (Levitt, 2005; Rogers, 1980), the older individual with a strong SOC has a greater ability to mobilize and exploit potential resources (Antonovsky, 1979, 1987).

To date, little attention has been paid to studies exploring PCT in the literature of older adults and its relation with SOC. Thus, this study aims to make a relevant contribution to the existing literature by focusing on the SOC of older adults who participated in an individual-based PCT intervention. This is a randomized controlled pilot study designed to explore the promotion of SOC through an individual-based PCT intervention. In detail, the aims of this study were the following: (a) to assess and compare older adults' SOC before and after a PCT intervention, (b) to analyse SOC dimensions scores (i.e., Comprehensibility, Manageability and Meaningfulness) for the PCT group, and (c) to explore significant differences between the PCT and the control group after the intervention and at follow-up. We hypothesized that those assigned to PCT would report increases in SOC compared to those in the control condition.

## METHODS

### PARTICIPANTS

A community-dwelling sample of 87 eligible participants, with ages between 65 and 89 years ( $M = 72.4$ ;  $SD = 5.15$ ), were recruited from community and health centers in the

Great Lisbon area, in Portugal. Participants were mostly women (59.8%) and professionally inactive (63.2%). There were no changes in the status of any of the demographic variables across time. Table 1 shows the socio-demographic and health-related characteristics of the participants.

When analyzing the crossing of the different socio-demographic variables, most of the participants who were married or in a relationship were inactive whilst single older adults, were mostly professionally active. Additionally, a higher number of older men than women showed a higher annual income, as presented in Table 2.

### MEASURES

The socio-demographic and health characteristics were evaluated in a first moment through a self-reported questionnaire. SOC was assessed, using the Orientation to Life Questionnaire (OtLQ - Antonovsky, 1993), a 29-item semantic differential scale, rated from 1 (*never*) to 7 (*always*), with a good internal consistency ( $\alpha = .82$ ) and composed by three subscales (Comprehensibility - sample item: "When you talk to people, do you have the feeling that they don't understand you?"; Manageability - sample item: "Has it happened that people whom you counted on, disappointed you?" and Meaningfulness - sample item: "Do you have the feeling that you don't really care about what goes on around you?"). The OtLQ presented overall good psychometric properties (in terms of construct and criterion related validities and reliability), in previous studies (Antonovsky, 1993; Eriksson, & Lindstrom, 2005), namely with older populations (Virués-Ortega, et al., 2007).

In the current study, the Cronbach's *Alpha* coefficients at baseline ( $t_1$ ), post-intervention ( $t_2$ ) and follow-up ( $t_3$ ) was .878, .989, and .988, respectively. All reliability coefficients were .80 or higher, thus we considered them to have good levels of reliability. The main variables that were studied in the present research were the SOC, Comprehensibility,



Manageability and Meaningfulness scores. Socio-demographic variables were solely used for the sample characterization.

## PROCEDURE

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. Participants were eligible to participate if they: (1) were 65 years of age or older, and (2) scored within the normal range on the Mini Mental Status Exam - MMSE - ( $> 26$ ) (Folstein, M., Folstein, S., & Mc Hugh, 1975). None of the participants had any history of psychiatric or neurological illness, or history of drug or alcohol abuse, which might compromise cognitive function.

Of 89 individuals initially meeting study inclusion criteria, two were excluded for assorted miscellaneous reasons (e.g., scheduling and transportation problems, inability to commit to 8 weekly sessions).

We collected data from the subjects at three different moments, thus the sequence of the intervention was the following: (1) The first set of data was collected one week before the beginning of PCT sessions (or control condition) at baseline. At baseline ( $t_1$ ), participants completed the informed consent, MMSE, the OtLQ and demographics. (2) After the baseline assessment, participants were randomly assigned to one of the two groups and one of the groups had eight PCT sessions. (3) One week after the intervention period ( $t_2$ ), a second assessment was conducted. (4) Follow-up ( $t_3$ ) was conducted 12 months after the end of the intervention.

The sessions were conducted by a clinical psychologist with PCT experience with older populations and who had no previous relationship with the participants. The therapist assumed a neutral position in order to avoid investigation bias. Neutrality was kept by ensuring that the findings were a function solely of the participants and conditions of the research, with no researchers' input.

The PCT intervention was structured, after a literature review and based on previous

interventions. The intervention consisted of individual 45-minute sessions, conducted in an adequate setting and with a weekly frequency. Each PCT session was performed under the adequate PCT therapeutic conditions and setting for the understanding of the social and psychological dynamics of the older adults and the aging process. The therapist took a non-directive role and assured three therapeutic attitudinal conditions: congruence; unconditional positive regard; and empathy (Pörtner, 2008; Sanders, 2007), core of this therapy. Some of the participants asked to be appraised of the results at the end the study.

A total of 87 participants who were randomized to PCT or control group, there were 44 participants who integrated and completed the 8-week PCT and 43 who were on a waiting list for an equivalent amount of time. We used a 1:1 ratio method to ensure that there was a sufficient sample size for conducting analyses in the experimental condition. No participants were lost to follow-up (PCT,  $n = 44$ ; control group,  $n = 43$ ) resulting in a final sample of 87, that was used for statistical analyses. Figure 1 demonstrates participant flow through the study.

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.

## STATISTICAL ANALYSES

Data was first analyzed to check for outliers and distribution forms. No missing value imputation was made. To explore if at baseline the two groups were homogeneous, a  $t$ -Student test was used to compare both conditions, on the SOC variable.

Comparisons between the three assessments ( $t_1$ ,  $t_2$  and  $t_3$ ) for the two groups were done using Repeated Measures ANOVA. Post-hoc Fisher's Least Significant Difference (LSD) test for mean differences was used to compare the three assessments for the SOC,

in each group (PCT and waiting list). Data were analyzed using SPSS for Windows (version 19.0).

## RESULTS

In general, our results showed that the intervention gave these older participants the opportunity for sharing their personal experience and narratives in a psychologically safe therapeutic setting, during which the relational process and attitudes, inherent to PCT, facilitated the promotion of their SOC.

Regarding our first objective, that is, to assess and to compare older adults' SOC before and after a PCT intervention, findings showed that participants in PCT evidenced a significant increase of their SOC (16.7%), whilst those in waiting list indicated a significant decrease (-2.7%), between baseline and follow-up, as seen in Table 3. Concerning SOC dimensions' scores (i.e., Comprehensibility, Manageability and Meaningfulness) for the PCT group, results showed that participants in PCT experienced an increment in the three dimensions of SOC. The highest increment was verified in the Comprehensibility dimension (71.2%), followed by Manageability (32.9%) and Meaningfulness (12.1%) dimensions. Complete descriptive information for SOC and its subscales is provided in Table 3.

Our third objective was to explore significant differences between the PCT and the control group after the intervention and at follow-up.

To accomplish this objective we firstly verified if the participants who did PCT differed from the ones who were attributed to the waiting list, in the three assessments, regarding the SOC. As seen in Table 4, results from the *t*-Student indicated that the two groups did not significantly differ at baseline assessment, concerning SOC. Conversely, they significantly differ at  $t_2$  and  $t_3$ .

Secondly, to explore if the variables changed during the three assessments, within SOC, the PCT and waiting list groups were analyzed separately, after the verification of

sphericity for all variables/groups with the Mauchly test. Specifically, both at the post-intervention, and at follow-up, participants who underwent PCT had a significantly higher SOC ( $M = 3.84$ ,  $SD = .219$ ). Significant differences between the intervention group and the control group were found at the post-intervention and follow-up. The effect size in the PCT group was high ( $\eta^2p = .776$ ). Results from the repeated measures ANOVA for the PCT group and control group in the three assessments ( $t_1$ ,  $t_2$  and  $t_3$ ) are presented in Table 5.

## DISCUSSION

The central aim of this randomized controlled pilot study was to explore the promotion of SOC through an individual-based PCT intervention. In doing so, this study contributes to the literature in two ways. Firstly, our results highlighted the pertinence of older adults' SOC. Secondly, the results suggested that individual PCT with older adults may enhance their SOC. The findings, as well as the strengths and limitations of this study, are discussed in more detail subsequently.

Our first objective was to assess and to compare older adults' SOC before and after a PCT intervention. Findings showed that after the intervention, a significant increase of 17.3% ( $M = 3.86$ ,  $SD = .218$ ) was observed in the participants who did PCT. Moreover, the SOC evidenced at follow-up ( $t_3$ ) ( $M = 3.84$ ,  $SD = .219$ ) by these participants was significantly higher (16.7%) in comparison to the baseline score ( $M = 3.29$ ,  $SD = .245$ ). Inversely, participants in control group experienced a minor decrease between baseline ( $M = 3.28$ ,  $SD = .236$ ) and follow-up ( $M = 3.19$ ,  $SD = .244$ ) (that is, a mean 2.7% significant decrease of their score). Moreover, between  $t_1$  and  $t_2$  the control group had a mean 1.2% reduction of their score ( $M = 3.24$ ,  $SD = .233$ ). Effective PCT is a process of developmental healing, through relational depth (Barrett-Lennard, 2007; Knox & Cooper, 2010; Mearns & Schmid, 2006). The interrelated attitudes (congruence, unconditional positive

regard and empathy) on the part of the therapist are central to the success of PCT (Freire, 2013; Sanders, 2007), and for the occurrence of psychological changes (Kottler, Sexton, & Whiston, 1994) and a positive outcome in therapy (Patterson, 1984; Rogers, 1951, 1959). However, it must be noted that PCT, although effective for most clients as traditionally practiced, has its limitations, as do all therapeutic approaches (Rogers, 1959). Alternatively, researchers suggest that PCT can be optimized in effectiveness by integrating methods from other models, such as focusing-oriented therapy, expressive therapy or emotion-focused therapy (Cain, 2013).

Our results support the fact that individual PCT may promote older adults SOC. However, the therapy format (group versus individual) has been subject of debate. For instance, significant differences were not previously found in terms of the intervention's efficacy when comparing group with individual interventions (Schmid & O'Hara, 2013).

Our second aim was to analyse SOC dimensions scores (i.e., Comprehensibility, Manageability and Meaningfulness) for the PCT group. Results showed that participants in PCT experienced an increment in the three dimensions of SOC. In detail, the highest increase was observed in the Comprehensibility dimension (71.2%). Manageability and Meaningfulness subscales showed an increase of 32.9% and 12.1%, respectively. Although we expected that PCT would increase the Meaningfulness dimension, the results indicated that the increment in SOC was mostly due to the increase of the Comprehensibility dimension. This dimension regards the extent to which events are perceived as making logical sense, i.e., being ordered, consistent, and structured (Antonovsky, 1993; Eriksson & Lindstrom, 2006). Hence, in our study, the participants who did PCT, showed a significant increase of their comprehensibility of events. Considering that SOC is a health promoting psychological resource, which strengthens one's capacity to deal with environmental strain (Volanen et al., 2010), PCT privileges the client's perspective over the therapist's and it moves away from a diagnostic

of problem-centered understanding of the client, emphasizing where the client wants to "go" (Bohart & Tallman, 1999; Cooper & McLeod, 2011).

In addition to this, Rogers' necessary and sufficient conditions provided, by a genuine therapist, are pivotal in terms of facilitating therapeutic personality change (Asay & Lambert, 1999). PCT empowers the client, through non-directiveness (Bozarth, 2002; Brodley, 1997; Witty, 2004), congruence, comprehensibility and psychological adjustment towards decision-making and full functionality (Cooper & McLeod, 2011; Levitt, 2005; Rogers, 1980). Moreover, our findings indicated that the effect size in the PCT group was strong (.776). These results are in line with previous studies that suggested that the relational process between the therapist and the client during PCT can produce effects (Witty, 2005). In particular, approximately 30% of the variance in the PCT outcome can be attributed to *common factors*, which include the relationship, with 40% relating to client factors such as social learning and health, 15% relating to specific techniques, and 15% reflecting expectancy or hope for the success of therapy (Asay & Lambert, 1999). Alternatively, research stressed that older adults may also benefit from other models such as cognitive-behavioral therapy (CBT). However literature on the effectiveness of CBT in older adults is still limited because less research has been conducted with this population generally (Cox & D'Oyley, 2011).

Additionally, we found no previous studies that indicated the effect of PCT on older adults' SOC. Hence, it is possible that the relational process and attitudes, inherent to PCT, have mediated the promotion of SOC among our participants.

Finally, our third objective was to explore significant differences between the PCT and the control group after the intervention and at follow-up. In our study, SOC was significantly different in both groups, after the intervention and at follow-up. It has been reiterated the need to address the challenge of maintaining health and well-being in old age (Fernández-Ballesteros, 2007). 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. Our findings showed that participants involved in PCT presented a higher SOC after the intervention, in comparison with those in the control group. Previous studies found SOC to be associated with well-being indicators (Söderberg et al., 1997; Petrie & Brook, 1992) and with health (Henje et al., 2010). In fact SOC, seems to be a potential reason or mediating process for psychosocial variation in health (Suominen et al., 1999). Considering that social and personality factors are among the key determinants of health and well-being (Volanen et al., 2004), SOC seems to be a health promoting resource, which strengthens resilience and develops a positive subjective state of health (Amirkhan & Greaves, 2003; Eriksson & Lindstrom 2006).

Our study offers a valuable contribution to the literature. Yet, the results need to be interpreted within the context of the following limitations. Although a diverse sample of participants was recruited, this pilot study is limited by a small sample size and reliance on self-report measures. Moreover, the propensity for this study to be generalized is limited by the use of a convenience sampling method. In fact, the study was confined to participants who were recruited from community and health centers. Alternatively, generalized results to the older Portuguese population would represent the psychological and cultural diversity of this population.

Furthermore, although significant differences were found between groups, their clinical relevance is yet to be determined. Therefore, these findings need to be interpreted for practical use in order to avoid overrating differences, although the results showed statistical significance. Additionally, we hypothesized that an intervention with a clinical sample may enhance comparative results including community and clinical samples.

It is also not known whether the therapeutic attitudes that are central to other therapeutic models (e.g., focusing-oriented therapy) would

allow for similar outcomes in different therapy models. Additionally, cognitive factors and the establishment of clear objectives, components that are approached in CBT, were not part of our intervention. Future comparative interventions with older adults may clearly benefit of including outcomes from interventions with several therapeutic models.

It was not entirely evident from just comparing PCT and control groups that the therapeutic attitudinal conditions provided within PCT, solely influenced or promoted SOC among older adults. Indeed, no in-depth interviews were performed. Qualitative interviews may have provided the means for a deep understanding of what actually constitutes older adults' experiences of SOC. In addition, our study is limited by the three assessment moments of SOC. Thus, longitudinal and sequential designs are further needed to explain the stability of the found results.

This study was also limited for the lack of a comparative intervention format. Alternatively, comparative group interventions may be particularly stimulating to explore in future research. In addition, the measurement of SOC itself has limitations. Although the SOC questionnaire was originally developed by Antonovsky himself, it may still need further development in order to capture the key ideas in the SOC theory. A full-scale trial should next test whether PCT produces parallel changes in other measures of well-being (e.g., quality of life and subjective well-being).

It is unknown whether the results found persisted beyond the follow-up period used in this study. Thus, it might have been helpful to have maintenance sessions after the conclusion of the weekly intervention sessions. 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. This intervention has the potential to offer a reasonably low-cost self-regulatory approach to the SOC.

In spite of the limitations we believe that the findings of this study contribute to a better understanding of the promotion of SOC

through PCT. Firstly, the data come from a randomized controlled pilot study. Secondly, besides the data, the study suggested the potential benefits of a PCT intervention on their SOC. Thirdly, this study contributed to filling a gap in gerontological literature. Indeed, we found no previous studies that have focused on whether PCT can promote older adults' SOC or not.

In brief, the present study focused on exploring the promotion of an individual

based PCT intervention in older adults and our findings suggest that PCT may increase SOC.

Therefore, this study also provides a basis for more research, specifically, designing and implementing effective intervention programs, in which SOC and other well-being indicators can be included, in order to contribute to a better understanding of older adults' specific needs. PCT interventions seem to be, thus, pertinent, as a means of promoting SOC within a salutogenic context among older populations.

TABLE 1  
DISTRIBUTION OF THE STUDY'S PARTICIPANTS ACCORDING TO SOCIO-DEMOGRAPHIC AND HEALTH-RELATED CHARACTERISTICS ( $N = 87$ )

	PCT Group		Control Group		Total	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
<i>n</i>	44		43		87	
Age ( <i>M</i> ; <i>SD</i> )	72.5 (5.402)		72.3 (4.931)		72.4 (5.145)	
Gender						
Female	25	56.8	27	62.8	52	59.8
Male	19	43.2	16	37.2	35	40.2
Education						
Primary school	10	22.7	9	20.9	19	21.8
Middle school	9	20.5	13	30.2	22	25.3
High school	20	45.5	14	37.2	36	41.4
University degree or higher	5	11.3	5	11.7	10	11.5
Marital status						
Married or in a relationship	33	75.0	24	55.8	57	65.5
Not married or in a relationship	11	25.0	19	44.2	30	34.5
Professional status						
Inactive	30	68.2	25	58.1	55	63.2
Active	14	31.8	18	41.9	32	36.8
Family annual income						
≤10,000 €	11	25.0	10	23.3	21	24.1
10,001 – 20,000 €	23	52.2	14	32.5	37	42.5
20,001 – 37,500 €	5	1.4	13	30.2	18	20.7
≥37,500 €	5	11.4	6	14.0	11	12.7
Perceived health						
Good	28	63.6	27	62.8	55	63.2
	16	36.4	16	37.2	32	36.8

TABLE 2  
DISTRIBUTION OF SOCIO-DEMOGRAPHIC CHARACTERISTICS BY GENDER, MARITAL STATUS, PROFESSIONAL STATUS AND FAMILY ANNUAL INCOME

	Marital status		Professional status		Family annual income			
	Married or in a relationship	Not married or in a relationship	Inactive	Active	≤10,000 €	10,001–20,000 €	20,001–37,500 €	≥37,500 €
Gender								
Female	35	17	34	18	16	22	9	5
Male	22	13	21	14	5	15	9	6
Marital status								
Married or in a relationship	-	-	43	14	13	24	12	8
Not married or in a relationship	-	-	12	18	8	13	6	3
Professional status								
Inactive	-	-	-	-	12	22	13	8
Active	-	-	-	-	9	15	5	3
Family annual income								
≤10,000 €	-	-	-	-	-	-	-	-
10,001–20,000 €	-	-	-	-	-	-	-	-
20,001–37,500 €	-	-	-	-	-	-	-	-
≥37,500 €	-	-	-	-	-	-	-	-



TABLE 3  
MEANS AND STANDARD DEVIATIONS ON THE SENSE OF COHERENCE SCORE

	Baseline ( $t_1$ ) ( $M$ ; $SD$ )	Post-intervention ( $t_2$ ) ( $M$ ; $SD$ )	Follow-up ( $t_3$ ) ( $M$ ; $SD$ )
PCT Group ( $g_1$ )			
SOC	3.29(.245)	3.86(.218)	3.84(.219)
Comprehensibility	2.26(.712)	3.90(.412)	3.87(.416)
Manageability	3.01(.486)	4.02(.399)	4.00(.390)
Meaningfulness	3.21(.353)	3.61(.286)	3.60(.285)
Control group ( $g_2$ )			
SOC	3.28(.236)	3.24(.233)	3.19(.244)
Comprehensibility	3.61(.322)	3.57(.318)	3.53(.321)
Manageability	2.99(.481)	2.96(.489)	2.94(.500)
Meaningfulness	3.19(.331)	3.14(.340)	3.05(.354)

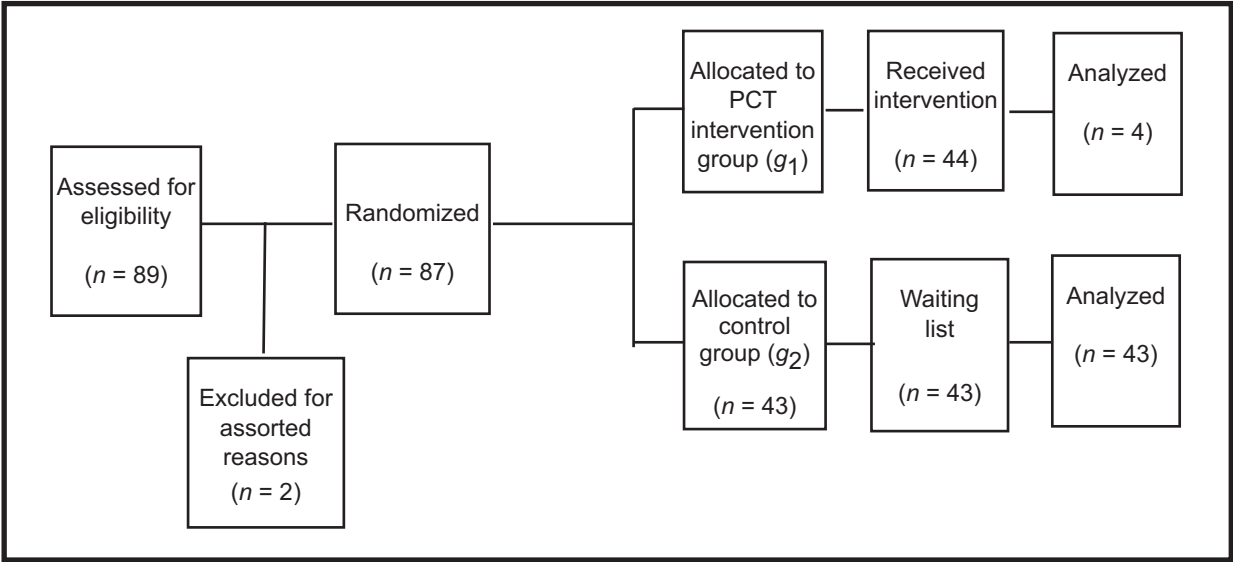
TABLE 4  
COMPARISON OF PARTICIPANTS PLACED IN INTERVENTION (PCT) WITH PARTICIPANTS IN WAITING LIST (WL)  
AT BASELINE ASSESSMENT ( $t_1$ ), POST-INTERVENTION ( $t_2$ ) AND FOLLOW-UP ( $t_3$ )

Variables	$t$	$t$ -Student $df$	$p$
SOC $t_1$	.194	85	.846
SOC $t_2$	12.767	85	.000
SOC $t_3$	12.981	85	.000

TABLE 5  
PCT GROUP AND CONTROL GROUP: COMPARISON BETWEEN BASELINE ( $t_1$ ), POST-INTERVENTION ( $t_2$ )  
AND FOLLOW-UP ( $t_3$ ) ASSESSMENTS FOR SOC ( $N = 87$ )

Variables	$t_1$ M(SD)	$t_2$ M(SD)	$t_3$ M(SD)	I J	Mean Difference I-J(SE)p	$\eta^2p$
SOC for PCT Group	3.29(.245)	3.86(.218)	3.84(.219)	$t_1$ $t_2$	-.567(.046).000	.776
				$t_1$ $t_3$	-.546(.045).000	
				$t_2$ $t_3$	.020(.006).001	
SOC for Control Group	3.28(.236)	3.24(.233)	3.19(.244)	$t_1$ $t_2$	.042(.009).000	.454
				$t_1$ $t_3$	.089(.013).000	
				$t_2$ $t_3$	.047(.009).000	

FIGURE 1  
PARTICIPANT FLOW THROUGH THE STUDY



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