

## RESEARCH ARTICLE (ORIGINAL)

## Making a Difference 3 – an individual cognitive stimulation program for older people: Appropriateness and feasibility

*Fazer a Diferença 3 - um programa de estimulação cognitiva individual para pessoas idosas: Aceitabilidade e aplicabilidade*

*Fazer a Diferença 3 - un programa de estimulación cognitiva individual para personas mayores: Aceptabilidad y aplicabilidad*

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### Abstract

**Background:** The delivery of individual cognitive stimulation by caregivers in a home-based setting is an innovative intervention. An example of this type of intervention is the Making a Difference 3 (MD3) cognitive stimulation program.

**Objective:** To explore the appropriateness and feasibility of the MD3 program for the Portuguese population.

**Methodology:** This study was developed in two phases. In Phase 1, exploratory interviews were conducted with academics, healthcare professionals, and caregivers to identify the receptivity to this type of intervention. In Phase 2, a panel of experts and focus groups with caregivers were conducted to explore their perceptions about the Portuguese version of the MD3 program.

**Results:** Phase 1 was the driving force behind the study. Participants considered this type of intervention very useful and versatile. Phase 2 allowed identifying the level of appropriateness and feasibility of the intervention that was translated and adapted to the Portuguese population.

**Conclusion:** The MD3 program can be an excellent tool in caring for older adults with cognitive impairment living at home.

**Keywords:** cognitive stimulation; non-pharmacological intervention; cognitive decline; dementia; neurocognitive disorder; caregivers

### Resumo

**Enquadramento:** A estimulação cognitiva individual desenvolvida em contexto domiciliário por um cuidador é uma intervenção inovadora. O programa de estimulação cognitiva Fazer a Diferença 3 (FD3) é um exemplo deste tipo de intervenção.

**Objetivo:** Explorar a aceitabilidade e a aplicabilidade do programa FD3 para a população portuguesa.

**Metodologia:** Estudo desenvolvido em duas fases: na Fase 1 realizaram-se entrevistas exploratórias a académicos, profissionais de saúde e cuidadores, com o intuito de se conhecer a receptividade a este tipo de intervenção; na Fase 2 conduziu-se um painel de peritos e grupos focais, com cuidadores, para explorar as suas perceções sobre o programa FD3, versão portuguesa.

**Resultados:** A Fase 1 foi impulsionadora do estudo. As partes interessadas analisaram este tipo de intervenção como muito útil e versátil. A Fase 2 permitiu perceber as potencialidades em termos de aceitabilidade e de aplicabilidade da intervenção, traduzida e adaptada, para a população portuguesa.

**Conclusão:** O programa FD3 poderá ser uma excelente ferramenta no cuidado à pessoa idosa com deterioração cognitiva a residir em contexto domiciliário.

**Palavras-chave:** estimulação cognitiva; intervenção não-farmacológica; declínio cognitivo; demência; perturbação neurocognitiva; cuidador

### Resumen

**Marco contextual:** La estimulación cognitiva individual, desarrollada en casa, por un cuidador, es una intervención innovadora. El programa de estimulación cognitiva Marcando la diferencia 3 (MD3) es un ejemplo de este tipo de intervención.

**Objetivo:** explorar la aceptabilidad y aplicabilidad del programa MD3 para la población portuguesa.

**Metodología:** se desarrollaron dos fases. En la Fase 1, se realizaron entrevistas exploratorias con académicos, profesionales y cuidadores, con el fin de conocer la receptividad a este tipo de intervenciones; La Fase 2, se desarrolló un panel de expertos y grupos focales para explorar sus percepciones sobre el programa, versión portuguesa.

**Resultados:** La Fase 1 fue la fuerza impulsora detrás del estudio. Los grupos de interés consideraron este tipo de intervención como muy útil y versátil. La Fase 2 permitió percibir las potencialidades en términos de aceptabilidad y aplicabilidad de la intervención, traducida y adaptada, para la población.

**Conclusión:** El programa MD3 puede ser una excelente herramienta para el cuidado de las personas mayores con deterioro cognitivo que viven en el hogar.

**Palabras clave:** estimulación cognitiva; intervención no farmacológica; deterioro cognitivo; demencia; trastorno neurocognitivo; cuidador



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## Introduction

Similarly to other international realities, Portugal struggles with problematic societal issues, such as the growing number of older people with a major neurocognitive disorder, often referred to as dementia (American Psychiatric Association [APA], 2013).

Portugal, until 2018, was one of the few European countries without an official strategy to care for older adults with major neurocognitive disorder (Despacho n.º 5988/2018 do Gabinete do Secretário de Estado Adjunto e da Saúde, 2018).

In the relevant literature on this topic, cognitive stimulation (CS) has gained increasing support in the clinical, social, and economic context given the potential non-pharmacological therapeutic effect of this intervention (Orgeta et al., 2015; Silva et al., 2020). There are different types of CS approaches and programs. Traditionally, this psychosocial intervention consists of group sessions incorporating a set of meaningful activities aimed to preserve the cognitive performance of persons with cognitive impairment (CI; Livingston et al., 2017).

Individual CS is a less common approach consisting of one-on-one sessions that can be developed in a home-based setting. In fact, there are few internationally known efforts to develop structured individual CS programs involving experts in this field but also older adults with CI and their caregivers. One of the most common and replicated programs in the literature is the Making a Difference 3 (MD3) - Individual Cognitive Stimulation Therapy developed by Yates, Orrell, Phoung, et al. (2015). Given the lack of structured individual CS programs in Portugal, this study aims to explore the appropriateness and feasibility of the Portuguese version of the MD3 individual CS program.

## Background

There is a growing concern about designing structured and replicable CS programs based on rigorous methodological guidelines. Examples of individual CS programs include the *Home-based collaborative memory intervention*, the *Active cognitive stimulation*, and the MD3 (Silva et al., 2020; Yates, Orrell, Phoung, et al., 2015). These programs aim to respond to an underexplored intervention context in the area of CS. Unlike most programs that are implemented by a healthcare professional in a hospital or community setting, these individual CS programs are to be delivered by an informal caregiver in a home-based setting. From this perspective, the informal caregiver (family member, neighbor, or friend) is the facilitator of the intervention. These programs are also beneficial because they can be applied to older people without access to group CS interventions due to mobility difficulties or unavailability in their area of residence (Silva et al., 2020). The MD3 program is an innovative program with therapeutic potential that can be applied at a reasonable cost and is aligned with the policies focused on aging in place (Fonseca, 2018; Orgeta et al., 2015).

## Research question

What is the appropriateness and feasibility of the MD3 - individual CS program (iCSP) in the Portuguese population from the perceptions of caregivers, healthcare professionals, and experts?

## Methodology

The MD3-iCSP- was developed by Yates, Orrell, Phoung, et al. (2015) based on the methodological recommendations of the Medical Research Council (Craig et al., 2008). This program was designed to be applied three times a week, in a total of 75 sessions (Yates, Orrell, Phoung, et al., 2015; Yates, 2016). It is recommended for older people with mild CI and mild to moderate dementia. The MD3-iCSP includes a manual with two main sections: (a) an introduction listing 13 key principles of good practice in the development of individual CS sessions to guide caregivers in their implementation; (b) the presentation of the sessions, focused on several topics such as “my life”, “current affairs”, or “food”. Each session follows the same main structure, complemented by practical instructions to the caregiver to facilitate the interaction with the persons, followed by the development of the proposed activities. All individual CS sessions have two levels of difficulty that are managed by the caregivers during the implementation of the sessions (Yates, Orrell, Phoung, et al., 2015; Yates, 2016).

This study was developed based on the *Guidelines for adapting cognitive stimulation therapy to other cultures* (Aguirre et al., 2014) and organized in two phases. In Phase 1, following the principles of stakeholder involvement, the following subjects were included: informal caregivers (InfC) of older people with CI ( $n = 2$ ), healthcare professionals (HProf) with experience in CS ( $n = 3$ ), and academics (ACad) with extensive research/teaching experience in the area of aging ( $n = 3$ ). This phase aimed to explore the appropriateness and feasibility of the MD3-iCSP (original English version) and the dyads or contexts that could benefit from the program. The MD3-iCSP was translated and adapted into European Portuguese based on the contributions made during this phase.

In Phase 2, an expert panel ( $n = 8$ ) and three focus groups with family caregivers ( $n = 10$ ) were conducted to explore their perceptions of the introductory part and sessions included in the European Portuguese version of the MD3-iCSP. In Phase 1, participants were selected by convenience, and data were collected through semi-structured interviews using a script designed by the research team. All participants were proficient in written and spoken English. After an invitation by the principal investigator, the MD3-iCSP (original version) was provided to each participant (InfC, HProf, ACad) for analysis. After a formal analysis, the principal investigator interviewed each participant to learn about their perceptions of the MD3-iCSP.

In Phase 2, a heterogeneous expert panel (Keeney et al., 2010) was conducted using the modified Delphi



technique to validate the contents of the MD3-iCSP in European Portuguese. The following criteria for expert eligibility were used: (a) To have vast knowledge in the area of older adult care, acquired through specialized training, and experience in the planning and implementation of CS interventions; (b) To deliver, in their profession/work context, weekly CS interventions to the older population; or (c) To have an extensive research activity in the area of CS. Experts were recruited through face-to-face or telephone contacts. After they accepted to participate, they received information by email about the study (e.g., objective, applicability of the knowledge produced by the panel, Delphi organization) and the European Portuguese version of the MD3-iCSP.

The experts' contributions were standardized through an Analysis Survey designed by the research team and rated on a 5-point Likert scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). At the end of this survey, the experts could provide other contributions in an open-ended question.

Based on the script, the experts were asked to rate their level of agreement with the structure and content of the introductory part (e.g., language, concepts, font size, mind maps, and amount information) and the sessions of the European Portuguese version of the MD3-iCSP (e.g., overall layout, language and concepts used, font size, images, clarity of the proposed activities, likelihood of engagement of the older person with CI).

In Phase 2, three focus groups were conducted with family caregivers of older adults with CI, who were selected after contacting a motor rehabilitation and cognitive stimulation center in northern Portugal (after the institution's approval). The team of this center pre-selected and contacted potential caregivers ( $n = 12$ ), ensuring the group's homogeneity within the area of interest (Puchta & Potter, 2004).

A research team member contacted those who agreed to participate ( $n = 10$ ) and provided more information about the study. The participants were given the European Portuguese version of the MD3-iCSP and a manual analysis guide similar to the one provided to the experts in the Delphi panel. The focus groups took place in a large office at the motor rehabilitation and cognitive stimulation center, in the presence of two research team members (one responsible for conducting the group and another one responsible for field notes and audio recording). The introduction to the themes and the group discussion were based on a script previously designed by the research team.

In Phase 1, the content of the interviews was analyzed and categorized. The categories had been previously organized using the following descriptors: (a) appropriateness and feasibility; (b) type of dyads; (c) contexts.

In Phase 2, levels of group consensus were established for the Delphi technique. Thus, in the Analysis Survey, group consensus was reached if 75% of the answers scored 4 to 5 points (Keeney et al., 2010). Descriptive statistics were used, such as measures of central tendency, dispersion (median), and frequency. The answers to the open-ended questions were subjected to content analysis (Keeney et al., 2010). In the focus groups, the research team conducted group observation and took field notes that supplemented the

audio data. The sessions were transcribed and analyzed together with the field notes, building the body of analysis. Data were analyzed using inductive approaches to thematic analysis based on a system of categories previously established, which resulted from the reading and analysis guide (Puchta & Potter, 2004). Sociodemographic data of the caregivers were collected and analyzed using descriptive statistics.

Despite having 75 sessions, after the 35th session, the MD3-iCSP repeats its thematic areas with similar activities and contents. Therefore, the team decided to explore the appropriateness and feasibility of the program until session 40 because data saturation was expected.

Concerning the ethical aspects, this study is part of the project entitled CS in older people (*Estimulação cognitiva em pessoas idosas*), which obtained a positive opinion from the Ethics Committee of the Regional Health Administration of the North (Opinion no. 27/2017). All ethical principles were ensured in this study.

## Results

In Phase 1, the participants' perceptions lead to the process of translation and adaptation of the MD3-iCSP into European Portuguese (entitled *Fazer a Diferença 3; PECEI-FD3*).

Concerning the characteristics of the HProf (HProf1, HProf2, and HProf3), (a) one was a nurse specialist in rehabilitation nursing, with experience in CS and 15 years of professional experience; (b) one was an occupational therapist, with four years of experience in CS; (c) and one was a social animator with a post-graduation in neuropsychological interventions and professional experience in CS.

The HProf assessed the program as useful and believe that its appropriateness will be positive and its feasibility will be achieved in some dyads:

"It's a very good idea, caregivers, family members, and even patients themselves are becoming more aware of the advantages of cognitive stimulation" (HProf1); "having a stimulation program that can be applied by a family member will benefit the families that are more active and involved in the aging of their older relatives" (HProf1). The HProf also identified families where this intervention may not be well accepted: "not all family members/caregivers will accept the program." (HProf2); "In general, due to the their education level, our population still doesn't understand very well the benefit of this intervention... they infantilize older people" (HProf2); "Family members/caregivers with low education levels, unmotivated, or clinically unstable are unlikely to adhere" (HProf2).

The caregivers (InfC1 and InfC2) were two daughters whose mothers were in a moderate to advanced stage of CI. Both were full-time caregivers. InfC1 was a retired pharmacy graduate who had the support of a formal caregiver. InfC2 had support from the family network and a housekeeper, had completed primary school, and was retired. The caregivers showed a good receptivity to the PECEI-FD3: "the manual is well organized, it's interesting,

everything seems to be well explained ... it seems very useful" (InfC1); "it's definitely very interesting, we, the caregivers, have few resources" (InfC2).

A potential barrier to its applicability is the sensory deficits that older people with CI often have: "Those with hearing or visual impairments may benefit little from the program; they can even become irritated about not being able to see or do things" (InfC 1).

The academics (ACad1, ACad2 and ACad3) in this study were teachers from polytechnic higher education ( $n = 2$ ) and university education ( $n = 1$ ). They reported that the program could be very useful for some families and should undergo a thorough cultural adaptation: "Every older person with dementia should have the right to this type of intervention." (ACad1); "Social isolation is a reality, . . . they need it" (ACad2); "This type of program will be for families who care about their older adults and get involved" (ACad2); "a rigorous cultural adaptation work will be necessary for its reliability and validity . . . take into account the tastes and preferences of the target population" (ACad1).

The academics highlighted a number of positive aspects in terms of the appropriateness and feasibility of the program in different contexts, but they warned about the intentionality of the intervention and the potential need for supervision by healthcare professionals: "It has the advantage of being in book format, which makes it

more accessible to families." (ACad3); "it has a friendly, colorful presentation" (ACad3); "It has the advantage of explaining how to perform cognitive stimulation, which will help the caregiver, but will it be enough?" (ACad3); "I think this program can have a broader applicability [than just the home]" (ACad1).

## Phase 2

Concerning the experts ( $n = 8$ ), 37.5% ( $n = 3$ ) met inclusion criterion a), 37.5% ( $n = 3$ ) met inclusion criterion b), and 25% ( $n = 2$ ) met inclusion criterion c). They had several academic backgrounds: Nursing ( $n = 4$ ), Psychology ( $n = 3$ ), Occupational Therapy ( $n = 1$ ), and Social Animation and Gerontology ( $n = 1$ ). One of the participants had two degrees (Nursing and Psychology), two were doctoral students, two had a doctoral degree in Psychology, two were specialized in Mental Health and Psychiatric Nursing, and one was specialized in Community and Family Health Nursing.

The analysis surveys on the introduction of the PECEI-FD3 manual were rated on a Likert scale from 3 (*no opinion*) to 5 points (*totally agree*). The levels of consensus obtained in the first moment were 88.5-100%. The parameters with the lowest scores were the font size and the amount of information. The remaining parameters scored 4 (*no opinion*) or 5 points (*strongly agree*; Table 1).

**Table 1**

*Expert Assessment - Introduction of the PECEI-FD3 Manual*

Parameters	Totally disagree $n$ (%)	Disagree $n$ (%)	No opinion $n$ (%)	Agree $n$ (%)	Totally agree $n$ (%)
Overall presentation	0	0	0	2 (25)	6 (75)
Language	0	0	0	4 (50)	4 (50)
Concepts	0	0	0	4 (50)	4 (50)
Font size	0	0	1 (12.5)	5 (62.5)	2 (25)
Mind maps	0	0	0	1 (12.5)	7 (87)
Amount of information	0	0	1 (12.5)	5 (62.5)	2 (25)
Key principles	0	0	0	1 (12.5)	7 (87)
Explanation on how to use the manual	0	0	0	3 (37.5)	5 (62.5)
Section - Frequently Asked Questions	0	0	0	1 (12.5)	7 (87.5)
Section - Useful resources	0	0	0	4 (50)	4 (50)

The parameters assessed in each of the 40 sessions ranged from 3 to 5 points, indicating high levels of consensus (Table 2). The parameter with the lowest mean score ( $M = 4.48$ ;  $SD = 0.17$ ) was the overall presentation of the sessions

and the parameters with the highest scores related to the concepts ( $M = 4.76$ ;  $SD = 0.22$ ) and the amount of information in each session ( $M = 4.75$ ;  $SD = 0.24$ ).

**Table 2**

*Measures of central tendency and dispersion of the parameters assessed in each session (sessions 1 to 40)*

Parameters	Mean ( $\pm$ SD)	Mean Range	Score Range
Overall presentation	4.48 (0.17)	4.24-5.00	3-5
Language	4.71 (0.17)	4.52-5.00	3-5
Concepts	4.76 (0.22)	4.48-5.00	3-5
Font size	4.59 (0.21)	4.36-5.00	3-5
Images	4.68 (0.22)	4.29-5.00	3-5
Amount of information	4.75 (0.24)	4.32-4.96	4-5
Session activities are clear	4.67 (0.16)	4.44 -4.84	3-5
Level of engagement provided	4.68 (0.27)	4.32-5.00	3-5

*Note.* SD = standard deviation.

The experts (Exp.) reported that the few technological resources and the low education levels that characterize this population could negatively impact the feasibility of the program: “most of our caregivers not only do not have a computer/tablet/smartphone, but they also have few or no search or navigating skills” (Exp4); “our caregivers have little tradition of reading. Long texts ‘scare’ them” (Exp6). The experts analyzed the content, organization, and level of difficulty of some sessions. They also highlighted the male participants’ perceptions of some of the proposed activities that, from their perspective, are strongly associated with the female population for cultural reasons: “I’m not sure if everyone knows the game ‘Dots and boxes’” (Exp1, Session 10 - Numbers II); “the suggestions for ‘Things to think about’ are too complex for most of our older people” (Exp5, Session 40 - Art); “I would try to include more problems that men could solve.” (Exp5, Session 21/22 - Useful tips).

On the Level of engagement provided by the session, an expert discussed how the session would be implemented: “about the level of engagement that the activities provide, it implies a relative answer, that is, theoretically, the activities seem to induce this engagement, . . . However, it will depend on how they are implemented” (Exp1). Overall, the experts’ opinions were taken into account by the research team and integrated into the final version of the PECI-FD3. Issues central to the research team, such as the information in the manual’s introduction, were discussed in the focus groups.

### Focus groups

All caregivers who agreed to participate in this study were women with a mean age of 59 years, most were daughters ( $n = 5$ ), and all lived with the person being cared for (Table 3).

**Table 3**

*Sociodemographic characteristics of informal caregivers (n = 10)*

Characteristics	Informal caregivers (n =10)
<b>Age</b> , years (mean, min-max)	59 (30-74)
<b>Gender</b> – n (%)	
Female	10 (100)
Male	0%
<b>Education level</b> , years (mean, min-max)	10.8 (4-16)
<b>Family relationship</b> – n (%)	
Daughter/Son	5 (50)
Spouse	3 (30)
Daughter-in-law/Son-in-law	1 (10)
Niece/Nephew	1 (10)

*Note.* Max = maximum; Min = minimum.

The caregivers agreed with the overall presentation and contents in the introduction of the PECI-FD3 manual. The content in the introduction was rated as useful and

relevant. The language and/or concepts were rated as intelligible. Nevertheless, caregivers provided significant contributions: “The manual has a very nice presentation,

I really liked it, it's colorful... it's nice!" (FG, InfC 1); "It seemed very interesting in terms of organization, structure. . . it has several titles which helps" (FG, InfC 3); "I had to read it more than once, not because I found it difficult to read or boring, but because it was a new subject... I learned a lot" (FG, InfC2).

Concerning the CS sessions, changes were suggested regarding the terms and concepts, as well as the level of difficulty of some activities, such as those proposed in the art sessions (session 25, 26, and 40). Both the caregivers and the experts found that the activities in the art sessions were complex (although they were simplified after the experts' initial assessment): "In general, I think that the presentation is great, attractive, well organized" (FG, InfC 8); "The discussion about art is complex, and it's not even a topic that older people master" (FG, InfC4). Concerning the appropriateness of the PECCI-FD3, the caregivers praised the program and even expressed their interest in applying it to their relatives. However, four caregivers reported that it could be difficult to implement due to lack of availability (compromising the adherence to the program) or instability in the relationship with their older family member with CI. Two other caregivers reported that the current state of apathy, lack of interest, and difficulty expressed by their relatives could compromise the implementation and understanding of the activities due to the worsening of the clinical condition (advanced CI). However, these caregivers reinforced their opinion about the PECCI-FD3, considering it interesting and applicable to other clinical cases.

"There is little dissemination of this type of material [CS programs] . . . , I thought it was very good." (FG, InfC2); "It's always a moment when we give them attention, spend time with them doing some of these activities, is a way of giving them attention . . ." (FG, InfC5); "The best person to work with my aunt and develop this type of activity is the maid . . . there is an emotional distance and so it would work better" (FG, InfC8).

## Discussion

According to the Guidelines for adapting cognitive stimulation therapy to other cultures (Aguirre et al., 2014), the translation of this type of intervention should involve all stakeholders as much as possible so that the intervention is sensitive to people's preferences, traditions, experiences, and system of beliefs and values. The more rigorous this process is, the more likely the target population will accept the intervention and understand its appropriateness.

In Phase 1, data were collected on the opinions of caregivers, academics, and healthcare professionals about the original version of the PECCI-MD3. This phase provided the impulse and support to the process of translation and adaptation of the PECCI-MD3. The results of the exploratory interviews provided insights into the potential appropriateness, types of dyads receiving the intervention, and contexts while allowing to determine the type of participants to be included in Phase 2.

In Phase 2, data were collected on the opinions of the

panel of experts and the caregivers who participated in the focus groups about the translation of the MD3-iCSP, representing an excellent contribution to the cultural validation process and reinforcing the appropriateness and feasibility of the intervention in the Portuguese population.

Phases 1 and 2 showed that this intervention is innovative and necessary for the Portuguese population. It might constitute an excellent response, especially in cases of persons at risk for CI or persons with CI whose family/caregiver is actively motivated and engaged in their therapeutic process (Yates, Orrell, Spector, et al., 2015; Yates et al., 2016). The quality of the relationship between dyad members should also be highlighted because it may affect the appropriateness and disability of the program (Orrell et al., 2017). Therefore, the prior assessment of the relationship between dyad members is an aspect to consider before implementing this program (Yates, 2016). Another difficulty to be taken into account is the low literacy/education level of the Portuguese population. This characteristic of the dyad must be considered by the healthcare professionals when prescribing this intervention. The strategy might involve increased monitoring of these dyads by these professionals. A recent systematic literature review found that the monitoring of the implementation of individual CS programs by healthcare professionals is crucial for the success of the intervention (Silva et al., 2020). This review found that studies where individual CS programs were delivered by the caregivers in home-based settings and the dyads were regularly monitored by healthcare professionals reported significant gains for older adults with CI (Silva et al., 2020). Finally, in terms of contexts, individual CS programs are an excellent resource to be delivered in home-based settings. This program may be prescribed by professionals from several care environments, from primary care to differentiated care, such as psychogeriatric units.

Although the various sections in the introduction of the PECCI-FD3 manual were well accepted, the experts' opinions differs from the family caregivers' opinions. The experts reported that it included too much information, highlighting that the caregivers had no reading habits or access to technological resources such as the Internet. In turn, the family caregivers appreciated the amount of information, reporting that it allowed them to acquire new knowledge vital in caring for and interacting with the older person with CI.

The CS sessions were well rated in terms of understanding, organization, and potential for engagement of the older person with CI in these sessions. The authors believe that the high levels of consensus obtained in these two phases are largely due to the excellent work done by the original authors of this program (Yates, Orrell, Phoung, et al., 2015). The research undertaken to design it was a rigorous process developed by a very experienced team (Yates, Orrell, Spector, et al., 2015; Yates, 2016). In this context, this research team also conducted a rigorous translation and cultural validation process, which also proved to be successful (Yates et al., 2019; Silva, 2019). Based on international guidelines, this research process

aimed to make this intervention more specific and sensitive to cultural and linguistic needs, which are key steps for the future appropriateness and feasibility of this intervention in the Portuguese population. Even so, the authors believe that the generalizations of the data extracted from the panel of experts and the focus groups may have some limitations. The authors followed the guidelines on the number of participants involved in the Delphi technique and the focus groups to minimize these limitations, but there is still a lack of consensus in the literature on this matter (Keeney et al., 2010). However, the authors believe that the process followed in this study confers validity because data saturation was reached in the open-ended questions and high levels of consensus were obtained in the closed-ended questions. As for the caregivers, this study found consensus in their interactions. However, the authors believe that the absence of male caregivers is a limitation as their opinions could have possibly enriched this process even more (Aguirre et al., 2014; Yates, Orrell, Spector, et al., 2015). Another aspect to reflect upon is the participants' regional origin as most of them are from the northern region of Portugal, more specifically from the metropolitan area of Porto, and only two experts are from the central region (Aguirre et al., 2014; Yates, 2016). The experiences of these participants may not be representative of the Portuguese population.

## Conclusion

The PECCI-FD3 was considered a useful, versatile, and accessible program to caregivers and older people with CI. The consultation with experts and caregivers provided valuable input to the development of the final version of PECCI-FD3. The program was appreciated for its friendly presentation and easy organization. Caregivers praised the initial information of the program, as well as the contents and organization of the CS sessions. Future studies should consider the geographic specificities of the Portuguese population to enhance the program's appropriateness in the national context. Therefore, nationwide studies should be conducted for a broad validation of this intervention. Finally, the effectiveness of this program should be assessed through experimental studies, and the meaning assigned to it by both caregivers and people with CI should be further explored.

### Author contributions

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