

ORIGINAL ARTICLE

Effectiveness of a telephone intervention based on motivational health coaching for improving the mental health of caregivers of people with dementia: A randomised controlled trial

Carmen Sarabia-Cobo PhD, RN¹  | Victoria Pérez RN, MSN² | Pablo de Lorena RN, MSN² | María Sáenz-Jalón RN, MSN³ | Ana Rosa Alconero-Camarero PhD, RN¹

¹Nursing Research Group IDIVAL, Faculty of Nursing, University of Cantabria, Santander, Spain

²CR Santa Lucía, Madrid, Spain

³Hospital 12 de Octubre, Nursing Research Group IDIVAL, Madrid, Spain

Correspondence

Carmen Sarabia-Cobo PhD, RN, Nursing Research Group IDIVAL, Faculty of Nursing, University of Cantabria, Spain
Avda. Valdecilla s/n 39008, Santander, Cantabria, Spain.
Email: carmen.sarabia@unican.es

Funding information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Abstract

Objectives: Caring for a family member with dementia is considered one of the activities with the greatest negative impact on a person's mental health. Developing long-lasting and effective strategies is a challenge for caregivers. This study sought to evaluate the impact of an intervention based on a programme of motivational coaching delivered by telephone in a group of caregivers of patients with dementia compared to a control group.

Methods: A randomised controlled trial with a control group and an intervention group. (CONSORT guidelines were used). Telephone calls were made during six weeks, involving a process of coaching and motivational interviews. The following variables were measured in caregivers: self-efficacy of caring, depression, perceived stress, frequency of problematic behaviours and dysfunctional thoughts. Assessments were conducted at three time points: baseline, post-intervention and three months' post-intervention.

Results: In total, 106 caregivers participated (53 subjects in the control group and 53 in the intervention group). Statistically significant differences (ANCOVA) were found between both groups for the self-efficacy and stress variables, with improved results in the intervention group ($p < .01$). Furthermore, statistically significant differences were found in the intervention group between the baseline and post-intervention assessments, with improvements in self-efficacy, decreased stress and decreased dysfunctional thoughts ($p < .05$). The results were maintained over time for both groups.

Conclusions: An intervention based on telephone calls using a health coaching approach with motivational interviewing appears to be effective for the improvement of self-efficacy and mental health of caregivers of people with moderate dementia. Furthermore, these effects appear to be maintained over time.

KEYWORDS

caregivers, coaching, dementia, eHealth, motivational interviewing, older people, randomised controlled trial

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2021 The Authors. *International Journal of Older People Nursing* published by John Wiley & Sons Ltd.

1 | INTRODUCTION

Interventions that seek to reduce the burden of care among family caregivers of people with dementia can reduce the long-term costs of care for dementia if institutionalisation can be delayed (Kaddour et al., 2019). Furthermore, caregiver burden can lead to caregivers failing to fulfil their duties because of stress, anxiety and depression (Vandepitte et al., 2016). Due to the expected increase in the number of patients with dementia, the unlikelihood of a cure in the near future and the increased cost of care, there is a growing need for effective care interventions directed at caregivers, especially directed at preserving their mental health (Cheng et al., 2020; Kishita et al., 2018). Many support interventions for caregivers have demonstrated to be effective for improving self-efficacy, self-esteem, reducing the negative aspects of overload and favouring the positive aspects of care (Hopkinson et al., 2019; Qiu et al., 2019; Tang, & Chan, 2016). Nonetheless, the number of people with dementia is on the rise, thus, caregivers are forced to combine their professional life with caring, which, in turn, accelerates institutionalisation (Stephan et al., 2017). Therefore, the use of e-health technology such as telephone-delivered interventions or video conferences is valuable for providing support and accompaniment, as these appear to be the most requested needs of caregivers in the process of dementia (Wilz, & Soellner, 2016). Telephone interventions appear very promising for satisfying the educational and support needs of informal caregivers of dementia at reduced costs (Bus et al., 2018; Donath et al., 2019; Tremont et al., 2015).

Multicomponent programmes which combine information, personalised care strategies and contact with other caregivers led to positive effects on confidence, self-efficacy, stress, burden and depression (Bayly et al., 2019; Parra-Vidales et al., 2017). Of all the strategies used, the motivational interview (MI) appears to be a widely researched health training technique with positive and long-lasting effects (DiClemente et al., 2017; Shingleton, & Palfai, 2016). Thus, motivational interviewing is a technique that is centred on the client and attempts to explore and resolve the ambivalence of feelings or behaviours, while accomplishing their goals. In addition, together with the interventions based on MI, a complementary methodology exists which is proving to be highly effective: coaching applied to health processes (Long et al., 2019). This is a patient-centred intervention which aims at improving patient's self-control and motivation to achieve goals which improve their process of health and illness (Olsen, & Nesbitt, 2010). Used as part of a process of coaching, MI is a simple and effective psychotherapeutic intervention for favouring processes of adaptation and management of stress and emotional overload (Bus et al., 2018; Dejonghe et al., 2017). According to studies, caring for a person with dementia is made up of potentially stress-inducing transitions that trigger a caregiver assessment process to identify whether resources can be mobilised to cope with change (Cheng et al., 2019; Wilz et al.,). Our methodological approach is that the caregiver burden is considered a situation in which the demands (both perceived and objective)

What does this research add to existing knowledge in gerontology?

- Caregivers of people with dementia improved their mental health after the intervention.
- Long-term caregiver health care requires effective and inexpensive psychological interventions.
- The results of this RCT indicated effective long-term effects on caregivers.

What are the implications of this new knowledge for nursing care with older people?

- Motivational coaching provides coping strategies against stress to caregivers of people with dementia.
- Telephone intervention is effective in improving the mental health of caregivers of people with dementia.

How could the findings be used to influence policy or practice or research or education?

- The intervention has been carried out by nurses effectively.
- Caring for people with dementia also requires taking care of the mental health of the caregivers.
- Designing simple phone interventions based on the motivational coaching approach will have benefits for caregivers

exceed the coping capacity and resources. Providing the caregiver with self-control strategies and improving their coping styles, from detecting their own strengths (through the coaching process) and helping them develop their advocacy style and personal changes (through the motivational interview) will give place to an improvement in their quality of life and better care for their family member with dementia (Meichsner et al., 2019).

The literature reviewed suggests, as we have seen, there are interventions that have been shown to be effective (Hopkinson et al., 2019; Qiu et al., 2019; Tang, & Chan, 2016) but very few have been followed up (longitudinal study) to assess whether the positive effect of the intervention has been sustained over time. This partly justifies carrying out this study. On the other hand, it is also noteworthy that the introduction of psychological variables that seem to play a modulating role on stress management and coping with caregiving overload in caregivers (such as self-efficacy of caring, depression, perceived stress, frequency of problematic behaviours and dysfunctional thoughts) have not been methodically and jointly assessed in the literature. On the other hand, many caregivers find it difficult to attend face-to-face sessions, so developing online models based on complementing a motivational model through telephone interventions seems to be an efficient and cost-effective measure (Waller

et al., 2017). However, there are not many studies that incorporate the coaching model applied to health together with the motivational interview that studies the long-term effects for stress reduction and improvement in the caregiver's own life control.

Thus, the aim of the present study was to evaluate the impact of an intervention based on a programme of motivational coaching conducted by telephone in a group of caregivers of patients with dementia compared to a control group.

2 | METHODS

This study was a randomised controlled trial with a control group and an intervention group (CONSORT guidelines were used). The study recruitment setting was a psychogeriatric day centre for older people belonging to a foundation located in a large urban area of the centre of Spain. The participating subjects were caregivers of older people with dementia who were users of the day centre.

Inclusion criteria: being over the age of 18, acting as the main caregiver, over six months' experience as a caregiver, living with the patient diagnosed by a specialist as having cognitive decline in moderate/advanced states of the illness (using the Global Deterioration Scale -GDS- 4/7) (Reisberg et al., 1982). Furthermore, participants had to have access to a telephone in order to perform the intervention.

People with moderate-severe dementia were selected because they carry a greater burden of care and for a longer period of time. The objective is to assess caregivers who have been caring for people with high physical and mental dependence for years. The literature suggests that these caregivers have the greatest impact on their mental and physical health and will benefit from this type of programme (Abreu et al., 2020; Smaling et al., 2018). The GDS scale was used because it allows classifying people according to the stage of dementia (it is the scale usually used worldwide by neurologists). A scale of 4-7 classifies the person with moderate to very severe dementia (Reisberg et al., 1982).

Exclusion criteria: cognitive decline and/or psychiatric disorder, unresolved hypoacusia. It was assessed by the research team using the Folstein Mini-Mental (Monroe, T., & Carter, 2012) and requesting medical history from the participants.

2.1 | Variables and tools

Sociodemographic variables were gathered for all participants: age, sex and level of studies. In addition, this study collected variables related to the role of the caregivers and the characteristics of the people receiving care: years of experience as a caregiver, characteristics of the person/s cared for level of dementia according to the Functional Assessment Staging (FAST) (Reisberg, 1988), years of evolution of the dementia and level of dependence of the person with dementia evaluated using the Barthel Index (Cid-Ruzafa, & Damián-Moreno, 1997).

TABLE 1 Themes made available to participants during telephone calls, based on the 'Partner in Balance' protocol

1. Acceptance
2. Balance in activities
3. Communication with family member and environment
4. Coping with stress
5. Focusing on the positive
6. Insecurities and rumination
7. Self-understanding
8. The changing family member
9. Social relations and support

2.2 | Independent variables

Three nurses delivered the intervention (two of whom were also psychologists). These nurses were assigned as 'coaches', and had received extensive training in both motivational interviews and the theory of change using coaching (the three nurses had a Master's Degree in Health Coaching and Motivational Interviewing) with extensive experience and training in these types of interventions (Neuner-Jehle et al., 2013). The intervention was an adaptation of the 'Partner in Balance' programme (Boots et al., 2018) which has been successfully validated in a similar population (Boots et al., 2018) and based on recommendations by previous studies (Neenan, & Palmer, 2013; Olsen, J. M., & Nesbitt 2010). The intervention consisted of a first face-to-face session with the coach, a period of sessions based on telephone calls and a final face-to-face assessment session with the coach. The basis of the intervention was to learn how to identify areas of change and create personal goals (Ai et al., 2017). The aim of the admission session was to familiarise participants with the programme and establish goals that they sought to achieve via their participation using the technique of motivational interviewing, which is often used to identify objectives of change and increase the intrinsic motivation for change (Neenan, & Palmer, 2013). The aims and strategies for achieving these objectives were individually determined and depended on the problems, the motivation and the personal abilities of participants. As it is uncommon for people to reflect upon their own problems and concerns, a list of themes was elaborated to aid reflection and assist participants in this process. According to the personal needs and individual areas of interest, the participants selected four out of nine possible themes from a list and they were individually informed to ensure that they understood the procedure for the telephone conversations. The selected themes are displayed in Table 1. Thereafter, a 20 min telephone call was conducted each week, focusing on the selected theme, via a process of motivational interviewing and emotional management using a process of coaching. The telephone calls were performed over a six-week period. Subsequently, a face-to-face encounter was arranged to evaluate the results and another encounter was scheduled three months after finalising the intervention.

2.3 | Control group

After completing the initial assessment, the participants in the control group were contacted by telephone to be evaluated face-to-face again after six weeks and then at three months.

2.4 | Procedure

The participants were assessed at three points in time: (T0) baseline assessment, (T1) upon completing the intervention (six weeks after the beginning of the intervention) and (T2) follow-up phase three months after completing the intervention.

2.5 | Outcome variables

The Caregiver Self-Efficacy Scale was used (CSES) (Fortinsky et al., 2002), which measures care management self-efficacy (4 items) and service-use self-efficacy (5 items). The care management self-efficacy scores range from 4 to 40 and service-use self-efficacy ranges from 5 to 50. The highest scores on the CSES indicate higher levels of self-efficacy.

Depression was evaluated using the Depression Scale by the Spanish Center of Epidemiological Studies (CES-D) (Radloff, 1977) in its Spanish version (Zunzunegui et al., 1998). This scale consists of 20 items with a Likert response format based on four options ('rarely or never': 0; 'all the time': 3), which evaluate whether the person acknowledges experiencing a range of depressive symptoms during the previous week. The interval of the overall score ranges from 0 and 60, and a higher score corresponds with greater symptoms of depression.

Perceived stress was evaluated using the Perceived Stress Scale (PSS) (Cohen et al., 1983) Spanish version (Remor & Carroles, 2001). This scale was designed to measure the degree to which the vital situations are perceived as being stressful. It consists of 14 items with Likert response formats based on five response options, ranging from 'never' (score: 0) to 'always' (score: 4). The score ranges between 0 (minimum stress perceived) and 56 (maximum stress perceived).

The problematic behaviour of the family member receiving care was evaluated using the MBCL (Zarit, S & Zarit, 1982), adapted to Spanish by Izal & Montorio (1994). This inventory consists of two subscales which measure the frequency of appearance of each problem (MBCL-A) and stress associated with the same (MBCL-B). Each of these subscales consists of 30 items, which are evaluated using a Likert-type scale with response options ranging from 0 and 4. In the case of the frequency subscale (MBCL-A), a score of 0 indicates that the problem does not stress the caregiver and 4 indicates that the caregiver is completely stressed. Therefore, the score interval of each of the subscales varies between 0 and 120, with a greater score indicating a greater frequency or intensity of the problematic behaviours.

Dysfunctional thoughts on care were evaluated using the questionnaire of dysfunctional thoughts (CPD) (Montorio et al., 2003). This scale has been designed as a tool for the identification of thoughts, beliefs, values and attitudes of caregivers of dependent older people which may represent an obstacle for the ability to appropriately cope with care. This questionnaire comprises 16 items evaluated using a Likert scale with five response options, and scores which range from 0 to 64. A higher score means a greater presence of barriers or obstacles for appropriately coping with care. Some examples of items included in this questionnaire are 'it is egoistic for a caregiver to dedicate time for him/herself while having a family member who is ill and in need' or 'a caregiver should only ask for help from other people or seek an alternative when the situation is borderline or when they cannot take it any more'.

2.6 | Ethical considerations

Ethical approval was obtained from the direction of the psychogeriatric day centre and the authorisation of the Bioethics Committee of the Foundation to which the centre belongs (CE 12/2019). All data were anonymous and were treated according to the existing legislation of the country.

2.7 | Statistical analysis

The IBM SPSS Software Statistics 24 Program was used for statistical analysis. A bilateral contrast and a 95% level of confidence were adopted. A descriptive analysis was performed of all the variables gathered for each group. The possible differences between the baseline characteristics of the study groups were evaluated using t tests for continuous variables and chi-square tests for categorical variables. To examine the differences in the results of the intervention and the control group during the intervention period, an analysis of covariance (ANCOVA) was conducted with outcome at post-intervention as the dependent variable, intervention as the between-subjects variable and per outcome its baseline value, age, sex and educational level as covariates. If significant, the intergroup effect size was calculated according to Cohen *d*. Effect sizes of 0.2 were considered small, 0.5 considered medium and 0.8 was considered high. The significance level was set at $p < .05$.

3 | RESULTS

3.1 | Description of the study participants

Purposive sampling methods were employed on a total sample of 172 caregivers. Of those who accepted to participate and who fulfilled the inclusion criteria ($n = 106$), a randomised distribution was performed, using a table with random numbers, to allocate patients

into two groups: the intervention group ($n = 53$) and the control group ($n = 53$). See the flow diagram in Figure 1.

A total of 106 participants expressed an interest to participate. Table 2 presents the sociodemographic variables of both groups and between-group comparisons revealed no significant differences in demographics and main outcome measures at baseline. All person/s cared had a grade of dementia between 6 and 7 (very advanced, FAST-6 $n = 89$; FAST-7 $n = 17$). These differences did not act as co-variables in any of the variables ($p < .05$).

3.2 | Intervention effects

The effects were compared between groups after 6 weeks. Table 3 displays a comparison of the mean scores for the outcome variables of both groups at each follow-up controlling for baseline variables.

The results of the ANCOVA at T1 (Table 4), after controlling for age, sex and education level, indicated significant effects in favour of the intervention group were found for depression (CES-D, $F = 22.87$; $p < .01$), dysfunctional thoughts on caring (CPD, $F = 14.87$, $p < .01$) and frequency of problematic behaviours (MBCL, $F = 9.56$, $p < .01$). However, no significant differences were found between both groups although intergroup differences were found for both subscales of self-efficacy of care (CSES) and for perceived stress (PSS), with improved scores in the intervention group, presenting a greater

self-efficacy in the performance of care, as well as less perceived stress, compared with the control group.

4 | DISCUSSION

The main aim of this study was to evaluate the impact of an intervention based on a programme of motivational coaching (health coaching intervention based on MI techniques) conducted by telephone in a group of caregivers of patients with dementia compared with a control group. The results show that the proposed intervention significantly reduced the perceived stress in the intervention group, improving the self-efficacy in the care of the person with dementia, as well as decreasing the dysfunctional thoughts, with a stable maintenance of these results over time. Nonetheless, the intervention did not have an impact on the variables for depression and frequency of problematic behaviours of the person with dementia.

The results concerning self-efficacy, stress and dysfunctional thoughts regarding the person's role of the caregiver, using cognitive-behavioural interventions based on eHealth are in line with several systematic reviews (Gitlin et al., 2010; Hopkinson et al., 2019; Hopwood et al., 2018; Vandepitte et al., 2016). They conclude that interventions based on longitudinal follow-up that provide caregivers with motivational support and tools will result in caregivers demonstrating greater satisfaction with caregiving, less emotional

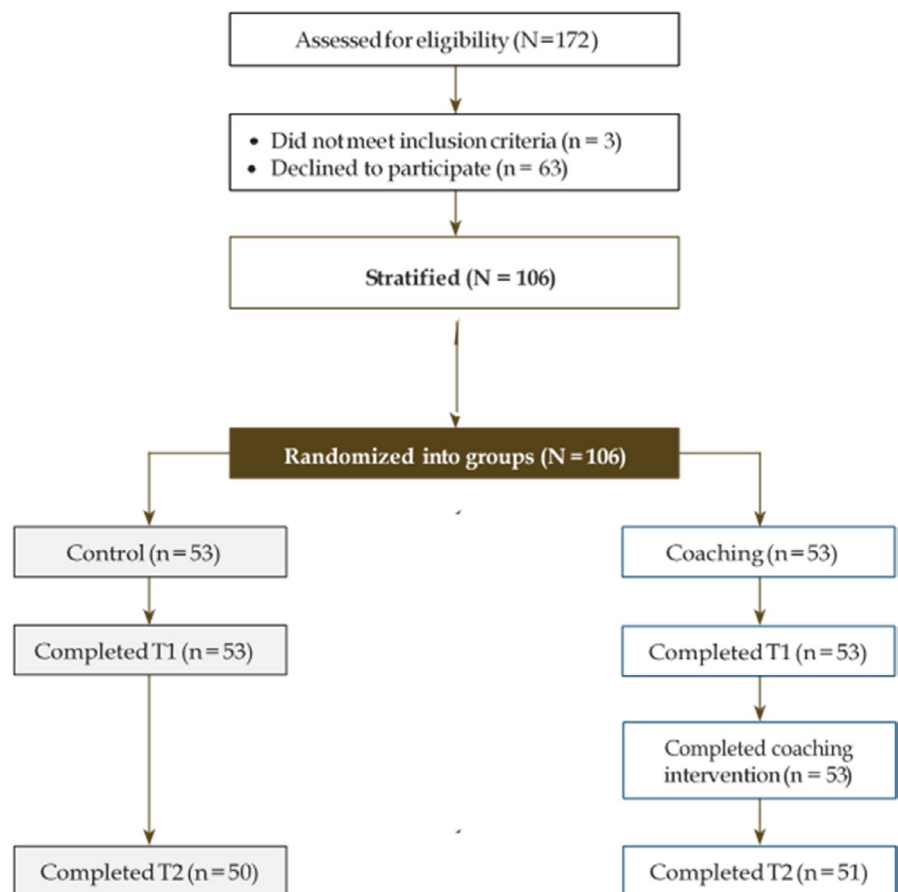


FIGURE 1 Trial Participation at Baseline (T0) and Three Months (T2)

overload and a closer bond with the cared-for person. The approach of this programme approach based on improving the positive and intact experiences to adapt to the individual situation of the caregiver could explain the positive effects on self-efficacy (Abrahams et al., 2018).

TABLE 2 Comparative variables between the control and intervention groups at baseline

	Control (n = 53) % M(SD)	Intervention (n = 53) % M(SD)	p value ^a
Age	67.8 (10.2)	70.2 (10.1)	.124
Gender			.236
Male	10%	5%	
Female	90%	95%	
Education			.356
High school	37%	38%	
College	21%	23%	
Graduate school	42%	39%	
Years as a caregiver	6 (3.6)	5 (4.9)	.410
Barthel Index	25 (12.9)	24 (11.8)	.123
FAST 5/6	89%	91%	.235

^at tests for continuous variables and chi-square tests for categorical variables.

Our finding that the intervention failed to improve the caregivers' depressive symptoms appears to coincide with other studies (Aggar et al., 2011; Joling et al., 2012). In agreement with Aneshensel et al., (Aneshensel et al., 2004), on their own, cognitive or behavioural interventions cannot alleviate the painful aspects inherent to the situation of caring for a family member, or the feelings of loss experienced by the caregivers. Therefore, although most studies on caregivers, including the present, frequently use measures of depressive symptoms as outcome measures to evaluate whether there have been changes after the intervention, there are different reasons why depression may not be a sensitive indicator of change (Joling et al., 2012). As noted in the literature, it is expected that a caregiver may display depressive symptoms without significant reductions of dysphoria due to the intervention, as this does not change the situation of illness (Aggar et al., 2011; Aneshensel et al., 2004). As studies with similar outcomes suggest, after the intervention, the emotions associated with the care of a family member—including acceptance of the illness—are validated, normalised and accepted, and thus, it would be convenient to find more sensitive variables for measuring this acceptance and normalisation (Hopkinson et al., 2019; Kishita et al., 2018).

Regarding the design of the intervention, the results of the present study appear to indicate that health coaching based on MI is an effective intervention for increasing self-efficacy, reducing a caregiver's dysfunctional thoughts, and favouring the reduction

TABLE 3 Comparison of the mean scores and standard deviations (SD) of each group in the outcome variables before and after the intervention and in the follow-up stage

		Control (n = 53) % M(SD)		Intervention (n = 53) % M(SD)		Significance
		M	SD	M	SD	
Self-efficacy with care (CSES) Care management	Baseline T0	33.2	.39	34.7	.58	$F = 2.36; p = 0.45$
	T1	31.6	1.98	37.3	1.3	$F = 11.3; p = 0.00$
	T2	32.3	.89	38.2	.47	$F = 10.3; p = 0.02$
Self-efficacy with care (CSES) Service use	Baseline T0	23.6	.85	25.8	.97	$F = 3.33; p = 0.56$
	T1	22.4	.23	28.7	.87	$F = 2.58; p = 0.02$
	T2	22.6	.45	29.6	1.3	$F = 6.36; p = 0.00$
Depression (CES-D)	Baseline T0	25.8	12.3	24.8	10.0	$F = 1.89; p = 0.45$
	T1	19.9	6.3	32.1	12.8	$F = 2.87; p = 0.19$
	T2	21.1	9.6	28.2	9.3	$F = 3.47; p = 0.23$
Perceived stress (PSS)	Baseline T0	25.3	7.6	24.9	9.3	$F = 0.32; p = 0.59$
	T1	24.3	8.3	20.3	11.3	$F = 9.87; p = 0.00$
	T2	19.9	8.1	21.8	2.5	$F = 4.45; p = 0.65$
Frequency of problematic behaviour (MBCL-A)	Baseline T0	59.2	11.2	57.3	15.2	$F = 6.78; p = 0.41$
	T1	57.3	12.3	51.3	14.3	$F = 1.57; p = 0.23$
	T2	58.3	19.3	43.8	12.3	$F = 9.89; p = 0.14$
Stress associated with problematic behaviour (MBCL-B)	Baseline T0	24.3	11.9	26.8	14.8	$F = 2.98; p = 0.32$
	T1	23.6	14.3	18.9	17.3	$F = 11.78; p = 0.23$
	T2	29.6	8.3	19.2	2.9	$F = 2.90; p = 0.21$
Dysfunctional thoughts on caring (CPD)	Baseline T0	26.9	18.2	27.5	13.3	$F = 9.12; p = 0.42$
	T1	27.7	11.8	22.2	11.8	$F = 2.37; p = 0.23$
	T2	29.3	10.8	20.9	5.7	$F = 3.32; p = 0.09$

TABLE 4 Analysis of covariance comparing control ($N = 53$) and intervention ($N = 53$) group at T1 post-test

Outcome	Control M (SD) ^f	Intervention M (SD) ^f	Mean difference (95% CI)	F test (df)	Cohen d
Primary outcomes					
Self-efficacy (CSES) ^a					
Care management	31.61 (1.32)	36.02 (1.02)	-4.41 (-7.23 to -1.58)	9.87 (1,60)	0.54
Service use	22.42 (0.42)	27.16 (0.80)	-4.74 (-6.40 to -1.82)	10.85 (1,60)	0.63
Depression (CES-D) ^b	19.02 (7.25)	33.25 (11.2)	14.23 (-11.22 to 6.23)	22.87 (1,60) [§]	0.94
Secondary outcomes					
Stress (PSS) ^c	25.2 (7.11)	21.22 (9.2)	-3.98 (-3.11 to -1.89)	15.44 (1,60)	0.45
MBCL-A ^d	56.8 (10.3)	50.3 (11.4)	-6.5 (-2.2 to 4.22)	10.33 (1,60) [§]	0.91
MBCL-B ^d	22.8 (9.74)	16.8 (14.2)	-6 (-1.87 to 1.44)	9.56 (1,60) [§]	0.90
CPD ^e	25.7 (8.69)	19.2 (7.85)	-6.5 (-5.87 to -3.11)	14.87 (1,60) [§]	0.89

^aCaregiver Self-Efficacy Scale (CSES).

^bCenter for Epidemiological Studies Depression Scale (CES-D).

^cPerceived Stress Scale (PSS).

^dStress associated with problematic behaviour (MBCL).

^eDysfunctional thoughts on caring (CPD).

^fAdjusted for outcome measure at baseline, age, sex, education level.

[§] $p < .01$.

in stress, all of which are variables that promote resilience and an improved emotional management in stressful situations, such as the prolonged care of a person with dementia (Dam et al., 2016; Dias et al., 2015). These results are even more convincing when the brief nature of the intervention is considered. It seems clear that the approach based on an intervention which uses coaching using a motivational approach enables the possibility of individually adapting to how each caregiver must address his/her needs (DiClemente et al., 2017). The impact of the same on stress reduction and the improvement of a person's self-efficacy are in line with a number of studies that have supported this approach as an intervention for different areas such as treatment adherence, improved lifestyle, pain control and the control of chronic diseases (Benzo et al., 2016; Gill et al., 2019; Magill et al., 2018; Thomas et al., 2012). de Wolever et al. (2013) defined health coaching as 'a patient-centred approach in which the patients determine their objectives, at least partially, employing self-discovery or active processes of learning, together with training aspects to work towards their objectives...'. Although many methods can be used, health training based on motivational interviewing techniques (MI) offers advantages for promoting behavioural changes, as the individual is guided to make his or her own decisions on how to implement lifestyle changes (Wolever et al., 2017).

In addition, the telephone-based interventions were well received by participants. Many of these accepted to participate in the study because they were unable to travel to receive the intervention

and because the telephone call was agreed with the professional according to the availability of each caregiver. Likewise, many caregivers also accepted to participate because they preferred an individualised consultation in order to more freely speak of their problems rather than doing so in group, which could limit their freedom of expression or resolve any questions (van Rijn et al., 2019). These results support previous studies highlighting that interventions based on telephone calls are generally well received by people, especially if these are older people (such as the case of the caregivers of people with dementia), and that the value of doing so individually supports the therapeutic connection (Schmittiel et al., 2017; Davis et al., 2019).

Several study limitations need to be considered. First, in our study protocol, deviations were measured with the self-report questionnaire for coaches. Second, small sample size limited the study's statistical power. Third, it is important to note that the assessor and the therapists were the same people. This could have threatened the internal validity of the study, although the analysis of certain findings suggests that this has not occurred.

Concerning future lines of research, it would be interesting to compare the effects of this intervention in different contexts, by evaluating face-to-face interventions, and group interventions, examining the interactions between participants, as well as using Internet methods. Furthermore, this intervention should be evaluated in caregivers of people in the initial phases of dementia, as well as studying the effects of the same in the long term.

5 | CONCLUSIONS

This study revealed that a programme based on an intervention of health coaching employing MI and delivered via telephone calls with caregivers of people with dementia was effective for increasing self-efficacy, and decreasing perceived stress and dysfunctional thoughts, with long standing effects over time. These effects were greater in the intervention group compared to the control group. These findings appear to be robust as they were based on the design of a randomised trial and the effects of the intervention were measured over time. These programmes enable the provision of care that is accessible both to the caregivers of people with dementia in initial stages of the disease, while supporting caregivers of patients with a longer history of the disease.

CONFLICTS OF INTEREST

'The authors declare no conflict of interest'.

AUTHORS' CONTRIBUTION

'C. S-C and V.P. involved in conceptualisation. C. S-C. and P.L. involved in methodology and writing—original draft preparation. C. S-C involved in software and validation and formal analysis, data curation, and supervision. V.P. and P.L. involved in investigation. V.P., P.L., M. S-J, and A.R.A-C. involved in writing—review and editing.. All authors have read and agreed to the published version of the manuscript'.

DATA AVAILABILITY STATEMENT

Not applicable.

ORCID

Carmen Sarabia-Cobo  <https://orcid.org/0000-0002-7929-4042>

REFERENCES

- Abrahams, R., Liu, K. P. Y., Bissett, M., Fahey, P., Cheung, K. S. L., Bye, R., Chaudhary, K., & Chu, L. W. (2018). Effectiveness of interventions for co-residing family caregivers of people with dementia: Systematic review and meta-analysis. *Australian Occupational Therapy Journal*, 65(3), 208–224. <https://doi.org/10.1111/1440-1630.12464>
- Abreu, W., Tolson, D., Jackson, G. A., & Costa, N. (2020). A cross-sectional study of family caregiver burden and psychological distress linked to frailty and functional dependency of a relative with advanced dementia. *Dementia*, 19(2), 301–318. <https://doi.org/10.1177/1471301218773842>
- Aggar, C., Ronaldson, S., & Cameron, I. D. (2011). Self-esteem in carers of frail older people: Resentment predicts anxiety and depression. *Aging & Mental Health*, 15(6), 671–678. <https://doi.org/10.1080/13607863.2011.562176>
- Ai, A. L., Park, C. L., Ajzen, I., Allison, P., Stott, T., Felter, J., Bailey, B. A. (2017). Taking aim on empowerment research: On the distinction between individual and psychological conceptions. In K. Harry (Ed.). *Behavior and group management in outdoor adventure education: Theory, research and* (Vol. 20, No. 2, pp. 242–250). Wong Publications.
- Aneshensel, C. S., Botticello, A. L., & Yamamoto-Mitani, N. (2004). When caregiving ends: The course of depressive symptoms after bereavement. *International Journal of Health and Social Behavior*, 45(4), 422–440. <https://doi.org/10.1177/002214650404500405>
- Bayly, M., Morgan, D., Kosteniuk, J., Elliot, V., Froehlich Chow, A., Peacock, S., McLean, A., & O'Connell, M. E. (2019). Protocol for a systematic review on interventions for caregivers of persons with mild cognitive impairment and early dementia: Does early stage intervention improve caregiver well-being and ability to provide care? *BMJ Open*, 9(5), e028441. <https://doi.org/10.1136/bmjopen-2018-028441>
- Benzo, R., Vickers, K., Novotny, P. J., Tucker, S., Hoult, J., Neuenfeldt, P., Connett, J., Lorig, K., & McEvoy, C. (2016). Health coaching and chronic obstructive pulmonary disease rehospitalization. A randomized study. *American Journal of Respiratory and Critical Care Medicine*, 194(6), 672–680. <https://doi.org/10.1164/rccm.201512-2503OC>
- Boots, L. M., de Vugt, M. E., Kempen, G. I., & Verhey, F. R. (2018). Effectiveness of a blended care self-management program for caregivers of people with early-stage dementia (partner in balance): Randomized controlled trial. *Journal of Medical Internet Research*, 20(7), e10017. <https://doi.org/10.2196/10017>
- Bus, K., Peyer, K. L., Bai, Y., Ellingson, L. D., & Welk, G. J. (2018). Comparison of in-person and online motivational interviewing-based health coaching. *Health Promotion Practice*, 19(4), 513–521. <https://doi.org/10.1177/1524839917746634>
- Cheng, S. T., Au, A., Losada, A., Thompson, L. W., & Gallagher-Thompson, D. (2019). Psychological interventions for dementia caregivers: What we have achieved, what we have learned. *Current Psychiatry Reports*, 21(7), 59. <https://doi.org/10.1007/s11920-019-1045-9>
- Cheng, S. T., Li, K. K., Losada, A., Zhang, F., Au, A., Thompson, L. W., & Gallagher-Thompson, D. (2020). The effectiveness of nonpharmacological interventions for informal dementia caregivers: An updated systematic review and meta-analysis. *Psychology and Aging*, 35(1), 55. <https://doi.org/10.1037/pag0000401>
- Cid-Ruzafa, J., & Damián-Moreno, J. (1997). Disability evaluation: Barthel's index. *Revista Espanola De Salud Publica*, 71(2), 127–137.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 385–396. <https://doi.org/10.2307/2136404>
- Dam, A. E., de Vugt, M. E., Klinkenberg, I. P., Verhey, F. R., & van Boxtel, M. P. (2016). A systematic review of social support interventions for caregivers of people with dementia: Are they doing what they promise?. *Maturitas*, 85, 117–130.
- Davis, J. D., Hill, B. D., Pillemer, S., Taylor, J., & Tremont, G. (2019). Guilt after placement questionnaire: a new instrument to assess caregiver emotional functioning following nursing home placement. *Aging & mental health*, 23(3), 352–356.
- Dejonghe, L. A. L., Becker, J., Froboese, I., & Schaller, A. (2017). Long-term effectiveness of health coaching in rehabilitation and prevention: A systematic review. *Patient Education and Counseling*, 100(9), 1643–1653. <https://doi.org/10.1016/j.pec.2017.04.012>
- Dias, R., Santos, R. L., Sousa, M. F. B. D., Nogueira, M. M. L., Torres, B., Belfort, T., & Dourado, M. C. N. (2015). Resilience of caregivers of people with dementia: A systematic review of biological and psychosocial determinants. *Trends in Psychiatry and Psychotherapy*, 37(1), 12–19. <https://doi.org/10.1590/2237-6089-2014-0032>
- DiClemente, C. C., Corno, C. M., Graydon, M. M., Wiprovnick, A. E., & Knoblach, D. J. (2017). Motivational interviewing, enhancement, and brief interventions over the last decade: A review of reviews of efficacy and effectiveness. *Psychology of Addictive Behaviors*, 31(8), 862–887. <https://doi.org/10.1037/adb0000318>
- Donath, C., Luttenberger, K., Graessel, E., Scheel, J., Pendergrass, A., & Behrnt, E. M. (2019). Can brief telephone interventions reduce caregiver burden and depression in caregivers of people with cognitive impairment?—long-term results of the German day-care study (RCT). *BMC Geriatrics*, 19(1), 196. <https://doi.org/10.1186/s12877-019-1207-y>
- Fortinsky, R. H., Kercher, K., & Burant, C. J. (2002). Measurement and correlates of family caregiver self-efficacy for managing dementia. *Aging*

- & *Mental Health*, 6(2), 153–160. <https://doi.org/10.1080/13607860220126763>
- Gitlin, L. N., Jacobs, M., & Earland, T. V. (2010). Translation of a dementia caregiver intervention for delivery in homecare as a reimbursable medicare service: Outcomes and lessons learned. *The Gerontologist*, 50(6), 847–854. <https://doi.org/10.1093/geront/gnq057>
- Hopkinson, M. D., Reavell, J., Lane, D. A., & Mallikarjun, P. (2019). Cognitive behavioral therapy for depression, anxiety, and stress in caregivers of dementia patients: A systematic review and meta-analysis. *The Gerontologist*, 59(4), e343–e362. <https://doi.org/10.1093/geront/gnx217>
- Hopwood, J., Walker, N., McDonagh, L., Rait, G., Walters, K., Iliffe, S., Ross, J., & Davies, N. (2018). Internet-based interventions aimed at supporting family caregivers of people with dementia: Systematic review. *Journal of Medical Internet Research*, 20(6), e216. <https://doi.org/10.2196/jmir.9548>
- Izal-Fernández, M., & Montorio-Cerrato, I. (1994). *Evaluación del medio y del cuidador del demente* (pp. 201–222). Del Ser. Evaluación neuropsicológica y funcional de la demencia. Barcelona.
- Joling, K. J., van Marwijk, H. W., Smit, F., van der Horst, H. E., Scheltens, P., van de Ven, P. M., Mittelman, M. S., & van Hout, Hein P. J. (2012). Does a family meetings intervention prevent depression and anxiety in family caregivers of dementia patients? A randomized trial. *PLoS ONE*, 7(1), e30936. <https://doi.org/10.1371/journal.pone.0030936>
- Kaddour, L., Kishita, N., & Schaller, A. (2019). A meta-analysis of low-intensity cognitive behavioral therapy-based interventions for dementia caregivers. *International Psychogeriatrics*, 31(7), 961–976. <https://doi.org/10.1017/S1041610218001436>
- Kishita, N., Hammond, L., Dietrich, C. M., & Mioshi, E. (2018). Which interventions work for dementia family carers?: An updated systematic review of randomized controlled trials of carer interventions. *International Psychogeriatrics*, 30(11), 1679–1696. <https://doi.org/10.1017/S1041610218000947>
- Long, H., Howells, K., Peters, S., & Blakemore, A. (2019). Does health coaching improve health-related quality of life and reduce hospital admissions in people with chronic obstructive pulmonary disease? A systematic review and meta-analysis. *British Journal of Health Psychology*, 24(3), 515–546. <https://doi.org/10.1111/bjhp.12366>
- Magill, M., Apodaca, T. R., Borsari, B., Gaume, J., Hoadley, A., Gordon, R. E. F., Tonigan, J. S., & Moyers, T. (2018). A meta-analysis of motivational interviewing process: Technical, relational, and conditional process models of change. *Journal of Consulting and Clinical Psychology*, 86(2), 140. <https://doi.org/10.1037/ccp0000250>
- Meichsner, F., Töpfer, N. F., Reder, M., Soellner, R., & Wilz, G. (2019). Telephone-based cognitive behavioral intervention improves dementia caregivers' quality of life. *American Journal of Alzheimer's Disease & Other Dementias*, 34(4), 236–246. <https://doi.org/10.1177/1533317518822100>
- Monroe, T., & Carter, M. (2012). Using the folstein mini mental state exam (MMSE) to explore methodological issues in cognitive aging research. *European Journal of Ageing*, 9(3), 265–274. <https://doi.org/10.1007/s10433-012-0234-8>
- Montorio, I., Losada, A., Márquez, M., Izal, M., & Gil, N. (2003, July). Assessment of the beliefs about caregiving in dementia caregivers: Analysis of the beliefs about caregiving questionnaire (BAC). póster. In *V European congress of gerontology*.12, (301–324).
- Neenan, M., & Palmer, S. (2013). *Cognitive behavioural coaching in practice an evidence based approach* (edited by Michael Neenan and Stephen Palmer.), cognitive behavioural coaching in practice. Routledge. New York
- Neuner-Jehle, S., Schmid, M., & Grüniger, U. (2013). The “Health Coaching” programme: A new patient-centred and visually supported approach for health behaviour change in primary care. *BMC Family Practice*, 14(1), 100. <https://doi.org/10.1186/1471-2296-14-100>
- Olsen, J. M., & Nesbitt, B. J. (2010). Health coaching to improve healthy lifestyle behaviors: An integrative review. *American Journal of Health Promotion*, 25(1), e1–e12. <https://doi.org/10.4278/ajhp.090313-LIT-101>
- Parra-Vidales, E., Soto-Perez, F., Perea-Bartolomé, M. V., Franco-Martín, M. A., & Muñoz-Sánchez, J. L. (2017). Online interventions for caregivers of people with dementia: A systematic review. *Actas Espanolas De Psiquiatria*, 45(3), 116–126.
- Qiu, D., Hu, M., Yu, Y., Tang, B., & Xiao, S. (2019). Acceptability of psychosocial interventions for dementia caregivers: A systematic review. *BMC Psychiatry*, 19(1), 23. <https://doi.org/10.1186/s12888-018-1976-4>
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385–401. <https://doi.org/10.1177/014662167700100306>
- Reisberg, B. (1988). Functional assessment staging (FAST). *Psychopharmacology Bulletin*, 24(4), 653–659.
- Reisberg, B., Ferris, S. H., de Leon, M. J., & Crook, T. (1982). The Global Deterioration Scale for assessment of primary degenerative dementia. *The American Journal of Psychiatry*, 139(9), 1136–1139. <https://doi.org/10.1176/ajp.139.9.1136>
- Remor, E. A., & Carrobes, J. A. (2001). Versión española de la escala de estrés percibido (PSS-14): Estudio psicométrico en una muestra VIH+. *Ansiedad Y Estrés*, 7, 195–201.
- Schmittiel, J. A., Adams, S. R., Goler, N., Sanna, R. S., Boccio, M., Bellamy, D. J., Brown, S. D., Neugebauer, R. S., & Ferrara, A. (2017). The impact of telephonic wellness coaching on weight loss: A “Natural Experiments for Translation in Diabetes (NEXT-D)” study. *Obesity*, 25(2), 352–356. <https://doi.org/10.1002/oby.21723>
- Shingleton, R. M., & Palfai, T. P. (2016). Technology-delivered adaptations of motivational interviewing for health-related behaviors: A systematic review of the current research. *Patient Education and Counseling*, 99(1), 17–35. <https://doi.org/10.1016/j.pec.2015.08.005>
- Smaling, H. J. A., Joling, K. J., van de Ven, P. M., Bosmans, J. E., Simard, J., Volicer, L., Achterberg, W. P., Francke, A. L., & van der Steen, J. T. (2018). Effects of the Namaste care family programme on quality of life of nursing home residents with advanced dementia and on family caregiving experiences: Study protocol of a cluster-randomised controlled trial. *British Medical Journal Open*, 8(10), e025411. <https://doi.org/10.1136/bmjopen-2018-025411>
- Stephan, A., Müller, C., Meyer, G., & Lautenschläger, S. (2017). Supporting people with dementia and family carers in transition to nursing home: A systematic review. *Innovation in Aging*, 1(Suppl. 1), 187–188.
- Tang, W. K., & Chan, C. Y. J. (2016). Effects of psychosocial interventions on self-efficacy of dementia caregivers: A literature review. *International Journal of Geriatric Psychiatry*, 31(5), 475–493. <https://doi.org/10.1002/gps.4352>
- Thomas, M. L., Elliott, J. E., Rao, S. M., Fahey, K. F., Paul, S. M., & Christine Miaskowski, R. N. Miaskowski, C. (2012). A randomized, clinical trial of education or motivational-interviewing-based coaching compared to usual care to improve cancer pain management. *Oncology Nursing Forum*, 39(1), 39–49. <https://doi.org/10.1188/12.ONF.39-49>
- Tremont, G., Davis, J. D., Papandonatos, G. D., Ott, B. R., Fortinsky, R. H., Gozalo, P., & Bishop, D. S. (2015). Psychosocial telephone intervention for dementia caregivers: A randomized, controlled trial. *Alzheimer's & Dementia*, 11(5), 541–548.
- van Rijn, A., Meiland, F., & Dröes, R. M. (2019). Linking two new E-health caregiver interventions to meeting centres for people with dementia and their carers: A process evaluation. *Ageing & Mental Health*, 1–10. <https://doi.org/10.1080/13607863.2019.1617243>
- Vandepitte, S., Van Den Noortgate, N., Putman, K., Verhaeghe, S., Verdonck, C., & Annemans, L. (2016). Effectiveness of respite care

- in supporting informal caregivers of persons with dementia: A systematic review. *International Journal of Geriatric Psychiatry*, 31(12), 1277–1288. <https://doi.org/10.1002/gps.4504>
- Waller, A., Dilworth, S., Mansfield, E., & Sanson-Fisher, R. (2017). Computer and telephone delivered interventions to support caregivers of people with dementia: A systematic review of research output and quality. *BMC Geriatrics*, 17(1), 265. <https://doi.org/10.1186/s12877-017-0654-6>
- Wilz, G., Meichsner, F., & Soellner, R. (2017). Are psychotherapeutic effects on family caregivers of people with dementia sustainable? Two-year long-term effects of a telephone-based cognitive behavioral intervention. *Aging & Mental Health*, 21(7), 774–781. <https://doi.org/10.1080/13607863.2016.1156646>
- Wilz, G., & Soellner, R. (2016). Evaluation of a short-term telephone-based cognitive behavioral intervention for dementia family caregivers. *Clinical Gerontologist*, 39(1), 25–47. <https://doi.org/10.1080/07317115.2015.1101631>
- Wolever, R. Q., Moore, M. A., & Jordan, M. (2017). Coaching in healthcare. *The Sage Handbook of Coaching*, 521–543.
- Wolever, R. Q., Simmons, L. A., Sforzo, G. A., Dill, D., Kaye, M., Bechard, E. M., Southard, M. E., Kennedy, M., Vosloo, J., & Yang, N. (2013). A systematic review of the literature on health and wellness coaching: Defining a key behavioral intervention in healthcare. *Global Advances in Health and Medicine*, 2(4), 38–57. <https://doi.org/10.7453/gahmj.2013.042>
- Zarit, S. H., & Zarit, J. M. (1982). Families under stress: Interventions for caregivers of senile dementia patients. *Psychotherapy: Theory, Research & Practice*, 19(4), 461. <https://doi.org/10.1037/h0088459>
- Zunzunegui, M. V., Delgado, M., Pérez, E., Yagüe, A. I., Illescas, M. L., & León, V. (1998). Validación de la escala CES-D para la medida de la sintomatología depresiva en una población de personas mayores española. *Revista Multidisciplinar De Gerontología*, 8, 156–161.

How to cite this article: Sarabia-Cobo, C., Pérez, V., de Lorena, P., Sáenz-Jalón, M., & Alconero-Camarero, A. R. (2021). Effectiveness of a telephone intervention based on motivational health coaching for improving the mental health of caregivers of people with dementia: A randomised controlled trial. *International Journal of Older People Nursing*, 16, e12398. <https://doi.org/10.1111/opn.12398>