SMAD

Original Article

Mindfulness-based intervention for caregivers of older adults with dementia*

Marília Graciela de Almeida Prado Sanchez[1]
    https://orcid.org/0000-0001-1990-6414
Ana Julia de Souza Caparrol[1]
    https://orcid.org/0000-0001-7419-597X
Gabriela Martins[1,2]
    https://orcid.org/0000-0002-3637-4763
Ludmyla Caroline de Souza Alves[1,2]
    https://orcid.org/0000-0001-5507-702x
Diana Quirino Monteiro[1,2]
    https://orcid.org/0000-0002-3130-4096
Aline Cristina Martins Gratão[1]
    https://orcid.org/0000-0002-8508-0251

Objective: to analyze the effects of Intervention with Mindfulness on depressive, anxious symptoms and burden of family caregivers of elderly people with dementia. Method: this is a randomized controlled clinical trial with a sample (n = 29) composed of the Intervention Group with Mindfulness (IGM) (n = 11) and the active Control Group (aCG) (n = 18). For IGM there were eight meetings (one per week) applying mindfulness meditation, for four months, at home, individually and for aGC, a home visit was conducted with guidance about the disease. The measures of the symptoms of overload (Zarit) and symptoms of anxiety and depression between the groups were compared and analyzed by Student's t tests, simple ANOVA test of variance and then the post hoc Bonferroni ($α < 0.05$). Results: in the analysis two by two, there was a reduction in the mean level of HAD after the intervention with the practice of Mindfulness for the intervention group (p = 0.048). When all groups were compared, there was a difference between the IGM group before intervention and aGC after intervention (p = 0.021). Conclusion: in general, the intervention showed improvement in the HAD instrument, highlighting the importance of Mindfulness-based intervention for caregivers of elderly people with dementia to alleviate symptoms of anxiety and depression.

Descriptors: Caregivers; Dementia; Psychological Stress; Mindfulness.

Intervenção baseada em *Mindfulness* para cuidadores de idosos com demência

Objetivo: analisar os efeitos da Intervenção baseada em *Mindfulness* sobre sintomas depressivos, ansiosos e sobrecarga de cuidadores familiares de idosos com demência. Método: trata-se de um ensaio clínico randomizado e controlado com amostra (n=29) composta por Grupo Intervenção com *Mindfulness* (GIM) (n=11) e Grupo Controle ativo (GCa) (n=18). Para GIM foram oito encontros (um por semana) aplicando a meditação *mindfulness*, durante quatro meses, no domicílio, individualmente e para GCa foi realizada uma visita domiciliar com orientações acerca da doença. Foram comparadas as medidas dos sintomas de sobrecarga (Zarit) e sintomas de ansiedade e depressão entre os grupos e analisadas pelos testes t de student, teste de variância simples ANOVA e em seguida o post hoc Bonferroni (α<0,05). Resultados: na análise dois a dois houve redução no nível médio da HAD após a intervenção com a prática de Mindfulness para o grupo intervenção (p=0,048). Ao se comparar todos os grupos entre si, houve diferença entre o grupo GIM pré intervenção e GCa pós intervenção (p=0,021). Conclusão: de forma geral, a intervenção apresentou melhora no instrumento HAD, destacando a importância da intervenção baseada em *Mindfulness* para cuidadores de idosos com demência para amenizar sintomas de ansiedade e depressão.

Descritores: Cuidadores; Demência; Estresse Psicológico; Atenção Plena.

Intervención basada en mindfulness para cuidadores de personas mayores con demência

Objetivo: analizar los efectos de la intervención con atención plena sobre los síntomas depresivos, ansiosos y la carga de los cuidadores familiares de personas mayores con demencia. Método: este es un ensayo clínico aleatorizado y controlado con una muestra (n = 29) compuesta por el Grupo de intervención con atención plena (GIM) (n = 11) y el Grupo de control activo (GCa) (n = 18). Para GIM hubo ocho reuniones (una por semana) aplicando meditación de atención plena, durante cuatro meses, en el hogar, individualmente y para CGa, se realizó una visita al hogar con orientación sobre la enfermedad. Las medidas de los síntomas de sobrecarga (Zarit) y los síntomas de ansiedad y depresión entre los grupos se compararon y analizaron mediante las pruebas t de Student, la prueba de varianza ANOVA simple y luego el Bonferroni post hoc (α <0.05). Resultados: en el análisis de dos por dos,hubo una reducción en el nivel medio de HAD después de la intervención con la práctica de Mindfulness para el grupo de intervención (p = 0.048). Cuando se compararon todos los grupos, hubo una diferencia entre el grupo GIM antes de la intervención y el GCa después de la intervención (p = 0,021). Conclusión: en general, la intervención mostró una mejora en el instrumento HAD, destacando la importancia de la intervención basada en la atención plena para los cuidadores de personas mayores con demencia para aliviar los síntomas de ansiedad y depresión.

Descriptores: Cuidadores; Demencia; Estrés Psicológico; Atención Plena.

Sanches MGAP, Caparrol AJS, Martins G, Alves LCS, Monteiro DQ, Gratão ACM.

3

Introduction

CNCDs (Chronic Non-Communicable Diseases) are the main causes of death and disability worldwide and, among them, dementia stands out due to its role in worsening the loss of independence and autonomy[1].

Due to the impairment imposed on the life of the older adult with dementia, the role of caregiver emerges for helping in daily life activities[2]. After the discovery of dementia, the caregiver faces a path full of challenges that accompany the development of the older adult's disease[2]. Several feelings are experienced by the person who chose or was chosen to care for the older adult, and most of these feelings cause emotional discomfort, overload, sadness, and tiredness[2]. In addition, it can be stated that the impacts of dementia on the life of the older adult involves biopsychosocial causes and consequences, as well as that they affect the relationship between the patient and the family member[2].

A study conducted with 102 caregivers of older adults with Alzheimer identified higher levels of overload in older caregivers; females; with lower schooling level; daughters and spouses of the patient, who do not have help from another person with the care, and older adults who present greater dependence to carry out the basic activities of daily life[3]. This suggests the need for thorough attention to this group of caregivers, especially the older ones (and with lower schooling levels), aiming to contribute to reducing overload[3].

Given the individual and collective impact of dementia, it is necessary to think of practices that aim at an increase or maintenance of positive feelings and, at the same time, at the decrease of emotional discomfort and overload; besides being able to be applied by any health professional and of uttermost importance, because nowadays it is understood that diseases are multi-factorial and demand care from several areas[3].

Among the possible interventions, the one based on *Mindfulness* stands out, and investigations report that this technique lowers the levels of stress, anxiety, and irritability, as well as it increases physical vigor and quality of life[4].

Mindfulness is a synonym of consciousness, that is, it is the work that does not require time, only to be awake at the moment and to pay attention to what the person is doing, no judgments[4]. The consciousness capacity can be developed and refined, carefully and systematically as a practice, through Mindfulness meditation[4].

It is understood that the meditation practice can be carried out individually, introspectively, and also collectively and comprehensively. The manifestation of full attention can occur by means of communication,

thoughts, feelings, readings and nutrition, that is, potentially all daily life situations fit[5]. Despite the origin of the word "mindfulness" refers to the millennial Eastern culture and to the Buddhist doctrine, nowadays the practice tries to break up with any religious instance so that it can reach other popular environments, such as the health professionals and the individuals that resort to this meditation[4].

In the long run, one of the most important aspects of the *Mindfulness*-based interventions is to allow for a great sensation of perspective, capable of helping the practitioners feel how much they are important or not and, as a consequence, enabling positive effects in the functioning of the brain[5]. Recent scientific advances have reported that areas of the brain associated with positive emotions such as happiness, empathy, and compassion become more intense and active when people meditate[5].

It is believed that the application of a *Mindfulness*-based intervention (MBI) in caregivers of older adults with dementia is effective for preserving the mental state of the caregivers, and of great relevance for the professionals of several health areas who work with the aging process.

Thus, the objective was to analyze the effects of a *Mindfulness*-based intervention on depressive, anxiety, and overload symptoms of family caregivers of older adults with dementia.

Method

This is a randomized and controlled clinical trial, with pre- and post-intervention assessments. The survey was conducted in 2018 in the city of São Carlos, inland of São Paulo. The participants were recruited from the School Health Unit (*Unidade de Saúde Escola*, USE) of the Federal University of São Carlos (*Universidade Federal de São Carlos*, UFSCar). The sample was estimated, a priori, using the *G Power* software: effect size = 0.4, α = 0.05, β = 0.7, for two groups. After the calculation, a minimum value of 15 individuals for each group was obtained.

Thus, a group of caregivers of older adults diagnosed with dementia was defined, which took part in the practice at their homes (MIG), and another called Active Control Group (ACG) of family caregivers of older adults diagnosed with dementia who did not take part in the practice based on *Mindfulness*, received educational guidelines on dementia at their own homes, by means of a booklet, and were included on a waiting list to participate later in the practice, at the end of the research.

The inclusion criteria of the study were the following: informal family caregivers of older adults with dementia who have provided care (aid in activities of daily life) for

more than a year, referred by the USE, and who agreed to participate in the research, which was expressed by signing up the Free and Informed Consent Form (FICF). The exclusion criteria were as follows: paid caregivers; those who have taken care of older adults for less than a year, those who had less than 75% of presence in the intervention, and those who had a hearing and cognitive impairment that could make listening and understanding the practice guidelines impossible. Recognizing that, for the application of *Mindfulness* meditation to be effective, it is necessary that the subject understands and listens to the guidelines.

The selection of the subjects was done out of the medical referral of older adults with dementia to the USE. The first 35 caregivers of older adults with dementia who sought the service were included, according to the inclusion criteria, were randomized through a list generated on the *randomization.com* page, and were allocated to the Intervention Group (MIG), and the Control Group (ACG) for the others (those referred to the USE later).

The recruitment of participants took place in the first semester of 2018, after the approval in the Research Ethics Committee (no. 2,592,717, on April 11th, 2018). Of the 35 informal caregivers of older adults with dementia, who met the inclusion criteria, after the randomization, 18 were allocated to the ACG and 17 to the MIG. Throughout the interventions, six participants gave up on continuing the intervention in the MIG, one due to the death of the older adult cared for, and five due to worsening of the older adult's condition, two of whom needed occasional hospitalizations. Thus, 11 participants were eventually analyzed in the MIG, as shown in Figure 1.

It is worth mentioning that the participants and responsible researcher A (applied the intervention), were not blind regarding the intervention; however, the concern in this study was with the concealment of the subjects and of the intervention in this study at the pre- and post-intervention (researcher B) and, for data randomization and analysis by a professional statistician (researcher C). Researcher B was properly trained by the research team, as well the main researcher (A), who, besides his Psychology degree, took courses and training on the theme, being licensed to practice *Mindfulness*.

After the allocation of the participants, an assessment was carried out from May to August 2018, applying the research protocol, consisting of the following instruments: 1) Questionnaire for caregiver characterization with questions on age, gender, schooling, income, degree of kinship with the older adult, if they live with the older adult, time in years devoted to caring, and if they practice any religion; 2) Zarit overload scale, validated for the Brazilian culture[6], with 22 items, whose objective is to evaluate the perceived impact of caregiving over physical and emotional health, social activities and financial condition. The total of the scale is obtained by summing all the items, and can vary from zero to 88. The higher the score obtained, the greater the overload perceived by the caregiver (Cronbach's α = .851); 3) The Hospital Scale of Anxiety and Depression (HAD), validated in Brazil[7], aims to assess the anxiety and depression levels. It presents 14 items, with four answer options, rated from zero to three. The subscale with seven items of anxiety symptoms assessment and seven items of depressive symptoms assessment is scored in total and from 0 to 21, with the higher scores indicating greater anxiety symptoms and greater depression symptoms (Cronbach's α = .680).
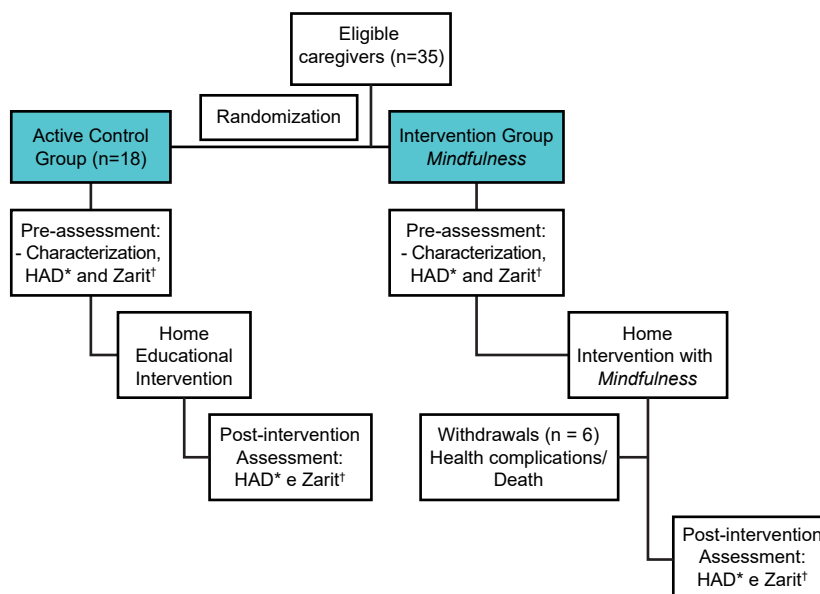
*HAD = Hospital Depression Scale; †Zarit = Zarit Overload Scale

Figure 1 - Graphical representation of the study subjects' allocation flowchart, São Carlos, SP, Brazil, 2018

Respecting the previous scheduling and a maximum period of one month after assessments, the MBI was applied by the main researcher, at the own home, in eight sessions, one per week[4] during two months for each subject. Sessions with five to six subjects took place weekly, at the same time, which took four months (August to December 2018) until the end of the intervention. The participants had no previous experiences with meditation and reported not doing any other kind of psychotherapy.

The ACG received a home visit, in August 2018, by researcher D belonging to the same research group, graduated in Nursing, and trained for the guidance. The visit lasted a mean of two hours, with the provision of guidelines on dementia, risk factors, diagnosis, care measures with the family member (emotional impact: the stress of the caregiver, changes in daily life), and treatment, in addition to surveying doubts that the caregiver had regarding this theme. The CG volunteers received guidance to keep up with the same activities of daily life, without participating in any intervention group in the period. There were no withdrawals from this group, and in the last week, researcher D contacted them by phone to ensure control of the activities.

In Figure 2, the activities carried out for the MIG[4] and ACG groups are described in an explanatory manner.

The data analyses were done in the Statistical Package for social Science (SPSS), version 21.0. The Shapiro-Wilk test was performed to evaluate data adherence to normality. To analyze the sociodemographic profile of the participants, means and standard deviation of the continuous variables and frequencies of the categorical variables were calculated. To verify the presence/absence of differences for the continuous sociodemographic variables, Zarit, HAD, Total Anxiety and Total Depression, the *Student's Independent T-test* was used and, to compare the categorical variables, the Chi-square test. To analyze the presence/absence of differences between the control and intervention groups for the variables of: Zarit, HAD, total anxiety, and total depression, the simple ANOVA variance test was used and then Bonferroni's post hoc ($\alpha < 0.05$). The significance level adopted for all the tests was $p \leq 0.05$ (5%).

The data analysis by means of the Jacobson and Truax (JT) method[8] was used to calculate the reliability of the alterations occurred between the pre- and post-intervention assessment in the comparisons that had a statistical significance, described in terms of the Reliable Change Index (RCI)[8].

To calculate the RCI, the pre- and post-test scores of each individual and the standard error value of the difference are required, according to the following formula: RCI=post-pre-/difSE, where difSE is the difference's standard error. From the RCI calculation, the following parameters are considered: RCI>1.96 is considered a Reliable Positive Change; RCI<-1.96 refers to a Reliable Negative Change, and RCI values between -1.96 and 1.96 are defined as Absence of Change (AC)[8].

Week	Group of the MINDFULNESS-based intervention[4]	Active Control Group
1	At home - Body and Breathing Meditation. Mind stabilization.	--
2	At home - Body Exploration Meditation. Exploring the difference between thinking about a sensation and experiencing it without judging or analyzing.	Home Visit and Health Education and surveying of the doubts about this topic
3	At home: reflection of previous experiences, added to the practices of the Attentive Yoga Movement. Exploration of physical and mental limits.	--
4	At Home - Sounds and Thoughts Meditation. Perception that thoughts are mental events, which come and go, as well as sounds	--
5	At Home - Exploring Difficulties Meditation. Facing the obstacles that emerge in the course of time	--
6	At home - Friendship Meditation. Perception of how negative thoughts are dispelled when the person cultivates tenderness and compassion through acts of generosity	--
7	At home – Critical reflection on the tight relationship between routine, activities, behavior, and mood. Allowing better choices, activities that provide pleasure and, in return, limiting those that consume personal resources.	--
8	Week eight interlaces the practice of Full Attention (Mindfulness) in daily life so that it can be an available resource.	Phone call

Figure 2 - Description of the weekly activities for the Intervention and Control Groups

Results

Table 1 presents the sociodemographic characteristics of the study participants. In both groups, there was a prevalence of female participants, who lived with the older adult to whom they provided care. No statistically significant differences were found between the ACG and MIG groups regarding the sociodemographic characteristics.

Table 2 shows the comparative data for the Zarit's variables assessing overload and the HAD's variables assessing anxiety and depression, before and after the intervention for the intervention and control groups, two by two. There was a statistically significant difference (p=0.048) that shows a reduction in the mean level of HAD after the intervention with the practice of *Mindfulness* for the intervention group. For the control group, no significant differences were found in the mean level of the variables in the pre- and post-analysis.

After the two by two analysis, it was decided to apply the ANOVA test with Bonferroni's post hoc (p<0.05) to compare all the groups with each other. And in this comparison, there was a difference between the pre-intervention MIG group and the post-intervention ACG. In other words, the groups were significantly different at these moments. The intervention showed improvement in the HAD instrument, but in general, the mean of the instruments did not decrease significantly.

The reliability of the changes occurred between the pre- and post-intervention assessment was calculated for each participant of the MIG, individually, on the HAD scale. Thus, on Table 3, taking into account the Reliable Change Index (RCI) of each participant allowed saying that four (36%) participants presented a significant change and that the others presented absence of change[7].

Table 1 - Sociodemographic characterization of the control (n=18) and intervention (n=11) group participants. São Carlos, SP, Brazil, 2018

Profile of the caregivers	ACG* (n=18)	MIG† (n=11)	p-value
Gender [n(%)]			0.715‡
Female	17 (94.4)	10 (90.9)	
Male	1 (5.6)	1 (9.1)	
Age [Mean (±SD§)]	56.4 (±18.8)	51.6 (±11.9)	0.087
Marital Status [n(%)]			0.363¶
Married	6 (33.3)	6 (54.5)	
Single	10 (55.6)	3 (27.3)	
Widow/Widower	1 (9.1)	1 (9.1)	
Separated	1 (9.1)	1 (9.1)	
Schooling [Mean (±SD§)]	8.8 (±3.6)	9.9 (±4.2)	0.836‖
Individual Income MW** [Mean (±SD§)]	1.4 (±0.8)	2.1 (±1.1)	0.927‖
Family Income MW** [Mean (±SD§)]	1.8 (±0.9)	3.1 (±1.2)	0.183‖
Degree of kinship with the older adult [n(%)]			0.054‡
Spouse	8 (44.4)	1 (9.0)	
Son/Daughter	5 (27.8)	3 (27.3)	
Daughter-in-law/Son-in-law	5 (27.8)	3 (27.3)	
Grandchild	--	2 (18.2)	
Brother/Sister	--	2 (18.2)	
Lives with the older adult [n(%)]			0.732‡
Yes	12 (66.7)	8 (72.7)	
No	6 (33.3)	3 (27.3)	
Number of comorbidities [Mean (±SD§)]	1.2 (±0.7)	1.0 (±1.0)	0.555‖
Time of care (years) [Mean (±SD§)]	7.1 (±4.2)	8.0 (±4.0)	0.940‖
Hours of care per day [Mean (±SD§)]	15.7 (±8.1)	17.0 (±9.0)	0.508‖
Religion practitioner [n(%)]			0.077‡
Yes	7 (38.9)	8 (72.7)	
No	11 (61.1)	3 (27.3)	

*ACG = Active Control Group; †MIG = Mindfulness Intervention Group; ‡Chi- Square; §SD = Standard Deviation; ‖Student's T-test; ¶Chi-square; **MW = Minimum Wage (Based on the value of R$ R$ 937 current in 2018)

Table 2 - Comparison of the pre- and post-intervention groups (n=11) and the pre and post-control groups (n=18). São Carlos, SP, Brazil, 2018

	MIG* (n=11)			ACG† (n=18)			(p-value)§
	Pre Mean (±SD‖)	Post Mean (±SD‖)	t (p-value)‡	Pre Mean (±SD‖)	Post Mean (±SD‖)	t (p-value)‡	
Zarit¶	34.09 (±13.6)	30.09 (±11.70)	0.735 (0.667)	26.33 (±15.48)	27.50 (±15.09)	-0.229 (0.760)	**0.528**
HAD**	16.00 (±8.30)	13.18†† (±5.36)	0.945 (0.048)‡‡	10.28 (±4.37)	9.78†† (±4.76)	0.328 (0.836)	**0.021**
Total Anxiety	8.91 (±4.50)	8.18 (±2.96)	0.447 (0.090)	6.28 (±3.34)	5.89 (±3.87)	0.322 (0.366)	**0.107**
Total Depression	7.09 (±4.52)	5.00 (±2.96)	1.295 (0.256)	4.00 (±3.08)	3.89 (±2.47)	0.119 (0.678)	**0.052**

*MIG = Mindfulness Intervention Group; †ACG = Active Control Group; ‡Student's t-test p<0.05; § ANOVA test; ‖SD = Standard Deviation; ¶ZARIT = Zarit Overload Scale; **HAD = Hospital Depression Scale; ††Bonferroni's post hoc (α<0.05); ‡‡α<0.05

Table 3 - Description of the scores on the HAD* scale of each participant at the pre- and post-intervention moment, according to the Reliable Change Index (RCI†) and the parameters (n=11). São Carlos, SP, Brazil, 2018

Participant	Pre HAD*	Post HAD*	RCI†	Parameters
01	17	11	-1.98	RNC‡
02	9	6	-0.57	AC§
03	13	10	-0.57	AC§
04	8	13	0.95	AC§
05	20	13	-1.98	RNC‡
06	11	12	0.19	AC§
07	3	3	0.00	AC§
08	22	20	-0.38	AC§
09	23	21	-0.38	AC§
10	23	15	-1.99	RNC‡
11	30	17	-2.47	RNC‡

*HAD = Hospital Depression Scale ; †RCI = Reliable Change Index; ‡RNC = Reliable Negative Change; §AC = Absence of Change

Discussion

The objective of this study was to analyze the *Mindfulness*-based intervention (MBI) over the anxiety and depression of family caregivers of older adults with dementia. In general, it was observed that the intervention group attained improvements in the anxiety and depression symptoms, compared to the control group.

The profile of family caregivers of older adults with dementia corroborates the findings in the literature with regard to them being females, aged between 51 and 56 years old, and living with the older adult[9-11], illustrating the cultural role of women as the main caregivers[10-11].

In this study, the importance is recognized of identifying the time of care in years and hours that the caregiver dedicates to their relative. The impact on the life of caregiver is perceptible, and the demand of time providing care puts the caregiver's life aside, contributing to the onset of diseases such stress, overload, and depressive symptoms, which justifies the need for help from other family members in caring for the older adult[12].

In this research, it was observed that the caregivers who participated in the MBI differ from those who did not. The comparative data referring to the outcome, anxious and depressive symptoms (Total HAD), reveals a reduction in the mean level of HAD after the MBI.

According to the American Psychiatric Association[13], anxiety disorders are those associated with characteristics of excess fear and anxiety, and related behavioral disorders[13]. *Mindfulness* allows teaching the subjects of care to deal with the challenges in life, purposely focusing their attention on the immediate living, as it reduces anxiety and can prevent future episodes, that is, a prevention model[14].

In addition, mindfulness can be understood as a psychological state, psychological trait, intervention practice and program, that is, it is a broad concept[15]. The main reasons for using the practice are the scientific evidence and the effectiveness of the MBI[15]. Effectiveness for anxiety disorders, depressive disorders, and in chronic and clinical conditions (physical symptoms)[15]. A national study identified the benefit of the MBI in helping in the treatment of anxiety disorders[14]. The data support research studies on *Mindfulness* Meditation and emotional comfort[14]. Among the main results found in the literature, it can be seen that the MBI reduces negative feelings, including stress and anxiety symptoms[16].

An important multi-centric, blind and randomized study, with two interventions at the same time, compared the maintenance of the anti-depressive therapy with the use of the MBI associated with the reduction/discontinuation of the pharmacological therapy[17]. A total of 424 individuals participated in the research, with half for each intervention group[17]. In both groups, no significant differences were found, that is, meditation had an impact similar to other therapies and medications; they stress that the MBI is a valid alternative in the prevention of relapses in depression, particularly in patients at higher risk, and that it can become an effective tool in reducing the intensity of depression symptoms[17].

Another study applied an 8-week program on older adults with dementias such as Alzheimer and on its caregivers, with pre- and post-intervention assessments, and it was possible to identify benefits, such as an increase in quality of life, a reduction in the depressive symptoms, and better quality of sleep[18]. They highlighted that the MBI can be beneficial for the patient and their caregivers, and can be done at a reduced cost for this population[18].

It should be noted that, after an individual analysis, due to the reliable change rate in this survey, only four participants obtained a reliable change. These findings were considered to be of great relevance when it comes to a small sample of individuals, who continuously go through hardships in their daily lives, difficult to be controlled; with variances in disease severity, conflicts within the family, other family demands, and financial problems, hindering improvement for all the symptoms.

In addition to the depressive and anxiety symptoms, pre- and post-intervention overload was evaluated by means of the Zarit Scale[6]. The concept of overload includes physical, psychological or emotional, social and financial problems, experienced by caregiver families, represented both by subjective and objective aspects, coming from the impact of care[6]. The demand for family care with older adults with dementia results in physical and emotional overload associated with the impairment of the older adult's ADLs (Activities of Daily Life), mainly in the severe stage of dementia[19].

A study conducted in Portugal sought to understand the variables that relate, predict and moderate the overload of the caregiver of individuals with Alzheimer, in the advanced and moderate stages, with 102 family caregiver of older adults[3]. Most of the family caregivers were female, without help in the provision of care, with older adults who depended on the aid in their basic activities of daily life, and, those who resorted less to the practice of *Mindfulness* presented higher physical and traumatic symptomatology levels, used less effective *coping* strategies, identified more memory and behavior problems in the patient, and presented higher levels of overload[3].

In view of this, it can observed that overload is present in the scene of most family caregivers of older adults with dementia and, for being a progressive health condition, the dependence and demand of the older adult tend to increase over time.

It can observed with caution that the study of *Mindfulness* Meditation presents discreet data in relation to the improvement of overload; however, given the increasing demand of the older adult, only maintaining its level in a stable stage corroborates to encourage new and more robust research studies, with qualitative assessments, as well as to cover the subjectivities that can be present.

This study suggested that *Mindfulness* is an effective strategy in treating anxiety and mood disorders. The MBI is being increasingly used in the health area; however, as the literature indicates, the engagement and adherence of the participants can be low[20].

Also, it is worth to consider in this context, the relevance of implementing intervention strategies in an adequate and systematized manner with assessments before and after the intervention and, comparing to control groups, allows understanding the real impact on the health of the participants, enabling the training of the health team in the line of Gerontology for such strategies.

The size of the sample can be considered one of the limitations of this study, hindering the generalization of the results. The low adherence of the participants is justified by the limited time available, besides the difficulties of remaining in the intervention due to the worsening of the condition of the older adult who receives the care, given that some were hospitalized and one died. The lack of pairing regarding the HAD can also be a limitation of this study, as the MIG started the research with higher means of depressive and anxious symptoms, which may have generated certain influence on the findings, hindering data analysis.

Conclusion

This work demonstrated the importance of applying the *Mindfulness-based intervention* (MBI) to the caregivers of older adults with dementia, especially for the reduction of anxiety and depressive symptoms. The results are positive regarding the applicability of this type of intervention, due to the low budget and for promoting the improvement of the mental health of the population of caregivers, which indicates the need for future research studies with this theme.

Sanches MGAP, Caparrol AJS, Martins G, Alves LCS, Monteiro DQ, Gratão ACM.

9

In view of the findings in the literature, it is stressed how much *Mindfulness* meditation has been expanding in the mental health scene with a focus on quality of life and therapeutic strategy.

References

1. Pot AM, Petra I. Improving dementia care worldwide: ideas and advice on developing and implementing a National Dementia Plan [Internet]. London: Bupa/ADI; 2013 [cited 2018 Nov 15]. Available from: https://www.alz.co.uk/sites/default/files/pdfs/global-dementia-plan-report-ENGLISH.pdf

2. Gomes FR, Vasques AM, Amaral RB, Pereira AG, Freitas AM, Ferreira EES. Biopsychosocial aspects of the relationship between caregivers and elders with Alzheimer's dementia. Rev Digital EFdeportes.com. [Internet]. 2013;18(185). [cited 2018 Nov 15]. Available from: <https://www.efdeportes.com/efd185/aspectos-biopsicossociais-na-demencia-de-alzheimer.htm>.

3. Rego BD. Overload in informal caregivers of patients with Alzheimer's disease. [Thesis]. Portugal: Universidade do Minho/Escola de Psicologia; 2015. [cited 2018 Nov 20]. Available from: <http://repositorium.sdum.uminho.pt/bitstream/1822/38641/1/Daniela%20Br%C3%A1s%20Rego.pdf>. doi: 1822/38641

4. Williams M, Penman D. Mindfulness: a practical guide to finding peace in a frantic world. Piatkus; 2011. 288p.

5. Kabat-Zinn J. Meditation Is Not What You Think: Mindfulness and Why It Is So Important. New York, NY: Hachette Books; 2018. 240 p.

6. Scazufca, M. Brazilian version of the Burden Interview scale for the assessment of burden of care in carers of people with mental illnesses. Rev Bras Psiquiatr. 2002;24(1):12–17. doi:10.1590/S1516-44462002000100006

7. Botega NJ, Bio MR, Zomignani MA, Garcia C, Pereira WAB Jr. Transtornos do humor em enfermaria de clínica médica e validação de escala de medida (HAD) de ansiedade e depressão. Rev Saúde Pública. 1995 Oct; 29(5):359-63. doi: 10.1590/S0034-89101995000500004.

8. Jacobson NS, Truax P. Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. J Consult Clin Psychol. 1991;59(1):12-9. doi: 10.1037//0022-006x.59.1.12

9. Queiroz TA, Ribeiro ACM, Guedes MVC, Coutinho, DTR, Galiza FT, Freitas MC. Palliative care are to the elderly in intensive care: the perspective of the nursing team. Texto Contexto Enferm. 2018;27(1):e1420016. doi: 10.1590/0104-07072018001420016

10. Gutierrez LP, Fernandes NRM, Mascarenhas M. Characterization of caregivers of the elderly in the metropolitan region of Porto Alegre (RS): care profile. Saúde Debate. 2017;41(114):885-98 doi: 10.1590/0103-1104201711417

11. Diniz MAA, Melo BRS, Neri KH, Casemiro FG, Figueiredo L, Gaioli CCLO, et al. Comparative study between formal and informal caregivers of older adults. Cienc Saúde Coletiva. 2018;23(11):3789-98. doi: 10.1590/1413-812320182311.16932016.

12. Brigola AG, Luchesi BM, Rossetti ES, Mioshi E, Inouye K, Pavarini SCI. Health profile of family caregivers of the elderly and its association with variables of care: a rural study. Rev Bras Geriatria Gerontol. 2017;20(3):410-22. doi: 10.1590/1981-22562017020.160202

13. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5). 5th ed. Washington: APA; 2013. 991p.

14. Lima A, Sene A. Mindfulness in anxiety reduction therapies. Rev Psicol Saúde Debate. 2017;3(1):40-1. doi: 10.22289/V3S1A19

15. Demarzo M, Garcia-Campayo GJ. Mindfulness for health. PROMEF - Programa de atualização em medicina de família e comunidade. 12th ed. Artmed Panamericana; 2017. p.125-64.

16. Goyal M, Singh S, Sibinga EMS, Gould NF, Rowland-Seymour A, Sharma R, et al. Meditation programs for psychological stress and well-being: a systematic review and meta-analysis. JAMA Intern Med. 2014;174(3):357-68. doi: 10.1001/jamainternmed.2013.13018

17. Kuyken W, Hayes R, Barret B, Bying R, Dalgleish T, Kessler D, et al. Effectiveness and cost-effectiveness of Mindfulness-based cognitive therapy compared with maintenance antidepressant treatment in the prevention of depressive relapse or recurrence (PREVENT): a randomized controlled trial. Lancet. 2015;386(9988):63-73doi: https://doi.org/10.1016/S0140-6736(14)62222-4

18. Paller KA, Creery JD, Florczak SM, Weintraub S, Mesulam MM, Reber PJ, et al. Benefits of mindfulness training for patients with progressive cognitive decline and their caregivers. Am J Alzheimer's Dis Other Dementias. 2015;30(3):257-67. doi: 10.1177/1533317514545377

19. Gratão ACM, Vale FAC, Cruz MR, Haas VJ, Lange C, Talmelli LFS, et al. The demands of family caregivers of elderly individuals with dementia. Rev Esc Enferm USP. 2010;44(4):873-80. doi: http://dx.doi.org/10.1590/S0080-62342010000400003

20. Reis E, Novelli MMPC, Guerra RLF. Interventions conducted with groups of caregivers of elderly with dementia: a systematic review. Cad Bras Ter Ocupacional. 2018;26(3):646-57. doi: https://doi.org/10.4322/2526-8910.ctoAR0981

Author's Contribution

Study concept and design: Marília Graciela de Almeida Prado Sanchez and Aline Cristina Martins Gratão. Obtaining data: Marília Graciela de Almeida Prado Sanchez, Ana Julia de Souza Caparrol, Gabriela Martins, Ludmyla Caroline de Souza Alves and Diana Quirino Monteiro. Data analysis and interpretation: Marília Graciela de Almeida Prado Sanchez, Ana Julia de Souza Caparrol, Gabriela Martins, Ludmyla Caroline de Souza Alves, Diana Quirino Monteiro and Aline Cristina Martins Gratão. Statistical analysis: Marília Graciela de Almeida Prado Sanchez and Aline Cristina Martins Gratão. Obtaining financing: Marília Graciela de Almeida Prado Sanchez and Aline Cristina Martins Gratão. Drafting the manuscript: Marília Graciela de Almeida Prado Sanchez , Ana Julia de Souza Caparrol, Gabriela Martins, Ludmyla Caroline de Souza Alves and Diana Quirino Monteiro. Critical review of the manuscript as to its relevant intellectual content: Diana Quirino Monteiro and Aline Cristina Martins Gratão. Research logistics, scheduling of participants: Ana Julia de Souza Caparrol, Gabriela Martins and Ludmyla Caroline de Souza Alves.

All authors approved the final version of the text.

Conflict of interest: the authors have declared that there is no conflict of interest.

Corresponding Author:
Aline Cristina Martins Gratão
E-mail: aline-gratao@hotmail.com
https://orcid.org/0000-0002-8508-0251