

# Feasibility and acceptability of a videoconference-based cognitive-behavioral intervention for caregivers of individuals living with mild cognitive impairment or early Alzheimer's disease

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## ABSTRACT

**Objective:** The objective of the current pilot study was to investigate the feasibility and acceptability of a videoconference-based cognitive behavioral (CBT) intervention for caregivers of individuals living with mild cognitive impairment or early Alzheimer's disease. The intervention included psychoeducation on emotions, strategies for management of unhelpful emotions and thoughts, behavioral activation, breathing and relaxation, strategies for communication and information on external resources.

**Methods:** This study used a cross-sectional design with two groups of four caregivers who received an 8-week CBT-based intervention via videoconference. Measures of feasibility and acceptability were collected post-intervention as well as suggestions for improvements.

**Results:** Eight female caregivers were enrolled in the intervention, one participant opted out at the seventh session. Of those who completed the program, all participants reported that it was very easy to participate using the online modality. All participants felt that the intervention was at least partly adapted to their experience and needs as a caregiver. Five out of seven participants (71%) indicated that they felt better and would recommend the intervention to another caregiver.

**Conclusion:** The current study demonstrated that it is feasible and acceptable to use a videoconference CBT-based group intervention with MCI or mild AD female caregivers.

**Innovation:** This is the first videoconference-based cognitive behavioral intervention for caregivers of individuals living with MCI or mild AD.

## 1. Introduction

The rapidly aging population in Western countries results in a higher prevalence of neurocognitive disorders such as mild cognitive impairment (MCI) and Alzheimer's disease (AD). The cognitive and behavioral symptoms of these disorders have impacts on daily functioning and people affected often need assistance with activities of daily living (ADLs) [1-4], for example for more complex tasks (e.g., preparing a meal, paying bills, shopping). Close relatives are most likely to support people with cognitive impairments in their ADLs, and as such become a

caregiver [5]. In the literature, they may be referred to *informal caregivers* or *familial caregivers*.

Supporting a relative with cognitive difficulties may affect the informal caregiver's own health and can lead to various degrees of burden. Objective burden is associated with caregiving tasks (hours spent providing care or assistance per week, number of missed workdays, etc.), whereas subjective burden pertains to the caregiver's perception of burden, namely the perception of the impact of caregiving on the caregiver's psychological, social, physical, and financial functioning [6]. Subjective burden in caregivers of individuals living with

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AD has been well documented [5,7]. Meta-analyses suggested that interventions based on cognitive-behavioral therapy (CBT) principles (e.g., cognitive restructuring, emotion identification, behavioral activation, relaxation, etc.) tend to have the largest effect sizes in reducing caregivers' subjective burden and depression post-intervention when compared to other types of psychosocial interventions [8-11], and this type of intervention delivered using videoconferencing modality has shown promising results [12-15]. In the present study, videoconferencing was based on the Oxford dictionary definition: *a conference in which participants in different locations are able to communicate with each other in sound and vision.*

Caregivers of individuals with MCI also report subjective burden [16], depressive symptoms [17,18], and emotional distress [19], in fact they report these issues in levels comparable to individuals caring for a person with AD [20]. However, few studies have yet investigated the efficacy of supportive interventions for caregivers of people in the prodromal or early stages of the disease. Two studies reporting on a single trial have specifically targeted MCI caregivers and used a group intervention to train adaptive problem-solving skills and attitudes in caregiving [21,22]. Results showed that depressive symptoms and burden associated specifically with dementia-related behaviors remained stable over time following the intervention but worsened in the control group who received nutritional counseling [21]. However, there were no effects of the problem-solving intervention on caregivers' subjective burden [22]. Another study trained caregivers at using mental contrasting to achieve attainable goals in their daily lives, which led to a significant impact on perceived stress and quality of life [23].

Although MCI and AD caregivers have overlapping psychological and health outcomes, a qualitative study previously conducted by the research team shows that their experience and immediate needs may be somewhat different, and interventions should be adapted to the latter (unpublished results), which is supported by other authors [24,25]. For instance, caregivers of individuals living with MCI report needs in terms of health education and communication [25], and many of them report distress associated with their lack of knowledge or misinformation. They also seek to develop caregiving skills and wish to learn how to manage their own emotional distress, many reporting impatience, guilt, and sadness (unpublished results). Hence, future support interventions for MCI caregivers should be adapted to include elements promoting caregivers' mental health, education about their relative's disease, and enhanced communication abilities to empower caregivers in their new role.

With these needs in mind, our team has put together a psychoeducation intervention incorporating disease knowledge and communication skills based on CBT principles that has yet to be evaluated for its feasibility, efficacy, and effectiveness. The general goal of this intervention is to promote and preserve psychological health, educate, and empower caregivers who are adapting to the recent cognitive decline in their loved one. In addition to the novelty of the intervention, we sought to examine the feasibility of an online modality to increase its potential accessibility for MCI caregivers specifically. Indeed, CBT-based interventions delivered via videoconference are known to be effective, for example, to reduce depression in various populations [26,27]. Furthermore, online interventions have increased in popularity since the COVID-19 pandemic. The advantages of the videoconference modality include the increased accessibility for participants in remote areas, as well as the reduced barriers related to scheduling constraints or concerns about stigma when consulting for psychological support [14].

The main goal of the present cross-sectional study was thus to evaluate the feasibility and acceptability of a videoconference CBT-based group intervention designed to promote the psychological well-being of MCI caregivers. Because of the gradual nature of the illness, which in turn might influence the caregiver's experience and needs, we also sought to determine whether the intervention (and its videoconference modality) was feasible and acceptable for caregivers of individuals at the initial stage of AD.

## 2. Methods

### 2.1. Participants

This pilot study used a cross-sectional design, participants were caregivers of individuals with prodromal (MCI) or early AD (individuals who had progressed from MCI to AD in the last year). In the latter case, participants who received a MCI diagnosis by a neurologist the year prior to the study were re-evaluated by our research team and some of them met the AD criteria at the time of recruitment; hence, they had progressed from MCI to AD in the last year. Persons with AD or MCI were all evaluated according to published diagnostic criteria [2,28] through a standardized evaluation procedure in the senior author's team (CH), which is described in other studies [29,30] and which included a thorough clinical history and neuropsychological assessment. The interview and psychometric testing were conducted by a Ph.D student in clinical neuropsychology and diagnoses were made by consensus by the research team, which included a senior geriatric neuropsychologist.

A convenience sampling method was used. Participants were spouse or a sibling of the care-receiver. Biological sex and the amount of time of caregiving or the level of burden were not specified as inclusion criteria. Participants had to self-identify as being the main caregiver of the individual living with either MCI or early AD. To avoid the confounding effects of other medical or psychological conditions, potential participants were excluded if they had a current untreated physical or psychological condition, or sensory impairment that could impede on participation (e.g., uncorrected auditory deficits). The study was approved by the Sectoral Research Ethics Board in Neuroscience and Mental Health of the *Centre intégré universitaire de santé et de services sociaux de la Capitale-Nationale* (approval #304-2012).

### 2.2. Procedure

The consent form and questionnaires were completed using the web platform REDCap (Vanderbilt University, Nashville, TN). The hyperlink to complete the pre-intervention questionnaires was sent one week before the beginning of the intervention. Participants were sent a reminder to complete the questionnaires if they had not done so three days before the start of the first session. A test meeting was arranged with all the participants the week prior to the beginning of the intervention. This allowed participants to download Zoom Pro® client (San Jose, CA) on their electronic tablet, smartphone or computer if they had never installed it before, to get familiar with the settings (i.e., log in, views, microphone), and to ask any questions to ensure they would not encounter technical issues at the time of the first session.

A secured link to the intervention session was sent via email to participants in the morning on the day of the session. The link to complete the post-intervention measures was sent one week after the participants completed the intervention. A reminder was sent six days after if the participants had not yet completed them.

Participants in the two groups received the same intervention and there was no control group. Caregivers were grouped according to their relative's cognitive status (MCI or early AD) and received an 8-week intervention (the same for both groups). Preliminary efficacy measures were also collected but are not presented in this paper.

### 2.3. Intervention

The intervention comprised eight weekly sessions of 90 min delivered by videoconference by a PhD student in clinical psychology (first author), with a 10-min break mid-session. The intervention was based on cognitive-behavioral principles, which have shown significant benefits on outcomes such as subjective burden and depressive symptoms in caregivers of individuals living with AD [10,11]. The content of the intervention was guided and adapted by the perspective of persons with lived experience (MCI caregivers) via focus groups examining their

experience and needs (unpublished results, see Fig. 1). The intervention included elements of health education (about normal and pathological aging, cognition, MCI and AD), psychoeducation about emotions while caring for a loved one, strategies to cope with unhelpful thoughts and emotions (i.e., naming emotions, recognizing and modifying or observing unhelpful thoughts), behavioral activation (engaging in pleasant activities), breathing and relaxation techniques, strategies to adapt their reactions and improve communication with their loved one, and information on external resources. The intervention was devised by integrating psychoeducative material and exercises from other validated interventions for individuals living with MCI [31,32], for stress management in older adults [33], and for caregivers of individuals living with AD [34]. A group format was favored to foster feelings of validation between caregivers' experiences and to provide social support.

The main topics covered in each weekly sessions are presented in Table 1. Each session had several activities or exercises covering different strategies or themes (e.g., a short educative segment on coping with emotions, a breathing exercise, planning pleasant activities). Self-monitoring and home exercises were proposed every week. Participants were sent (by e-mail) a participant workbook with materials to support the weekly sessions. The intervention was manualized and is available for any qualified professional by writing to the corresponding author of this paper.

## 2.4. Measures

### 2.4.1. Acceptability and feasibility

A questionnaire was designed specifically for the present study to evaluate the feasibility and acceptability of the intervention. The questionnaire included 29 items covering different aspects: general technical considerations, ease of use of the online modality (e.g., use of Zoom Pro®, potential bugs), advantages and disadvantages of the online intervention, perceived pertinence of the different educational themes and strategies presented, adequacy of the intervention related to the caregiver's experience and needs, perceived efficacy, and open-ended questions (e.g., perception of change, potential improvements due to the intervention). The questionnaire is available in supplementary materials. Most questions were answered on a 4-point Likert-type scale. In

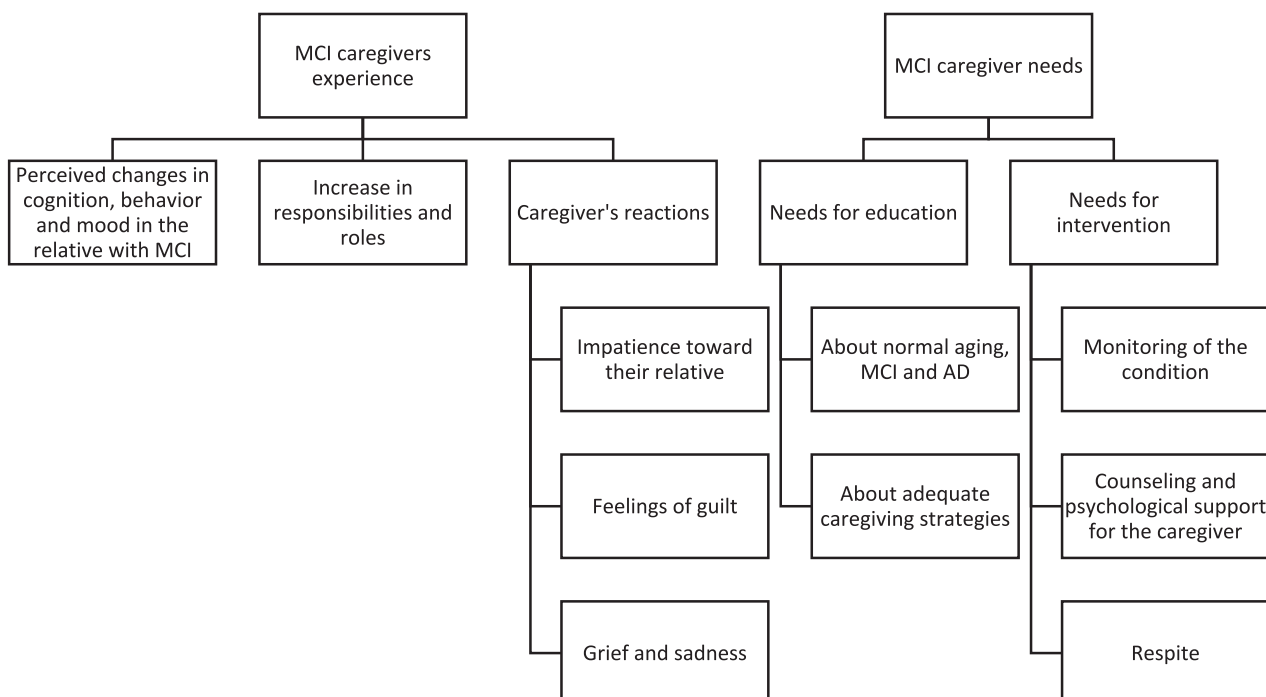
**Table 1**  
Topics of the weekly intervention sessions.

Session	Topic
Week 1	Presentation of the intervention, education on normal and pathological cognitive aging, identifying pleasant activities
Week 2	Better understanding of my caregiving role and the associated emotions and reactions, increasing pleasant activities
Week 3	Education about emotions Abdominal breathing technique
Week 4	Links between thoughts and emotions. Identifying unhelpful thoughts Respiration and relaxation technique
Week 5	Observing and modifying unhelpful thoughts, exploring more realistic or helpful thoughts
Week 6	Optimizing communication with my loved one with cognitive decline Explore self-expectations as a caregiver
Week 7	Optimizing my reactions to my loved cognitive issues and dealing with difficult behavior Discussion about gratifying aspects of caregiving
Week 8	Program overview and preparing for the future Identifying and using available resources

addition, the feasibility questionnaire included a few open-ended questions if participants wished to provide more insight about the intervention. Attendance was documented.

### 2.4.2. Baseline measures

Information about caregivers' age, sex, relation to care-receiver, occupation, and physical and psychological health were obtained via a self-report sociodemographic questionnaire. To evaluate baseline objective and subjective burden, the French-Canadian version of the Montgomery Borgotta Caregiver Burden Scale (MBCBS) was used [35]. Caregivers' perception of the care-receiver's memory and behavioral problems were evaluated using the French version of the Revised Memory and Behavior Problems Checklist (RMBPC) [36]. Caregiver's health-related quality of life was measured at baseline using the French version of the Short Form Health Survey 36-item (SF-36) [37].



**Fig. 1.** Flowchart of major and subthemes uncovered in the qualitative study (unpublished results).

### 2.5. Analyses

Descriptive statistics were used to characterize the sample of caregivers. Data on pre-post change were not reported since the goal of the current study was to evaluate the feasibility and acceptability.

### 3. Results

Fig. 2 presents the flowchart of participants in the study. A total of 13 eligible caregivers were initially interested to participate in the current study. After exclusion of participants for technical, time or other issues, eight caregivers gave their consent, completed the pre-intervention measures, and enrolled in the intervention. Seven participants completed the post-intervention measures including the feasibility questionnaire. Participants' characteristics are presented in Table 2 and baseline measures are presented in Table 3. Although biological sex was not specified as an inclusion criterion, the current sample was composed only of women.

#### 3.1. Feasibility and acceptability of the intervention

Most participants (71.4%) had a relative present at home when they were attending the sessions, and all of these were the person who received the MCI or early AD diagnosis. Most caregivers (71.4%) took part in some of the sessions in an open area (kitchen) while others (42.9%) took part in a closed room (such as an office) at some point during the sessions. Most caregivers (71.4%) completed the intervention on a portable computer, the others used any of the following devices: a desktop computer (14.3%), an electronic tablet (14.3%), or a smartphone (14.3%).

#### 3.2. Ease of use of the online modality

All participants (100%) reported that it was *very easy* to use emails as the main mean of communication throughout the intervention. All participants reported that it was either *very easy* (71.4%) or *easy enough* (28.6%) to complete the consent form and all (100%) were able to download an electronic copy. Similarly, four caregivers (57.1%) reported that it was *very easy* and three that it was *easy enough* to complete the online questionnaires via REDCap. All participants (100%) reported that the Zoom® software was *very easy* to use.

All participants (100%) reported that the formatting of the online questionnaires was *good*. However, two participants (28.6%) reported that it was difficult to respond because they could not see the entire text of their response when using a tablet. They all (100%) reported that the quality of the image using the software Zoom® was *good*. Regarding the quality of the audio, most participants (71.4%) reported that it was *good*, one caregiver reported that it was *good enough* and one (14.3%) participant reported that it was *bad*. Finally, most participants (57.1%) did not require technical support. The other three reported that technical assistance from the research team was adequate. During one session in the AD caregiver group, the Internet connection was unstable for about 5 min, but it did not have a significant impact on the overall session.

#### 3.3. Attendance

In the MCI caregiver group, three sessions were conducted with all four participants, four sessions were conducted with three participants and one session was conducted with only two participants. In the early AD caregivers' group, four sessions were conducted with all four

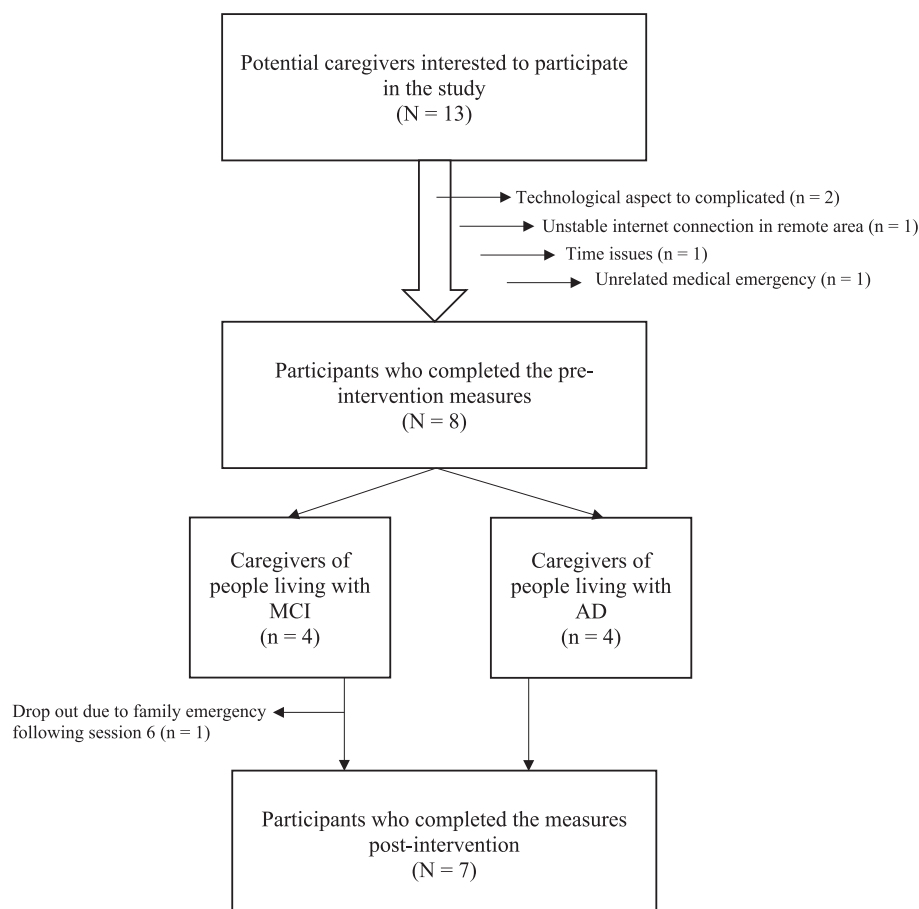


Fig. 2. Flowchart of participants in the study.

**Table 2**  
Participants characteristics.

	MCI	Early AD
Caregiver's age – M years (SD)	69.0 (7.7)	67.0 (8.0)
Caregiver's sex		
Women (%)	4 (100%)	4 (100%)
Care-receiver's sex		
Women – n (%)	2 (50%)	0 (0%)
Men – n (%)	2 (50%)	4 (100%)
Care-receiver's MoCA		
Raw score (/30) – M (SD)	21.75 (1.50)	17.25 (2.50)
Z score* – M (SD)	-1.85 (0.75)	-4.04 (0.72)
Relation with care-receiver		
Common law partner – n (%)	0 (0%)	2 (50%)
Married or civil union – n (%)	2 (50%)	2 (50%)
Siblings – n (%)	2 (25%)	0 (0%)
Amount of time they have known the care-receiver (years) – M (SD)	51.8 (14.9)	29.0 (16.2)
Caregiver's work status		
Still employed – n (%)	0 (0%)	2 (50%)
Retired – n (%)	4 (100%)	2 (50%)
Habitation		
House – n (%)	3 (75%)	3 (75%)
Apartment rental – n (%)	1 (25%)	1 (25%)

Note. All caregivers who were still employed worked part-time; MoCA: Montreal Cognitive Assessment; MCI: mild cognitive impairment, AD: Alzheimer's disease, M: mean, SD: standard deviation, \* The Z scores were computed using the normative data from Larouche et al. (2016).

**Table 3**  
Caregivers' baseline measures.

Measure	M (SD)	
	MCI	AD
MBCBSQ		
Objective burden	20.0 (3.0)	23.0 (2.8)
Subjective burden	13.0 (1.0)	16.0 (3.2)
Burden related to demand	9.0 (0.0)	8.0 (2.2)
RMBPC		
Frequency	15.0 (4.4)	32.0 (10.7)
Reactions	11.0 (5.1)	26.0 (6.6)
SF-36	75.0 (14.5)	57.0 (15.5)

Note. MCI: mild cognitive impairment, AD: Alzheimer's disease, M: mean, SD: standard deviation, MBCBSQ: Montgomery-Borgotta Caregiver Burden Scale, RMBPC: Revised Memory and Behavior Problems Checklist, SF-36: Short-Form Health Survey 36-item.

participants, two sessions were conducted with three participants, and two sessions were conducted with two participants. Only one caregiver per group attended all eight sessions.

### 3.4. Advantages/disadvantages of the videoconference modality

Two participants included in the study were living in remote areas and would not have been able to participate to an in-person intervention. More than half (57.1%) of participants reported that it was *very helpful* to participate in the intervention from home, two (28.6%) reported that it was *helpful enough* and one (14.3%) participant reported that it was *not at all helpful*. In an open-ended question, participants were asked to comment on the online modality. It was reported that the online

modality allowed them to save time and hassle linked to transportation and allowed them to feel more available for the care receiver. A participant mentioned that the online modality allowed her to fit the participation into her busy schedule. On the other hand, two caregivers reported that it would have been more stimulating if the intervention had been in person. Another participant mentioned that the online modality felt less spontaneous, did not allow for much human warmth with the other participants and made it harder to develop a relationship with the therapist.

### 3.5. Perceived usefulness of the different educational themes or strategies

Participants were asked to identify which themes or strategies (summarized into six items) presented in the intervention were pertinent. All themes/strategies were deemed pertinent by at least 3 participants. From most to least endorsed were: *strategies to cope with unhelpful thoughts and emotions* (100%), *psychoeducation about emotions related to the caregiving role* (85.7%), *education on attitudes or behaviors to favor with their relative* (85.7%), *psychoeducation about thoughts* (71.4%), *increasing pleasant activities* (57.1%) and *breathing and relaxation techniques* (42.9%). Most participants (71.4%) reported that the number of activities or exercises during the sessions was *adequate*, whereas one participant (14.3%) reported that there *could have been more* activities and another reported that there were *too many activities*. Most participants (71.4%) reported that, globally, the activities were *useful enough* and two (28.6%) endorsed those activities as *partly useful*. Almost all participants (85.7%) reported having *generally completed* the home activities except one (14.3%) who reported having *generally not completed* the home assignments. Most participants (71.4%) reported that home assignments were *useful enough*, one participant (14.3%) reported that they were *very useful*, and another (14.3%) reported that they were *partly useful*. Six participants (85.7%) reported that they would continue to use some of the techniques in their everyday lives following the intervention, and a single (14.3%) participant reported that she would not use any of the techniques.

### 3.6. Adequacy of the intervention related to caregiver experience and needs

In the MCI caregivers' group, two (66.7%) participants reported that the intervention was *partly adapted* to their caregiver experience, and one (33.3%) reported that it was *well adapted*. Two (66.7%) participants reported that the intervention was *partly adapted* to their caregiver needs, and one (33.3%) reported that it was *well adapted*. In the AD caregivers' group, two participants reported that the intervention was *partly adapted* to their caregiver experience, and the other two reported that it was *well adapted*. Three participants (75%) reported that the program was *partly adapted* to their caregiver needs, and one (25%) reported that it was *well adapted*. Overall, most participants (71.4%) reported that they would recommend another caregiver to participate in the intervention *as it is*, whereas two would recommend the intervention *if some changes are made* (see suggestions and comments below).

### 3.7. Perceived efficacy

Caregivers were asked how they felt following their participation in the intervention. All participants (100%) in the MCI caregivers' group reported they felt *better*. In the AD caregiver group, two (50%) participants reported they felt *better*, and two (50%) reported there was *no changes* in how they felt.

### 3.8. Participants' suggestions and comments

One participant (caregiver of a person with MCI) suggested that groups could be more homogenous in terms of relationship to the care receiver, for example including only spouses, or persons living with the



person with MCI. Another MCI caregiver indicated that the intervention could be better tailored to caregivers of persons at more advanced stage of AD. One caregiver reported that after completing the intervention she now felt better prepared for the future. One indicated that the participant workbook would be useful for reference in the future. A participant mentioned that she particularly liked the content addressing emotions. One caregiver of a person living with early AD wished that the intervention could help caregivers to obtain concrete help from other health care professionals (i.e., social worker) or community resources and to overcome barriers to accessing help (e.g. waiting lists).

## 4. Discussion and conclusion

### 4.1. Discussion

To the best of our knowledge, this study is the first to investigate the feasibility and acceptability of a videoconference CBT group intervention for caregivers of individuals with MCI or early AD. Results showed that the CBT-based intervention delivered via group videoconference was acceptable and feasible and was generally well received by both MCI and AD female caregivers. All participants felt that the intervention was at least partly adapted to their experience and needs as a caregiver.

The present intervention was developed by integrating educative material, psychoeducation and CBT-based strategies, elements that have shown efficacy in reducing depression and burden in dementia caregivers, as well as increasing their knowledge or literacy [8,11,38]. In the present study, caregivers judged that most themes or strategies were pertinent, particularly *strategies to cope with unhelpful thoughts and emotions*, *psychoeducation about emotions related to the caregiving role*, *education on attitudes or behaviors to favor with their relative*, and *psychoeducation about thoughts*. Hence, the more cognitive strategies of CBT and the psychoeducational parts of the intervention seemed to be particularly relevant according to the caregivers' point of view. Most participants reported that they would continue to use some of the techniques in their everyday lives after the intervention, indicating that the content of the intervention was well received and integrated by caregivers.

In the current sample, compared to MCI caregivers, slightly more AD caregivers reported that the intervention was adapted to their *experience*. It is possible that some of the examples used in the intervention were more associated to the late stage of MCI or to mild AD (e.g., more severe memory issues), and some MCI caregivers did not yet relate to these situations. Given the potentially evolutive condition of persons with MCI and the variability in their autonomy levels, this could be perceived as a strength of the intervention. Indeed, some caregivers reported that the intervention either helped them being more prepared for potential future situations, or provided information that they could come back to in the future if needed. Keeping in mind the diversity of trajectories of persons with cognitive decline, and variability in ongoing challenges for caregivers, the intervention could be offered periodically, and caregivers could potentially benefit from it at different moments in time.

Although all participant reported that the intervention at least partly met their needs as caregivers, caregivers in the AD group did mention they had additional needs which could not be met by the intervention, for example needs for external support and resources such as respite services. As such, even in the early stages of AD, support for caregivers should come in a variety of forms.

Some caregivers mentioned that videoconferencing was not as good as in-person contact for the development of alliance or group cohesion. These results are in line with those reported in a systematic review, which suggested that the experience in terms of alliance with participants is more variable in videoconferencing than in person [39]. In the present study, some caregivers viewed that alliance was more difficult to develop while others reported it was not a problem. Despite this potential downside, most participants were satisfied with the online

modality of the intervention, which is consistent with data from other studies [39]. This disadvantage must thus be considered together with possible advantages of the online modality.

Most caregivers had their relative with MCI or AD at home while they completed the sessions. The online modality thus allowed participants to keep an eye on their relative or to feel available for them. One of the main strengths of videoconferencing therapy in general is the accessibility of the intervention and the reduction in burden associated to transportation [39]. In the present study, two enrolled participants were living in more remote cities and could not have participated if the intervention had been in-person. Participants were comfortable enough with the online aspects of the intervention (e.g., emails, REDCap, Zoom, etc.) and required little to no assistance, yet it must be noted that two participants initially declined to enroll because they felt uncomfortable with the online modality. Thus, there is a chance some caregivers could not access such interventions or would need support to participate if they do not easily have access to the internet or are not familiar with online procedures.

The main limitation of the present study is the small sample size and the fact that all participants were female, which limits the representativity of the caregiver sample and the generalizability of our findings only to female caregivers. Since 42.5% of caregivers in Quebec were male in 2018 [40], future research should aim to recruit more male caregivers. Another limitation of this study pertains to the convenience sampling of caregivers. Individuals who accepted to participate were perhaps more at ease with online interactions in a small group, and more open to expressing themselves in a group. They might also have been more distressed or more prone to seek out help compared to caregivers who refused to take part in the study. This may limit again the generalizability of our findings to this specific caregiver population.

The current study also has several strengths. Including caregivers of persons living with either MCI or early AD allowed for a broader understanding of the potential of the intervention in the early stages of cognitive decline when caregivers are less supported. We also included different type of caregivers (e.g., spouse, siblings) and persons who resided or not with the care-receiver.

### 4.2. Innovation

Perhaps the most innovative aspect of the present study is the combination of characteristics like the inclusion of an understudied population, the intervention approach used and the modality to offer the intervention. Namely, this intervention is one of the few designed for MCI caregivers as it is the first that was specifically designed to address the experience and needs of these individuals. In line with those needs, we favored a combination of CBT elements with psychoeducational components to empower caregivers by providing them with tools for the future in their new and potentially evolutive role. Psychoeducation was also combined with CBT active components to address the caregivers' needs for emotional support. The intervention not only targeted psychological distress but also aimed at preventing it by increasing caregivers' knowledge and fostering their self-efficacy.

Moreover, previous studies demonstrated the benefits of online interventions in AD caregivers, but this modality had yet to be explored for MCI caregivers. A major innovative aspect of this intervention for MCI caregivers is that it used a videoconference modality, which is suited to the reality of busy caregivers nowadays. To our knowledge, this is the first study examining an intervention for MCI caregivers that used an online modality. Videoconference and telehealth show many advantages and many studies have shown promising results in other populations, mainly its accessibility [14,15,26,41]. The results of the current study demonstrate that this modality is feasible and well received by the female caregiver population.

### 4.3. Conclusion

The current study demonstrated that it is feasible and acceptable to use a videoconference CBT group intervention with MCI or mild AD female caregivers. The online aspect of the intervention was experienced positively for most caregivers, allowing to fit the intervention in their busy schedule and being able to participate from remote areas. Results suggest that the intervention was well received by both MCI and AD caregivers. MCI caregivers seemed to feel better prepared to face their relatives' decline following the intervention, even if they reported they may not relate to the full content of the sessions. AD caregivers reported that they benefited from the current intervention, but they also report other needs that go beyond the scope of the intervention (e.g., access to external help).

### CRedit authorship contribution statement

**Phylcia Verreault:** Formal analysis, Funding acquisition, Investigation, Project administration, Writing – original draft, Writing – review & editing. **Marie-Christine Ouellet:** Conceptualization, Supervision, Writing – original draft, Writing – review & editing. **Céline Mavounza:** Conceptualization, Data curation, Writing – original draft. **Robert Jr Laforce:** Resources, Supervision, Writing – original draft. **Jean Vézina:** Resources, Writing – original draft. **Carol Hudon:** Conceptualization, Data curation, Resources, Supervision, Writing – original draft, Writing – review & editing.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pecinn.2024.100317>.

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