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How family dementia caregivers perceive benefits of a 4-week Mentalizing Imagery Therapy program: a pilot study

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Abstract

of research interest include mindfulness, mentalizing, guided imagery, therapies to support family dementia caregivers, depression, and neural biomarkers.

Conflict of Interest

The Authors declare that there is no conflict of interest.

Procedures and Consent

Written informed consent was obtained from each participant prior to participation in study procedures in accordance with the Institutional Review Board of the University of California, Los Angeles (IRB #13-001877).

Disclosures

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Dr. Jain discloses that within the past 36 months he has received research support from the National Institutes of Health and a Jerome and Celia Reich Award in Depression Research. He has also received salary support from the non-profit Clinical Trials Network Institute at the Massachusetts General Hospital, which receives income from pharmaceutical companies. He serves on the Board of Directors of the Hoffman Institute Foundation.

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Background—Family caregivers of dementia patients experience high levels of interpersonal stress that often results in elevated anxiety, and depression, and negative impacts on interpersonal relationships. Changes in behaviors and the structure of relationships with the care recipient (CR) and others in the social milieu challenge the caregivers' ability to mentalize, or understand the links between mental states and behaviors. This study investigates the experiences and perceived benefits of family dementia caregivers who underwent Mentalizing Imagery Therapy (MIT), a treatment aiming to improve balanced self-other mentalizing and reduce psychological symptoms.

Methods—Purposeful sampling was used to select 11 family dementia caregivers who underwent a 4-week pilot trial of MIT. Semi-structured interviews were completed post-intervention to identify subjective benefits, putative psychological mediators and perceived active components.

Results—Caregivers reported improvements in well-being, mood, anxiety, and sleep, and a majority stated MIT helped with forming and maintaining healthier relationships. Some participants noted benefits extending to how they reacted to their social environment and perceived themselves more objectively from others' perspectives. Specific elements of MIT, including self-compassion, self-care, and the ability to reflect on emotionally arousing challenges, might have mediated these improvements.

Conclusion—Family dementia caregivers perceived salutary benefits of MIT on multiple domains of well-being. The self reports suggest MIT holds promise for improving well-being, reducing non-mentalizing patterns of thought, and facilitating improvements in balanced mentalization within the caregivers' relationships.

Keywords

depression; anxiety; mentalization; mindfulness; dementia caregivers

Introduction

Alzheimer's disease and related dementias are conditions marked by the deterioration of cognitive and functional abilities in multiple domains (Breitner, 2006; Kukull & Bowen, 2002). As of 2019, 5.8 million people in the United States and 50 million people worldwide suffer from dementia, with an estimated 10 million new cases every year (Alzheimer's Association 2018; Prince et al., 2013; World Health Organization 2019). Fighting this rising tide of dementia is the caregiver population, the vast majority of whom consist of family members. In 2017, 16.1 million family and other informal caregivers provided 18.4 billion hours of care for dementia patients (Adelman et al., 2014; Alzheimer's Association, 2018). Caregivers were more likely to be women and non-Hispanic white; over two thirds of caregivers were married or in a long-term relationship, and over half reported taking care of their parents (Alzheimer's Association, 2018). Lesbian, gay, and bisexual adults are more likely to assume the role of caregiver than their heterosexual peers (AARP and National Alliance for Caregiving, 2015). Most family caregivers lack adequate training and finances to cope with their situation, but are bearing an increasingly central role in dementia care (Adelman et al., 2014).

Family caregivers have been referred to as "invisible second patients" (Brodaty & Donkin, 2009) because the challenges they face often lead to negative impact on individual mental

and physical health (Schulz & Martire, 2004; Tatangelo et al., 2018; Vitaliano et al., 2007). Caregivers are negatively impacted by behavioral disturbances exhibited by the CR (Care Recipient), and often perform strenuous tasks as part of their caring regimen involving physical strain and sleep disruption (Cheng, 2017; Creese et al., 2008; Huang et al., 2012; Schulz & Martire, 2004). They are more prone to health complications such as compromised immune function and increased mortality (Brodaty & Donkin, 2009; Papastavrou et al., 2007; Riffin et al., 2017; Schulz & Martire, 2004). Symptoms of depression and anxiety are widespread among the caregiver population; between 10–40% of family dementia caregivers are reported to suffer from depression and approximately 25% from elevated anxiety (Alzheimer's Association 2018; Mahoney et al., 2005; Papastavrou et al., 2007; Richardson et al., 2013; Watson et al., 2018).

The time-consuming activity of caregiving also leads to negative effects on an individual caregiver's social network and financial stability; in 2016, 48% of dementia care contributors cut back on spending due to the cost of dementia caregiving (Alzheimer's Association 2018, Brodaty & Donkin, 2009; Langa et al., 2001; Schüz et al., 2015). Caregivers often forego vacations and hobbies, describe decreased personal and family time, and report more work-related difficulties (Brodaty & Donkin, 2009). Among dementia caregivers who were employed while providing care, 18% reported reduced working hours while 9% gave up working entirely (Alzheimer's Association 2018). Prolonged caregiving may eventually result in compassion fatigue, leading to feelings of resentment and hopelessness towards their loved one and overall deterioration of the patient-caregiver relationship (Day & Anderson, 2011).

As the burdens of the growing family caregiver population have become more visible, research into therapies that may counter the strains of caregiving has increased. Caregiver interventions largely focus on providing psychosocial support, education, and skills training. Systematic reviews and meta-analyses suggest these therapies are beneficial on average for caregivers, while clinical experience suggests that given the heterogeneity of the caregiver population and types of dementia, interventions tailored to individual caregiver profiles could provide more personalized and better targeted care. (Abrahams et al., 2018; Gilhooly et al., 2016; Laver et al., 2017; Richardson et al., 2013; Sörensen & Conwell, 2011; Zarit, 2018). Different types of interventions may be beneficial and complementary for individual caregivers; future interventions should draw from clinical experience, tailoring and adapting intervention components to the specific needs of caregiving individuals (Cheng et al., 2019; Zarit, 2018).

To meet these demands, developing new strategies for reducing caregiver stress remains a key priority area of the United States National Institute on Aging (The National Institute on Aging, 2020). Research on psychological interventions for caregivers has primarily aimed to reduce perceived stress and negative moods with mindfulness (purposeful and nonjudgemental attention to the present experience) or cognitive reframing (Cheng et al., 2019; Hurley et al., 2014; Pinquart & Sörensen, 2006; Sörensen et al., 2002). Meta-analytic evidence demonstrates that mindfulness-based interventions for dementia caregivers improve symptoms of stress, depression and mental-health related quality of life (Brown et al., 2016; Collins & Kishita, 2019; Kor et al., 2018; Li et al., 2016; Liu et al., 2017; Whitebird et

al., 2013). Dementia caregivers who underwent interventions based on cognitive behavioral therapy (CBT) and cognitive reframing also reported overall small but significant reductions in stress and depression (Hopkinson et al., 2019; Kishita et al., 2018).

A psychological mechanism that might partially account for the benefits of these therapies involves promoting the capacity for mentalization (Allen & Fonagy, 2014). Mentalization is a psychological process pertaining to how an individual understands their own mind and behaviors, those of others, and reciprocal influences between self and others. A balanced capacity to “mentalize” (the active verb form of mentalization) facilitates a sense of individual identity and understanding of the behaviors of others. Mentalization-based therapy is a talk therapy provided in both patient-therapist dyads and groups to enhance mechanisms of mentalization (Allen et al., 2008; Bateman & Fonagy, 2012) that has demonstrated efficacy for borderline personality disorder as well as adolescents who self-harm. (Bateman & Fonagy, 1999; Bateman & Fonagy, 2009; Rossouw & Fonagy, 2012).

Mindfulness can also serve to facilitate more effective mentalization. (Allen, 2013). Clinical mindfulness therapies that have been studied for caregivers such as Mindfulness-Based Stress Reduction provide training on internal mentalization of present-moment emotions and sensations via a focus on shifting the participants’ relationship to the process of mentalizing (generating and reacting to thoughts) (Allen et al., 2008), but do not formally consider how to mentalize others or understand relationships within a narrative frame (Jain & Fonagy, 2018). CBT promotes mentalizing through a structured process of focusing on cognitive distortions related to one’s own mind and behaviors, and can improve understanding of others’ minds when analyzing cognitive distortions within relationships (Allen et al., 2008).

To our knowledge, research on mindfulness-based therapies and CBT for caregivers has not previously focused on the potential therapeutic benefit of balancing mentalizing between self and other perspectives. The caregiver role, however, requires balanced mentalizing to care for the loved one, attend to the caregivers’ own needs, and understand how caregiver-CR interactions might affect CR symptoms. Underlining the loss of ability to mentalize the CR as dementia progresses, the family dementia caregiver situation has been referred to as one of “becoming strangers” with the formerly intimate CR (Wuest et al., 1994). Caregiving also involves managing conflicts within the web of larger family relations (Strawbridge & Wallhagen, 1991), requiring a strong capacity to mentalize others to effectively navigate. Promoting mentalization for caregivers can thus provide potential benefits in fostering greater well-being and resilience, and promote mastery of complicated caregiving dynamics (McEvoy et al., 2019).

Mentalizing Imagery Therapy (MIT) was developed by the senior author (FAJ) to integrate balanced attention to mentalizing into a series of structured mindfulness and guided imagery practices (Jain & Fonagy, 2018). Practices of mindfulness, including focused stretching with present moment attention and breathing meditations, serve to reduce emotional arousal so that self and other mentalizing in challenging interpersonal situations becomes possible. To ground the imagery in a physical reality, the participant internalizes images of themselves and the other into a center within the body in the lower chest, a non-religious adaptation of practices found within Shaivite Hindu and Tibetan Buddhist meditation traditions in which

an image of a deity is visualized within the body. The process of embodied visualization with self and other images enables the participant to attend to visceral sensations they may have had during the challenging situation and to better imagine the visceral sensations the other may have been experiencing. During the exercises, participants further reflect on their interconnectedness with others, their communities and environment.

Using these mindfulness and guided imagery techniques, MIT aims to decrease the severity of adverse psychological symptoms for the participant and improve mentalizing in challenging relationship situations (Jain & Fonagy, 2018). Preliminary data suggested that MIT practices can reduce family dementia caregiver symptoms of depression when taught within traditional group settings in an 8-week program (Jain et al., 2014) as well as remotely through smartphone technology without the aid of an instructor, albeit with a smaller effect size (Sikder et al., 2019). Based on caregiver feedback from the former trial, the MIT program for caregivers was shortened to 4 weeks and focused on core MIT principles of self and other mentalizing. The purpose of this investigation was to better understand the perceived experiences of family dementia caregivers with regard to interpersonal relationships and individual well-being in the context of a pilot trial of the refined 4-week group MIT program. We hypothesized that caregivers would perceive improvements in psychological symptoms of stress and low mood, as well as experience benefits for interpersonal mentalizing. We also aimed to identify perceived active components by which caregivers derived benefit, hypothesizing that themes of mindfulness and self-compassion would emerge.

Methods

Eleven participants were purposefully sampled (a sampling technique used in resource limited settings to ensure participants' availability, articulateness, and racial inclusivity) according to standard procedures for qualitative research (Palinkas et al., 2015) from 26 caregivers who were enrolled in a controlled feasibility trial of MIT or a wait list condition in which subjects received a progressive muscle relaxation audio recording while awaiting MIT. Participants who could confidently verbalize their experiences and thoughts in the course of a group treatment, were easily accessible via phone, and helped capture a diverse population were identified and referred by the group program instructor. The interview component of the study was added after the trial began and the number of participants was constrained by feasibility constraints of the study. Interviews were obtained after receipt of MIT regardless of initial assignment to MIT (N=6) or the control (N=5) condition; participants were interviewed with respect to their experiences with MIT but not the wait list condition. Participants enrolled in the trial were recruited with flyers provided to caregiver support groups, posted on local billboards, and from the known dementia caregiver pool with telephone calls to those who had provided permission to be contacted for research studies. All procedures were approved by the IRB of the University of California, Los Angeles (IRB#13-001877).

Participants had to be at least 35 years of age, be the primary caregiver of a relative with dementia, and demonstrate elevated symptoms of depression as identified by a score of 10 or more on the Patient Health Questionnaire-9 (Kroenke et al., 2001). Exclusion criteria

included diagnosis of a primary psychiatric disorder other than Major Depressive Disorder (MDD), psychotic disorder, unstable medical illness, neurodegenerative disease, active drug or alcohol abuse, and meditation practice more than once per week. Participants receiving antidepressant medication, psychotherapy, or enrolled in a support group were required to maintain current dosages of medications or frequency of therapy or group visits from 6 weeks prior to the study through the outcome assessment. Participants were screened at baseline for psychiatric disorders using the MINI International Neuropsychiatric Interview for DSM-IV (Sheehan et al., 1998).

Demographic Characteristics of the Interviewed Participants

Eleven participants (9 female) were interviewed. Seven identified as Caucasian, two as African American, and two as Hispanic. Six were over the age of 65, while the other five were between 38 and 65 years old. Level of education was fairly high, with the average participant having 16 years of education. Seven caregivers were children of the care recipient, while four were spouses. Participants had been caring for their loved ones for an average of 6.5 years.

Mentalizing Imagery Therapy

The Mentalizing Imagery Therapy (MIT) intervention was manualized and consisted of four, two-hour weekly group sessions over one month. Each 4–8 person group session consisted of a mindful stretching and breathing exercise, group discussion, and a specific guided imagery practice. Guided by an instructor well-versed in MIT, each session aimed to facilitate mentalization within the participant, introduce new concepts and build upon previously taught exercises. The guided imagery practices have been detailed previously (Jain & Fonagy, 2018) and are briefly described here.

Week 1, “Eye in the Center”: focuses on fostering participants’ natural experiences of observation and awareness, helping participants focus attention within the “center” region (lower chest, toward the back), and mapping out mental processes (e.g. where in the body thoughts appear to originate) and perceptions around this center. This exercise introduces users to basic mindfulness principles and facilitates balanced attention to internal emotional and cognitive aspects of experience.

Week 2, “Nesting Doll”: builds upon mentalization of self in “Eye in the Center.” Participants are guided to become more aware of their internal mental processes, noting emotions and sensations. Participants are encouraged to then form a mental model or image of themselves and hold this within the central region, incorporating both positive and negative feelings and observing them as parts of a larger whole. Managing and associating emotions and sensations with a physical reality helps participants represent explicit (verbalized and readily accessible) and implicit (unverbalized and often relegated to the background of conscious awareness) mental states. Toward the end of the meditation, participants are invited to make a mental image of a loved one, such as the CR, and to imagine the sensations and thoughts experienced by the loved one. Mentalization of the self is thus balanced with mentalization of the other. The exercise moves beyond a strict focus on mental states by incorporating bodily sensations and encouraging the participant to also

more deeply imagine their own and the other's physical reality (i.e. atoms) and the origin of these components within the "light of the stars". This was done to reduce arousal related to emotional content of the imagery so that participants could more effectively observe and impute their and others' psychological states.

Week 3, "Situation Solver": uses sequential perspective taking of a complex interpersonal situation to further balance mentalization of self and other. The participant first embodies a challenging situation with the center, reducing affect in favor of cognition. The user then engages the situation from different perspectives, examining responses and emotions from the angle of self and other, identifying how shifts in internal mental states occurred in self and other, and recontextualizing the challenge in a broader environmental sense. The practice aims to reduce emotional arousal and deficits of mentalization by helping the participant mindfully reflect on a challenging interpersonal situation from multiple perspectives, including physically representing and grounding the other.

Week 4, "Life Globe": facilitates attributes of mentalization on a more complete scale by including links between the participant and different levels of social function. The meditation encourages the user to mindfully reflect on themselves, others (including family and friends as applicable), communities they are a part of, places in nature, and the larger world and universe, and further contemplate their underlying connections. The participant strengthens this sense of unity through constructing mental representations of others from the inside - their internal being - and this may help to overcome personal detachment and feelings of aloneness (Jain & Fonagy, 2018). The exercise moves beyond a mentalizing model to encourage a focus on how beings are physically connected at a fundamentally universal (holistic) level and invites participants to incorporate their spirituality as applicable.

Data Collection

Semi structured, in-depth interviews using both leading and open-ended questions were conducted with the participants to assess whether MIT was helpful and how, as well as the most impactful components of MIT. Interviews took place following completion of all other study procedures, and were carried out by phone by a trained, master's level member of the study staff who had no other contact with participants. Questions asked whether and how MIT impacted participant well-being, such as ("Do you think that MIT impacted your sense of well-being?"), daily life ("Would you say that MIT has affected your daily life or altered your day to day activities?"), relationships ("Do you think that MIT has changed your relationships with others?"), and perceived active components ("What part of the program helped that aspect the most?"). Follow up questions were asked in order to elicit more in depth answers and clarify specific points, in accordance with standard methods for semi-structured interviews (Drever, 1995). Participants were asked to provide examples and anecdotes, and to give comprehensive answers to the best of their ability.

Qualitative Data Analysis

Interviews were recorded and transcribed verbatim. A within case analysis was used to isolate and describe individual themes and experiences, and a cross case theme analysis

for comparison of significant individual themes across all participant accounts (Ayres et al., 2003). Two study researchers coded the interviews independently guided by deductive approaches (based on the theoretical framework of the approach used and predetermined themes). A high degree of overlap was independently achieved (greater than 80% of responses), and differences were resolved by revisiting the particular passage and discussing the concepts and themes until consensus was reached (Richards & Hemphill, 2018). Three major categories and themes were explored. “Psychological and relationship well-being,” included statements on how MIT affected the participant’s overall well-being, affective changes, daily living, and relationships. “Putative psychological mediators,” investigated specific elements participants described as leading to a change in well-being, daily life, and relationships, such as an increase in self-compassion or a newfound ability to deal with challenging situations from multiple perspectives. The final category was labeled “Perceived active components,” and identified aspects of MIT that participants found most helpful.

Results

Psychological and relationship well-being

All participants reported improvement in their well-being. Many stated MIT produced a calming or centering effect, along with increased mindfulness. The centering effect was phrased in different ways, with Participant 3 explaining how MIT “gave me a kind of rudder, I think I was floundering and it centered me.” while Participant 5 reported how the meditations “gave me a lot of control.” Participant 5 also added, “I feel more accepting of things, of my situation. I feel more upbeat about it.”

Common benefits reported by participants were improvements in mood, anxiety and sleep. For some, the aforementioned centering effect worked in conjunction with these improvements, as seen in Participant 4’s experience: “I’ve used the techniques from meditation to kind of center me, to bring that feeling of stress and anxiety down.” Lower stress and anxiety were also described by Participant 8, who stated MIT “makes the highs and lows more manageable, so I don’t get pissed off and feel hopeless and totally drained.” Participant 10 noted that the treatment helped not only with mood and anxiety: “I can focus better and I don’t feel depressed.” but also helped with sleep, stating that MIT “helped my insomnia, I’m sleeping a lot better.”

Several participants noted benefits extending beyond their internal states to how they reacted to their social environment. For Participant 6, MIT translated into a healthier attitude towards their surroundings: “I have a better attitude about things than when I started...I’m more tolerant of change.” A similar shift in worldview was reported by Participant 9 who after the treatment described, “I have more energy... I think my overall view of life and the world is not so grim.” MIT provided Participant 11 a balanced reaction to challenging situations, “If things got overly tense in the house... it allowed me the ability to just kind of relax and to go to a different place for a while.”

Nine participants reported MIT helped maintain and form healthier relationships. Participant 6 explained how the meditations helped them grow personally and become more grounded, “I’m a better listener now, I’m more present now. It just put me in a much better place.

I'm much easier to get along with." Participant 2 felt comparable self-improvement which contributed to more balanced relationships saying, "I think meditation made me a little bit more likeable – it improved my attitude." In other narratives, the therapy helped participants become more cognizant of the other's feelings. Through MIT, Participant 9 was able to "become more aware of my mother's feelings...putting myself in her place." Participant 1 noted benefits for relationships outside of that with his care recipient, stating in relation to his ex-girlfriend that he became "more compassionate...more sympathetic to the other person."

Putative Psychological Mediators

Several elements of MIT may have contributed to the aforementioned effects on participants' well being, relationships, and daily life.

Self-compassion was an area commonly mentioned by participants. Participant 2 emphasized a newfound ability to find comfort through MIT, stating that the treatment "allowed me to comfort myself; comforting myself is giving myself the same comfort and sympathy that I would give someone else I love." Aspects of forgiveness were also mentioned by several participants, with Participant 9 describing how "I'm much more compassionate toward myself...forgiving myself when I'm not at 100%." Participant 3 mentioned a similar epiphany with their struggle with depression: "struggling with depression, I can beat myself up when I don't do something. Meditation allowed me to do my best, to improve without beating myself up."

Statements also suggested an increase in the ability to cognitively reflect on emotionally arousing challenges, including from an outside (external) perspective (Box 1). Participant 2 used the meditation to break down challenging moments and reapproach the situation from a more manageable standpoint, "I'm able to take a distressing emotion and slow it down, and sort of break it down into pieces...I can start dealing with it, just deal with a piece of it rather than a huge swirling mass of it." The reflective changes in perspective were particularly beneficial to Participant 1. "It helped me calm down, definitely.... Meditation allows me to think through situations and react better, and make better decisions." The improved decision making and perspective taking further extended to Participant 1's other relationships: "It's helped me in other relationships - I react better, I can see the bigger picture and take myself out of the center of it."

Another aspect of daily life seen as positively affected by MIT was self-care. Burdened and preoccupied by the endless demands of family caregiving, participants were able to use MIT to create much needed self-time. In the case of Participant 6, the meditations "forced me to plan some time for myself." Participant 8 reported equally positive results, explaining how MIT "helps create a space between me and what's going on. It's a space I can get myself together."

Perceived active intervention components

When prompted to identify perceived active components (such as instructor, meditations, homework, group sessions, and educational sessions), many participants attributed MIT's benefits to the combination of all these elements.

All eleven participants had positive comments about the instructor, and placed the instructor's role highly. The instructor was able to give participants an effective framework of new concepts and abstractions contained within the meditative practices, as well as clearly outline goals for each practice. This sentiment was expressed by Participant 1: "The instructor was the most important - he helped me appreciate why we're doing what we're doing, and what the goal is" as well as Participant 3, who was appreciative of the instructor's "expertise in meditation, it allowed me to understand how helpful it can be." Participant 7 added that the instructor "was really good at teaching you about [the meditation], and really guided me in how to successfully do [the meditation], and in such a way that I could tailor it to me."

The remaining elements were viewed favorably, but by different subsets of participants. Some participants, such as Participant 3, enjoyed the group sessions: "It is useful to have the opportunity to meet with other caregivers in the same situation who can relate to what you're going through." Participant 9 also found the group sessions to be helpful, emphasizing how "it really was the highlight of my week to go be with the group." However, Participant 8 conversely found the group to be least helpful, saying "I didn't get much from the other people."

Discussion

These results suggest that a 4-week MIT group improved well-being and self-perceived symptoms of depression and anxiety in family dementia caregivers, and strengthened perceived capacities for mindfulness, self-compassion and self-care. Notably, benefits were observed in relation to self and others, consistent with MIT's focus on balancing mentalizing within challenging interpersonal situations. Many caregivers found MIT practices to be useful tools that helped to reduce stress, cope with difficult situations with their loved ones, and decouple distressing circumstances from negative emotional reactivity. The present results on perceived benefits of the MIT program support and extend our quantitative and neuroimaging findings from this cohort, which demonstrated statistically superior improvements in depressive and anxiety symptoms, and increased connectivity of the dorsolateral prefrontal cortex with an emotion regulation brain network, in the MIT group relative to the control group (Jain et al, in review).

MIT appeared to facilitate conditions necessary for mentalizing, specifically caregivers' perceived cognitive and emotional stability, or "being more centered" despite the challenges they encountered. Participants reported being able to recognize and reduce emotional arousal in difficult situations, facilitating calmness and helping them make better decisions. This reduction in emotional arousal provides more optimal conditions for effective mentalization (Fonagy & Bateman, 2008) as it is more difficult to mentalize when experiencing strong emotions. Controlled mentalizing of emotions was particularly salient in the caregivers' responses via improved mindfulness (non-judgmental, curious attention) and causal sequencing, or "slowing down" a situation to examine it piece by piece. MIT also appeared to reduce non-mentalizing patterns of self-judgment and criticism regarding perceived defects within themselves.

In addition to facilitating attributes of mentalization of the self and individual well being, another goal of MIT is promoting mentalization of others in the context of complex interpersonal relationships (Jain & Fonagy, 2018). In this study, MIT was observed to promote cognitive, emotional, and explicit elements of mentalizing themselves and others in relationships. Several caregivers remarked that it helped them observe themselves more objectively, “as if from behind,” or placing themselves within “the big picture”. This resulted in an improved ability to respond to their situation. There was also evidence that MIT helped caregivers mentalize others better from the inside, to take their perspective as did one participant with her mother (who was her care recipient) and another with his ex-girlfriend. Perhaps these improvements in mentalization resulted in participants’ reports of greater empathy and patience, of feeling less alone and more appreciative of support networks.

Comparison of these results with other mindfulness interventions in family dementia caregivers is informative regarding similarities and differences. In a study observing the effects of brief Mindfulness Based Stress Reduction (MBSR) training on dementia caregiver wellbeing, qualitative interviews were conducted one month post-intervention supplementing survey data (Hoppes et al., 2012). Participants reported increased feelings of acceptance, an increased sense of peace, and decreased reactivity (Hoppes et al., 2012). Another mixed method study employed a modified version of Mindfulness Based Cognitive Therapy (MBCT) for dementia caregivers and obtained semi-structured interviews during a post-intervention focus group, and this revealed themes of improved self-awareness, concentration, relaxation, and sleep quality (Kor et al., 2019). This is consistent with other reports of the effects of MBSR and MBCT in non-caregiver populations of older adults (Fouk et al., 2014; Moss et al., 2015; Smith et al., 2007; Smith, 2004; Williams et al., 2018). We suggest that the experiences of acceptance, relaxation, calmness, and present awareness described by MBSR and MBCT participants were comparable to those self-oriented benefits described in this study of MIT, but that MIT participants’ descriptions of benefits such as perceiving themselves more objectively from other perspectives outside of themselves in challenging relationship situations were unique to MIT.

This study has several limitations. Although the small sample size satisfied the flexible criteria normally employed for a pilot feasibility study (Marshall, 1996; Robinson, 2014), the use of purposeful sampling to recruit participants may introduce selection biases otherwise precluded by random sampling methods (Palinkas et al., 2015). The lack of a control group also introduces potential issues with confounders, which may limit the ability to attribute the reported benefits to MIT. However, the goal of this investigation focuses on providing in-depth explorations into participant experiences with MIT and less so on generalizability of findings. When factoring in the limited resources of a pilot feasibility study, purposeful sampling provided a suitable means to meet this goal (Palinkas et al., 2015; Patton, 2002). Additional research with larger samples and control groups is necessary to determine the generalizability of the findings from this sample and uncover possible confounders. Our study also strived to include racial and ethnic minorities within our sample, providing reason for optimism that these findings might be generalizable to diverse populations; this is a topic to be expanded upon in future studies

While there was evidence for some improvement in mentalizing of self from the outside and others from the inside, the questions used to elicit caregivers' perceived benefits were general in nature and not informative of MIT's effect on some specific mentalizing capacities: it remains unclear whether caregivers perceived improvement in automatic mentalizing when confronted with challenging situations, or with external mentalization of the care recipient. Although participants' interviews suggest that MIT played a role in reduced emotional arousal, it is less clear whether it facilitated internal mentalization of self, i.e. helped caregivers gain new awareness regarding the links between their mental states and behavior. Future studies should be tailored specifically to address these aspects of mentalizing to more comprehensively determine the perceived benefits of MIT for mentalizing.

Aspects of the intervention and interview can also be improved. The MIT sessions were guided by one instructor throughout the duration of the intervention; there is a possibility that the reported benefits may be related to the particular instructor's expertise. Inclusion of multiple instructors for subsequent research would provide greater clarity regarding the benefits of the MIT intervention itself. Participants in the study were required to be the primary caregiver, but might have had assistance from siblings or partners. Additionally, the care recipients' severity and dementia type were not captured. The only requirement was the caregivers' endorsement that the care recipient carried a dementia diagnosis (e.g. from a primary care physician or neurologist). Utilizing these measures in future studies would provide deeper insight regarding MIT's benefits for caregivers with specific risk profiles.

The timing of the interview at the end of the 4-week intervention is another potential constraint. Statements given by the participants may be biased towards recent practices, whereas benefits of techniques focusing on mentalization of the self, situated closer to MIT's start, might be more difficult to recall. Furthermore, the study did not ask subjects who received the progressive muscle relaxation recording prior to MIT regarding their experiences with the recording, although no subjects spontaneously mentioned this as specifically beneficial. Future research could incorporate other qualitative elements into different time points of the study, such as observation during group sessions or analysis of journal entries. Determining the extent to which self-reported MIT benefits are also consistent with quantitative reductions in psychological symptoms and improvements in mindfulness or self-compassion should also be studied. Having access to this information would provide more detailed information regarding the effects of MIT. Finally, it is unclear whether the benefits would continue over the moderate to longer term, as the interviews were obtained soon after the 4-week intervention. Further research should study longer term perceived outcomes of MIT in the context of a larger, randomized controlled trial, with multiple group instructors.

Implications

The implications of the present study suggest the utility of mentalizing imagery practices in assisting patients who are depressed due to the caregiving demands of caring for a CR. Because of the pilot nature of the study, it is difficult to generalize these results into long term outcomes, and more research needs to be done. However, clinicians may be well-served

by considering the importance of mentalizing as a useful therapeutic mechanism, beyond a self-focused mindfulness practice and beyond cognitive techniques such as cognitive restructuring. Specifically, it seems feasible that mentalization's focus on relationships, including participants' relationships with themselves, CRs, and other individuals in their life, has something to do with its salubrious effects. Further resources on MIT (such as audio recordings of exercises, sample written materials provided to participants) may be accessed by contacting the corresponding author of the study.

Conclusion

In this pilot study of family dementia caregivers, MIT resulted in perceived salutary benefits in multiple domains of well-being, in reducing non-mentalizing patterns of thought, and in improving understanding of the self more objectively within relationships. MIT's approach might be particularly well suited for caregivers due to its focus on balancing understanding of how self and other mental states interact in challenging circumstances. Further studies in larger samples are warranted.

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References

- AARP & National Alliance for Caregiving (2015, June). Caregiving in the U.S. 2015 Report <https://www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states-2015-report-revised.pdf>
- Abrahams R, Liu KPY, Bissett M, Fahey P, Cheung KSL, Bye R, Chaudhary K, & Chu LW (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. 10.1111/1440-1630.12464 [PubMed: 29527683]
- Adelman RD, Tmanova LL, Delgado D, Dion S, & Lachs MS (2014). Caregiver burden: A clinical review. *JAMA - Journal of the American Medical Association*, 311(10), 1052–1059. 10.1001/jama.2014.304 [PubMed: 24618967]
- Allen J, & Fonagy P (2014). *Mentalizing in psychotherapy*. The American Psychiatric Publishing Textbook of Psychiatry, Sixth Edition. 10.1176/appi.books.9781585625031.rh31
- Allen J, Fonagy P, & Bateman A (2008). *Mentalizing in clinical practice* American Psychiatric Publishing.
- Allen JG (2013). Psychotherapy is an ethical endeavor: Balancing science and humanism in clinical practice. *Bulletin of the Menninger Clinic*, 77(2), 103–131. 10.1521/bumc.2013.77.2.103 [PubMed: 23697818]
- Alzheimer's Association. (2018). 2018 Alzheimer's Disease Facts and Figures. *Alzheimer's & Dementia*, 14(3), 367–429. 10.1016/j.jalz.2018.02.001
- Ayres L, Kavanaugh K, & Knafel K (2003). Imp Qualitative Data Analysis. *Qualitative Health Research*, 13(6), 871–883. 10.1177/1049732303255359 [PubMed: 12891720]
- Bateman A, & Fonagy P (1999). Effectiveness of partial hospitalization in the treatment of borderline personality disorder: a randomized controlled trial. *Am J Psychiatry*, 156(10), 1563–1569. 10.1176/ajp.156.10.1563 [PubMed: 10518167]

- Bateman A, & Fonagy P (2012). Handbook of mentalizing in mental health practice American Psychiatric Pub.
- Bateman A, & Fonagy P (2009). Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. *American Journal of Psychiatry* 10.1176/appi.ajp.2009.09040539
- Breitner JCS (2006). Dementia - Epidemiological considerations, nomenclature, and a tacit consensus definition. *Journal of Geriatric Psychiatry and Neurology*, 19(3), 129–136. 10.1177/0891988706291081 [PubMed: 16880354]
- Brodaty H, & Donkin M (2009). Clinical research: Family caregivers of people with dementia. *Dialogues Clinical Neuroscience*, 11(2), 217–228. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181916/pdf/DialoguesClinNeurosci-11-217.pdf>
- Brown KW, Coogole CL, & Wegelin J (2016). A pilot randomized controlled trial of mindfulness-based stress reduction for caregivers of family members with dementia. *Aging & Mental Health*, 20(11), 1157–1166. 10.1080/13607863.2015.1065790 [PubMed: 26211415]
- Cheng ST, Au A, Losada A, Thompson LW, & Gallagher-Thompson D (2019). Psychological Interventions for Dementia Caregivers: What We Have Achieved, What We Have Learned. *Current Psychiatry Reports*, 21(7), 59. 10.1007/s11920-019-1045-9 [PubMed: 31172302]
- Cheng ST (2017). Dementia Caregiver Burden: a Research Update and Critical Analysis. *Current Psychiatry Reports*, 19(9). 10.1007/s11920-017-0818-2
- Collins RN, & Kishita N (2019). The Effectiveness of Mindfulness- and Acceptance-Based Interventions for Informal Caregivers of People With Dementia: A Meta-Analysis. *The Gerontologist*, 59(4), e363–e379. 10.1093/geront/gny024 [PubMed: 29635303]
- Day JR, & Anderson RA (2011). Compassion Fatigue: An Application of the Concept to Informal Caregivers of Family Members with Dementia. *Nursing Research and Practice*, 2011, 1–10. 10.1155/2011/408024
- Drever E (1995). Using Semi-Structured Interviews In Small-Scale Research. A Teacher's Guide Scottish Council for Research in Education.
- Fonagy P, & Bateman A (2008). The Development of Borderline Personality Disorder—A Mentalizing Model. *Journal of Personality Disorders*, 22(1), 4–21. 10.1521/pepi.2008.22.1.4 [PubMed: 18312120]
- Foulk MA, Ingersoll-Dayton B, Kavanagh J, Robinson E, & Kales HC (2014). Mindfulness-Based Cognitive Therapy With Older Adults: An Exploratory Study. *Journal of Gerontological Social Work*, 57(5), 498–520. 10.1080/01634372.2013.869787 [PubMed: 24329497]
- Gilhooly KJ, Gilhooly MLM, Sullivan MP, McIntyre A, Wilson L, Harding E, Woodbridge R, & Crutch S (2016). A meta-review of stress, coping and interventions in dementia and dementia caregiving. *BMC Geriatrics*, 16(1), 1–8. 10.1186/s12877-016-0280-8 [PubMed: 26729190]
- Hopkinson MD, Reavell J, Lane DA, & 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. 10.1093/geront/gnx217 [PubMed: 29529290]
- Hoppes S, Bryce H, Hellman C, & Finlay E (2012). The Effects of Brief Mindfulness Training on Caregivers' Well-Being. *Activities, Adaptation and Aging*, 36(2), 147–166. 10.1080/01924788.2012.673154
- Huang SS, Lee MC, Liao YC, Wang WF, & Lai TJ (2012). Caregiver burden associated with behavioral and psychological symptoms of dementia (BPSD) in Taiwanese elderly. *Archives of Gerontology and Geriatrics*, 55(1), 55–59. 10.1016/j.archger.2011.04.009 [PubMed: 21601931]
- Hurley RVC, Patterson TG, & Cooley SJ (2014). Meditation-based interventions for family caregivers of people with dementia: A review of the empirical literature. *Aging and Mental Health*, 18(3), 281–288. 10.1080/13607863.2013.837145 [PubMed: 24093954]
- Jain FA, & Fonagy P (2018). Mentalizing Imagery Therapy: Theory and Case Series of Imagery and Mindfulness Techniques to Understand Self and Others. *Mindfulness*, 1–13. 10.1007/s12671-018-0969-1

- Jain FA, Nazarian N, & Lavretsky H (2014). Feasibility of central meditation and imagery therapy for dementia caregivers. *International Journal of Geriatric Psychiatry*, 29(8), 870–876. 10.1002/gps.4076 [PubMed: 24477920]
- Kishita N, Hammond L, Dietrich CM, & 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. 10.1017/S1041610218000947 [PubMed: 30017008]
- Kor PPK, Chien WT, Liu JYW, & Lai CKY (2018). Mindfulness-Based Intervention for Stress Reduction of Family Caregivers of People with Dementia: A Systematic Review and Meta-Analysis. *Mindfulness*, 9(1), 7–22. 10.1007/s12671-017-0751-9
- Kor PPK, Liu JYW, & Chien WT (2019). Effects of a modified mindfulness-based cognitive therapy for family caregivers of people with dementia: A pilot randomized controlled trial. In *International Journal of Nursing Studies Elsevier Ltd*. 10.1016/j.ijnurstu.2019.02.020
- Kroenke K, Spitzer RL, & Williams JBW (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613. 10.1046/j.1525-1497.2001.016009606.x [PubMed: 11556941]
- Kukull WA, & Bowen JD (2002). Dementia epidemiology. In *Medical Clinics of North America* 10.1016/S0025-7125(02)00010-X
- Langa KM, Chernew ME, Kabeto MU, Herzog AR, Ofstedal MB, Willis RJ, Wallace RB, Mucha LM, Straus WL, & Fendrick AM (2001). National estimates of the quantity and cost of informal caregiving for the elderly with dementia. *Journal of General Internal Medicine*, 16(11), 770–778. 10.1046/j.1525-1497.2001.10123.x [PubMed: 11722692]
- Laver K, Milte R, Dyer S, & Crotty M (2017). A Systematic Review and Meta-Analysis Comparing Carer Focused and Dyadic Multicomponent Interventions for Carers of People With Dementia. In *Journal of Aging and Health* (Vol. 29, Issue 8). 10.1177/0898264316660414
- Li G, Yuan H, & Zhang W (2016). The Effects of Mindfulness-Based Stress Reduction for Family Caregivers: Systematic Review. *Archives of Psychiatric Nursing*, 30(2), 292–299. 10.1016/j.apnu.2015.08.014 [PubMed: 26992885]
- Liu Z, Chen QL, & Sun YY (2017). Mindfulness training for psychological stress in family caregivers of persons with dementia: a systematic review and meta-analysis of randomized controlled trials. *Clinical interventions in aging*, 12, 1521–1529. 10.2147/CIA.S146213 [PubMed: 29026290]
- Mahoney R, Regan C, Katona C, & Livingston G (2005). Anxiety and depression in family caregivers of people with alzheimer disease: The laser-ad study. *American Journal of Geriatric Psychiatry*, 13(9), 795–801. 10.1097/00019442-200509000-00008
- Marshall MN (1996). Sampling for qualitative research Sample size. *Family Practice*, 13(6), 522–525. [PubMed: 9023528]
- McEvoy P, Morris L, Yates-Bolton N, & Charlesworth G (2019). Living with dementia: using mentalization-based understandings to support family carers. *Psychoanalytic Psychotherapy* 10.1080/02668734.2019.1709536
- Moss AS, Reibel DK, Greeson JM, Thapar A, Bubb R, Salmon J, & Newberg AB (2015). An adapted mindfulness-based stress reduction program for elders in a continuing care retirement community: Quantitative and qualitative results from a pilot randomized controlled trial. *Journal of Applied Gerontology*, 34(4), 518–538. 10.1177/0733464814559411 [PubMed: 25492049]
- Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, & Hoagwood K (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research* 10.1007/s10488-013-0528-y
- Papastavrou E, Kalokerinou A, Papacostas SS, Tsangari H, & Sourtzi P (2007). Caring for a relative with dementia: Family caregiver burden. *Journal of Advanced Nursing*, 58(5), 446–457. 10.1111/j.1365-2648.2007.04250.x [PubMed: 17442030]
- Patton MQ (2002). *Qualitative research and evaluation methods*. Thousand Oaks, Cal.: Sage Publications
- Pinquart M, & Sörensen S (2006). Helping caregivers of persons with dementia: Which interventions work and how large are their effects? *International*

Psychogeriatrics, 18(4), 577–595. <http://search.proquest.com/docview/621525225/abstract/embedded/PMXBYVX3FCHZ4KDB?source=fedsrch> [PubMed: 16686964]

- Prince M, Bryce R, Albanese E, Wimo A, Ribeiro W, & Ferri CP (2013). The global prevalence of dementia: A systematic review and metaanalysis. In *Alzheimer's and Dementia* 10.1016/j.jalz.2012.11.007
- Richards KAR, & Hemphill MA (2018). A practical guide to collaborative qualitative data analysis. *Journal of Teaching in Physical Education* 10.1123/jtpe.2017-0084
- Richardson TJ, Lee SJ, Berg-weger M, & Grossberg GT (2013). Caregiver Health : Health of Caregivers of Alzheimer ' s and Other Dementia Patients 10.1007/s11920-013-0367-2
- Riffin C, Van Ness PH, Wolff JL, & Fried T (2017). Family and Other Unpaid Caregivers and Older Adults with and without Dementia and Disability. *Journal of the American Geriatrics Society*, 65(8), 1821–1828. 10.1111/jgs.14910 [PubMed: 28426910]
- Robinson OC (2014). Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative Research in Psychology*, 11(1), 25–41. 10.1080/14780887.2013.801543
- Rossouw TI, & Fonagy P (2012). Mentalization-Based Treatment for Self-Harm in Adolescents: A Randomized Controlled Trial. *Journal of the American Academy of Child & Adolescent Psychiatry*, 51(12), 1304–1313.e3. 10.1016/j.jaac.2012.09.018 [PubMed: 23200287]
- Schulz R, & Martire LM (2004). Family Caregiving of Persons with Dementia: Prevalence, Health Effects, and Support Strategies. *American Journal of Geriatric Psychiatry*, 12(3), 240–249. 10.1097/00019442-200405000-00002
- Schüz B, Czerniawski A, Davie N, Miller L, Quinn MG, King C, Carr A, Elliott KEJ, Robinson A, & Scott JL (2015). Leisure Time Activities and Mental Health in Informal Dementia Caregivers. *Applied Psychology: Health and Well-Being*, 7(2), 230–248. 10.1111/aphw.12046 [PubMed: 26097155]
- Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, & Dunbar GC (1998). The Mini-International Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry*, 59(SUPPL. 20), 22–33. 10.1016/S0924-9338(99)80239-9
- Sikder AT, Yang FC, Schafer R, Dowling GA, Traeger L, & Jain FA (2019). Mentalizing Imagery Therapy Mobile App to Enhance the Mood of Family Dementia Caregivers: Feasibility and Limited Efficacy Testing. *JMIR Aging*, 2(1), e12850. 10.2196/12850 [PubMed: 31518275]
- Smith A, Graham L, & Senthinathan S (2007). Mindfulness-based cognitive therapy for recurring depression in older people: A qualitative study. *Aging and Mental Health*, 11(3), 346–357. 10.1080/13607860601086256 [PubMed: 17558586]
- Smith A (2004). CLINICAL USES OF MINDFULNESS TRAINING FOR OLDER PEOPLE 423–430. 10.1017/S1352465804001602
- Sörensen S, & Conwell Y (2011). Issues in dementia caregiving: Effects on mental and physical health, intervention strategies, and research needs. In *American Journal of Geriatric Psychiatry* (Vol. 19, Issue 6, pp. 491–496). 10.1097/JGP.0b013e31821c0e6e
- Sörensen S, Pinquart M, & Duberstein P (2002). How Effective Are Interventions With Caregivers ? An Updated Meta-Analysis 42(3), 356–372.
- Strawbridge WJ, & Wallhagen MI (1991). Impact of family conflict on adult child caregivers. *Gerontologist* 10.1093/geront/31.6.770
- Tatangelo G, McCabe M, Macleod A, & You E (2018). “I just don’t focus on my needs.” The unmet health needs of partner and offspring caregivers of people with dementia: A qualitative study. *International Journal of Nursing Studies*, 77(September 2017), 8–14. 10.1016/j.ijnurstu.2017.09.011 [PubMed: 28982034]
- The National Institute on Aging. (2020). Strategic Directions for Research, 2020–2025
- Vitaliano P, Echeverria D, Shelkey M, Zhang J, & Scanlan J (2007). A Cognitive Psychophysiological Model to Predict Functional Decline in Chronically Stressed Older Adults. *Journal of Clinical Psychology in Medical Settings*, 14(3), 177–190. 10.1007/s10880-007-9071-x
- Watson B, Tatangelo G, & Mccabe M (2018). Depression and Anxiety Among Partner and Offspring Carers of People With Dementia : A Systematic Review xx(xx), 1–14. 10.1093/geront/gny049

- Whitebird RR, Kreitzer MJ, Lauren Crain A, Lewis BA, Hanson LR, & Enstad CJ (2013). Mindfulness-based stress reduction for family caregivers: A randomized controlled trial. *Gerontologist*, 53(4), 676–686. 10.1093/geront/gns126 [PubMed: 23070934]
- Williams CM, Meeten F, & Whiting S (2018). ‘ I had a sort of epiphany !’ An exploratory study of group mindfulness-based cognitive therapy for older people with depression 7863. 10.1080/13607863.2016.1247415
- Wuest J, Ericson PK, & Stern PN (1994). Becoming strangers: the changing family caregiving relationship in Alzheimer’s disease. *Journal of Advanced Nursing*, 20(3), 437–443. [PubMed: 7963047]
- Zarit SH (2018). Past is prologue: how to advance caregiver interventions. *Aging and Mental Health*, 22(6), 717–722. 10.1080/13607863.2017.1328482 [PubMed: 28508678]

Public Significance Statement

This study is the first to report how family dementia caregivers perceive benefits of a 4-week group Mentalizing Imagery Therapy program, which includes mindfulness and guided imagery exercises to improve mood and promote understanding of self and others. The reports indicate that caregivers find benefits for reducing negative psychological symptoms such as stress and depression, improving self-compassion and mindfulness, and increasing their ability to address relationship challenges.

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Box 1 /**Participant 10****Illustrative Case**

Participant 10 was a 38 year old, married Hispanic female living with and caring for her mother. She had averaged 30 hours of caregiving a week for 4.5 years. She was diagnosed with a Major Depressive Episode, had previously tried psychotherapy, but never tried meditation nor took antidepressants. Following the 4 week MIT program she noted the meditations “gave [her] a sense of peace, a sense of calm” allowing her to “move forward and deal with what [she] had to deal with.” She could focus and work with clarity, completing previously tedious paperwork and administrative and financial related tasks from start to finish. Her symptoms of depression and insomnia improved substantially. Furthermore, the participant reported a change in perspective, saying the meditations brought her “to that place where [she] could see [herself] from behind.” This “outside-in” approach allowed her to take active control of her problems, rather than letting things happen to her passively. As a result she felt more patient, leading to healthier relationships that were less judgmental and more informed by others’ views.