

Psychotherapeutic Interventions for Dementia: a Systematic Review



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ABSTRACT

Background and Objectives

While a range of psychotherapeutic interventions is available to support individuals with dementia, comprehensive reviews of interventions are limited, particularly with regard to outcomes related to adjustment and acceptance. The current review assesses studies that evaluated the impact of various forms of psychotherapeutic interventions on acceptance and adjustment to changing life circumstances for older adults with cognitive impairment.

Research Design and Methods

A systematic search of PubMed, PsycINFO, and CINAHL databases was conducted, restricted to articles published in English within the last 16 years (from 2003 to 2019). Twenty-four articles were identified that examined the effects of psychotherapeutic interventions on outcomes related to acceptance and adjustment which included internalizing symptoms, quality of life, self-esteem, and well-being. Fifteen studies examined interventions targeted towards individuals with cognitive impairment, while nine studies also targeted their caregivers.

Results

Interventions that impacted outcomes related to acceptance and adjustment (e.g., adaptation, depressive symptoms, helplessness, self-esteem, and quality of life) varied in their theoretical approach, which incorporated elements of cognitive behavioural therapy (CBT), problem-solving therapy, psychotherapy, reminiscence therapy, interpersonal therapy, mindfulness-based therapy, and meaning-based, compassion-focused therapy. Among all interventions, reductions in depression were the most commonly reported treatment outcome particularly among interventions that

incorporated problem-focused and meaning-based therapies. Mixed findings were reported with regard to outcomes related to helplessness, quality of life, self-esteem, and life satisfaction indices for individuals with cognitive impairment.

Discussion and Implications

There is some support for the effectiveness of psychotherapeutic interventions on improving acceptance and adjustment in older adults with cognitive impairment, particularly with regard to reducing depressive symptoms.

Key words: dementia, psychotherapeutic interventions, acceptance, adjustment

INTRODUCTION

Older adults with cognitive impairment and/or dementia have been the focus of non-pharmacological intervention studies to improve cognition, mood, and quality of life and, in some cases, to reduce behavioural disturbances.⁽¹⁾ The content of these interventions typically includes the application of traditional psychotherapeutic techniques to treat mental or emotional disturbances such as cognitive behavioural therapy, interpersonal therapy, acceptance and commitment therapy, and motivational interviewing. Providing psychotherapeutic interventions to help individuals with cognitive impairment accept and adjust to lifestyle changes can enhance their sense of well-being and quality of life.⁽²⁾ This is the case whether cognitive impairment is considered mild (e.g., Mild Cognitive Impairment) or more severe (e.g., dementia).⁽³⁾

A prior literature review and meta-analysis summarized the evidence of psychotherapeutic interventions in cognitively impaired older adults (i.e., those with dementia or mild cognitive impairment) living in community and institutional

settings. There was moderate support for psychotherapeutic interventions in reducing depression, while limited evidence was available for anxiety.⁽⁴⁾ However, this review only included six studies, and did not review any constructs related to acceptance and adjustment other than depression in persons with cognitive impairment and/or dementia.

Acceptance and adjustment are important to manage living with cognitive impairment and/or dementia and to cope with stigma, shock, and distress associated with a dementia diagnosis.^(5,6,7) Individuals who are unable to adjust or cope with their diagnosis often become frustrated, anxious or depressed.⁽⁵⁾ Acceptance can be defined as recognizing or assenting to a situation without the need to change or protest the situation.^(8,9,10)

Adjustment is defined as a harmonious process of altering behaviour in response to a situational change. Constructs relevant to adjustment include resilience, problem-solving, and coping, as well as distress and depression.^(11,12) Acceptance and adjustment in the context of cognitive impairment and/or dementia may be reflected in terms of quality-of-life indicators such as mood status, social engagement or behavioural adaptations (e.g., engaging in driving self-regulatory strategies) of the affected individual. Moreover, developmental theories, such as the Motivational Theory of Life-Span Development,⁽¹³⁾ consider acceptance and adjustment as adaptive responses to challenges associated with change or decline, which is critical to successful aging. In line with the theory, acceptance and adjustment may take the form of engaging or disengaging from goals in order to maintain a sense of personal agency.

Psychotherapeutic interventions have the potential to assist older adults with developing adaptive responses to cognitive decline that support acceptance and adjustment.⁽¹⁴⁾ Patient-centred interventions that take into consideration the individual's identity and social roles may prove most effective in helping individuals adjust to their changing circumstances.⁽¹⁵⁾ Clare⁽¹⁶⁾ has noted that some individuals with early-stage dementia normalize their cognitive problems to maintain a consistent sense of self while others adapt their self-concept in response to perceived changes in their cognitive abilities. The maintenance of prior self-concept, however, may lead to poor decision-making from a lack of awareness of specific limitations.⁽¹⁷⁾ In addition, situations that challenge a person's self-concept may be perceived as threatening and possibly lead to depression, anxiety, and combative behaviours.⁽¹⁸⁾ For these reasons, it has been proposed that early psychotherapeutic interventions may have beneficial effects on acceptance and adjustment to lifestyle changes associated with cognitive impairment, and perhaps even delay the progression of dementia.⁽²⁾ For example, prior intervention studies have found that mindfulness and/or acceptance-based components have produced significant benefits, in comparison to control conditions, on measures of mindfulness/acceptance, depression, and anxiety, with small-to-medium effect sizes.^(19,20,21)

Caregivers may also help the process of adjusting and accepting a dementia diagnosis in a spouse. Prior studies

found that the relationship between the spouse and partner was a significant factor for improving social relationships⁽²²⁾ and served as a coping mechanism for reduced stress,⁽²³⁾ particularly during the early stages when structured interventions can focus on care planning and future needs.⁽²⁴⁾

As cognitive impairment often occurs in the context of a degenerative process, it is important to acknowledge that acceptance and adjustment to lifestyle changes may be ongoing, and intervention approaches may need to make accommodations for the progressive nature of the cognitive and behavioural deficits. A prior literature review was unable to recommend specific intervention features that best facilitate improved self and identity in people with dementia.⁽²⁵⁾ Acceptance and adjustment to cognitive impairment and/or dementia are emerging research areas and important to facilitate psychological well-being.^(5,6) However, to date, there has been no critical appraisal or systematic review of the literature that describes theoretically-based psychotherapeutic interventions, offered either individually to persons with dementia or in dyads with their caregiver, that promote improvements in acceptance and adjustment to life circumstances and associated constructs (e.g., identity, self-perception, emotional regulation) in patients with cognitive impairment, including those with dementia. Thus, the purpose of this systematic review is to 1) advance treatment knowledge, and 2) to identify limitations in the current literature. This review will also provide directions for further research.

METHODS

Search Strategy

A systematic literature search was performed to identify all published peer-review articles on the effects of psychotherapeutic interventions in persons with cognitive impairment and/or dementia. We searched for key studies using PubMed, PsycINFO, and CINAHL databases. The systematic search was restricted to articles published in English within the last 16 years (2003–2019). Limiting the search to 16 years ensures that the most recent evaluations of psychotherapies are captured in this review. This timeframe was also chosen in order to complement and update existing reviews of psychotherapeutic interventions, but with a more expansive inclusion criteria of research. The search strategy included a set of search terms to capture the population of interest (i.e., age, older adults, dementia, Alzheimer, and mild cognitive impairment[MCI]); the specific type of study (i.e., evaluation of a psychotherapeutic intervention); and constructs or outcomes related to acceptance and adjustment. Specifically, search terms included, “aged AND dementia OR mild cognitive impairment OR Alzheimer OR minor neurocognitive disorder AND psychotherapy AND depression OR quality of life OR self-efficacy OR self-concept.”

In order to be included in the review, studies must have an evaluative component. This can take the form of a randomized control trial, non-randomized control trial, or a single sample

design with a pre- and post-intervention. The rationale for this inclusion criteria was to assess the effectiveness of psychotherapeutic interventions within older adults who are dealing with cognitive limitations in order to recommend interventions that show the most promise for application in future studies.

Process of Review

The review was conducted in accordance with Cochrane guidelines for systematic reviews and registered under the Prospero International prospective register for systematic reviews (http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42015019189). Two reviewers independently screened the search results and selected abstracts for full review based on inclusion/exclusion criteria. Studies were eligible for review if they reported psychotherapeutic interventions pre- and post- assessment outcomes such as acceptance, helplessness, adaptation, self-esteem, depression, and quality of life in older adults with some degree of cognitive impairment (e.g., mild cognitive impairment, Alzheimer disease or related dementia). Studies that evaluated interventions that engaged their caregivers were also

included. Interventions that primarily focused on improving cognitive function (e.g., processing speed, memory) without reference to other psychosocial outcomes such as acceptance, adjustment or related constructs were excluded. Because we were interested in patients with cognitive impairment, we excluded studies where the intervention solely targeted caregivers. We also excluded studies involving individuals in long-term care settings (e.g., assisted living or nursing home) because cognitive impairment tends to be more severe and individuals may not be able to participate in psychotherapy. Interventions that focused on reducing challenging social behaviour (e.g., aggressive behaviours, wandering, agitation) were also excluded.

Level of inter-rater agreement for inclusion of studies for the review was moderate (Kappa = 0.49⁽²⁶⁾). Discrepancies were resolved through discussion or, if necessary, by a third reviewer. The final data, including study features and outcomes, were entered for each study into a database management program and independently reviewed by the authors. A total of 24 articles were eligible for review after screening (see Figure 1). These studies fell into two groups: studies of the effects of psychotherapeutic interventions for

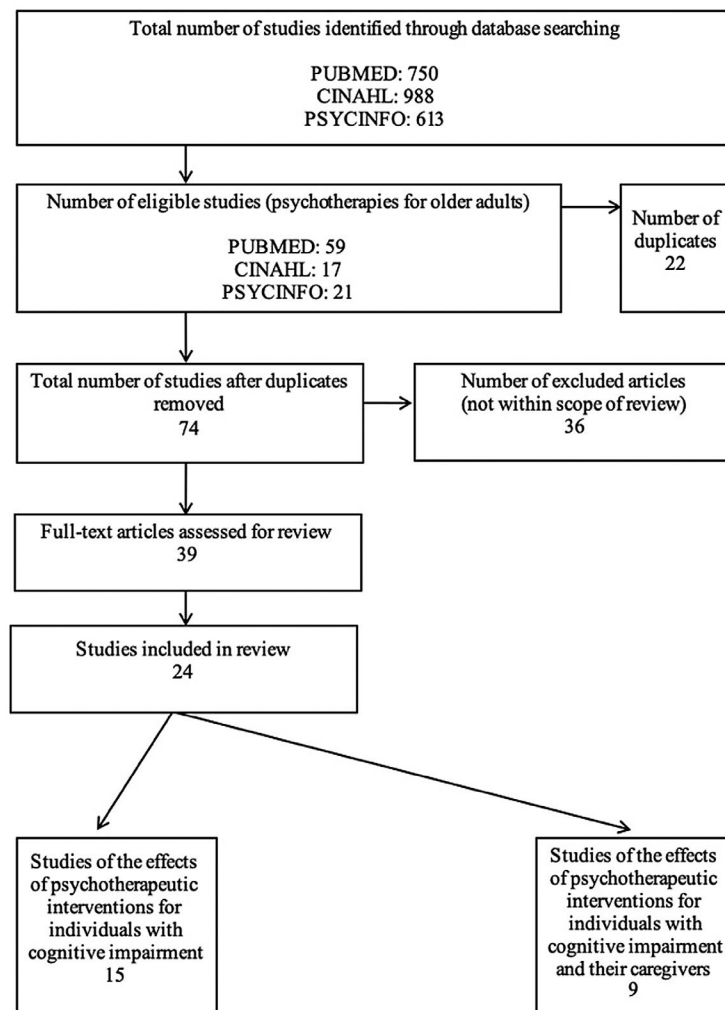


FIGURE 1. Search results and study inclusion

people with cognitive impairment (n=15), and studies of psychotherapeutic interventions targeting both people with cognitive impairment and their caregivers (n=9).

RESULTS

The studies examining the effects of psychotherapeutic interventions in persons with cognitive impairment or dementia are provided in Table 1, and studies that also involved caregivers in the therapeutic process are provided in Table 2. The tables included information on the intervention including the sample size, context, length, intensity, and provider characteristics, as well as the primary outcome variables and main findings.

Study Design

As shown in Tables 1 and 2, 13 interventions were implemented in group settings.^(27,28,29,30,31,32,33,34) The duration of each intervention session varied, with sessions ranging from 30 min to 6 hours. Most of the interventions were led by clinical psychologists.^(31,35,36,37,38) The majority of studies (n = 17) employed a control group.^(27,34,39,40,41,42,43,44,45) Post-intervention follow-up assessments intervals ranged from one week to twelve months.

Study sample sizes ranged from 9 to 221 participants. Mean ages ranged from 69 to 83 years. More than half of the studies (n = 15) used the MMSE to determine level of cognitive impairment with participants; scores ranged from 17 to 28.^(27,28,29,30, 32,33,35,36,37,39,39,40,43,45,46) Other cognitive measures that were used included the Dementia Rating Scale (DRS),⁽³¹⁾ Clinical Dementia Rating Scale (CDR),^(18,42,44,47,48) the Rating of Anxiety in Dementia (RAID), Trails A and B,⁽³⁴⁾ and Addenbrooke's cognitive examination (ACE-III).⁽⁴⁹⁾

Participant attrition rates ranged from 5% to 50%. Participants were recruited in a variety of settings including memory clinics,^(28,29,35,37) community agencies,^(18,31) psychiatry facilities,^(36,46) a home-delivered meals program,⁽³²⁾ institutional research centres,^(32,34,40) self-referrals,^(32,36,47) referrals from physicians,⁽⁴⁷⁾ and outpatient clinics and community day centres specializing in dementia care.⁽⁴⁸⁾

Cognitive Behavioural Therapy-based Interventions

The most common psychotherapeutic component used in five interventions was Cognitive Behavioural Therapy (CBT). CBT is a goal-oriented psychotherapy treatment that supports individuals in their problem-solving process by changing maladaptive thinking or behaviour that may be contributing to their emotional distress. Joosten-Weyn Banningh and colleagues' CBT based program^(27,28,29,30) included components of psychoeducation and memory rehabilitation. The findings were mixed in relation to acceptance (degree to which patients cognitively adjust to their chronic condition) and helplessness (degree to which patient generalize disease to daily function). Of the four studies, two found increases in acceptance post-intervention,^(27,28) and one found that

helplessness decreased for women post-intervention compared to a wait-list control group.⁽³⁰⁾ The authors concluded these differences in the acceptance and helplessness outcomes may have resulted from the scales not being sensitive enough to detect meaningful changes. Quality of life (QoL) and depressive symptoms were also assessed in the four studies, but no changes in these outcomes were reported.

Additionally, two separate studies examined a CBT-based intervention for anxiety in persons with dementia that included deep breathing, behavioural activation, sleep management, and coping skills.^(42,48) Reductions in depressive symptoms among the intervention group were reported in one study,⁽⁴²⁾ while QoL improved in the Stanley *et al.*⁽⁴⁸⁾ study. In both studies, caregivers also reported reductions in participants' level of distress.

Two multi-model interventions also included components of CBT.^(47,43) In addition to CBT, these interventions included group therapy programs that combined exercise, cognitive therapy, and support programs,⁽⁴⁷⁾ as well as rehabilitative treatment.⁽⁴³⁾ Cognition significantly improved in post-intervention in both studies. Additionally, depressive mood improved after treatment,⁽⁴³⁾ as did self-esteem.⁽⁴⁷⁾

Problem-focused Therapies

The therapeutic goal of problem-focused therapies is to help individuals initiate resolutions to persistent problems and to identify maladaptive habits that may be contributing to the maintenance of their problems. Three interventions incorporated therapies that focused on supporting individuals navigate emotional and physical challenges related to their dementia diagnosis. Problem Adaptation Therapy (PATH) offers compensatory strategies and environmental adaptations,^(32,31) while problem-solving therapy⁽³⁶⁾ helps patients identify problems and implement action plans to help overcome perceived obstacles. Problem focused therapy was also incorporated into one multimodel intervention that combined practical problem-solving strategies with cognitive training, self-assertiveness training, and motor exercise.⁽³³⁾ Reductions in depressive symptoms were reported in three studies.^(31,32,36) A reduction in disability (degree of disruption of the participants' social life, family life/ home responsibilities, and work) was also observed in the Kiosses *et al.*^(31,32) studies. Cognition was also assessed in all four studies but no significant changes were observed.

Group Psychotherapies

Group psychotherapies encourage participants to discuss and share their experiences and feelings of loss associated with dementia. Three interventions utilized group psychotherapy.^(37,41,44) Reductions in depressive and anxiety symptoms were reported in Cheston and Jones.⁽³⁷⁾ Among the 12 psychological symptoms that were assessed with the Neuropsychiatric Inventory (NPI), reductions in anxiety and apathy were reported in Weber *et al.*⁽⁴⁴⁾ Although no reductions in depressive symptoms were observed, significant short-term improvements in quality of life and self-esteem were reported in one study.⁽⁴¹⁾

TABLE 1. Studies of psychosocial interventions in patients with cognitive impairment

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
1. Duru Asiret and Kapucu ⁽³⁹⁾ Turkey	RCT with post-intervention assessment at 12 weeks.	N = 62; Individuals with dementia (Mean age = 82.1). Treatment group: Mean MMSE = 15.7±2.5; Control group: Mean MMSE = 14.2±2.1	Reminiscence group therapy (12 weekly sessions, 30 to 45 min)	Cognition (MMSE); Depression (GDS); Daily Living Activities Observation Form.	MMSE scores improved and GDS scores decreased for treatment group subjects; no difference between groups in activities of daily living with regard to mobility, individual hygiene, feeding, sleeping, and dressing but a positive change was found in the communication, collaboration, socialization, and restlessness parts for the treatment subjects
2. Burgener <i>et al.</i> ⁽⁴⁷⁾ United States	RCT with post-intervention assessments at 20 and 40 weeks. Control group received attention-control educational programs.	N = 43; Individuals with dementia (Mean age = 77). All participants had scores of <2.0 on CDR Scale	Multimodal intervention (group therapy) that combined exercise, cognitive therapies, and support programs. This included TaiChi classes offered 3 times weekly for 1 hr (instructors received extensive training, with a minimum of 5 yrs of practice); CBT (facilitated by social workers) included small groups and individual counselling (based on individual needs) and were conducted bi-weekly (90-min sessions); Support group met bi-weekly (alternating with CBT) (90 min).	Cognition (MMSE); Physical functioning (single leg stance, Berg Balance Scale, CIRS; Depression (GDS); Rosenberg's Self-Esteem Scale (SES)	MMSE scores improved for treatment group subjects over the first 20 weeks, but declined over the first 20 weeks for control group subjects. No significant differences were found between groups on physical functioning. Self-esteem improved for treatment group subjects, but decreased for control group subjects. No additional improvements were found for the 40-week intervention compared to the 20-week intervention in any of the outcome measures
3. Burns <i>et al.</i> ⁽³⁵⁾ United Kingdom	RCT with post-intervention assessments at 6 weeks and 3 months. Control group received standard care.	N = 40; Individuals with Alzheimer's disease (Mean age = 76). Treatment group: Mean MMSE = 24.4±4.4; Control group: Mean MMSE = 21.5±3.6	Psychodynamic interpersonal therapy (individual therapy led by clinical psychologists) aimed at identifying interpersonal conflicts or difficulties and adapted for those with Alzheimer's disease (6 weekly 50-min sessions).	Depression (Cornell Scale for Depression in Dementia); Cognition (MMSE); Revised Memory and Behaviour Problems Checklist	No significant differences on the outcome measures for the patients. Slight improvement in the caregiver's reaction to behavioural problems.
4. Carreira <i>et al.</i> ⁽³⁸⁾ United States	RCT with post-intervention assessment occurring at recurrence of depressive episode (up to 2 years). Control group received standard clinical management.	N = 52; Individuals with depression (Age ≥70). All participants had MMSE scores of ≥17	Interpersonal therapy (IPT, individual therapy led by clinical psychologists) focused on role or interpersonal conflict (monthly 45-min sessions).	Cognitive function (DRS); Depression recurrence rate; Time to recurrence of depression	Significant interaction was found between cognitive performance and treatment; lower cognitive performance was associated with longer time to recurrence in IPT than control; Those with average cognitive performance showed no effect of maintenance IPT on time to recurrence

TABLE 1. Continued

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
4. Carreira <i>et al.</i> (38) United States	RCT with post-intervention assessment occurring at recurrence of depressive episode (up to 2 years). Control group received standard clinical management.	N = 52; Individuals with depression (Age ≥70). All participants had MMSE scores of ≥17	Interpersonal therapy (IPT, individual therapy led by clinical psychologists) focused on role or interpersonal conflict (monthly 45-min sessions).	Cognitive function (DRS); Depression recurrence rate; Time to recurrence of depression	Significant interaction was found between cognitive performance and treatment; lower cognitive performance was associated with longer time to recurrence in IPT than control; Those with average cognitive performance showed no effect of maintenance IPT on time to recurrence
5. Cheston and Jones (37) United Kingdom	RCT with post-intervention assessment occurring at the end of the therapy session (10 weeks). Control group received psycho-education.	N = 16; Individuals with dementia (Mean age = 77). Treatment group: Mean MMSE = 24.6 (range 21-27) Control group: Mean MMSE = 23.8 (range 18-26)	Group psychotherapy (led by clinical psychologists) encouraged participants to discuss and share their experiences of memory loss (10 weekly 75-min sessions).	Depression (Cornell Scale for Depression in Dementia and Brief Assessment Schedule Depression Cards); Anxiety (RAID and Beck Anxiety Inventory)	Psychotherapy was shown to decrease depression, while psychoeducation was shown to increase it; No interaction was found between mode of therapy and BASDEC or Beck Anxiety Inventory; After the low affect level of participants in the psychoeducation groups was controlled for, differences between interventions were no longer significant
6. Collins <i>et al.</i> (49) United Kingdom	Single sample design with a post-intervention assessment.	N = 64; Individuals with dementia (Mean age = 74.1; Mean ACE-III = 69.6 (range 57-85)).	Compassion-Focused Therapy (CFT) (6 weekly 2-hr group sessions led by clinical psychologists, neuropsychologists, and doctoral trainees).	Anxiety and Depression (Hospital Anxiety and Depression Scale); Respiratory Rate (number of inhalations per minute; RR); Quality of Life (Quality of Life in Alzheimer's Disease; QoL).	Participants demonstrated reductions in anxiety and depression although this trend was not significant. There were significant improvements in QoL and reductions in RR.
7. Joosten-Weyn Banningh, Prins <i>et al.</i> (30) Netherlands	Non-randomized, with waitlist control with post-intervention assessment at 2 weeks.	N = 93; Patients with MCI (Mean age = 70). Treatment group: Mean MMSE = 25.6±3.2; Control group: Mean MMSE = 25.8±3.9.	Combined elements from psychoeducation, cognitive rehabilitation, and CBT (10 weekly 2-hr sessions, group therapy led by trained psychology research assistants).	Acceptance and helplessness (ICQ); Distress and general well-being (GDS-15 and RAND-36 Health Survey)	Relative to the control, acceptance increased more in the intervention group; An interaction effect was found between intervention and sex in helplessness; Helplessness decreased more in female patients; Distress and general well-being showed no effect
8a. Kiosses <i>et al.</i> (32) United States	RCT with post-intervention assessments at 6 and 12 weeks. Control group received standard supportive therapy.	N = 30; Individuals with major depression, mild cognitive impairment and disability Treatment group: Mean MMSE = 26.9±2.3; Control group: Mean MMSE = 26.4±3.0	Problem Adaptation Therapy (PATH; individual therapy facilitated by social workers); problem solving approach integrated environmental adaptations and caregiver participation (12 weekly sessions).	Hamilton Depression Rating Scale; Sheehan Disability Scale; Patient satisfaction (Client Satisfaction Questionnaire)	PATH was found to be more efficacious than control in reducing depression and disability at 12 weeks.

TABLE 1. Continued

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
8b. Kiosses <i>et al.</i> (31) United States	RCT with post-intervention assessments at 4, 8, and 12 weeks. Control group received standard supportive therapy.	N = 74; Individuals with major depression, mild cognitive impairment and disability (Mean age = 81). Treatment group: Mean DRS = 115.8±13.9; Control group: Mean DRS = 121.1±9.0	Same as above study	Depression (Montgomery-Asberg Depression Rating Scale); Disability (World Health Organization Disability Assessment Schedule II)	Participants in PATH had significantly greater reduction in depression and disability compared to control; Participants in PATH had significantly greater depression remission rates compared to control.
9. Kurz <i>et al.</i> (33) Germany	Non-randomized, with waitlist control with post-intervention assessment at 4 weeks.	N = 40; Individuals with MCI or dementia (Mean age = 66). MCI Wait List: Mean MMSE = 28.0±1.0; MCI group: Mean MMSE = 27.8±1.1; Mild Dementia group: Mean MMSE = 21.9±2.1	Multi-component cognitive rehabilitation program (group therapy); Combined practical problem solving strategies with cognitive training, self-assertiveness training, and motor exercise (4 week 6-hr sessions held on weekdays at 22 hrs per week).	Mood (BDI); Episodic verbal memory (California Verbal Learning Test); Episodic non-verbal memory (Rey complex figure)	Participants in the MCI intervention group showed significant improvements on all 4 of the outcome measures. There were no significant improvements in the mild dementia group.
9. Mackin <i>et al.</i> (36) United States	RCT with post-intervention assessments at 12 and 36 weeks. Control group received standard supportive therapy.	N = 221; Individuals with major depression and executive dysfunction (Mean age = 73). Sample MMSE Score = 27.8±1.7; MMSE scores for the two groups not reported.	Problem solving therapy (individual therapy led by clinical psychologists) designed to reduce depression by helping patients identify problems and implement action plans (12 weekly sessions).	Verbal learning and memory (Hopkins Verbal Learning Test - Revised); Executive functioning (Initiation/Perseveration index of the Mattis Dementia Rating Scale, Wisconsin Card Sorting Test-64 Computer Version, Stroop Color and Word Test (SCWT), Trail Making Task (parts a and b); Severity of Depression Symptoms (Hamilton DRS)	Information processing speed component of executive functioning improved after treatment (Stroop Color and Word Test). This improvement was associated with a decrease in depressive symptom severity. Verbal learning, memory, and other tests of executive functioning showed no improvement. No effects on depressive symptoms were found after controlling for sex.

TABLE 1. Continued

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
10. Marshall <i>et al.</i> ⁽⁴¹⁾ 2015 United Kingdom	RCT with post-intervention assessments at 2 and 10 weeks. Control group received usual treatment (wait-list control).	N = 58; Individuals with memory problems and cognitive impairment (Mean age treatment = 74.6; 76.6 for control; 70% with Alzheimer's diagnosis).	Living Well with Dementia group intervention incorporates elements of psychotherapy (e.g. a focus on encouraging participants to share feelings associated with dementia such as embarrassment, worry and sadness) and psycho-educational elements, including information about memory loss, dementia and medical treatments (10 weekly 75-min group sessions led by trained therapists including occupational therapists, nurses, support workers, psychology trainees).	Quality of life in Alzheimer's disease (QoL-AD); Cornell Scale for Depression in Dementia (CSDD); Cognition (MMSE).	Improvements in both participant-rated quality of life and self-esteem in the treatment condition compared to the control although this was not significant (significant short-term improvements T1-T2 but not to T3).
11. Snarski <i>et al.</i> ⁽⁴⁶⁾ United States	RCT with post-intervention assessments at 2 and 4 weeks (mid and post treatment). Control group received usual treatment (pharmacological intervention).	N = 50; Individuals with depression and mild to moderate cognitive impairment (Mean age = 72). Sample MMSE Score = 24.8±2.9; MMSE scores for the two groups not reported.	Behavioral Activation Therapy (individual therapy led by therapists) aimed at keeping patients active and engaged; Encouraged patients to explore the influence of meaningful reinforcing activities on their mood (eight 30- to 60-min sessions held over 4 weeks).	Cognition (MMSE); depression (GDS); QoL (QOLI)	Treatment was associated with a decrease in depressive symptoms primarily in the early phase of treatment (i.e., pre- and mid-treatment but not mid- and post-treatment); No significant improvement found in quality of life.
12. Weber <i>et al.</i> ⁽⁴⁴⁾ Switzerland	Single sample design with post-intervention assessments at 3, 6, and 12 months.	N = 76; Individuals with dementia and behavioral and psychology symptoms (BPSD; Mean age = 76). CDR 0.5 n=6 CDR 1.0 n=25 CDR 2.0 n=33 CDR 3.0 n=12	Combined group music therapy, movement therapy, psychodynamic therapy, and psychotherapy; Other therapeutic interventions included interviews with the participants and family interventions (2-3 weekly 6-hr sessions for 8 months). Facilitators of the therapies included psychiatry residents, movement and music therapists, clinical psychologist, social worker, and nurses.	The Neuropsychiatric Inventory (NPI), Therapeutic Community Assessment scale including staff (SAS) and client assessments (CAS) and a Group Evaluation Scale (GES).	SAS and GES scores increased significantly across time; CAS scores show no significant changes; NPI total scores decreased significantly across time for anxiety and apathy.
13. Wu & Koo ⁽⁴⁵⁾ 2016 Taiwan	RCT with post-intervention assessment at 6 weeks.	N = 103 (Mean age = 73.6); Individuals with mild or moderate dementia. Treatment group: Mean MMSE = 23.1±1.4; Control group: Mean MMSE = 22.9±1.6	Reminiscence group therapy (6 weekly 1-hr sessions).	Herth Hope Index, the Life Satisfaction Scale, and the Spirituality Index of Well-Being; Cognition (MMSE).	Treatment group showed significantly improvement in hope, life satisfaction, spiritual well-being and cognition.

RCT = randomized control trial; ACE-III = Addenbrooke's cognitive examination; MCI = mild cognitive impairment; BDI = Beck's Depression Inventory; CDR = Clinical Dementia Rating Scale; CIRS = Cumulative Illness Rating Scale; CBT = cognitive behavioural therapy; DRS = Dementia Rating Scale; GDS = Geriatric Depression Scale; MMSE = Mini-Mental State Examination; NPI = Neuropsychiatric Inventory; QoL-AD = Quality of Life in Alzheimer's disease; QOLI = Quality of Life Inventory; RAID = Rating of Anxiety in Dementia; ICQ = Illness Cognition Questionnaire.

Emotion-focused and Meaning-based Therapies

Two interventions incorporated psychotherapies that were emotion-focused or meaning-based. The Preserving Identity and Planning for Advance Care (PIPAC) intervention⁽¹⁸⁾ targets stress processes that occur during the early stages of dementia by promoting coping strategies that help to reduce negative emotional and health-related outcomes. Improvements in health-related QoL and coping, and reductions in depressive symptoms, were reported among participants in the treatment group. However, other indicators of self-reported emotional outcomes (anxiety, meaning, social engagement, emotional and anticipated support) did not significantly change at post-treatment assessment. The meaning-based, multi-component Daily Enhancement of Meaningful Activity (DEMA) intervention⁽⁴⁰⁾ supports couples facing MCI by encouraging participants to remain engaged in meaningful activities, work together to meet goals, remain engaged in meaningful activities, and adapt to changes over time. Participants with MCI demonstrated higher levels of meaningful activity engagement post-intervention. Moreover, spouses had lower levels of caregiver burden post-intervention, although communication satisfaction decreased.

Interpersonal Therapies

The goal of interpersonal therapy is to help identify and resolve interpersonal difficulties that may be contributing to distress. Two interventions incorporated elements of psychodynamic interpersonal therapy⁽³⁵⁾ and maintenance interpersonal psychotherapy (IPT).⁽³⁸⁾ One of the studies⁽³⁸⁾ found that interpersonal therapy was protective against recurrent major depressive episodes following the intervention compared to controls who received usual care. Moreover, the time to major depression recurrence was longer in the intervention than the control group (58 weeks compared to 17 weeks). The Burns *et al.*⁽³⁵⁾ study did not observe any significant changes in any of the main outcome variables (e.g., cognitive function, activities of daily living, caregiver stress, and coping) post-intervention which the authors attributed to the relatively low-dosage of the treatment (six, brief sessions).

Reminiscence Therapies

Reminiscence therapy incorporates the use of music, voice recordings, photographs, and other familiar objects to invoke the sharing of activities, events, and experiences in the past with other individuals in the group. Two interventions incorporated reminiscence therapy. In one study, reductions in depressive symptoms and improvements in cognition were reported in the treatment group.⁽³⁹⁾ No difference was found in mobility, individual hygiene, eating, sleeping, and dressing areas of daily living activities between the intervention and control group, although a positive change was found in communication, collaboration, socialization, and restlessness. Increases in hope, life satisfaction, and spiritual well-being were reported in another study post-evaluation.⁽⁴⁵⁾

Mindfulness-based and Compassion-focused Therapies

The goal of mindfulness-based therapies is to decrease stress, improve mood, and reduce maladaptive reactive behaviours. Two interventions incorporated elements of mindfulness-based practices. In one intervention, participants were taught attentional and emotional skills that encourage awareness and acceptance of the present moment.⁽³⁴⁾ Participants showed improvements on quality-of-life measures and fewer depressive symptoms post-intervention.

Similar to the philosophy of mindfulness-based therapy, compassion-focused therapy helps individuals develop and accept compassion in order to alleviate shaming of the self and others.⁽⁴⁹⁾ The program uses mindfulness exercises to reduce stress and internalizing problems. Reductions in depression and respiratory rate and improvements in quality of life were reported among participants post-intervention.

Behavioural Activation Therapies

One intervention incorporated behavioural activation (BA).⁽⁴⁶⁾ Based on traditional behavioural techniques, the goal of BA therapy is to encourage patients to remain active and engaged in life's activities, rather than leading withdrawn and avoidant lifestyles. BA encourages the patient to explore how meaningful, reinforcing activities influence their mood. Although no difference was reported in changes among the quality-of-life measures, the authors found reductions in depressive symptoms among participants in the intervention group compared to the control group.

DISCUSSION

While a range of psychotherapeutic interventions is available to support individuals with dementia, comprehensive reviews of interventions are limited. In this review, we identified 24 studies that evaluated the effectiveness of psychotherapeutic interventions. The majority of interventions reported incorporating elements of CBT. Reductions in depressive symptoms were the most commonly reported outcome among the majority of the interventions evaluated (9 out of 17 studies reported reductions). Changes in other measures related to acceptance and adjustment, such as adaptation, helplessness, self-esteem and quality of life, were mixed.

Consistent with prior studies,⁽¹⁾ we observed reductions in depressive symptoms following meaning- or problem-based interventions. Depressive symptoms declined following seven RCTs and two non-randomized control studies that employed meaning- or problem-based interventions. Meaning-based therapies and problem-based interventions encourage individuals to engage with meaningful activities and offers strategies to help overcome challenges associated with their diagnosis. These opportunities to find a sense of purpose and develop competence may, in turn, reduce the likelihood of developing depressive symptoms. However, out of the 17 studies that included a depression outcome measure, three

TABLE 2. Studies of psychotherapeutic interventions for individuals with cognitive impairment and their caregivers

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
1. Hilgeman <i>et al.</i> ⁽¹⁸⁾ United States	RCT, blocked randomization stratified by race and sex. Post-intervention assessment at 4-6 weeks. Control group received minimal support.	N = 18 dyads; Individuals with dementia (Mean age = 83) and their caregivers. Treatment group: Mean DRS = 119.1±14.1; Control group: Mean DRS = 110.0±20.0 Treatment group: CDR 0.5 n=4 CDR 1.0 n=6 Control group: CDR 0.5 n=0 CDR 1.0 n=8	Preserving Identity and Planning for Advance Care (PIPAC) intervention (individual therapy led by certified interventionists); Meaning-based, emotion-focused, person-centered interview (4 weekly sessions). Combines one self-adjusting, future planning component and one self-maintaining, reminiscence-based (identity-salient role) component, and Cohen-Mansfield's Identity Interview to maximize coping and enhance quality of life and well-being in the early stages of dementia.	QoL-AD, Bath Assessment of Subjective Quality of Life in Dementia Meaning in Life, Emotional Support and Anticipated Support scales, Health EuroQoL-5, Decisional Conflict Scale, Index for Managing Memory Loss	Intervention participants reported less depressive symptomatology than comparison group individuals. QoL increased and dependence in mobility and decisional conflict decreased but not autonomy/health-related QoL. Intervention caregivers reported less depression and better QoL and self-care.
2a. Joosten-Weyn Banningh, Roelofs <i>et al.</i> ⁽²⁸⁾ 2013 Netherlands	Non-randomized, with waitlist control with post-intervention assessments at 6-8 months.	N = 47 dyads who data post-test; Individuals with MCI (Mean age = 70) and their caregivers. Sample MMSE Score = 25.7±3.2; MMSE scores for the two groups not reported	CBT (group therapy led by trained psychology research assistants) aimed at increasing the use of memory strategies and external aids, increasing wellbeing, the diminishing of feelings of distress and helplessness, acceptance of memory loss, and the strengthening of the partner relation. Intervention included elements of psychoeducation and memory rehabilitation (10 weekly 2-hr sessions)	Depression (GDS), General Well-being and Health (RAND-36), Acceptance (Illness Cognition Questionnaire; ICQ), Helplessness (subscale of the ICQ), The Sense of Competence Questionnaire (caregivers).	Intervention participants increased acceptance and insight of decline following. Intervention caregivers sense of competence increased.
2b. Joosten-Weyn Banningh, Vermooij-Dassen <i>et al.</i> ⁽²⁹⁾ Netherlands	Non-randomized, with waitlist control with post-intervention assessments at 2 weeks.	N= 84 dyads; Individuals with MCI (Mean age = 68) and their caregivers. Sample MMSE Score = 25.3±2.8; Caregiver Treatment MMSE Score = 25.9±3.9; Caregiver Control MMSE Score = 25.4±3.2	Same as above study.	Same as above study.	No significant difference between groups for any of the measures. Qualitative data suggest lowered stress levels and gains in knowledge, insight, and coping skills.
2c. Joosten-Weyn Banningh, Kessels <i>et al.</i> ⁽²⁷⁾ Netherlands	Pilot single design study with post-intervention assessment at 2 weeks.	N = 22 dyads; Individuals with MCI (Mean age = 69) and their caregivers. Sample MMSE Score = 26.7±2.2	Same as above studies.	Same as above studies.	No changes were found on distress and mood measures in both patients and their significant others. Intervention participants showed a significant increased level of acceptance. Caregivers reported an increased awareness of memory and behavioural problems.

TABLE 2. Continued

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
3. Lu <i>et al.</i> ⁽⁴⁰⁾ United States	Pilot single design study with post-intervention assessments at 1 week and 3 months.	N=12 dyads; Individuals with MCI (Mean age = 69) and their caregivers. Sample MMSE Score = 27.1±1.9; Sample Trails A = 48.0±23.1; Sample Trails B = 149.9±88.6	Meaning-based, multi-component Daily Enhancement of Meaningful Activity (DEMA) intervention (individual therapy led by nurses), which was tailored to help couples facing MCI work together to meet goals, remain engaged in meaningful activities, and adapt to changes over time (6 biweekly 55-to 70-min sessions).	Dementia Deficits Scale, Canadian Occupational Performance Measure, Communication and Affective Expression Subscales of Family Assessment Device, Expressive Support Scale, Patient Health Questionnaire, General Health subscale of the SF-36 and QoL-AD, Caregiving Burden Scale.	Participants showed increases in meaningful activity performance and maintenance of health-related outcomes. Caregivers: Large effect size for decreasing burden but worsening of communication satisfaction
4. Paller <i>et al.</i> ⁽³⁴⁾ United States	Single sample design with post-intervention assessment at 8 weeks.	N = 37 dyads; Individuals with MCI (Mean age = 72) and their caregivers. RBANS Patient Group = 69.4±3.8; Patient Trails A = 88.8±4.7; Patient Trails B = 202.0±24.3; RBANS Caregiver Group = 69.4±3.8; Caregiver Trails A = 36.0±0.8; Caregiver Trails B = 81.6±9.3	Mindfulness-based program (group therapy) that included elements drawn from dialectical behaviour therapy and from acceptance and commitment therapy. The program incorporated mindfulness practices, such as attending to breathing, bodily sensations, movement, and thoughts with acceptance (8 weekly 90-min sessions).	QoL-AD, GDS, Pittsburg Sleep Quality Inventory, Beck Anxiety Inventory, Trail-Making Tests A and B, Repeatable Battery for the Assessment of Neuropsychological Status, Revised Memory Problem and Behavior Checklist (RMPBC), Health (SF-36)	Participants showed increases in QoL, depression and anxiety. Decreases in all outcomes but were not statistically significant. Caregivers showed positive trends in health and reduced distress about the individual with MCI.
5a. Stanley <i>et al.</i> ⁽⁴⁸⁾ United States	RCT with post-intervention assessments at 3 and 6 months. Control group received diagnostic feedback.	N = 32 dyads; Individuals with dementia (Mean age = 79) and their caregivers. Treatment group: CDR 0.5 or 1 n=6 CDR 2.0 n=10 Control group: CDR 0.5 or 1 n=9 CDR 2.0 n=7	Peaceful Mind, a CBT-based intervention (individual therapy led by trained graduate student clinicians and predoctoral intern supervised by clinical psychologists and a geriatric social worker) for anxiety in dementia involving self-monitoring for anxiety, deep breathing, and developing skills such as coping self-statements, behavioral activation and sleep management (12 weekly sessions). Patients learned skills, and “collaterals” (caregivers) served as coaches.	NPI-Anxiety subscale, Rating Anxiety in Dementia scale, Penn State Worry Questionnaire-Abbreviated, Geriatric Anxiety Inventory, Depression (GDS), QoL-AD, Patient Health Questionnaire, Client Satisfaction Questionnaire	Intervention participants were rated by clinicians as less anxious; and they rated themselves as having higher quality of life. No effects were noted on patient self-reported worry, anxiety, or depression or on collateral depression. Intervention caregivers reported less distress related to their loved ones’ anxiety.

TABLE 2. Continued

Study	Design	Sample Size and Characteristics	Intervention Type and Focus	Outcome Measures	Main Findings
5b. Paukert <i>et al.</i> (42) United States	Pilot single sample design with post-intervention assessments at 3 and 6 months.	N = 8 dyads; Individuals with dementia (Mean age = 77) and their caregivers. Sample CDR Score CDR 0.5 n=2 CDR 1.0 n=5 CDR 2.0 n=1	Same as above study.	Same as above study.	Majority of participants reported reduced depressive symptoms Half of caregivers reported decrease in distress
6. Schifflczyk <i>et al.</i> (43) Germany	Single sample design with post-intervention assessment at 3 and 6 months.	N = 194 dyads; Individuals with dementia (Mean age = 73) and their caregivers. Sample MMSE Score = 17.2±6.8	Combined short-term rehabilitative treatment of patients and psychosocial intervention for caregivers (individual therapy facilitated by an interdisciplinary team of physicians, psychologists, art therapists, ergotherapists, physical therapists, social workers and nurses). Average amount of intervention is 20 hrs for patients and 15 hrs for caregivers per week.	Depression (GDS), cognition (MMSE), behavioural functioning (QoL-AD)	Cognition and depressive mood were improved after treatment. Caregiver burden was reduced.

RCT = randomized control trial; ACE-III = Addenbrooke's cognitive examination; MCI = mild cognitive impairment; CBT = cognitive behavioural therapy. GDS = Geriatric Depression Scale; MMSE = Mini-Mental State Examination; QoL-AD = Quality of Life in Alzheimer's disease; RAND/SF36 = Short Form Health Survey; RBANS = Repeatable Battery for the Assessment of Neuropsychological Status; ICQ = Illness Cognition Questionnaire.

included patients with major depression and it was unclear whether interventions can better improve depression in those with mild versus more severe type of cognitive impairment. Future studies will need to distinguish between patients with mild and major depression due to challenges in assessment and treatment, as there is often overlap in the diagnosis of cognitive disorders and depression.

The findings on the effectiveness of CBT interventions at improving acceptance and adjustment in persons with mild cognitive impairment were mixed, based on the findings of four non-controlled studies by the same lead author. Earlier studies by this group^(27,28) showed significant improvements in acceptance and adjustment following CBT. However, as their sample size increased in subsequent studies,^(29,30) the findings were less consistent. This would suggest that other factors, such as patient characteristics, may be impacting the effectiveness of CBT for improving acceptance and adjustment in persons with MCI, and the possible effect of these factors needs to be further examined. In contrast, one RCT in persons with dementia⁽⁴⁷⁾ found that self-esteem significantly improved following a CBT intervention. Differences pertaining to the severity of cognitive impairment, intervention components, and samples sizes may at least partially explain the conflicting findings related to acceptance and adjustment of changing lifestyle following CBT.

Moreover, while 45% of the studies included dyads, it is unclear how including caregivers in interventions affected the patient both short- and long-term. While some dyad interventions improved depression and quality of life, so did those interventions without caregivers included. Future studies should determine the difference in effect sizes comparing an intervention with and without caregivers. The differences between the studies in terms of intervention format (individual vs. group) and the characteristics of the individuals leading the interventions also make it difficult to identify optimal intervention conditions. For example, in a few studies,^(38,31,32) the same clinician led both the intervention and control group, which may have resulted in bias (e.g., therapist allegiance or cross-contamination). Given the heterogeneity among the studies, it is difficult to determine whether intervention effects or lack thereof are more strongly related to shorter or longer intervention durations or the length of the assessment intervals in relation to the conclusion of the intervention. More longitudinal research is needed to determine the optimal content, method of delivery, and duration of these interventions to impact on the adjustment of individuals with dementia as the disease progresses.

While all studies included people with some cognitive impairment, the recruitment process and diagnostic criteria for study entry varied widely. It may be that the effectiveness of psychotherapeutic interventions is at least partially dependent on the initial level of self-awareness exhibited by the participants. If this is the case, those with milder forms of cognitive impairment may benefit most from these intervention approaches. Unfortunately, it is not possible to determine from the studies reviewed whether or not this is the

case because of the range of diagnostic criteria applied and, in some cases, the small samples sizes employed.

A limitation to this review is the conflicting findings due to differences among studies in design, methodological rigour, sample sizes and characteristics, types of intervention, and outcome measures, which limits the generalizability of the findings. Although 70% of the studies reviewed employed randomized designs, intervention durations and assessment intervals varied widely between studies and both can contribute to considerable variability in study outcomes. The extent to which intervention effects are found to be maintained over time may be influenced, at least in part, by the time elapsed from the intervention completion and the follow-up assessments. Additionally, some studies combined cognitive,⁽³³⁾ memory,^(27,28,29,30) intensive rehabilitation including physical therapy⁽⁴³⁾ or music/movement therapies⁽⁴⁴⁾ with a psychotherapeutic intervention. Findings from these multi-component studies may have obscured active ingredients that may contribute to positive outcomes.

In summary, the particular outcomes of interest in the context of cognitive impairment were acceptance and adjustment to lifestyle changes including associated constructs such as depression, self-esteem, mood, and quality of life. Relevant outcomes are commonly reflected in terms of indicators such as mood status, social engagement or behavioral adaptations of the affected individual, and were employed in most studies reviewed. Less frequently employed, though potentially extremely important from a clinical perspective, are measures of coping, self-efficacy, confidence, skill utilization or therapeutic competence. Factors such as confidence and therapeutic competence may mediate the relationship between the intervention approach and outcomes⁽⁵⁰⁾ and could be an important focus in future studies.

The theoretical linkage between acceptance and adaptation in cognitive impaired older adults remains uncertain. Lack of acceptance of cognitive impairment, for some, may be a coping strategy that enhances self-esteem and adaptation. For others, it may cause significant distress or impaired functioning and maladaptation to their environment. More research is needed to improve the measurement of the constructs of acceptance and adjustment. Given the complex and idiosyncratic nature of these constructs, a more direct investigation into the psychometric properties is warranted in order to fully understand the role that acceptance and adjustment plays in face of aging-related declines.

Clinical Implications

It is critical to develop non-pharmacological interventions for individuals with cognitive impairment and/or dementia. Meaning and problem-based approaches emerged as psychotherapeutic interventions that can reduce depressive symptoms. Encouraging acceptance and adjustment in individuals living with cognitive impairment and/or dementia can help them to cope more effectively with the shock, anger, fear, uncertainty, and feelings of despair that can accompany a dementia diagnosis. Despite the limited, mixed findings,

interventions that encourage acceptance and adjustment have the potential to alleviate the psychological distress associated with a dementia diagnosis. Future studies may consider combining aspects of meaning- or problem-based interventions with CBT to determine the effects on acceptance and adjustment, given that the benefits of psychotherapeutic interventions for individuals with cognitive impairment have yet to be fully realized.

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CONFLICT OF INTEREST DISCLOSURES

The authors declare that no conflicts of interest exist.

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