

In search of the best evidence for life review therapy to reduce depressive symptoms in older adults: A meta-analysis of randomized controlled trials

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Abstract

Life review builds on a naturally occurring process in later life and entails attributing meaning to positive and negative memories across the lifespan. The current meta-analysis focuses on the best evidence of life review as a therapeutic intervention to reduce depressive symptoms in older adults. A systematic literature search resulted in eleven randomized controlled trials. The meta-analysis showed a large effect. When two outliers were removed, the effect size was moderate and was maintained at three months follow-up. Heterogeneity was low with no clear publication bias in spite of differences in interventions and study designs. Hence, the best available evidence shows that life review therapy has moderate effects on depressive symptoms in older adults.

KEYWORDS

depression, life review, meta-analysis, older adults, therapy

1 | INTRODUCTION

Due to an increase in life expectancy and a decrease in fertility, the world population aged 60 or above is currently growing at a rate of approximately 3% per year (United Nations, 2015). In 2050, the number of people aged 60 and above will have more than doubled to 2.1 billion worldwide (United Nations, 2015). The prevalence of clinically relevant depressive symptoms lies around 19.5%, whereas current major depression in later life occurs in about 3.3% of older adults in Western countries (Volkert, Schulz, Härter, Włodarczyk, & Andreas, 2013). There is increasing evidence that prevention and treatment of depression can be effective in this age group (Cuijpers, Karyotaki, Pot, Park, & Reynolds, 2014; Cuijpers et al., 2015), and several treatments for late-life depression are considered evidence-based (Kropf & Cummings, 2017; SAMSHA, 2011). Life review therapy has a particular place in this spectrum of interventions. It originated in the field of

gerontology and was specifically developed for an older target group. Particularly, it takes the autobiographical perspective of older adults into account. This article uses a meta-analytic approach to find the best available evidence for life review therapy in alleviating symptoms in depressed older adults.

The past is often seen as a driving force in psychological theory and practice. Whereas psychoanalysts see unconscious, unresolved past conflicts as a major force in the development of mental illness, behaviorists see learning histories as essential (Seligman, Railton, Baumeister, & Sripada, 2013). However, studies on reminiscence and life review (Westerhof & Bohlmeijer, 2014), autobiographical memory (Bluck & Levine, 1998), and narrative psychology (Adler, Lodi-Smith, Philippe, & Houle, 2015) have shown that the past is subject to important interpretative processes. Rather than the past events themselves, it is their personal meaning that is pertinent in regulating identity development, well-being, and mental health across the lifespan

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(Adler et al., 2015; Bluck & Levine, 1998; Westerhof & Bohlmeijer, 2014). In hindsight, people may look back upon their lives and discover their past as a source of insight and inspiration even when facing adversity (Freeman, 2010; Randall & McKim, 2008). Therefore, an important question is whether individuals are able to develop new meanings of their past through systematic reflection on their own autobiography. While most psychotherapies take an individual's past into consideration, life review therapy has given the most systematic contribution to this question.

More than fifty years ago, Butler (1963) argued that a return to the past is not a sign of cognitive deterioration, but a naturally occurring process in light of life's finitude. He distinguished reminiscence (i.e., the recollection of personal memories) from life review, as a process of evaluating both positive and negative memories. The outcome of life review can be more pathological, when individuals experience feelings of guilt and regret about mistakes and missed opportunities, but it can also be successful, when people resolve, accept, and integrate memories into a larger whole. In his well-known model of lifespan development, Erikson (1982) similarly described the last phase of life as a balance between despair and ego integrity that might result in the virtue of wisdom.

Over the years, it has become clear that reminiscence and life review are important processes across the lifespan, not just in the later phase of life (Westerhof, Bohlmeijer, & Webster, 2010). Furthermore, individuals were found to use reminiscence and life review for a wide array of adaptive and maladaptive functions beyond death acceptance (Webster, Bohlmeijer, & Westerhof, 2010). In a theoretical review of the literature, Westerhof and Bohlmeijer (2014) distinguish between social functions (i.e., conversing with and teaching others), instrumental functions (i.e., coping with and solving problems), and integrative functions (i.e., constructing identity and accepting death). The integrative functions are characterized by a process of meaning construction that helps find order and significance, even in negative memories. Although different functions might support each other, successful life review is particularly built on the integrative functions that involve the evaluation, acceptance, and integration of memories in a larger whole.

Building on these insights, a wide variety of interventions has been developed to stimulate both reminiscence and life review in older adults (Westerhof, Bohlmeijer, & Webster, 2010). These interventions differ in their goals that vary from fostering well-being, identity, cognitive functioning, and social connectedness, to decreasing mental health complaints like depression, anxiety, or trauma (Pinquart & Forstmeier, 2012). Correspondingly, they also differ in the functions that are supported: whereas reminiscence interventions mainly support the social function

Public Health Significance

- Depressive symptoms occur frequently in older adults, providing a high burden for individuals, their social network, and society.
- Life review therapy has specifically been developed for older adults, building on a naturally occurring process of attributing meaning to one's own life cycle.
- The current meta-analysis provides evidence that life review therapy has a moderate effect on depressive symptoms that also sustains three months after the intervention.

in retrieving and sharing personal memories, life review interventions tend to stimulate the integrative functions (Westerhof, Bohlmeijer, & Webster, 2010). Over time, interventions have been tailored to specific target groups, such as people with depressive symptomatology, war veterans, African-Americans, and individuals with cancer, dementia, or intellectual disabilities (Westerhof, 2019). Some interventions are less structured, for instance reminiscence groups in nursing homes (Haight & Burnside, 1993), while others follow clear manuals, such as structured life review (Haight & Haight, 2007) and Guided Autobiography (Birren & Cochran, 2001). Interventions have also added therapeutic methods from other approaches, for example, deriving from cognitive therapy (Watt & Cappeliez, 2000). Interventions are also delivered in both individual and group formats (Haight, Coleman, & Lord, 1995; Watt & Cappeliez, 2000). A more recent advancement is the use of technology to deliver reminiscence and life review interventions (Lamers, Bohlmeijer, Korte, & Westerhof, 2015; Preschl et al., 2012).

The diversity of interventions is an important asset in the field. However, it is also complicated by the fact that different labels have been used to describe similar interventions; for example, structured life review has also been described as reminiscence therapy (Shellman & McNeil, 2019). On the other hand, similar labels have been used to describe different interventions. For example, life review therapy has described interventions that use therapeutic techniques to support the integrative function (Westerhof, Bohlmeijer, Beljouw, et al., 2010) as well as interventions that focus on the competence to retrieve specific positive memories (Serrano, Latorre, Gatz, & Montanes, 2004).

It is therefore important to be precise about content, target groups, and goals. In this article, we focus on *life review therapy*. First, we include interventions that use life review as a therapeutic treatment (i.e., those interventions that have the aim to decrease depressive symptoms in a target group of

people with depressive symptomatology). We focus on interventions in cognitively sound individuals in their second half of life (i.e., with a mean age of 50 and above), as reminiscence and life review are increasingly acknowledged to be important prior to the latest phase of life.

Second, we include interventions that build on a process of life review. These are characterized by a focus on the evaluation, acceptance, and integration of both positive and negative memories across the lifespan, *and/or* a focus on integrative reminiscence as its main process, *and/or* a focus on ego integrity as an important goal. In recent years, the working mechanisms of life review therapy have been better conceptualized by integrating theoretical insights and empirical findings from the field of reminiscence and life review, with the cognitive psychology of autobiographical memory and the personality psychology of narratives (Westerhof & Bohlmeijer, 2014). Depressed persons have difficulty in retrieving specific, positive memories of unique events happening on a single day in their lives (Ono, Devilly, & Shum, 2016). They tend to retrieve more negative than positive memories in a mood congruence effect, but they also tend to overgeneralize their memories. Stimulating the retrieval of specific, positive memories across different phases of life is thus an important process that is stimulated in life review therapy. Furthermore, difficulties in autobiographical reasoning (i.e., construing more general meanings of memories for one's person and life), are related to lower levels of mental health and well-being (Adler et al., 2015). In particular, people with depressive symptoms have difficulty in construing a positive meaning out of negative memories (Westerhof & Bohlmeijer, 2014). Stimulating autobiographical reasoning about negative memories is therefore an important target of life review therapy, including evaluation and acceptance of regrets (Westerhof, 2019). Last, life review includes an evaluation of different phases across the lifespan. This serves to integrate past memories into a broader life story that provides life with a sense of unity and purpose (McAdams, 2011). Hence, life review interventions focus on several phases of the lifespan. Taken together, these three processes support clients in providing new meanings to personal memories by means of a systematic reflection on their lives (Haber, 2006; Haight & Burnside, 1993; Westerhof, 2019). Some earlier studies have shown that meaning in life indeed mediates the effects of life review therapy on depressive symptoms (Korte, Bohlmeijer, Cappeliez, Smit, & Westerhof, 2012; Westerhof, Bohlmeijer, Beljouw, et al., 2010).

Three earlier meta-analyses of reminiscence and life review interventions exist (Bohlmeijer, Smit, & Cuijpers, 2003; Lan, Xiao, & Chen, 2017; Piquart & Forstmeier, 2012). Bohlmeijer et al. (2003) found a large effect size in their analysis that included twenty studies with a range of reminiscence and life review interventions that aim to reduce depressive symptoms. Piquart and Forstmeier

(2012) included 128 studies that also assessed these types of interventions. They assessed a wide variety of outcome measures, including depression, mental health symptoms, well-being, ego integrity, death acceptance, purpose in life, mastery, social integration, and cognitive performance. Moderate effects were found for depression and ego integrity, whereas small effects were found on the other outcomes. Lan et al. (2017) focused on life review interventions only. They included eleven studies in their meta-analysis and found a moderate effect size for depression and well-being, and no effects for life satisfaction, self-esteem, quality of life, and autobiographical memory.

However, none of these meta-analyses address life review as a therapeutic treatment of depressive symptoms in persons with depressive symptomatology. Hence, it remains unclear what the evidence for this specific type of intervention is. Furthermore, the meta-analyses did include studies of lower quality, such as studies without randomization, as well as publications that underwent less stringent peer review, like dissertations and book chapters. As we aim to provide the best available evidence, we focus only on randomized controlled trials (RCTs), including all kinds of control conditions (e.g., waiting list, no treatment, care-as-usual, placebo, or alternative treatment). As a further indication of quality, an article had to be published in a peer-reviewed journal, excluding books, dissertations, and conference proceedings.

2 | METHODS

2.1 | Search strategy and selection of studies

This meta-analysis was conducted in accordance with PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009). A systematic literature search was carried out on February 6th, 2019 in three databases: Web of Science, Scopus, and PsycINFO. The search terms used referred to the intervention (“reminiscence” or “life review”), the outcome (“depression” or “depressive”), and the method (“randomized” or “RCT”). Furthermore, the included studies of three earlier meta-analyses were added to the database results (Bohlmeijer et al., 2003; Lan et al., 2017; Piquart & Forstmeier, 2012). There were no restrictions regarding the publication date.

Both researchers checked the exclusion criteria for each article on the basis of title and abstract. They discussed their results and solved discrepancies by consensus. Exclusion criteria were as follows: (a) the study focuses on a target group with dementia, Alzheimer's, or cognitive impairment; (b) the study did not provide the results of an original empirical study; (c) the study did not address the effects of life review therapy in a randomized controlled trial; (d) the study was not published as a peer-reviewed

article (e.g., book chapter, letter to the editor, PhD thesis); (e) the study was written in a language beyond English, German, Dutch, French, Spanish, Italian, or Portuguese. When the title and abstract did not provide enough information about the exclusion criteria, it was included for the next round.

Both reviewers independently checked the full text of the remaining articles for the following exclusion criteria: (a) not a randomized controlled trial; (b) depressive symptoms were not an outcome variable; (c) alleviated levels of depressive symptoms was not an inclusion criterion of the study; (d) the intervention did not focus on life review therapy as defined in the introduction. The interrater reliability for the inclusion criteria was good (Cohen's kappa = 0.82). The remaining conflicts about the inclusion criteria were solved by consensus.

2.2 | Data extraction

Information on the following intervention characteristics was extracted from each included article: (1) recruitment; (2) inclusion criteria; (3) exclusion criteria; (4) intervention type; (5) individual or group format; (6) number of sessions; (7) duration of sessions; and (8) number of weeks. Furthermore, the following study characteristics were extracted: (1) control condition(s); (2) sample size in experimental and control condition(s); (3) mean or median age of the sample; (4) percentage of women in sample; (5) percentage dropout; (6) outcome measure; (7) follow-up assessments with duration; (8) means and standard deviations of the experimental and control condition(s) at the different measurements (pre-, post-, follow-up). Means and standard deviations from intention-to-treat analyses were used, when these were not provided analyses for completers only were used. If more than one follow-up occurred, we used the follow-up closest to three months as this was the most frequent follow-up time.

Quality was assessed with eight criteria. These were based on the criteria of the Cochrane collaboration, but tailored to the design of the included studies (see also Weiss, Westerhof, & Bohlmeijer, 2016): (1) Was a power analysis carried out or were at least 34 participants included (i.e., could the trial detect a moderate interaction effect in a repeated measures ANOVA with a power of $f = 0.25$, $\alpha = 0.05$, power (1-beta) = 0.80, 2 groups, 2 measurements, and a correlation of 0.50 between measurements)? (2) Were the inclusion and exclusion criteria adequately described? (3) Was the randomization properly described? (4) Were dropout and reasons for dropout adequately described? (5) In cases of dropout, was an intention-to-treat analysis performed? (6) Were the counselors trained to deliver the intervention? (7) Was the treatment integrity checked? (8) Were the outcome measures at baseline assessed and study groups comparable, and in the

case of differences between groups, were adjustments made to correct for baseline imbalance? Each criterion was scored with 0 or 1. Next, the percentage of items scoring 1 across all applicable criteria was calculated.

2.3 | Data analysis

The program Comprehensive Meta-Analysis (CMA, version 2.2.064) was used to carry out all analyses. We used a random effects model as heterogeneity was expected due to differences in the characteristics of the interventions and studies. The standardized difference in means (Cohen's d) was the primary outcome statistic. When available, between-group effect sizes (Cohen's d) were computed for follow-up differences in depressive symptoms around three months after the intervention ended. When articles used more than one measure of depressive symptoms, we conducted a meta-analysis for the particular study in order to include only one effect size per article. Westerhof, Lamers, Postel, and Bohlmeijer (2019) included two different intervention conditions (group vs. individual delivery), which were merged into one dataset for all calculations. We interpreted Cohen's d as small (0 to 0.32), moderate (0.33 to 0.55), or large (0.56 or higher; Lipsey & Wilson, 1993). We tested for heterogeneity with the chi-squared test (Cochrane's Q) and I^2 statistics (25%, 50%, and 75% are considered low, moderate, and high; Higgins, Thompson, Deeks, & Altman, 2003). If there was significant heterogeneity, we conducted analyses without the outliers. The risk of publication bias was estimated using a funnel plot, the Egger's test, a trim and fill analysis, and a classic fail-safe analysis.

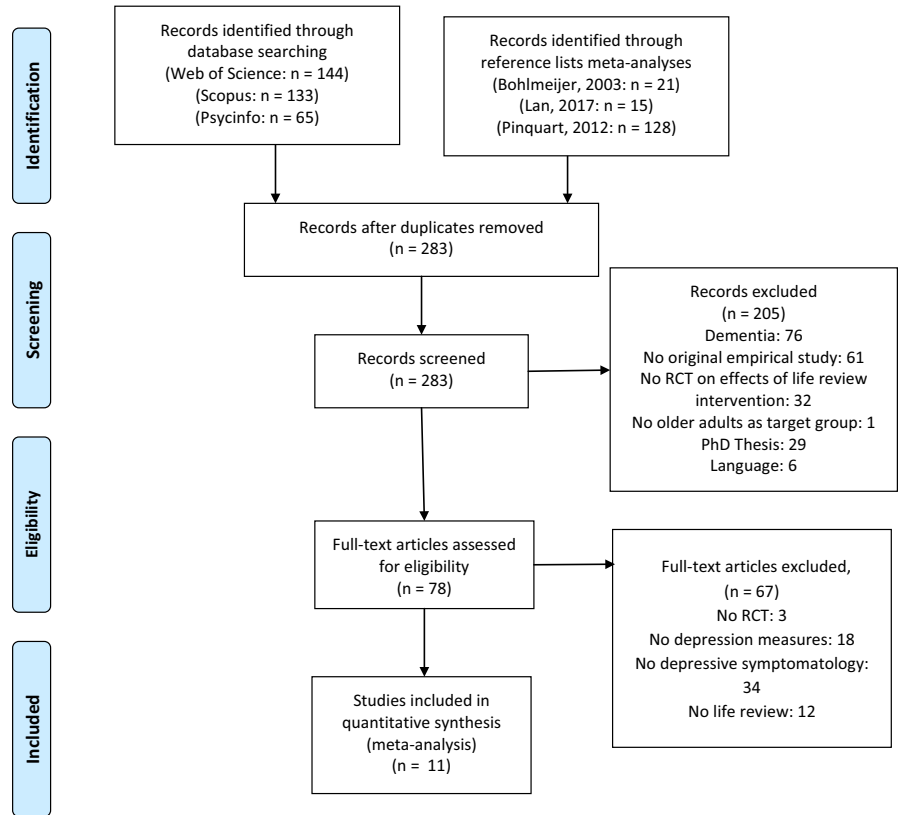
3 | RESULTS

3.1 | Study selection

The flow of the search and inclusion process can be found in Figure 1. The database search resulted in 342 hits, whereas the inclusion of studies in previous meta-analyses resulted in 47 hits. Removal of the duplicates left 283 results, of which 78 remained after screening the title and abstract. After reading the full texts, 11 studies were used for meta-analysis.

3.2 | Characteristics of interventions and studies

The main characteristics of the included interventions and studies are presented in Table 1. Six interventions took place in a group format, while the other six interventions were administered individually (Westerhof et al., 2019 had both an individual and a group format). The number of sessions ranged between 5 and 12, with an average of 8.2 sessions. The duration of the intervention ranged between 5 and 12 weeks, with

FIGURE 1 PRISMA 2009 flow diagram

an average of 10.2 weeks. Different protocols for life review therapy were used: interventions based on the work of Butler (Afonso & Bueno, 2009; Arean et al., 1993; Klausner et al., 1998), Birren's Guided Autobiography (Chan, Ng, Tien, Man Ho, & Thayala, 2013; also combined with cognitive therapy: Watt & Cappeliez, 2000; Karimi et al., 2010), Haight's structured life review (Preschl et al., 2012), "the stories we live by" (combining life review with narrative therapy: Korte et al., 2012; Lamers et al., 2015; Westerhof et al., 2019), and "looking for meaning" (combining life review with creative therapy; Pot et al., 2010).

All 11 studies included participants with depressive symptoms. These were mostly in the range of moderate symptoms as measured with screening instruments like the Center for Epidemiological Studies Depression Scale (CES-D; 5 studies), the Geriatric Depression Scale (GDS; 4 studies), or the Beck Depression Index (BDI; 2 studies). Two studies required a diagnosis of major depressive disorder. Four studies excluded people with severe depressive episodes, and five studies excluded persons with elevated risk of suicide. Furthermore, studies also excluded participants who already (recently) received pharmacological treatment (9 studies) or psychotherapeutic treatment (8 studies) for depression. Seven studies excluded subjects with cognitive impairments or dementia, six studies excluded psychiatric comorbidities, like psychosis, anxiety, alcohol, or drug abuse. And lastly, there were more practical reasons why individuals could not participate, such

as issues with language, seeing or hearing difficulties, or physical impairments.

All 11 studies were RCTs published in peer-reviewed journals between 1993 and 2019 with a median of 2010. The included studies involved 903 participants. Sample size varied between 16 and 202 participants with an average of 82.1 participants. The mean age varied between 54 and 79 years of age, with an overall weighted average age of 64.0 years old. All studies included more women than men, ranging from 54% to 81% with a weighted average of 74.1% of women. Nine out of eleven studies reported information regarding dropouts, with a range from 0% to 39.7% and a weighted average dropout rate of 14.6%. Outcome measures were different scales used to assess depressive symptoms, including the Center for Epidemiological Studies Depression Scale (CES-D, used 5 times), the Geriatric Depression Scale (GDS, 4), Beck Depression Inventory (BDI, 3), Hamilton Depression Rating Scale (HRSD, 3), and Montgomery-Asberg Depression Rating Scale (MADRS, 1). The control conditions included 10 active control groups (e.g., instrumental reminiscence, expressive writing, and group relaxation) and 7 nonactive control groups (e.g., waiting-list control and no intervention).

The quality of the studies ranged between 3 and 8 with an average score of 5.8 and a standard deviation of 2.1 (see Table 2). Regarding study quality, information about the in- and exclusion criteria was reported the best and

TABLE 1 Main characteristics of studies included in this meta-analysis, divided in lower and higher quality

First author, year	Format	Number sessions, number weeks	Total sample	Mean age	% Women	% Dropout	3 months Follow-up	Outcome measure	Control group
Afonso (2009)	Individual	5, 5	90	76	78.9	Unknown	No	CES-D	1. Group relaxation 2. No intervention
Arean (1993)	Group	12, 12	75	66.5	74.7	21.3	Yes	BDI, GDS, HRSD	1. Problem-solving therapy 2. Waiting-list control
Chan (2013)	Individual	5, 8	26	69.7	80.8	0	No	GDS	No intervention
Karimi (2010)	Group	6, 6	29	70.5	59.0	0	No	GDS	1. Social discussion group 2. Instrumental reminiscence
Klausner (1998)	Group	11, 11	16	66.8	53.8	18.8	No	BDI, HRSD, MADRS	Goal-focused group psychotherapy
Korte (2012)	Group	8, 12	202	63.3	76.6	14.85	Yes	CES-D	No intervention
Lamers (2015)	Individual	7, 10	174	56.9	77.0	14.4	Yes	CES-D	1. Expressive writing 2. Waiting-list control
Pot (2010)	Group	12, 12	171	64.3	72.5	10.5	Yes	CES-D	Minimal intervention (20 min video)
Preschl (2012)	Individual	6, 6	36	70 ^a	66.7	0	Yes	BDI	Waiting-list control
Watt (2000)	Individual	6, 6	26	66.8	54.0	Unknown	Yes	GDS, HRSD	1. Active socialization group 2. Instrumental reminiscence
Westerhof (2019)	Both	6, 12	58	53.8	77.6	39.7	Yes	CES-D	Waiting-list control

Abbreviations: BDI, Beck Depression Inventory; CES-D, Center for Epidemiological Studies Depression Scale; GDS, Geriatric Depression Scale; HRSD, Hamilton Depression Rating Scale; MADRS, Montgomery-Asberg Depression Rating Scale.

^aMedian.

rated sufficient in all eleven studies, while information about randomization and treatment integrity was reported least.

3.3 | Results of data analysis

Nine out of eleven studies found a significant effect in decreasing depressive symptoms at posttreatment ($p < .05$). Effect sizes of studies ranged from 0.19 to 3.37 (Figure 2). The random effect model showed that life review therapy had a large effect on depressive symptoms postintervention (Cohen's $d = 1.01$; $z = 4.61$; $p < .001$). The 95% confidence interval was between 0.58 and 1.44, with a standard error of 0.22. A heterogeneity analysis revealed significant high heterogeneity ($Q = 115.88$; $I^2 = 91.37$; $p < .001$). Without the two outliers (Afonso & Bueno, 2009 and Chan et al., 2013), the effect decreased noteworthy (Cohen's $d = 0.57$; $z = 6.76$; $p < .001$), and the heterogeneity becomes low to moderate and nonsignificant ($Q = 12.61$; $p = .126$; $I^2 = 36.53$).

3.4 | Follow-up effects

The forest plot in Figure 3 displays the follow-up effects. Six studies examined follow-up effects after 3 months compared to a control condition. The random effect model showed that life review therapy had a moderate effect on depressive symptoms after a 3-month follow-up (Cohen's $d = 0.46$; $z = 4.822$; $p < .001$). The 95% confidence interval was between 0.27 and 0.65, with a standard error of 0.10. Heterogeneity was low ($I^2 = 32.1$) and nonsignificant ($Q = 7.36$; $p = .195$).

3.5 | Publication bias

Visual inspection using a funnel plot of the included studies clearly shows the two outliers to the right. Furthermore, it shows that the larger studies along the left side of the funnel and the smaller studies are on the right. In line with these findings, Egger's regression intercept suggests that there might be a publication bias (intercept = 3.96; $t = 1.87$; $df = 9$; $p = .047$ [1-tailed]). However, a trim and fill analysis indicated that no

TABLE 2 Quality of included studies

First author, year	Power	In- and exclusion criteria	Description randomization	Description dropout	Intention-to-treat analysis	Trained counselors	Check treatment integrity	Baseline comparability	Total
Afonso (2009)	1	1	0	0	0	0	0	1	3
Arean (1993)	1	1	0	1	0	1	1	1	6
Chan (2013)	0	1	1	1	1	0	1	1	6
Karimi (2010)	0	1	0	1	1	1	1	0	5
Klausner (1998)	0	1	0	1	0	0	0	1	3
Korte (2012)	1	1	1	1	1	1	1	1	8
Lamers (2015)	1	1	1	1	1	1	1	1	8
Pot (2010)	1	1	0	1	1	1	0	1	6
Preschl (2012)	1	1	1	1	1	1	1	1	8
Watt (2000)	0	1	0	0	0	1	1	0	3
Westerhof (2019)	1	1	1	1	1	1	1	1	8
Total	7	11	5	9	7	8	6	9	–

studies needed to be trimmed, which suggests that the effect size was likely not affected by publication bias. Additionally, a classic fail-safe N also supports this conclusion ($z = 12.95$; $p < .001$ (two-tailed), as the number of missing studies that would bring the p -value above .05, is equal to 470 studies.

4 | DISCUSSION

This meta-analysis is unique in its focus on peer-reviewed published RCTs on life review as the attribution of meaning to both positive and negative memories across the lifespan, and as a therapeutic intervention to reduce depressive symptoms in older individuals. The meta-analysis showed a large effect (Cohen's $d = 1.01$), similar to the one reported by Bohlmeijer et al. (2003; Cohen's $d = 0.82$) in their meta-analysis that included a wider variety of reminiscence and life review interventions that were aimed at older subjects with and without depressive symptomatology. However, there was large heterogeneity in our meta-analysis. Without two outliers (Afonso & Bueno, 2009; Chan et al., 2013), a moderate effect size was found (Cohen's $d = 0.57$). This is similar to Pinquart and Forstmeier (2012; Hedges $g = 0.57$) and Lan et al. (2017; Cohen's $d = 0.57$), who included more diverse interventions with a broader focus and target groups. Unlike the earlier meta-analyses, the heterogeneity was low to moderate and nonsignificant when the two outliers were removed, suggesting that we focused on a more homogeneous subset of interventions. There was also no clear indication for publication

bias. Furthermore, the meta-analysis of the effects at three months follow-up also showed a similar moderate effect size (Cohen's $d = 0.46$) with low and nonsignificant heterogeneity.

We conclude that these findings apply to life review therapy, even despite the differences in specific protocols used (e.g., the employment of different therapeutic methods) and the delivery format (individual, group, or internet). The fact that the study designs differed in terms of control groups, definitions of older adults, and measures used for assessing depressive symptoms makes these findings even stronger. It can therefore be concluded that the evidence, based on the best available studies, suggests that life review therapy has moderate effects that sustain over time for older adults with depressive symptomatology.

All included studies were found in the database search and not through the additional references from the earlier meta-analyses. This suggests that the search strategy was adequate and did not miss studies. The overlap with earlier meta-analyses was small. Although the findings of these meta-analyses were not unlike the findings of the current meta-analysis, we found evidence for a more homogenous subset of life review therapy, even when including newer studies. Although the choice to only include RCTs published in peer-reviewed journals might have increased the risk of publication bias, it also increased the chance of finding higher quality studies. A number of limitations should also be mentioned. First, more evidence on long term effects is needed, as only three studies found evidence for the maintenance of effects for follow-ups up to one year (Korte et al., 2012; Lamers et al., 2015; Westerhof et al., 2019). Second, all studies except one (Korte et al., 2012)

Author, year: Effect size (95% CI)

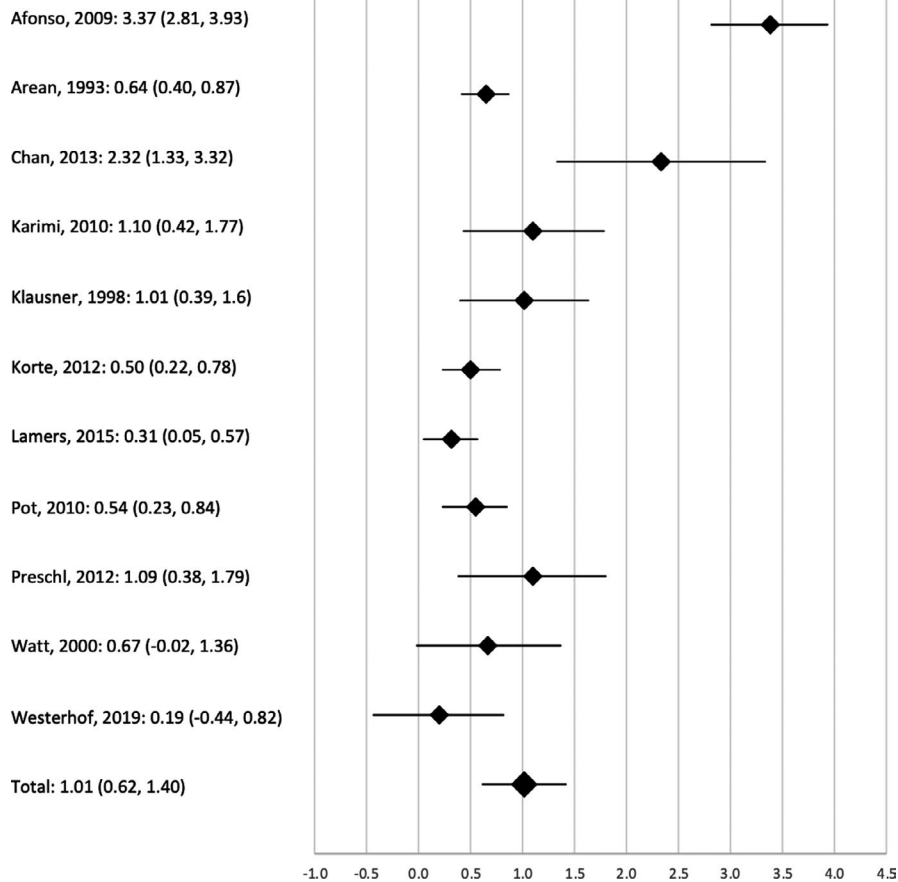


FIGURE 2 Forest plot of the postintervention results

assessed depressive symptomatology and not clinical depression as an outcome. Lastly, a focus on only depressive symptomatology as an outcome could be considered a limitation, as life review has been shown to also increase several aspects of well-being in addition to meaning in life and ego integrity as possible working mechanisms (Bohlmeijer, Roemer, Cuijpers, & Smit, 2007; Lan et al., 2017; Pinquart & Forstmeier, 2012).

4.1 | Practical implications

In earlier syntheses of evidence, both Scogin, Welsh, Hanson, Stump, and Coates (2005) and SAMSHA (2011) have rated reminiscence therapy and life review interventions as evidence based. This article adds further evidence, as it used a stricter definition of life review therapy and included studies of better quality that were mostly published after 2010. According to the framework for the evaluation of complex interventions created by the Medical Research Council (Campbell et al., 2000), the research on life review therapy can now be rated to be in the fourth phase (definite randomized trial). There is at least one study (Korte et al., 2012) that carried out an RCT in a practice setting, thereby making a step toward the fifth phase (long term implementation).

Important issues for further research in the implementation phase are the rate of uptake, the stability of the intervention, any broadening of subject groups, and the possible existence of adverse effects (Campbell et al., 2000).

An important question is how clinical psychologists and other mental health psychotherapists can use the evidence on life review therapy in their everyday practice. They would need generic psychological competences to facilitate and structure sessions, to listen actively and empathically, and to stimulate therapeutic processes (Lamers, Westerhof, & Bohlmeijer, 2017). To stimulate specific life review processes, several structured protocols can be used, like Structured Life Review (Haight & Haight, 2007), Guided Autobiography (Birren & Cochran, 2001), or “The Stories We Live By” (Bohlmeijer & Westerhof, 2010). Before using these protocols, it is important to complete training (e.g., through the International Institute for Reminiscence and Life Review, or the Birren Center for Autobiographical Studies). When conducting life review therapy, progress of clients can be monitored and interpreted with the use of existing benchmarks for evaluating life review interventions in clinical practice (Rubin, Parrish, & Miyawaki, 2019).

A number of issues should be taken into account in the indication of life review therapy. First, age itself should be used

more as a guideline, as findings have shown that life review therapy is effective across the second half of life (e.g., Lamers et al., 2015). Rather, professionals can check whether limitations in speech, hearing, cognitive functioning, and mobility prohibit participation in life review therapy. Second, the findings of this meta-analysis show that clients with depressive symptoms are good candidates for life review therapy. As depressive symptomatology is almost six times more prevalent than major depression in older adults (Volkert et al., 2013), it is important to know that life review therapy is indicated for mild-to-moderate depressive symptoms as well as major depressive disorder. However, there is less evidence for the most severe cases of depression and cases with suicide risk. Third, possible comorbidities, like addiction, posttraumatic stress disorder, and psychosis could be a counterindication as these were exclusion criteria in several studies. Lastly, the therapy could be offered specifically to individuals who struggle with personal meaning in their lives that could be the result of either difficulties in providing meaning to the past or of a need to make up the balance after a critical life event, like retirement, illness, or widowhood (Lamers et al., 2017).

The mode of delivery can vary between face-to-face and online therapy for individuals or groups. Individual interventions have the advantage that they can be adapted to personal needs

and allow for discussion of sensitive issues (Haight et al., 1995). Clients who would have trouble functioning in a group could also benefit more from individual therapy. Group interventions make use of social processes that benefit social exchange, social support, and learning from others (Watt & Cappellez, 2000). They need specific guidance by therapists in order to create a comfortable atmosphere and do justice to the stories of all those involved. Groups could consist of four to ten people, given the variation found in the studies included in this meta-analysis. Clients need to be open to discuss their memories in a group as well as able to listen to the memories of others (Korte, Drossaert, Westerhof, & Bohlmeijer, 2013). Online therapy can be important for participants who are less mobile or who want to work at their own timing and in their own environment (Westerhof et al., 2019). It can also be helpful for people who want to be supported in a more anonymous and less stigmatizing way. However, clients often prefer face-to-face contact that supports their reflective process. Hence, more practical internet exercises, like writing about memories, are perhaps best combined with face-to-face sessions in a blended therapy (Westerhof et al., 2019).

With the increasing number of older individuals in society and the aging of a new generation that might be more open to psychotherapy, clinical psychologists, and other mental health psychotherapists will increasingly see older adults in their

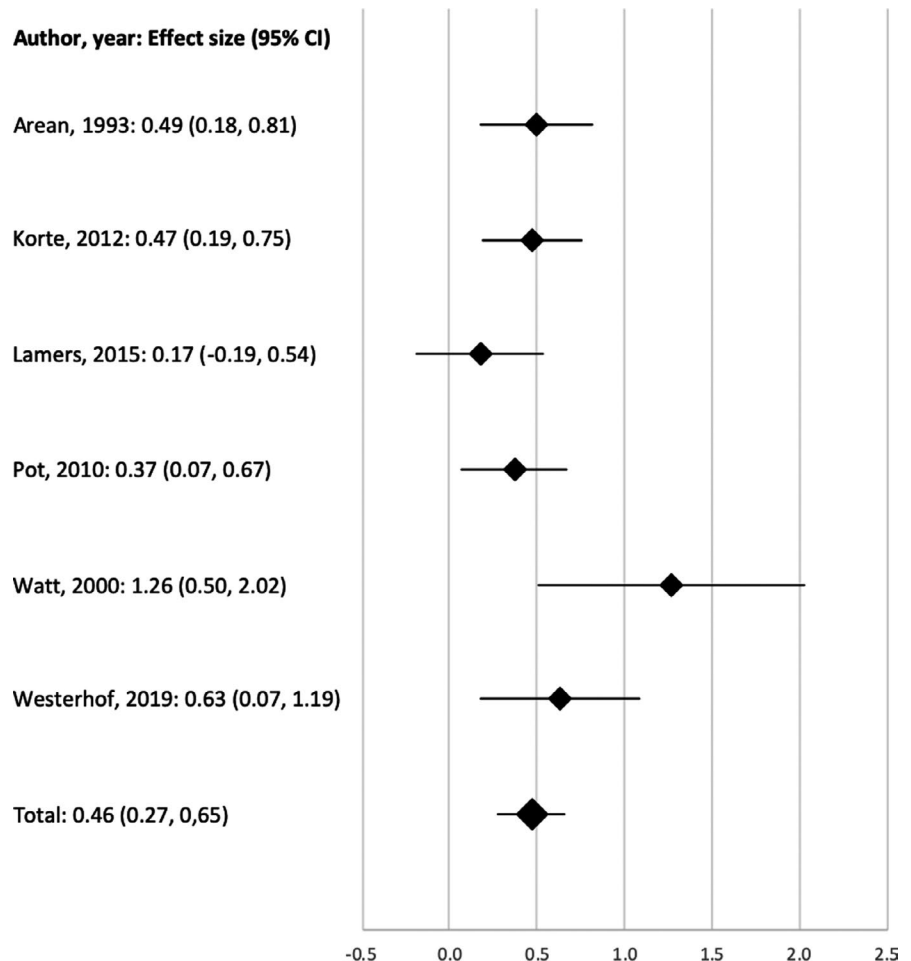


FIGURE 3 Forest plot of the follow-up results

practice. They will often hear about their clients' past life and encounter past problems that still dominate their stories, in particular from older adults with depressive complaints. A therapy using a systematic life review can support them in attributing new meanings and discovering their past to be a source of insight and inspiration rather than of rumination and remorse.

AUTHOR CONTRIBUTION

Both authors designed the study and contributed to the protocol. Slatman conducted the literature searches. Both authors were involved in the screening and selection of the included studies. Slatman conducted the statistical analyses. Westerhof wrote the first draft of the manuscript and both authors contributed to and have approved the final manuscript.

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