

 Open access • Journal Article • DOI:10.1080/13607863.2011.651434

## Effects of reminiscence interventions on psychosocial outcomes: a meta-analysis.

— [Source link](#) 

Martin Piquart, Simon Forstmeier

**Institutions:** University of Marburg, University of Zurich

**Published on:** 02 Jul 2012 - Aging & Mental Health (Centre for Reviews and Dissemination (UK))

**Topics:** Reminiscence therapy

Related papers:

- [The effects of reminiscence on psychological well-being in older adults: a meta-analysis](#)
- [Reminiscence and mental health: a review of recent progress in theory, research and interventions](#)
- [The life review: An interpretation of reminiscence in the aged](#)
- [Effects of reminiscence and life review on late-life depression: a meta-analysis](#)
- [Mapping the Future of Reminiscence: A Conceptual Guide for Research and Practice](#)

Share this paper:    

View more about this paper here: <https://typeset.io/papers/effects-of-reminiscence-interventions-on-psychosocial-34k3jyrm8>



**University of  
Zurich**<sup>UZH</sup>

**Zurich Open Repository and  
Archive**

University of Zurich  
University Library  
Strickhofstrasse 39  
CH-8057 Zurich  
[www.zora.uzh.ch](http://www.zora.uzh.ch)

---

Year: 2012

---

## **Effects of reminiscence interventions on psychosocial outcomes: A meta-analysis**

Pinquart, Martin ; Forstmeier, Simon

**Abstract:** Objectives: This study integrated results from controlled trials of reminiscence interventions. Methods: Meta-analysis was used to aggregate results from 128 studies on nine outcome variables. Results: Compared to non-specific changes in control-group members, moderate improvements were observed at posttest with regard to ego-integrity ( $g = 0.64$ ) and depression ( $g = 0.57$  standard deviation units). Small effects were found on purpose in life ( $g = 0.48$ ), death preparation ( $g = 0.40$ ), mastery ( $g = 0.40$ ), mental health symptoms ( $g = 0.33$ ), positive well-being ( $g = 0.33$ ), social integration ( $g = 0.31$ ), and cognitive performance ( $g = 0.24$ ). Most effects were maintained at follow-up. We observed larger improvements of depressive symptoms in depressed individuals ( $g = 1.09$ ) and persons with chronic physical disease ( $g = 0.94$ ) than in other individuals, and in those receiving life-review therapy ( $g = 1.28$ ) rather than life-review or simple reminiscence. Moderating effects of the control condition were also detected. Conclusions: Reminiscence interventions affect a broad range of outcomes, and therapeutic as well as preventive effects are similar to those observed in other frequently used interventions.

DOI: <https://doi.org/10.1080/13607863.2011.651434>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-70978>

Journal Article

Accepted Version

Originally published at:

Pinquart, Martin; Forstmeier, Simon (2012). Effects of reminiscence interventions on psychosocial outcomes: A meta-analysis. *Aging Mental Health*, 16(5):541-558.

DOI: <https://doi.org/10.1080/13607863.2011.651434>

## Effects of Reminiscence Interventions on Psychosocial Outcomes: A Meta-Analysis

MARTIN PINQUART<sup>1</sup> & SIMON FORSTMEIER<sup>2</sup>

*<sup>1</sup>Philipps University, Marburg, Germany; <sup>2</sup>University of Zurich, Switzerland*

Running head: Effects of reminiscence

Address correspondence to Martin Piquart, Department of Psychology, Philipps University, D-35032 Marburg, Germany. Phone: +41-3641-2823628, Fax: +41-6421-28-23685: Email: [pinquart@staff.uni-marburg.de](mailto:pinquart@staff.uni-marburg.de).

*Accepted by Aging & Mental Health*

*Vol. 16, No. 5, July 2012, 541–558*

## **Effects of Reminiscence Interventions on Psychosocial Outcomes: A Meta-Analysis**

### **Aging and Mental Health**

#### **Abstract**

**Objectives:** This study integrated results from controlled trials of reminiscence interventions.

**Methods:** Meta-analysis was used to aggregate results from 128 studies on 9 outcome

**variables. Results:** Compared to non-specific changes in control-group members, moderate improvements were observed at posttest with regard to ego-integrity ( $g=.64$ ) and depression ( $g=.57$  standard deviation units). Small effects were found on purpose in life ( $g=.48$ ), death preparation ( $g=.40$ ), mastery ( $g=.40$ ), mental health symptoms ( $g=.33$ ), positive well-being ( $g=.33$ ), social integration ( $g=.31$ ), and cognitive performance ( $g=.24$ ). Most effects were maintained at follow-up. We observed larger improvements of depressive symptoms in depressed individuals ( $g=1.09$ ) and persons with chronic physical disease ( $g=.94$ ) than in other individuals, and in those receiving life-review therapy ( $g=1.28$ ) rather than life-review or simple reminiscence. Moderating effects of the control condition were also detected.

**Conclusions:** Reminiscence interventions affect a broad range of outcomes, and therapeutic as well as preventive effects are similar to those observed in other frequently used interventions.

**Key words:** life-review, controlled trials, depression, ego-integrity

## Introduction

Reminiscence is defined as the process of thinking or telling someone about past experiences that are personally significant. Based on the suggestion by Erikson (1959) and Butler (1963) that reviewing one's life is a central task of old age, reminiscence has increasingly been used in older adults as a therapeutic mode for promoting self-acceptance and psychological health.

Different forms of reminiscence interventions may have different potential for solving these tasks. Recently, Webster, Bohlmeijer and Westerhof (2010) and Westerhof, Bohlmeijer, and Webster (2010) distinguished between simple reminiscence, life-review, and life-review therapy. Simple reminiscence is mainly unstructured autobiographical storytelling with the goal of communicating and teaching or informing others, remembering positive past events, and enhancing positive feelings. Relative to simple reminiscence, life-review is much more structured. Life-review usually covers the entire life span and is most often performed in a one-to-one format. Rather than simply describing past events (as in simple reminiscence), life-review focuses on the (re-)evaluation of life events and on the integration of positive and negative life events in a coherent life story. Finally, life-review therapy refers to the use of life-review with persons with serious mental health problems, such as depression. It is characterized by linking life-review to a clear theory of causal factors of depression or mental illness. Life-review therapy is focused on reducing bitterness revival and boredom and promoting a positive view on one's past. It often explicitly applies therapeutic techniques that have been developed in other therapeutic frameworks, such as cognitive therapy, problem-solving therapy, or narrative therapy.

Six meta-analyses have summarized effects of reminiscence. Large improvements of depressive symptoms have been reported by Bohlmeijer, Smit, and Cuijpers (2003:  $d=.84$  standard deviation units, based on 20 studies), Chin (2007;  $g=.90$  standard deviation units, 6 studies), and Pinquart, Duberstein, and Lynness (2007;  $g=1.00$ , 8 studies with depressed older adults). However, a recent meta-analysis on prevention of depression by Forsman,

Schierenbeck, and Wahlbeck (2011) did not find a significant effect of reminiscence ( $d=.24$ , based on 5 studies).

Effects on positive psychological well-being were smaller. Bohlmeijer et al. (2007) found moderate improvements of positive well-being ( $d=.54$ ), based on 15 studies. Chin (2007) reported significant effects of reminiscence on positive affect ( $d=1.09$ , based on 6 studies) whereas no significant improvements were found with regard to life-satisfaction ( $d=.22$ , based on 5 studies) or self-esteem ( $d=.51$ , based on 6 studies). Finally, Woods, Spector, Jones, Orrell, and Davies (2005) did not find significant effects of reminiscence on cognitive performance of dementia patients at posttest ( $d=.27$ , based on 5 studies). However, participants in the intervention had higher cognitive performance at follow-up ( $d=.50$ ).

Unfortunately, a large number of potential outcome variables were not addressed in these meta-analyses, such as ego-integrity, mastery, meaning of life, and social integration. In addition, most previous meta-analyses did not assess the effects of reminiscence at follow-up as well as effects of moderator variables. Furthermore, available meta-analyses did not test whether effects of reminiscence would also be found in young and middle-aged adults.

Thus, the goal of the present meta-analysis was to integrate the results of a larger number of controlled studies on a broader range of outcome variables at posttest and follow-up and to identify variables that moderate the size of the observed intervention effects.

### **Moderating effects of study characteristics**

In order to have test power, the search for moderating effects of study characteristics was limited to the two most often assessed outcomes, depression and positive well-being.

**Forms of reminiscence.** Because participants in life-review therapy have elevated levels of depression or of other psychological symptoms (e.g., Webster et al., 2010) and because life-review therapy often integrates applies psychotherapeutic techniques, life-review therapy may show stronger improvement of depressive symptoms and positive well-being than other forms of reminiscence.

**Health status at pretest.** Lower pre-intervention levels of symptoms leave less room for improvement. In fact, Bohlmeijer et al. (2003) found stronger improvements of depressive symptoms if subjects showed elevated levels of depression at pretest. Similarly, individuals who are psychologically distressed because of a chronic physical illness or cognitive decline may show above-average improvements of psychological symptoms.

**Format.** Individual and group formats have unique advantages. Individual sessions can be easily adapted to the needs of the participant and he/she might be more willing to talk about critical experiences. However, a group format promotes social exchange with other group members. Thus, interventions held on a one-to-one basis may show above-average improvements of depression, and group reminiscence may show above-average effects on social integration. Nonetheless, effect sizes on depression and positive well-being did not vary between individual and group condition in meta-analyses of Bohlmeijer et al. (2003, 2007).

**Number of sessions.** Haight and Haight (2007) suggested that 6 to 8 sessions seem to be sufficient to review one's life. Bohlmeijer et al. (2007) did not find a moderating effect of the number of sessions on change in positive well-being.

**Control condition.** Because participants of placebo control conditions may show more positive change than those of no-treatment control conditions, the differences between improvements in the reminiscence and control condition would be smaller. Nonetheless, Bohlmeijer et al. (2007) found no significant differences between studies that used an active placebo and those that did not.

**Age.** Reviewing one's life and finding ego-integrity has been described as a developmental task of old age (Butler, 1963; Erikson, 1959), and older adults are more likely to use reminiscence for teaching others and death preparation (Webster & McCall, 1999). Thus, older adults may be more interested in reminiscence than younger adults. This might lead to larger intervention effects in older samples. However, Bohlmeijer et al. (2007) did not find larger effects of reminiscence in samples with a mean age of 80 years or above compared

to samples with a mean age of 68-79 years.

**Gender.** Webster and McCall (1999) observed that women are more likely than men to use reminiscence for remembering negative events and clarifying one's identity. Thus, women may benefit more from interventions aimed at finding meaning in life and accepting one's past. Nonetheless, Bohlmeijer et al. (2003) did not find a significant moderating effect of gender.

**Residence.** Bohlmeijer et al. (2007) found smaller effects of reminiscence on psychological well-being in residential care than in community-dwelling older adults. We tested whether Bohlmeijer's result could be replicated.

**Publication status.** Because studies with insignificant effects may be less likely to be published (Lipsey & Wilson, 2001), published studies may show larger effects than unpublished studies.

**Study quality.** Randomization, blinding of raters, use of a treatment manual of interventions, training of interventionists, treatment integrity, use of intent-to-treat analysis, and sufficient test power are criteria for the quality of the study (Cuijpers, Smit, Bohlmeijer, Hollon, & Andersson, 2010). Low study quality may cause random error rather than systematic error (Lipsey & Wilson, 2001). In fact, no moderating effect of the quality of the studies was found in the meta-analysis by Bohlmeijer et al. (2003).

## **Methods**

### **Selection of studies**

Studies were identified by search of electronic data bases (CINAHL, Google scholar, Medline, PsycInfo, Psyn dex; search terms: (reminiscence or life-review or autobiographical storytelling or autobiographical writing) and (intervention or therapy or trial) and cross-referencing. In order to be included in the meta-analysis, a study had to

- a) examine the effects of (simple) reminiscence, life-review, or life-review therapy
- b) use a control condition that did not receive an active psychological treatment



- c) use one or a combination of the following outcomes: depression, other psychological symptoms (e.g., anxiety), positive psychological well-being (e.g., life-satisfaction), ego-integrity, purpose in life, mastery, cognitive performance, social integration, and preparation for death
- d) provide sufficient information for computing effect sizes, and
- e) be published/ presented before November 2011.

From the identified 253 studies, 125 had to be excluded because they had no control condition (65), they were case studies (22), they did not provide quantitative data (10), the control condition was an active psychological treatment rather than a placebo condition (7), they duplicated results from other papers (7), the intervention condition combined reminiscence and other forms of psychological treatment (6), the study was not available by interlibrary loan (5), or insufficient information was provided for computing effect sizes (3). Finally, 128 studies were included in the present meta-analysis (see, Appendix I and II).

## Measures

**Depressive symptoms.** Depression was assessed with the Geriatric Depression Scale (Sheikh & Yesavage, 1986; 37 studies), the Beck Depression Inventory (Beck, Steer, & Brown, 1996; 13 studies), the Center for Epidemiological Studies Depression Scale (Radloff, 1977; 11 studies), and other measures (21 studies).

**Other psychological symptoms.** These symptoms were measured with the State-Trait-Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970; five studies), the Symptom Checklist SCL-90 (Derogatis, 1994; three studies), and other measures (15 studies).

**Psychological well-being.** Studies used the Life Satisfaction Index (Neugarten, Havighurst, & Tobin, 1961; 28 studies), the Self-Esteem Scale (Rosenberg, 1965; 22 studies), the Affect Balance Scale (Bradburn, 1969; 13 studies), and other scales (47 studies).

**Ego-integrity.** This variable was assessed with six different measures, such as the Ego-integrity Scale (Boylin, Gordon, & Nehrke, 1976; one study).

**Meaning of/purpose in life.** This variable was assessed with the Purpose in Life Test (Crumbaugh, 1968; four studies) and related instruments (seven studies).

**Mastery.** This variable was measured with the mastery scale by Pearlin and Schooler (1978; three studies) and related instruments (12 studies).

**Cognitive performance.** This variable was assessed with the Mini Mental State Examination (Folstein, Folstein, & McHugh, 1975; 15 studies) and related scales (11 studies).

**Social integration.** Social integration was assessed with measures of frequency and/or quality of social contacts (10 studies) and loneliness scales (13 studies).

**Preparation for death.** This variable was assessed with measures of (low levels of) death anxiety (e.g., Death Anxiety Scale; Templer, 1970; three studies), preparation for the end of life (Steinhauser et al., 2004; one study), and lack of denial of death (one study).

**Study quality.** A modified version of the checklist by Cuijpers et al. (2010) was used that assesses 8 criteria of study quality (e.g., randomization, training of therapists or group leaders). One criterion of the original checklist (meeting criteria for a clinical diagnosis) did not apply to our study. This criterion was replaced by the sum-category of lack of additional problems with study quality, such as problems with sociodemographic equivalence of intervention and control group. A sum-score was computed with higher scores indicating better quality.

**Coded variables.** We coded *type of reminiscence* (based on the criteria defined by Webster et al., 2010; 1=simple reminiscence, 2=life-review, 3=life-review therapy), *illness at pretest* (1=none, 2=depression, 3=dementia, 4=chronic physical disease), *number of sessions* (continuous variable), *format* (0=individual, 1=group), *control condition* (0=only testing/wait list control, 1=active placebo), *mean age* (continuous variable), *percentage of women* (continuous variable), *publication status* (1=published, 0=unpublished), *residence* (1=private home, 2=nursing home/residential care), *study quality* (continuous variable), and the *size of the statistical effects*. Based on 20% of the included studies, an inter-rater agreement of  $r=.89$  was

established for continuous variables and of 90% for categorical variables. Differences were resolved by discussion.

### Statistical Integration of Findings

Calculations for the meta-analysis were performed in five steps, using random-effects models and the method of moments (Lipsey & Wilson, 2001). A random-effects meta-analysis is appropriate if the effect sizes vary between studies beyond sample error, and not all sources of variation may be identified.

1. We computed effect sizes  $d$  for each study as the difference in the post-treatment measure between the reminiscence condition and control condition divided by the pooled standard deviation ( $SD$ ). Positive scores indicate improvements. Outliers that were more than two  $SD$  from the mean of the effect sizes were recoded to the value at two  $SD$ .
2. Effect sizes were adjusted for differences in the outcome measures between the intervention group and control group at pretest and for bias due to overestimation of the population effect size in small samples (using Hedges' unbiased estimator  $g$  which is defined as  $g = d * [1 - \frac{3}{4 * (n_1 + n_2 - 9)}]$ ; Hedges, 1981).
3. Effect sizes were weighted by the inverse of their variance. Weighted mean effect sizes ( $\bar{g} = \frac{\sum w_i g_i}{\sum w_i}$ ) and 95%-confidence intervals (CI;  $\bar{g} \pm 1.96 * SE(\bar{g})$ ); with SE being the standard error of  $\bar{g}$ ) were computed.
4. Homogeneity of effect sizes was computed by use of the  $Q$  statistic, with  $Q = \frac{(\sum w_i g_i^2) - \frac{(\sum w_i g_i)^2}{\sum w_i}}$ .
5. In order to test the influence of moderator variables, we used an analogue of analysis of variance and meta-regression. Differences between two conditions are interpreted as significant when the 95%-CIs do not overlap.

To interpret the practical significance of the results, we used Cohen's criteria.

According to Cohen (1992), improvements of  $d \geq .8$  are interpreted as large, of  $d = .50$  as

medium, and of  $d=.20$  as small.

## Results

Eighty-two interventions provided simple reminiscence, 37 offered life-review and another 18 studies life-review therapy. Most studies offered reminiscence in a group format (90 studies). Seventy-five percent of the included studies randomly allocated the participants to the intervention and control condition (95 studies). Ninety-five studies were published. The interventions offered, on average, 10.1 sessions ( $SD=10.6$ , range 1 – 72) and lasted about 8.3 weeks ( $SD=7.7$ ; range 1 – 78). Follow-up data were provided in 27 studies with a mean time interval of 22.9 weeks ( $SD=28.8$ , range 2 – 156 weeks) since the end of the intervention.

The 128 intervention studies provided results for 4,067 adults who received a reminiscence intervention and 4,337 control group members. The participants had a mean age of 73.1 years ( $SD=12.7$ ; range 18.8-85.7 years); 66% were women, and 28% were married.

Average effect sizes for the outcome variables are provided in Table 1. At posttest, improvements of all outcome variables were statistically significant. Largest improvements were found for ego-integrity ( $g=.64$ ), followed by depression ( $g=.57$ ), purpose in life ( $g=.48$ ), death preparation ( $g=.40$ ), mastery ( $g=.40$ ), mental health ( $g=.33$ ), positive well-being ( $g=.33$ ), social integration ( $g=.31$ ), and cognitive performance ( $g=.24$ ). As indicated by the non-overlap of the 95%-CIs, improvements of depression were larger than improvements of positive mental health, and cognitive performance. At follow-up, intervention effects persisted for 6 out of 9 main outcome variables (depression, other indicators of mental health, sum of indicators of positive well-being, ego integrity, cognitive performance, death preparation).

[Insert Table 1]

Recently Cuijpers et al. (2010) found some evidence for a publication bias in research on therapy for depressed adults which may lead to an overestimation of the effect sizes. In order to test for such a bias, we applied the trim-and-fill algorithm (Duvall & Tweedie, 2001). Applying this procedure led to lower estimations of improvements of ego-integrity ( $g=.50$ ,

$Z=1.98, p<.05$ ) and life-satisfaction at posttest ( $g=-.01, Z=-.14, n.s.$ ). However, effects of reminiscence on purpose in life ( $g=.73, Z=4.54, p<.001$ ) and death preparation ( $g=.52, Z=2.95, p<.01$ ) were even somewhat larger after applying the trim-and-fill algorithm. The lower improvement of life-satisfaction after application of the trim-and-fill algorithm may be based on the fact that studies on change in life-satisfaction with small samples often used a passive control condition ( $r=.21$ ) which led to larger relative improvements after reminiscence (Table 2). Because the small number of included studies with small effect sizes seemed to be a result of the use of different study designs of published studies rather than of a failure to identify unpublished studies with low or even negative effects, we used the original data for the following analyses.

About 70% of the effect sizes were heterogeneous (Table 1). Therefore, we searched for moderating effects of study characteristics. As shown by the significant  $Q$ -statistic, intervention effects on depressive symptoms and positive well-being varied by the form of reminiscence (Table 2). Stronger effects were found in life-review therapy than in other life-review interventions and in simple reminiscence.

Change of depression also varied by the kind of diseases at pretest. Improvements of depressive symptoms were stronger in depressed individuals than in healthy and demented persons, and in individuals with chronic physical illness as compared to healthy individuals. However, diseases at pretest did not moderate the size of improvement of positive well-being.

Similarly, no moderating effects of format of the intervention (group versus individual format) or number of sessions were found. Change of positive well-being varied between studies with active versus passive control condition. Weaker relative effects of reminiscence were found in studies with an active control condition.

Levels of change of depressive symptoms and positive well-being did not vary by age, gender, forms of residence of the participants, and study quality.

[Insert Table 2]

The assessed moderator variables are not completely independent of each other. For example, most studies with dementia patients use simple reminiscence. Thus, we also tested whether the effects of significant univariate moderators would persist in multivariate analysis. A weighted multiple linear regression analysis was computed with life-review therapy (1=yes, 0=no), depression status at pretest (1=depressed, 0=not depressed), physical illness at pretest (1=yes, 0=no) as independent variables and change in depressive symptoms as dependent variable. In that analysis, only initial depression status ( $B=.75$ ,  $\beta=.47$ ,  $Z=4.06$ ,  $p<.001$ ) and physical illness at pretest ( $B=.62$ ,  $\beta=.28$ ,  $Z=2.98$ ,  $p<.01$ ) were significant moderators. As only one significant moderator of improvement of positive well-being has been identified, there was no need for a multivariate analysis with regard to this variable.

Due to the smaller number of available studies, we did not compute the full set of moderator analyses for the other outcomes. However, because benefits of reminiscence on social integration may be larger in interventions with group format than with one-to-one format we tested whether this would be the case. Because the only available meta-analysis on effects of reminiscence on cognitive performance focused on dementia patients (Woods et al., 2005), we also tested whether cognitive intact individuals would benefit from reminiscence with regard to cognitive outcomes as well. We did not find a moderator effect of group format on change in social integration ( $Q(1,22)=.61$ , n.s.). The moderating effect of dementia status on change in cognitive performance was also not significant ( $Q(1,27)=3.22$ , n.s.). Nonetheless, significant improvements of cognitive performance were only found in individuals with cognitive impairment ( $g=.33$ ,  $Z=4.00$ ,  $p<.001$ ), but not in cognitively intact persons ( $g=.12$ ,  $Z=1.37$ , n.s.).

## Discussion

The present meta-analysis found positive immediate effects of reminiscence interventions on all assessed outcomes. Effects on depression, other indicators of mental health, positive well-being, ego-integrity, cognitive performance, and death preparation were

maintained at follow-up. In addition, effect sizes on depression and positive well-being varied, in part, by form of reminiscence, symptoms at pretest, and kind of control condition. We start the discussion with a comparison of our results with those of previous meta-analyses.

The largest effect size of reminiscence on depression of previous meta-analyses (Pinquart et al., 2007) was exclusively based on studies with depressed older adults, and the present meta-analysis found a similar effect size for that group in a larger data set. Our observed effect on depression in individuals with no medical condition was similar to the effect size reported by Forsman et al. (2011) on preventive trials. Our mean effects on positive well-being were somewhat smaller than those reported by Bohlmeijer et al. (2007) and Chin (2007) with regard to positive affect in particular. Bohlmeijer et al. (2007) used Cohen's  $d$  rather than Hedges'  $g$ , which led to somewhat larger estimates (Lipsey & Wilson, 2001). In addition, as our analyses on positive well-being included more than 5 times more effect sizes than the two previous meta-analyses, we attained more reliable results.

The effect size on cognitive performance was very similar to that of a previous meta-analysis by Woods et al. (2005), although we found a significant effect already at pretest, probably because of higher test power. Thus, available results indicate that reminiscence can slightly improve cognitive performance of individuals with cognitive impairment, although they do not yet provide sufficient evidence for such an effect in cognitively intact individuals.

The present meta-analysis showed that reminiscence affects a broad range of outcome variables. The moderate effect of reminiscence interventions on ego-integrity supports Butler's (1963) suggestion that reminiscence interventions are a useful tool for the development of an accepting attitude towards one's own life. Unfortunately, there were too few studies to compare the effects of different forms of reminiscence on that outcome variable.

Although only six out of nine follow-up effects were significant, the effect sizes at follow-up were not smaller than those at posttest. Thus, the loss of effects at follow-up seems

to be based on the smaller number of available studies that provided follow-up data.

Few moderator variables had significant effects. The present meta-analysis is the first to show that life-review therapy has stronger effects on depression than life-review or simple reminiscence, and that this effect is explained by the higher levels of depressive symptoms of participants receiving life-review therapy at pretest. Interestingly, “non-therapeutic” life-review interventions did not differ in their effects on depression and positive well-being from simple reminiscence.

The present meta-analysis is also the first to find support for the assumption that patients with chronic physical illness benefit more from reminiscence interventions than healthy individuals, at least with regard to depressive symptoms. This effect may be based on their elevated levels of depression at pretest and/or on an emergent need to find ego-integrity because of limited remaining life-expectancy due to AIDS, cancer, or other severe diseases.

In line with Bohlmeijer et al. (2003, 2007) we found that the observed effect sizes did not vary between individual and group format and by the number of sessions. This indicates that one-to-one and group-based interventions work and that prolonging the intervention beyond seven sessions does not have an additional effect.

In contrast to Bohlmeijer et al. (2007), we observed larger relative improvements of positive well-being if the control condition did not receive any intervention as compared to a placebo intervention. This result indicates that non-specific interventions, such as socializing and discussion of current events, can also be a source of positive feelings.

Despite the suggestion that reminiscence may be a particularly useful intervention for older adults, the present meta-analysis did not find lower effect sizes on young or middle-aged adults than on older adults. Nonetheless, only about 6% of the available intervention studies focused on young and middle-aged adults, and some of them assessed individuals with severe physical illness (e.g., Ando, Morita, Akechi, & Okamoto, 2010), who may have a stronger need for reminiscence than their healthy peers. Thus, there is a need for more research on the



effects of reminiscence interventions on young or middle-aged adults.

The quality of the study did not moderate the size of effects. This indicates that our results are quite robust with regard to study quality.

### **Limitations and Conclusions**

Some limitations of the present meta-analysis have to be mentioned. First, very limited numbers of studies were available for some outcomes (e.g., ego-integrity), subgroups (e.g., persons younger than 60 years), and for follow-up assessments. Second, we used broad categories of three forms of reminiscence. There were variations within these categories, for example with regard to theoretical background, level of structure, the biographical events addressed, and the therapeutic strategies. In addition, differences between interventions in the levels of structure and inclusion of evaluations of life are often gradual rather than categorical. Thus, other raters might have come to somewhat different conclusions regarding how some studies might be coded. Nonetheless, levels of interrater-agreement were satisfactory and the effect sizes for simple reminiscence, life-review, and life-review therapy were homogeneous, thus indicating that similarities of the effects within these conditions prevail. Third, we focused on main effects of moderator variables. Combining moderator variables would lead to small subsets of studies that lack test power for the identification of statistical significance. Fourth, no data were available for some moderators, such as whether individuals with unresolved biographical conflicts would benefit more from life-review than other persons. Fifth, we did not limit the included studies to those with highest quality. However, we were able to show that study quality did not moderate the size of the effects, which is a relevant result.

Nonetheless, several conclusions can be drawn from the present meta-analysis. First, we conclude that reminiscence interventions produce small to moderate improvements of depressive symptoms, other indicators of mental health, ego-integrity, positive well-being, purpose in life, mastery, cognitive performance, social integration, and death preparation.

Second, the largest effects on depressive symptoms can be expected when applying life-review therapy to depressed adults. Therapeutic effects for these interventions are similar to those observed for psychotherapeutic interventions with depressed older adults in general (Pinquart et al., 2007). Third, interventionists could either use simple reminiscence or life-review to promote positive well-being when not working with depressed adults. Fourth, more work is recommended on effects of reminiscence interventions on ego-integrity and death preparation, on reminiscence with younger adults, and on long-term effects on all assessed outcomes. In addition, more research is needed on who benefits most from reminiscence interventions, such as those with unresolved biographical conflicts and persistent regrets. Finally, with regard to practical consequences, our meta-analysis indicates that reminiscence is a worthwhile intervention that should be offered to older adults and other persons who are interested in remembering the past, reviewing their lives, and finding ego-integrity. However, we should have realistic expectations about the (low) effects as long as reminiscence is used with the goal of enhancing psychological well-being and quality of life or preventing problems rather than as therapeutic intervention with psychologically distressed individuals.

## References

- Ando, M., Morita, T., Akechi, T. & Okamoto, T. (2010). Efficacy of short-term life-review on the spiritual well-being of terminally ill cancer patients. *Journal of Pain & Symptom Management*, *39*, 993-1002.
- Beck, A.T., Steer, R.A., & Brown, G.K (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.
- Bohlmeijer, E., Roemer, M., Cuijpers, P., & Smit, F. (2007). The effects of reminiscence on psychological well-being in older adults: A meta-analysis. *Aging and Mental Health*, *11*, 291-300.
- Bohlmeijer, E., Smit, F., & Cuijpers, P. (2003). Effects of reminiscence and life review on late-life depression: A meta-analysis. *International Journal of Geriatric Psychiatry*, *18*, 1088-1094.
- Boylin, W., Gordon, S.K., & Nehrke, M.F., (1976). Reminiscing and ego integrity in institutionalized elderly males. *Gerontologist*, *16*, 118-124.
- Bradburn, N.M. (1969). *The structure of psychological well-being*. Chicago: Aldine.
- Butler, R.N. (1963). The life review: An interpretation of reminiscence in the aged. *Psychiatry*, *26*, 65–76.
- Chin, A.M. (2007). Clinical effects of reminiscence therapy in older adults: A meta-analysis of controlled trials. *Hong Kong Journal of Occupational Therapy*, *17*, 10-22.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159.
- Crumbaugh, J.C. (1968). Cross-validation of purpose-in-life based on Frankel's concepts. *Journal of Individual Psychology*, *24*, 74-81.
- Cuijpers, P., Smit, A., Bohlmeijer, E., Hollon, S.D., & Andersson, G. (2010). The effects of psychotherapy for adult depression are overestimated: a meta-analysis of study quality and effect size. *Psychological Medicine*, *40*, 211-223.

- Derogatis, L.R. (1994). *SCL-90-R: Administration, scoring and procedures manual*. Minneapolis: National Computer Systems, Inc.
- Duval, S.J., & Tweedie, R.L. (2000). Trim and fill: A simple funnel plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, *56*, 455-463.
- Erikson, E.H. (1959). *Identity and the life cycle*. New York: International University Press.
- Folstein, M.F., Folstein, S.E., & McHugh, P.R. (1975). Mini-Mental State (a practical method for grading the state of patients for the clinician). *Journal of Psychiatric Research*, *12*, 189–198.
- Forsman, A.K., Schierenbeck, I., & Wahlbeck, K. (2011). Psychosocial interventions for the prevention of depression in older adults: Systematic review and meta-analysis. *Journal of Aging and Health*, *23*, 387-416.
- Haight, B.K. & Haight, B.S. (2007). *The handbook of structured life review*. Baltimore, MD: Health Professions Press.
- Hedges, L. V. (1981). Distribution theory for Glass's estimator of effect size and related estimators. *Journal of Educational Statistics*, *6*, 107-128.
- Lipsey, M.W., & Wilson, D.B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- Neugarten, B.L., Havighurst, R., & Tobin, S. (1961). The measurement of life satisfaction. *Journal of Gerontology*, *16*, 134–143.
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, *19*, 2–21.
- Pinquart, M., Duberstein, P., & Lyness, J. (2007). Effects of psychotherapy and other behavioral interventions on clinically depressed older adults: A meta-analysis. *Aging and Mental Health*, *11*, 645-657.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385-401.

- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sheikh, J.I., & Yesavage, J.A. (1986). Geriatric Depression Scale: Recent evidence and development of a shorter version. *Clinical Gerontologist, 5*, 165-173.
- Spielberger, C.D., Gorsuch, R.L., & Lushene, R.E. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Templer, D.I. (1970). The construction and validity of a death anxiety scale. *Journal of General Psychology, 82*, 165-177.
- Webster, J.D., Bohlmeijer, E.T., & Westerhof, G.J. (2010). Mapping the future of reminiscence: A conceptual guide for research and practice. *Research on Aging, 32*, 527-564.
- Webster, J.D., & McCall, M.E. (1999). Reminiscence functions across adulthood: A replication and extension. *Journal of Adult Development, 6*, 73-85.
- Westerhof, G.J., Bohlmeijer, E.T., & Webster, J.D. (2010). Reminiscence and mental health: A review of recent progress in theory, research and interventions. *Aging & Society, 30*, 697-721.
- Woods, B., Spector, A., Jones, C., Orrell, M., & Davies, S. (2005). Reminiscence therapy for dementia. *Cochrane Database of Systematic Reviews, 18*(2).

Table 1. Average effects of reminiscence interventions at posttest and follow-up

Variable	<i>k</i>	<i>g</i>		95%-CI	<i>Z</i>	<i>Q</i>
Posttest						
Depression	92	.57	.44	.70	8.64***	367.32***
Mental health	29	.33	.16	.51	3.77***	64.29***
Positive well-being	101	.33	.23	.42	6.88***	258.23***
Life-satisfaction	55	.22	.09	.35	3.43***	116.19***
Self-esteem	39	.20	.07	.33	2.98**	67.18**
Positive affect	33	.41	.27	.54	5.86***	68.31***
Ego-integrity	10	.64	.22	1.06	2.99**	41.12***
Purpose in life	14	.48	.14	.82	2.73**	54.71***
Mastery	21	.40	.15	.65	3.16**	105.14***
Cognitive performance	28	.23	.11	.34	3.83***	32.90
Social integration	23	.31	.12	.50	3.23**	63.57***
Death preparation	5	.40	.09	.71	2.50*	3.44
Follow-up						
Depression	20	.50	.24	.76	3.76***	86.85***
Mental health	9	.39	.02	.77	2.06*	43.93***
Positive well-being	22	.32	.12	.52	3.14**	54.59**
Life-satisfaction	14	.36	.12	.60	2.91**	23.31*
Self-esteem	10	.26	-.00	.52	1.93	14.89
Positive affect	4	.22	-.04	.48	1.68	1.38
Ego-integrity	3	.98	.00	1.96	1.96*	13.08**
Purpose in life	3	.24	-.04	.53	1.67	.39
Mastery	6	.28	-.30	.86	.95	31.16***
Cognitive performance	11	.18	.01	.35	2.05*	8.34
Social integration	6	.15	-.25	.56	.74	14.75**
Death preparation	2	1.00	.04	1.96	2.05*	3.31

Note. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . *k*=number of treated subsamples; *g*=effect size (positive scores indicate improvements); 95%-*C.I.*=95% confidence interval of the effect size; *t*=test of significance of the effect size; *Q*=test of homogeneity of the effect size (significant values indicate heterogeneity).

Table 2. Influences of moderator variables on change in depressive symptoms and positive well-being at posttest

Variable	Depressive symptoms					Positive well-being						
	<i>k</i>	<i>g</i>	95%-CI	<i>Z</i>	<i>Q</i>	<i>k</i>	<i>g</i>	95%-CI	<i>Z</i>	<i>Q</i>		
Form of reminiscence					23.56***					13.57*		
Simple reminiscence	50	.52	.35	.68	6.13***	60.01	63	.24	.13	.36	4.21***	63.10
Life-review	27	.31	.09	.54	2.72**	19.36	32	.38	.21	.54	4.52***	30.88
Life-review therapy	15	1.28	.95	1.61	7.65***	13.81	5	1.02	.61	1.42	4.94***	8.13
Health conditions at pretest					32.64***							2.53
No	47	.31	.15	.48	3.75**	44.06	65	.28	.17	.40	4.76***	64.18
Depression	23	1.09	.85	1.33	8.73***	28.70	12	.48	.19	.77	3.21***	7.52
Dementia	12	.31	-.02	.65	1.86	4.67	14	.23	-.06	.51	1.55	12.13
Physical illness	10	.94	.56	1.31	4.85***	12.63	9	.61	.32	.91	4.05***	16.37*
Format					1.33							.65
Individual format	27	.69	.44	.94	5.42***	34.01	37	.36	.21	.52	4.55***	41.06
Group format	65	.52	.35	.68	6.17***	60.51	65	.31	.19	.44	4.93***	68.90
Number of sessions (median split)					.42							.39
≤ 7 sessions	39	.63	.42	.84	5.83***	39.97	47	.32	.18	.45	4.50***	46.11
> 7 sessions	51	.54	.35	.72	5.62***	52.56	51	.38	.24	.52	5.36***	53.56
Control condition <sup>1</sup>					1.57							5.12*
Active condition	37	.45	.23	.67	3.95***	41.73	46	.18	.04	.32	2.49*	33.43
Only tests/WLC	62	.61	.42	.80	6.84***	66.85	65	.39	.27	.52	6.06***	87.20
Age					2.84							.15
< 60 years	6	.68	.15	1.22	2.50*	5.08	11	.36	.08	.65	2.51*	6.62
60 – 80 years	59	.59	.42	.75	7.10***	66.11	54	.35	.22	.48	5.42***	65.90
> 80 years	22	.33	.06	.60	2.43*	18.18	28	.39	.22	.56	4.56***	22.59
Gender					1.44							.64

< 33% women	10	.71	.30	1.12	3.40***	8.53	12	.45	.15	.74	2.97**	13.55
33-66% women	19	.67	.37	.97	4.40***	14.59	18	.33	.08	.57	2.64**	8.27
> 66% women	52	.50	.32	.68	5.46***	60.45	59	.32	.19	.44	4.83***	67.40
Residence						1.83						1.46
Private home	42	.65	.45	.85	6.30***	43.64	41	.39	.24	.54	5.02***	33.92
Nursing home/residential care	43	.53	.33	.73	5.242***	47.75	47	.31	.17	.46	4.32***	59.70
Mixed forms	7	.32	-.15	.79	1.34	4.02	11	.19	-.11	.49	1.25	7.22
Publication status						.13						.20
Published	70	.58	.43	.74	7.28***	62.97	68	.35	.23	.46	5.79***	72.56
Unpublished	22	.52	.24	.81	3.56***	32.05	33	.30	.12	.47	3.32***	29.51
Study quality						2.62						3.72
Below median	33	.42	.19	.65	3.59***	26.40	38	.47	.30	.64	5.39***	39.94
Above median	59	.65	.82	1.21	7.68***	69.02	63	.27	.15	.38	4.47***	67.31

Notes. WLC = wait list control condition. <sup>1</sup> Separate effect sizes were computed in that analysis if the study included an active and a passive control condition. *k*=number of treated subsamples; *g*=effect size (positive scores indicate improvements); 95%-*C.I.*=95% confidence interval of the effect size; *t*=test of significance of the effect size; *Q*=test of homogeneity of the effect size. \* *p*<.05; \*\* *p*<.01; \*\*\* *p*<.001.



**Appendix I: Selected Characteristics of the Included Studies**

Authors	N <sub>reminisc.</sub>	N <sub>control</sub>	Dropout rate	Randomiz.	Age	% women	Health condition	Form	Setting	# sess.	f-u	Outcomes
Afonso & Bueno (2010), Afonso et al. (2011)	30	60		yes	76.0	83	depression	LRT	I	5		EI, D, PIL, PWB, SI
Akanuma et al. (2011)	12	12	0	yes	78.4	75	dementia	SR	G	12		COG, D, SI
Ando et al. (2006)	15	21	0	no	53.0	80	phys. illness	LR	I	4		D, PWB
Ando et al. (2010)	34	35	10.4	yes	56.0	56	phys. illness	LR	I	2		DP, EI, MH, PIL
Arean et al. (1993)	27	20	25	yes	66.7	70	depression	LRT	G	12		D, EI
Arkoff et al. (2004)	18	18		no	65.5	100	no	LR	G	14		MA, PIL, PWB, SI
Arkoff et al. (2006)	30	36		no	18.8	83	no	LR	G	14		MA, PIL, PWB, SI
Baines et al. (1987)	20	10		yes	82.1	93	dementia	SR	G	20	4	COG, MH, PWB
Bass & Greger (1996)	4	8	0	no	68.5		dementia	SR	G	8		D
Bevis (2008)	24	24	17.1	yes	84.8	76.5	dementia	SR	G	6		D, MH, PWB
Blohm (1998)	14	26	11.1	yes	85.7	93	no	SR	G	8		D, DP, EI, MH, PWB
Bohlmeijer et al. (2008)	57	36	12.2	no	63.9	61	depression	LRT	G	8		PIL
Bohlmeijer et al. (2009)	64	43	13	no	64.0	75	no	LR	G	8		D, SWE
Bramlett & Gueldner (1993)	34	41	7.4	no	71.5	81	no	SR	G	3	9	SWE
Brooker & Duce (2000)	25	25	7.4	no	81.9		dementia	SR	G	2		PWB
Bryant et al. (2005)	43	22		yes	20.0	63	no	SR	I	14		PWB
Burnside (1990)	24	19		no	75.6	100	no	SR	G	8		PWB
Chao et al. (2006)	10	8	16.7	no	79.6	25	physical	SR	G	9		D, PWB

							dependence						
Chen (2011)	20	20		yes			phys. illness	LR	I	3			EI, PWB
Chiang et al. (2008)	36	39		yes	78.3	0	no	LR	G	8	4		PWB
Chiang et al. (2010)	45	47	30.8	yes	77.4	0	no	SR	G	8	13		D, MH, SI
Cho (2008)	19	21	26.3	no	44.4	0	no	LR	G	6			D, MH, PIL
Christopher (1986)	33	32	38.5	yes	76.6	58.5	dementia	SR	G	32	12		COG, D
Cook (1991)	14	18	22.2	yes	81.3	41.5	no	SR	G	16			D, PWB
Cook (1998)	12	24		yes	82.3	100	depression	SR	G	16			PWB
Cooper (1982)	12	15	15.6	yes	72.5	96	no	SR	G	12			PWB
Dai et al. (2010)	62	67	3.2	yes	70	58	depression	LRT	G	6			PWB
Daleo (1999)	13	13	7.1	no	75	69	depression	SR	G	9			D
Davis (2004)	7	7	22.2	no	68.5		stroke	LR	I	3			D, PWB
Dehkordi et al. (2009)	32	32	8.9	yes			no	SR	G	8			D
de Medeiros et al. (2011)	36	15	2.5	yes	80.6	64	no	SR, LR	G	8	34		COG, D, PWB, SI
Emery (2002)	18	8	38.6	yes	84.0	84	no	SR	G	8	8		D, MH, PIL, PWB, SI
Erlen et al. (2001)	10	10	9	yes	43.7	20	phys. illness	LR	I	4	52		D, PIL, PWB
Erlich (1979)	12	24		yes			no	LR	G	4			PIL, PWB
Feng et al. (2010)	62	67	3.2	yes	70	58	depression	LRT	G	6			D
Ferguson (1980)	15	15		no	81.5	100	no	SR	G	24			PWB
Fielden (1990)	15	16		no	74.7	74	no	SR	G	9			MH, PWB, SI
Fischer (1989)	21	11	8.6	yes	71.5		no	SR	G	12			D
Fry (1983)	108	54		yes	79.6	59	depression	LRT, SR	I	5			D, PWB, SI, SWE
Fry & Barker (2002)	20	18	5	no	30.5	100	no	SR	G	6			D, PWB, SWE,

Georgmiller & Maloney (1984)	34	29	0	no	74.6		no	LR	G	7		DP
Goldwasser & Auerbach (1996)	20	16	8.3	yes	83.1	72	no	SR	I	1		PWB
Goldwasser et al. (1987)	9	18	11	yes	81.6	82	dementia	SR	G	10	?	COG, D
Gonçalves et al. (2009)	11	11		yes	80.7	100	depression	LRT	I	4		D, PWB
Gudex et al. (2010)	127	137	26.8	yes	82.3	68	mixed	SR	G, I		26	COG, MH, SWB
Gurm (1990)	18	17	5.4	no	82.6	78	no	SR	G	8		D
Haight (1988)	16	35	15	yes	76	78	mobility impairment	LR	I	6		PWB
Haight (1989)	6	6	0	yes	74	67	no	LR	I	6		PWB
Haight (1992)	10	12	19	yes	76	78	depression	LRT	I	6	52	PWB
Haight & Dias (1992)	150	38	21.7	no	78	77	no	LR, SR	G, I	7		D, PWB
Haight et al. (1995)	6	10	11.1	no	77	100	no	LR	I	6		PWB
Haight et al. (1998)	104	97	20-47.6	yes	79.9	69	no	LR	I	6	44	D, PWB
Haight et al. (2000)	26	26	79.7	yes	79.6	69	no	LR	I	6	156	D, PWB
Haight et al. (2003)	7	7		no		60	dementia	LR	I	8		C, PWB
Haight et al. (2006)	15	16	0	yes	79.5	81	dementia	LR	I	6		C, D, PWB, SI
Hanaoka & Okamura (2004)	40	37	4.8	yes	81.6	86	no	LR	G	8	12	D, PWB
Haslam et al. (2010)	53	20	29.3	yes		81	dementia	SR	G, I	6		C, PWB
Hedgpeth & Hale (1983)	20	20		yes	76.3	80	no	SR	I	1		C, D, MH, SWE
Hoffman (2003)	5	5	0	no	46	100	cancer	LR	I			D, DP, PIL, PWB
Hosenfeld (1989)	8	8	23.8	yes	77.9	100	no	SR	I	6		PWB
Hsieh et al. (2010)	29	32	12.1	yes	77.9	62.5	dementia	SR	G	12		D

Hsu & Wang (2009)	24	21	6.2	yes	77.9	74	no	SR	G	7		D
Hughston & Merriam (1982)	28	28	21.4	yes	68.2	76	no	SR	I	4		C
Ito et al. (2007)	17	28	15	yes	82.9	56	dementia	SR	G	13		C
Karimi et al. (2010)	19	10	25.6	yes	70.5	56	depression	LRT	G	6		D
King (1978)	4	14	40	yes	66	25	no	SR	G	16		PWB
Koffman (2000)	23	6	12	yes	72.4	50	no	LR	G	8		D, EI, MH, PWB
Korte et al. (in press)	99	102	7	yes	63.5	80	depression	LRT	G	8	13	D, MH
Lai et al. (2004)	36	65	14.9	yes	82.6	78	dementia	SR	I	6	6	PWB, SI
Lappe (1987)	42	41		yes	83.3	88	no	SR	G	15		PWB
LaTour (1987)	8	9		yes	79.5		no	SR	G	8		PWB
Ligon (2007)	29	30	1.7	yes	81.1	77	no	SR	I	3	10	PWB
Lin (2010)	17	17	10.5	yes	77.6	57	dementia	LR	G	20		C, D, MH
Liu et al. (2007)	12	14	29.4	yes	74.7	17	no	SR	G	10		D, PWB, SI
Mandel (1988)	22	25		yes	78.1	13.6	no	SR	G	16		D, MH, PWB
Mannelli (1999)	38	36	14.9	no	71.2	76	no	SR	G	10		D, PWB,
Mastel-Smith et al. (2007)	15	16	6.1	yes	70.1	81	no	SR	G	10		D
Masten-McGilvray (1990)	33	17	17.5	yes	77.2	64	no	LR, SR	G	8	8	PWB, SI, SWE
McMurdo & Rennie (1993)	29	20	10	no	79.3	81	no	SR	G	63		C, D, PWB
Miller (1985)	15	33	25	yes	77.8		no	LR	G	8	26	D, PIL, PWB
Mitchell (1989)	38	34	10	yes	75.6	71	no	SR	G	4		PWB
Mohammedzadeh et al. (2011)	18	18		yes			no	LRT	I			D
Morgan (2000), Morgan &	8	9	0	yes			dementia	LR	I	12	6	C, D, PWB

Woods (2010)												
Namazi & Haynes (1994)	5	10		no	81	100	dementia	SR	G	12		C
Nomura (2009)	40	40		yes	82.6	71	no	LR	I	5-6		D, PWB
Nomura & Hashimoto (2006)	22	26		yes	81.9	96	no	SR	G	8	12	D, EI, MH, PWB
Norris (2001)	25	48	6.4	yes	78.2	92	no	SR	I	4		PWB
Okumura et al. (2008)	8	8		no	84	100	dementia	SR	G	5		C, PWB
Parsons (1983)	41	47	22.9	yes	76.6	20.7	no	SR	G	5		PWB, SI
Pearson (2006)	13	12		yes	82	100	no	LR	G	6		D, EI, SWB
Pot et al. (2010), Westerhof et al. (2010)	79	74	4.8	yes	72.5	64.4	no	LRT	G	12	39	D, MH, PIL, PWB, SWE
Rattenbury (1993) study 1	76	101	25.5- 43.7	yes	83	70	no	SR	G	55		PWB
Rattenbury (1993) study 2	7	8	11.8	yes	67	50	cognitive impairment	SR	G	8		C, PWB, SI
Rattenbury & Stones (1989)	8	16	8	yes		85	no	SR	G	8		D, PWB
Reddin (2006)	26	11	19.6	yes	81	97	no	LR, SR	G	7		D, PWB
ReVille (1996)	40	80	20	yes	72.4	70	no	LR	I	6		D, PWB
Richeson & Thorson (2002)	150	224		no	70.4		no	SR	G	8		PWB
Rybarczyk & Auerbach (1990)	56	50	0	yes	65.7	0	phys. illness	LR, SR	I	1		MH, SWE
Rybarczyk et al. (1993)	72	34		yes	65	33	phys. illness	LR, SR	I	1		PWB, MH, SWE
Scates et al. (1985)	17	17	16	yes	75.1	64	no	SR	G	6		MH, PWB
Schafer et al. (1986)	128	57		no		73.5	no	SR	G, I	12		PWB, SI, SWE

Serrano et al. (2004)	20	23	14	yes	75.8	83	depression	LRT	I	4		D, PWB
Shellman et al. (2009)	19	37	0	yes	72.6	77	no	LR	I	8		D
Shi et al. (2007)	36	38		yes			depression	SR	G	6		D
Siviş et al. (2005)	5	5		no	68	60	no	SR	G	6		PWB
Steinhauser et al. (2008)	12	18	54	yes	62	46	phys. illness	SR	I	3	2	D, DP, MH
Stevens-Ratchford (1993)	12	12	0	yes	79.9	67	no	SR	G	6		D, PWB
Stinson & Kirk (2006)	10	8	16.6	yes	81.8	100	no	SR	G	12		D
Stinson et al. (2010)	22	25	12	yes	82.5	100	no	SR	G	12		D
Su et al. (in press)	49	44	3.9	yes	77.4	29	phys. illness	LR	G	73		C, D
Tabourne (1995)	16	17		no	63		dementia	SR	G	24		PWB
Tadaka et al. (2000)	11	10	8.3	yes	83.3	50	dementia	SR	G			COG
Tadaka & Kanagawa (2007)	28	27	6.6	yes	84.2	70	dementia	SR	G	8	26	C, D
Tatchell et al. (2003)	49	42	9.9	no	78	81	no	SR	I	5		MH, SI
Taylor-Price (1995)	17	17		yes	78.2	100	no	SR	G	12		D, PWB
Thorgrimsen et al. (2002)	7	4	9.1	yes	79.6	57	dementia	SR	G	18		C, PWB
Tourangeau (1988)	13	12	0	yes	78.4	76	no	SR	G	8		D
Vaughan & Kinnier (1996)	10	19	50.9	yes	39.5	4	phys. illness	LR	G	6		D, DP, PIL, PWB
Wang (2005)	25	23		yes	79.5	40	no	SR	I	17		D, PWB
Wang (2007)	51	51	5.9	yes	79.8	53	dementia	SR	G	8		C, D
Wang et al. (2005)	46	48	13	yes	75.6	45	no	SR	I	17		D, PWB
Wang et al. (2009)	38	39	10.5	yes	79.3	47	dementia	SR	G	8		MH
Watt & Cappeliez (1996)	21	5	35	yes	66.4	54	depression	LRT	G	6		D
Watt & Cappeliez (2000)	27	13	35	yes	66.8	54	depression	LRT	G	6	13	D

Weiss (1994)	20	8	30	yes			depression	LRT	G	6	PWB
Wilson (2006)	30	15		no	77.3	76	depression	SR, LRT	I	24	D
Wu et al. (2011)	35	39	4	no	81.3	0	phys. illness	SR	G	12	D, PWB
Youssef (1990)	21	21	39	yes	65.7	100	no	SR	G	6	D

Notes.  $N_{\text{reminisc}}/N_{\text{control}}$ =number of completers in experimental and control condition. C=cognitive performance, D=depression, DP=death preparation, EI=ego integrity, G=group format, I=individual (one-to-one) format, LR=life-review, LRT=life review therapy, MA=mastery, MH=mental health (other than depression), PIL=purpose in life, PWB=positive psychological well-being, SI=social integration, SR=simple reminiscence. # sess.=number of sessions, f-u=follow-up interval (in weeks). Age and percentage of women refers to the reminiscence condition.

## Appendix II: Studies Included in the Meta-Analysis

- Afonso, R., & Bueno, B. (2010). Reminiscencia con distintos tipos de recuerdos autobiográficos: efectos sobre la reducción de la sintomatología depresiva en la vejez [Reminiscence with different types of autobiographical memories: Effects on the reduction of depressive symptomatology in old age]. *Psicothema*, 22, 213-220.
- Afonso, R., Bueno, B., Loureiro, M.J., & Pereira, H. (2011). Reminiscence, psychological well-being, and ego Integrity in Portuguese elderly people. *Educational Gerontology*, 37, 1063-1080.
- Akanuma, K., Meguro, K., Meguro, M., Sasaki, E., Chiba, K., Ishii, H., & Tanaka, N. (2011). Improved social interaction and increased anterior cingulate metabolism after group reminiscence with reality orientation approach for vascular dementia. *Psychiatry Research: Neuroimaging*, 192, 183-187.
- Ando, M., Morita, T., Akechi, T., & Okamoto, T. (2010). Efficacy of short-term life-review on the spiritual well-being of terminally ill cancer patients. *Journal of Pain & Symptom Management*, 39, 993-1002.
- Ando, M., Tsuda, A., & Moorey, S. (2006). Preliminary study of reminiscence therapy on depression and self-esteem in cancer patients. *Psychological Reports*, 98, 339-346.
- Arean, P.A., Perri, M.G., Nezu, A.M., Schein, R.L., Christopher, F., & Joseph, T.X. (1993). Comparative effectiveness of social problem-solving therapy and reminiscence therapy as treatment for depression in older adults. *Journal of Consulting and Clinical Psychology*, 61, 1003-1010.
- Arkoff, A., Meredith, G.M., Bailey, E., Cheang, M., Dubanoski, R.A., Griffin, P.B., & Niyekawa, A. M. (2006). Life review during college freshmen year. *College Student Journal*, 40, 263-269.
- Arkoff, A., Meredith, G.M., & Dubanoski, J. P. (2004). Gains in well-being achieved through retrospective proactive life review by independent older women. *Journal of Humanistic Psychology*, 44, 204-214.
- Baines, S., Saxby, P., & Ehlert, K. (1987). Reality orientation and reminiscence therapy: A controlled cross-over study of elderly confused people. *British Journal of Psychiatry*, 151, 222-231.
- Bass, B.A., & Greger, M. (1996). Stimulus complexity in reminiscence therapy and scores on the Beck Depression Inventory of a small group of nursing-home residents. *Perceptual and Motor Skills*, 82, 973-974.
- Bevis, A. (2008). *Memory, identity and well-being: Preserving selfhood in dementia*. Doctoral thesis, University of Exeter.
- Blohm, K.A. (1998). *The use of a group reminiscence intervention with newly admitted nursing home residents*. Unpublished dissertation, California School of Professional Psychology, Alamada, CA.
- Bohlmeijer, E., Kramer, J., Smit, F., Onrust, S., & van Marwijk, H. (2009). The effects of integrative reminiscence on depressive symptomatology and mastery of older adults. *Community Mental Health Journal*, 45, 476-484.
- Bohlmeijer, E.T., Westerhof, G.J., & de Jong, M.E. (2008). The effects of integrative reminiscence on meaning in life: Results of a quasi-experimental study. *Aging & Mental Health*, 12, 639-646.
- Bramlett, M.H., & Gueldner, S.H. (1993). Reminiscence: A viable option to enhance power in elders. *Clinical Nurse Specialist*, 7(2), 68-74.



- Brooker, D., & Duce, L. (2000). Wellbeing and activity in dementia: a comparison of group reminiscence therapy, structured goal-directed group activity and unstructured time. *Aging & Mental Health, 4*, 354- 358.
- Bryant, F.B., Smart, C.M., & King, S.P. (2005). Using the past to enhance the present: Boosting happiness through positive reminiscence. *Journal of Happiness Studies, 6*, 227-260.
- Burnside, I.M. (1990). *The effect of reminiscence groups on fatigue, affect and life satisfaction in older women*. Unpublished dissertation, University of Texas, Austin, TX.
- Chao, S.Y., Liu, H.-Y., Wu, C.-Y., Jin, S.-F., Chu, T.-L., Huang, T.-S., & Clark, M.J. (2006). The effects of group reminiscence therapy on depression, self esteem, and life satisfaction of elderly nursing home residents. *Journal of Nursing Research, 14*, 36-45.
- Chen, S.H. (2011). *Effectiveness of life review in increasing self-transcendence, hope, and spiritual well-being of patients with cancer* [in Chinese]. Unpublished master thesis. Available online at [http://ethesys.fy.edu.tw/ETD-db/ETD-search-c/view\\_etd?URN=etd-0502111-095037](http://ethesys.fy.edu.tw/ETD-db/ETD-search-c/view_etd?URN=etd-0502111-095037).
- Chiang, K.-J., Chu, H., Chang, H.-J., Chung, M.-H., Chen, C.-H., Chiou, H.-Y., & Chou, K.-R. (2010). The effects of reminiscence therapy on psychological well-being, depression, and loneliness among the institutionalized aged. *International Journal of Geriatric Psychiatry, 25*, 380-388.
- Chiang, K.-J., Lu, R.-B., Chu, H., Chang, Y.-C., & Chou, K.-R. (2008). Evaluation of the effect of a life review group program on self-esteem and life satisfaction in the elderly. *International Journal of Geriatric Psychiatry, 23*, 7-10.
- Cho, S. (2008). Effects of logo-autobiography program on meaning in life and mental health in the wives of alcoholics. *Asian Nursing Research, 2*, 129-139.
- Christopher, F. (1986). *The effects of group psychotherapy on mental status, social adaptation, and depression in elderly persons in long-term care with age-onset organic brain syndrome*. Unpublished doctoral dissertation, New York University.
- Cook, E.A. (1991). The effects of reminiscence on psychological measures of ego integrity in elderly nursing home residents. *Archives of Psychiatric Nursing, 5*, 292–298.
- Cook, E.A. (1998). Effects of reminiscence on life satisfaction of elderly female nursing home residents. *Health Care for Women International, 19*, 109–118.
- Cooper, F.W. (1982). *The effects of two group approaches on self-esteem among the elderly*. Unpublished dissertation, Kent: Kent State University.
- Dai, B., Gao, J., & Qun, Y. (2010). Study on intervention effect of group reminiscence therapy on self-esteem and emotional balance of the elderly in communities [in Chinese]. *Chinese Nursing Research, 24*, 1704-1707.
- Daleo D.V. (1999). *The effects of structured reminiscent group therapy with depressed elderly in a nursing home context*. Unpublished dissertation. The California School of Professional Psychology: San Diego, CA.
- Davis, M.C. (2004). Life review therapy as an intervention to manage depression and enhance life satisfaction in individuals with right hemisphere cerebral vascular accidents. *Issues in Mental Health Nursing, 25*, 503–515.
- Dehkordi, D., Dehkordi, H., Nekuee, A., & Fruzande, R. (2009). The effect of group reminiscence therapy on depression of elderly [in Farsi]. *SID, 58-64*.
- de Medeiros, K., Mosby, A., Hanley, K.B., Pedraza, M.S., & Brandt, J. (2011). A randomized clinical trial of a writing workshop intervention to improve autobiographical memory

- and well-being in older adults. *International Journal of Geriatric Psychiatry*, 26, 803-811.
- Emery, E.E. (2002). *Living history-spiritually . . . or not? A comparison of conventional and spiritually integrated reminiscence groups*. Unpublished doctoral dissertation, Bowling Green State University, Bowling Green, OH.
- Erlen, J.A., Mellors, M.P., Sereika, S.M., & Cook, C. (2001). The use of life review to enhance quality of life of people living with AIDS: A feasibility study. *Quality of Life Research*, 10, 453-464.
- Erlich, A.B. (1980). *The life review and the elderly: A study in self-concept. Recognition and re-cognition*. Unpublished dissertation, California School of Professional Psychology.
- Feng, J., Gao, Z., Yuan, Z., Xi, G.X., & He, G.P. (2010). Effects of group reminiscence therapy on depressive symptoms of elderly in communities [in Chinese]. *Chinese General Practice*, 13, 422-424.
- Ferguson, J.D. (1980). *Reminiscence counseling to increase psychological well-being of elderly women in nursing home facilities*. University of South Carolina, Columbia, SC.
- Fielden, M.A. (1990). Reminiscence as a therapeutic intervention with sheltered housing residents: A comparative study. *British Journal of Social Work*, 20, 21-44.
- Fischer, S.M. (1989). *The efficacy of reminiscence group therapy with an elderly population*. Memphis State University, Memphis, TN.
- Fry, P.S. (1983). Structured and unstructured reminiscence training and depression among the elderly. *Clinical Gerontologist*, 1(3), 15-37.
- Fry, P.S., & Barker, L.A. (2002). Female survivors of abuse and violence: The influence of storytelling reminiscence on perceptions of self-efficacy, ego-strength, and self-esteem. In J.D. Webster, & B.K. Haight (Eds.), *Critical advances in reminiscence work: From theory to application* (pp. 197-217). New York: Springer.
- Georgmiller, R., & Maloney, H.N. (1984). Group life review and denial of death. *Clinical Gerontologist*, 2, 37-49.
- Goldwasser, A.N., & Auerbach, S. M. (1996). Audience-based reminiscence therapy intervention: Effects on the morale and attitudes of nursing home residents and staff. *Journal of Mental Health and Aging*, 2, 101-114.
- Goldwasser, A. N., Auerbach, S. M., & Harkins, S. W. (1987). Cognitive, affective and behavioral effects of reminiscence group therapy on demented elderly. *International Journal of Aging & Human Development*, 25, 209-222
- Gonçalves, D.C., Albuquerque, P.B., & Paul C. (2009). Life review with older women: An intervention to reduce depression and improve autobiographical memory. *Aging-Clinical & Experimental Research*, 21, 369-371.
- Gudex, C., Horsted, C., Jensen, A.M., Kjer, M., & Sørensen, J. (2010). Consequences from use of reminiscence - a randomised intervention study in ten Danish nursing homes. *BMC Geriatrics*; 10, 33.
- Gurm, B.K. (1990). *Life review and the institutionalized elderly*. Unpublished thesis, University of British Columbia, Vancouver.
- Haight, B.K. (1988). The therapeutic role of a structured life review process in homebound elderly subjects. *Journals of Gerontology: Psychological Sciences*, 43, P40-44.
- Haight, B.K. (1989). Life review: A report on the effectiveness of a structured life-review process: Part II. *Journal of Religion and Aging*, 5(3), 31-41.
- Haight, B.K. (1992). Long-term effects of a structured life review process. *Journals of Gerontology: Psychological Science*, 47, P312-315.

- Haight, B.K., Bachman, D.L., Hendrix, S., Wagner, M.T., Meeks, A., & Johnson, J. (2003). Life review: Treating the dyadic family unit with dementia. *Clinical Psychology & Psychotherapy, 10*, 165-174.
- Haight, B.K., Coleman, P., & Lord, K. (1995). The linchpins of a successful life review: Structure, evaluation, and individuality. In B. Haight, & J. Webster (Eds.), *The art and science of reminiscing: Theory, research, methods, and applications* (pp. 179-192). Washington, DC: Taylor & Francis.
- Haight, B.K., & Dias, J.K. (1992). Examining key variables in selected reminiscing modalities. *International Psychogeriatrics, 4* (Suppl.2), 279-290.
- Haight, B.K., Gibson, F., & Michel, Y. (2006). The Northern Ireland life review/life storybook project for people with dementia. *Alzheimer's & Dementia, 2*, 56-58.
- Haight, B.K., Michel, Y., & Hendrix, S. (1998). Life-review: Preventing despair in newly relocated nursing home residents: Short and long-term effects. *International Journal of Aging & Human Development, 47*, 119-142.
- Haight, B.K., Michel, Y., & Hendrix, S. (2000). The extended effects of the life review in nursing home residents. *International Journal of Aging and Human Development, 50*, 151-168.
- Hanaoka, H., & Okamura, H. (2004). Study on effects of life review activities on the quality of life of the elderly: A randomized controlled trial. *Psychotherapy and Psychosomatics, 73*, 302-311.
- Haslam, C., Haslam, S.A., Jetten, J., Bevins, A., Ravenscroft, S., & Tonks, J. (2010). The social treatment: The benefits of group interventions in residential care settings. *Psychology and Aging, 25*, 157-167.
- Hedgpeth, B.E., & Hale, W.D. (1983). Effect of a positive reminiscing intervention on affect, expectancy, and performance. *Psychological Reports, 53*, 867-870.
- Hoffman, N. (2003). *Subjective well-being before and after a life review in women with cancer*. Unpublished dissertation, California Institute of Integral Studies, San Francisco, CA.
- Hosenfeld, C.A. (1989). *The effects of one-to-one reminiscence on the subjective wellbeing of older persons*. Unpublished Dissertation. Ohio University.
- Hsieh, C.J., Chang, C., Su, S.F., Hsiao, Y.L., Shih, Y.W., Han, W.-H., & Lin, C.C. (2010). Reminiscence group therapy on depression and apathy in nursing home residents with mild-to-moderate dementia. *Journal of Experimental and Clinical Medicine, 2*, 72-78.
- Hsu, Y.C., & Wang, J.-J. (2009). Physical, affective, and behavioral effects of group reminiscence on depressed institutionalized elders in Taiwan. *Nursing Research, 58*, 294-299.
- Hughston, G.A., & Merriam, S.B. (1982). Reminiscence: A nonformal technique for improving cognitive functioning in the aged. *International Journal of Aging and Human Development, 15*, 139-149.
- Ito, T., Meguro, K., Akanuma, K., Ishii, H., & Mori, E. (2007). A randomized controlled trial of the group reminiscence approach in patients with vascular dementia. *Dementia and Geriatric Cognitive Disorders, 24*, 48-54.
- Karimi, H., Dolatshahee, B., Momeni, K., Khodabakhshi, A., Rezaei, M., & Kamrani, A.A. (2010). Effectiveness of integrative and instrumental reminiscence therapies on depression symptoms reduction in institutionalized older adults: An empirical study. *Aging & Mental Health, 14*, 881-887.
- King, K.S. (1978). *Group reminiscing experience with aging people*. Unpublished dissertation, University of Utah, Salt Lake City, UT.

- Koffman, S.D. (2000). *Structured reminiscence and Gestalt life review: Group treatment of adults for late life adjustment*. New York, London: Garland.
- Korte, J., Bohlmeier, E.T., Cappeliez, P., Smit, F., & Westerhof, G. (in press). Life review therapy for older adults with moderate depressive symptomatology: a pragmatic randomized controlled trial. *Psychological Medicine*. Lai, C. K., Chi, I., & Kayser-Jones, J. (2004). A randomized controlled trial of a specific reminiscence approach to promote the well-being of nursing home residents with dementia. *International Psychogeriatrics*, *16*, 33–44.
- Lappe, J.M. (1987). Reminiscing: The life review therapy. *Journal of Gerontological Nursing*, *13*, 12–16.
- LaTour, F.W. (1987). *The effect of reminiscence therapy on self-esteem and anxiety in an aged population*. Unpublished dissertation, California School of Professional Psychology, Los Angeles, CA.
- Ligon, M.B. (2007). *Life satisfaction of elders through oral history: The narrator's perspective*. Unpublished dissertation, Virginia Commonwealth University, Richmond, VI.
- Lin, L.J. (2010). *Impact of the revised life-review program on quality of life for residents with Alzheimer's disease in South Taiwan's long-term care facilities*. Unpublished dissertation, University of Minnesota.
- Liu, S.-J., Lin, C.-J., Chen, J.-M. & Huang, X.Y. (2007). The effects of reminiscence group therapy on depression, self-esteem, loneliness and life-satisfaction of elderly people living alone. *Taiwan Journal of Medicine*, *12*, 133-142.
- Mandel, D. (1988). *The therapeutic effects of highly and moderately structured reminiscence group interventions on measures of anxiety, depression and self-esteem in an institutionalized geriatric population*. Unpublished dissertation, St. John's University, Jamaica, NY.
- Mannelli, D.F. (1999). *The effects of scripture-based group reminiscence upon the psychological well-being of Roman Catholic elderly*. Unpublished dissertation, Chicago School of Professional Psychology, Chicago, IL.
- Mastel-Smith, B. A., McFarlane, J., Sierpina, M., Malecha, A., & Haile, B. (2007). Improving depressive symptoms in community-dwelling older adults: A psychosocial intervention using life review and writing. *Journal of Gerontological Nursing*, *33*, 13-19.
- Masten-McGilvray, V. L. (1990). *The effect of group life review therapy on adaptation in the elderly: A comparison of the relative efficacy of life review and reminiscence*. Unpublished dissertation, University of Maryland Baltimore County, Department of Psychology.
- McMurdo, M.E.T., & Rennie, L. (1993). A controlled trial of exercise by residents of old people's homes. *Age and Ageing*, *22*, 11-15.
- Miller, H.M. (1986). *Life review as an intervention: A comparison of a systematically induced life review and non-specific factor groups with elderly residents*. Unpublished dissertation, University of Kansas.
- Mitchell, L.A. (1989). *The effect of reminiscing workshops on life satisfaction for socially-isolated senior citizens residing in public housing*. Unpublished dissertation, Oklahoma State University, Stillwater, OK.
- Mohammadzadeh, A., Dolatshahy, B., & Mohammadjhani, P. (2011). The effects of integrative reminiscence therapy on signs of depression in the elderly [in Farsi]. *Iranian Journal of Ageing*, *6*(19).



- Morgan, S. (2000). *The impact of a structured life review process on people with memory problems living in care homes*. DCLinPsy thesis, University of Wales Bangor.
- Morgan, S., & Woods, R.T. (2010). Life review with people with dementia in care homes: A preliminary randomized controlled trial. *Non-pharmacological Therapies in Dementia, 1*, 43-60.
- Namazi, K.H., & Haynes, S.R. (1994). Sensory stimuli reminiscence for patients with Alzheimer's disease. *Clinical Gerontologist, 14*, 29-46.
- Nomura, N. (2009). Individual reminiscence therapy improves self-esteem for Japanese community-dwelling older adults [in Japanese]. *Japanese Journal of Psychology, 80*, 42-47
- Nomura, N., & Hashimoto, T. (2006). Group reminiscence therapy for Japanese elderly community [in Japanese]. *Japanese Journal of Psychology, 77*, 32-39.
- Norris, T.L.P. (2001). *The effectiveness and perceived effectiveness of simple reminiscence therapy involving photographic prompts for determining life satisfaction in noninstitutionalized elderly persons*. Unpublished dissertation, Louisiana State University Health Sciences Center School of Nursing.
- Okumura, Y., Tanomukai, S., & Asada, R. (2008). Effects of short-term reminiscence therapy on elderly with dementia: A comparison with everyday conversation approaches. *Psychogeriatrics, 8*, 124-133.
- Parsons, W.A. (1983). *Reminiscence group therapy with older persons: A field experiment*. Unpublished dissertation, University of Florida.
- Pearson, L. (2006). *The effect of integrative reminiscence on depression, ego integrity and personal mastery in the elderly*. Unpublished dissertation. California School of Professional Psychology, San Francisco, CA.
- Pot, A.M., Bohlmeijer, E.T., Onrust, S., Melenhorst, A.-S., Veerbeek, M., & De Vries, W. (2010). The impact of life review on depression in older adults: A randomized controlled trial. *International Psychogeriatrics, 22*, 572-581.
- Rattenbury, C.R. (1993). *A large-scale longitudinal study of the therapeutic value of reminiscence intervention with elderly institutionalized adults*. Unpublished dissertation, Memorial University of Newfoundland, St John's.
- Rattenbury, C., & Stones, M.J. (1989). A controlled evaluation of reminiscence and current topics discussion groups in a nursing home context. *Gerontologist, 29*, 768-771.
- Reddin, M. (2006). *Structured life review as a therapeutic process for elderly nursing home residents*. Unpublished doctoral dissertation, Indiana University, IN.
- ReVille, S.M. (1996). *The effect of life review on psychosocial development in mature adults*. Unpublished dissertation. The California School of Professional Psychology, San Diego, CA.
- Richeson, N., & Thorson, J.A. (2002). The effect of autobiographical writing on the subjective well-being of older adults. *North American Journal of Psychology, 4*, 395-404.
- Rybarczyk, B.D., & Auerbach, S.M. (1990). Reminiscence interviews as stress management interventions for older patients undergoing surgery. *The Gerontologist, 30*, 522-528.
- Rybarczyk, B., Auerbach, S., Jorn, M.L., Lofland, K.R., & Perlman, M.I. (1993). Using volunteers and reminiscence to help older adults to cope with an invasive medical procedure: A follow-up study. *Behavior, Health, & Aging, 3*, 147-162.
- Scates, S.K.H., Randolph, D.L., Gutsch, K.U., & Knight, H.V. (1985). Effects of cognitive-behavioral, reminiscence, and activity treatments on life satisfaction and anxiety in the elderly. *International Journal of Aging & Human Development, 22*, 141-146.

- Schafer, D., Berghorn, F., Holmes, D., & Quadagno, J. (1986). The effects of reminiscing on the perceived control and social relations of institutionalized elderly. *Activities, Adaptation, and Aging*, 8, 95-110.
- Serrano, J. P., Latorre, J. M., Gatz, M., & Montanes, J. (2004). Life review therapy using autobiographical retrieval practice for older adults with depressive symptomatology. *Psychology and Aging*, 19, 272-277.
- Shellman, J.M., Mokel, M., & Hewitt, N. (2009). The effects of integrative reminiscence on depressive symptoms in older African Americans. *Western Journal of Nursing Research*, 31, 772-786.
- Shi, L., Wang, H., & Zhao, J. (2007). Effect of reminiscence therapy on depressive symptoms of older institutionalized adults. *Journal of Nursing Science*, 9
- Siviş, R. (2005). *The effect of a reminiscence group counselling program on the life satisfaction of older adults*. Unpublished dissertation, Middle east Technical University, Turkey.
- Steinhauser, K.E., Alexander, S.C., Byock, I.R., George, L.K., Olsen, M.K., & Tulsky, J.A. (2008). Do preparation and life completion discussions improve functioning and quality of life in seriously ill patients? Pilot randomized control trial. *Journal of Palliative Medicine*, 11, 1234-1240.
- Stevens-Ratchford, R.G. (1993). The effect of life review reminiscence activities on depression and self-esteem in older adults. *American Journal of Occupational Therapy*, 47, 413-420.
- Stinson, C.K., & Kirk, E. (2006). Structured reminiscence: An intervention to decrease depression and increase self transcendence in older women. *Journal of Clinical Nursing*, 15, 208-218.
- Stinson, C.K., Young, E.A., Kirk, E., & Walker, R. (2010). Use of a structured reminiscence protocol to decrease depression in older women. *Journal of Psychiatric and Mental Health Nursing*, 17, 665-673.
- Tabourne, C.E. (1995). The effects of a life review program on disorientation, social interaction and self-esteem of nursing home residents. *International Journal of Aging and Human Development*, 41, 251-266.
- Tadaka, E., Kanagawa, K., Tachiura, K., & Wada, M. (2000). Effects of care program of reminiscence on community elderly with dementia [in Japanese]. *Journal of the Japan Academy of Gerontological Nursing*, 5, 96-106.
- Tadaka, E., & Kanagawa, K. (2007). Effects of reminiscence group in elderly people with Alzheimer disease and vascular dementia in a community setting. *Geriatrics and Gerontology International*, 7, 167-173.
- Tatchell, T., Jordan, T. R., Waite, P. J., & Tatchell, R. H. (2003). Transmissive reminiscence therapy with college students and institutionalized senior adults. *Journal of Intergenerational Relationships*, 1(4), 35-52.
- Taylor-Price, C. (1995). *The efficacy of structured reminiscence group psychotherapy as an intervention to decrease depression and increase psychological well-being in female nursing home residents*. Unpublished dissertation, Mississippi State University.
- Thorgrimsen, L., Schweitzer, P., & Orrell, M. (2002). Evaluating reminiscence for people with dementia: A pilot study. *Arts in Psychotherapy*, 29(2), 93-97.
- Tourangeau, A. (1988). Group reminiscence therapy as a nursing intervention: an experimental study. Part one. *AARN Newsletter*, 44, 17-18.
- Vaughan, S.M., & Kinnier, R.T. (1996). Psychological effects of a life review intervention on persons with HIV disease. *Journal of Counseling & Development*, 75, 115-123.

- Wang, J.-J. (2005). The effects of reminiscence on depressive symptoms and mood status of older institutionalized adults in Taiwan. *International Journal of Geriatric Psychiatry, 20*, 57–62.
- Wang, J.-J. (2007). Group reminiscence therapy for cognitive and affective function of demented elderly in Taiwan. *International Journal of Geriatric Psychiatry, 22*, 1235-1240.
- Wang, J.-J., Hsu, Y.C., & Cheng, S.F. (2005). The effects of reminiscence in promoting mental health of Taiwanese elderly. *International Journal of Nursing Studies, 42*, 31-36.
- Wang, J.-J., Yen, M., & OuYang, W.-C. (2009). Group reminiscence intervention in Taiwanese elders with dementia. *Archives of Gerontology and Geriatrics, 49*, 227-232.
- Watt, L.M., & Cappeliez, P. (1996). Efficacité de la rétrospective de vie intégrative et de la rétrospective de vie instrumentale en tant qu'interventions pour des personnes âgées dépressives [The effectiveness of integrative life review and instrumental life review in the treatment of old adults with depression]. *Revue Québécoise de Psychologie, 17*, 101-114.
- Watt, L.M., & Cappeliez, P. (2000). Integrative and instrumental reminiscence therapies for depression in older adults: Interventions strategies and treatment effectiveness. *Aging and Mental Health, 4*, 166–177.
- Weiss, J.C. (1994). Group therapy with older adults in long-term care settings: research and clinical cautions and recommendations. *Journal for Specialists in Group Work, 19*, 22–29.
- Westerhof, G.J., Bohlmeijer, E.T., van Beljouw, I.M., & Pot, A. M. (2010). Improvement in personal meaning mediates the effects of a life review intervention on depressive symptoms in a randomized controlled trial. *The Gerontologist, 50*, 541-549.
- Wilson, L.A. (2006). *A comparison of the effects of reminiscence therapy and transmissive reminiscence therapy on levels of depression in nursing home residents*. Unpublished dissertation, Capella University.
- Wu, L.F. (2011). Group integrative reminiscence therapy on self-esteem, life satisfaction and depressive symptoms in institutionalised older veterans. *Journal of Clinical Nursing, 20*, 2195-2203.
- Youssef, F.A. (1990). The impact of group reminiscence counselling on a depressed elderly population. *Nurse Practitioner 15*(4), 34–37.