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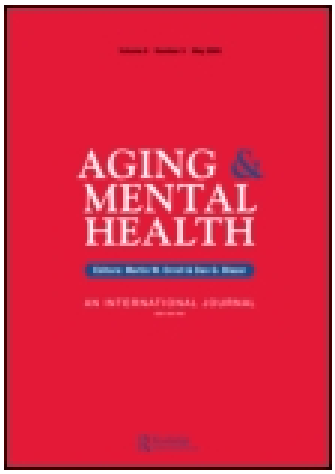

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Post-traumatic stress disorder in older adults: a systematic review of the psychotherapy treatment literature

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Post-traumatic stress disorder in older adults: a systematic review of the psychotherapy treatment literature

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Objectives: Older adults represent the fastest growing segment of the US and industrialized populations. However, older adults have generally not been included in randomized clinical trials of psychotherapy for post-traumatic stress disorder (PTSD). This review examined reports of psychological treatment for trauma-related problems, primarily PTSD, in studies with samples of at least 50% adults aged 55 and older using standardized measures.
Methods: A systematic review of the literature was conducted on psychotherapy for PTSD with older adults using PubMed, Medline, PsychInfo, CINAHL, PILOTS, and Google Scholar.
Results: A total of 42 studies were retrieved for full review; 22 were excluded because they did not provide at least one outcome measure or results were not reported by age in the case of mixed-age samples. Of the 20 studies that met review criteria, there were: 13 case studies or series, three uncontrolled pilot studies, two randomized clinical trials, one non-randomized concurrent control study and one *post hoc* effectiveness study. Significant methodological limitations in the current older adult PTSD treatment outcome literature were found reducing its internal validity and generalizability, including non-randomized research designs, lack of comparison conditions and small sample sizes.
Conclusion: Select evidence-based interventions validated in younger and middle-aged populations appear acceptable and efficacious with older adults. There are few treatment studies on subsets of the older adult population including cultural and ethnic minorities, women, the oldest old (over 85), and those who are cognitively impaired. Implications for clinical practice and future research directions are discussed.

Keywords: geriatric; systematic review; psychotherapy; PTSD

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Introduction

Older adults continue to be the fastest growing section of the US population and among many international industrialized countries (United Nations, 2009; U.S. Census Bureau, 2012). In the USA, the number of older adults is predicted to rise to more than 70 million by 2030 making this age group 20% of the total US population (U.S. Census Bureau, 2012). Furthermore, by 2060, 44% of older individuals are expected to identify as one or more ethnic minorities. Such an increase in the number, proportion and heterogeneity of the older adult population is likely to correspond to a growing need for specialized mental health care addressing the unique expression, assessment and treatment of mental health problems in later life (Karel, Gatz, & Smyer, 2012).

One psychiatric disorder requiring more concentrated research into the prevalence, symptomology, assessment and treatment in aging populations is post-traumatic stress disorder (PTSD). In brief, the Diagnostic and Statistical Manual for Mental Disorder-5 (American Psychiatric Association, 2013) criteria for PTSD are as follows: Criterion A: the person was exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence (e.g., direct exposure or indirectly, by learning that a close relative or close friend was exposed to trauma); Criterion B: intrusion (e.g., recurrent, involuntary, and intrusive memories or traumatic nightmares); Criterion C: avoidance (e.g., avoidance of trauma-related thoughts or feelings or trauma-related external reminders); Criterion D: negative alterations in cognitions and mood (e.g., persistent negative beliefs and expectations about oneself or the world); and Criterion E: alterations in arousal and reactivity (e.g., hypervigilance or exaggerated startle response).

In the general population, the rate of lifetime exposure to potentially traumatic events among older adults is between 74.2 and 96.1% (de Vries & Olff, 2009). Of course, not all older adults exposed to these events will develop PTSD. In a large epidemiological study in the USA, Pietrzak, Goldstein, Southwick, and Grant (2011) estimated a 6.5% rate for PTSD in older adults, a rate that is lower than the typical 8%–10% rate for younger adults (Kessler et al., 2005). Epidemiological investigations of community-dwelling adults outside the USA show decreasing rates of PTSD with age or no differences in rates among young, middle-aged and older adults (e.g., Creamer, Burgess, & McFarlane, 2001; de Vries & Olff, 2009). Lower prevalence rates of PTSD in older adults may be confounded by a number of factors including the tendency of older adults to express psychological difficulties as somatic complaints and generational reluctance to admit trauma or trauma-related symptoms due to perceived stigma (Thorp, Sones, & Cook, 2011).

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Assessment and treatment of PTSD can be challenging in older adults due to cognitive or sensory decline and comorbid mental and physical disorders (Thorp et al., 2011). Misattribution of trauma-related symptoms on the part of older patients or their providers may lead to inadequate treatment plans or administration of poorly focused or inappropriate treatment (Allers, Benjack, & Allers, 1992). Additionally, PTSD comorbidity may interfere with the treatment of other mental health disorders in this population (Hegel et al., 2005).

Cognitive-behavioral therapies (CBTs), namely Prolonged Exposure (PE; Foa, Hembree, & Rothbaum, 2007), Cognitive Processing Therapy (CPT; Resick & Schnicke, 1993) and Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 2001), are considered evidence-based psychotherapies for PTSD in numerous guidelines developed across three continents (North America, Europe and Australia; Forbes et al., 2010). All of these treatments are trauma-focused meaning that they involve the processing of traumatic material. In brief, PE exposes patients to trauma-related situations that are objectively safe but avoided due to trauma-related distress (in vivo exposure) and to memories of the traumatic event through repeated recounting of the details of the most disturbing event (imaginal exposure). CPT assists patients by examining the relationship between unhealthy and distorted thinking patterns related to trauma, and teaching healthier adaptive ways of thinking. EMDR works to integrate trauma memories and associated stimuli by asking patients to recall trauma-related images while receiving one of several types of bilateral sensory input (e.g., side to side eye movements).

Although these three CBT interventions have been found to be efficacious in younger and middle adults, older adults appear to be excluded from the majority of these randomized controlled trials (RCTs) and thus generalizability of findings to this population is questionable. Including a sufficient number of older adults in psychotherapy outcome studies or conducting research solely in this population is important for a number of reasons. For instance, developmental issues relevant to the aged such as retirement or death of a spouse and other challenges such as cognitive deterioration or physical limitations may impact treatment engagement, adherence, delivery and outcome.

The goal of this paper was to systematically review the literature on the psychological treatment of trauma-related symptoms and PTSD in later life. In addition to summarizing the current state of the treatment literature for PTSD in older adult populations, this review identifies gaps in the literature, provides direction for future research and makes recommendations for current clinical practice.

Methods

A systematic literature review was conducted using PubMed, Medline, PsychInfo, PILOTS, Google Scholar and CINAHL to find peer-reviewed articles on psychotherapy for older adults with trauma-related issues. Because there appeared to be a relative dearth of empirical research on this topic, we used the following broad search terms, 'geriatric, old age, aged,' 'treatment' and 'trauma or PTSD.' Given the anticipated scarcity of studies, particularly controlled outcome studies, individuals aged 55 and over, were included in the review.

A total of 489 articles were retrieved and titles and abstracts reviewed. To be included in this review, articles had to meet the following criteria: (1) published between January 1980 (the year PTSD entered official psychiatric nomenclature) and January 2014, (2) published in English-language, (3) included at least 50% of participants over age 55, (4) focused on psychotherapy of a qualifying potentially traumatic event as defined by the Diagnostic and Statistical Mental Disorder-Third to Fourth Edition Text Revised (American Psychiatric Association, 1987, 2000), (5) reported at least one outcome measurement, and (6) reported outcome data by age. Thus, papers that provided a theoretical discussion of psychotherapy with older trauma survivors or focused on non-psychological interventions were excluded. In addition, for articles that included mixed age samples where results were not reported by age, the first author of this paper was contacted to inquire about the number of participants 55 and over and outcomes specifically from this cohort. In the event such information was not procured, these studies were excluded from this review (a full list is available from the last author). We further hand-searched reference lists of articles for further potentially relevant studies. Forty-two articles were pulled for detailed review. Since it was not possible to calculate pre- to post-effect sizes for the majority of the identified studies, a qualitative synthesis of the literature was undertaken.

Results

A total of 20 studies met review criteria: 13 case studies or series, three uncontrolled pilot studies, two RCTs, one non-randomized concurrent control study, and one *post hoc* effectiveness study. Table 1 presents information on the sample (i.e., number of participants, age, gender, race, type of trauma), treatment type, number of sessions and duration of treatment and outcomes included for case studies and case series. Table 2 presents the same information for pilot studies and randomized designs.

Case studies and series

As seen in Table 1, 13 case studies or series which reported at least one outcome measure were identified (Boehnlein & Sparr, 1993; Brugmer & Heuft, 2004; Clapp & Beck, 2012; Cook, O'Donnell, Moltzem, Ruzek, & Sheikh, 2006; Cornelius & Kenyon-Jump, 2007; Duax, Waldron-Perrine, Rauch, & Adams, 2013; Gielkens, van Alphen, Sobczak, & Segal, 2014; Hyer, 1995; Hyer & Sacks, 2008; Hyer & Woods, 1998; Maercker, 2002; Russo, Hersen, & van Hasselt, 2001; Yoder, Tuerk, & Acierno, 2010). Three of 13 case studies reported on EMDR, three were on CBT, two were on PE, one imaginal exposure only, one life review (Butler, 1963), one

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Table 1. Review of trauma treatment studies including older adults: case studies and series.

Study	Sample						Treatment type	Number of Sessions/therapy duration	Outcome
	N (+55)	Age (X or range)	% female	% non-white	Trauma type	% full PTSD criteria			
Boehlein & Sparr (1993)	8	66–76	0	0	Former prisoner of war	50[a]	Supportive group therapy	2 years, bi-weekly group	No reduction in PTSD symptoms
Burgmer & Heft (2004)	1	71	100	0	Motor vehicle accident	100	EMDR	4, 60 minute sessions	Reduction in PTSD symptoms
Clapp & Beck (2012)	3	67–72	0	0	Motor vehicle accident	100	Group-based CBT	14, 2 hour sessions	Reduction in PTSD symptoms found in two of three patients
Cook et al. (2006)	8	68–81	0	75%	Combat	100	Psychoeducation + supportive group therapy	3 to 4 individual-based psychoeducation sessions + 1x/weekly group sessions for 2 years	No reduction in PTSD symptoms; Self-reported improvement in coping with PTSD
Cornelius & Kenyon-Jump (2007)	1	72	0	100%	Mixed trauma	100	CBT + in vivo exposure	15, 60 minute sessions	Reduction in PTSD, depression and anxiety symptoms
Duax et al. (2013)	1	65	0	0	Combat	100	PE	14, 60–90 minute sessions	Reduction in PTSD and depressive symptoms
Gielkens et al. (2014)	1	76	100	0	Sexual assault	100	Brief eclectic psychotherapy	25 sessions over 18 months	Reduction of PTSD symptoms
Hyer (1995)	1	72	100	0	Sexual assault	100	EMDR	4, 60 minute sessions	Reduction of PTSD symptoms
Hyer & Sacks (2008)	1	83	100	0	Mixed	100	CBT + Anxiety management training + Pharmacotherapy	2 week trial antidepressants + 12, 60 minute sessions	Reduction in PTSD, depression and anxiety symptoms
Hyer & Woods (1998)	1	66	0	0	Combat	100	Supportive therapy + EMDR	25, 1 hour sessions supportive counseling + 6, 1 hour EMDR sessions	Reduction in PTSD symptoms
Maercker (2002)	3	60–72	100	0	Mixed trauma	33[b]	Life review therapy	10 to 13, 90 minute sessions	Reduction in PTSD symptoms; Two of three patients experienced an increase in avoidance
Russo et al. (2001)	1	57	100	0	Mixed trauma	100	Imaginal exposure	32, 60 minute sessions	Reduction in PTSD, depression and anxiety symptoms
Yoder et al. (2010)	1	87	0	0	Former prisoner of war	100	PE + SSRI	7, 75 to 90 minute sessions over 7 weeks	Reduction in PTSD symptoms

Note: CBT = cognitive behavioral therapy; EMDR = eye movement desensitization and reprocessing; PTSD = post-traumatic stress disorder; PE = prolonged exposure; SSRI = selective serotonin reuptake inhibitor. [a]Three of the remaining participants had residual PTSD and 1 had major depressive disorder. [b]Two participants only met a partial PTSD diagnosis because they did not meet avoidance/numbing criteria.

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Table 2. Review of trauma treatment studies including older adults: pilot, randomized and other designs.

Study	Research design	Sample						Treatment type	Number of sessions/ duration	Outcomes
		N (+ 55)	Mean age	% female	% non-white	Trauma type	% full PTSD criteria			
Bichescu et al. (2007)	Randomized controlled trial	18	C1: 68.9	5.5	0	Political prisoner	100	C1: NET	C1: 5, 120 minute sessions	C1: Reduction in PTSD symptoms;
			C2: 69.8					C2: Psychoeducation	C2: 1, 120 minute session	C2: Reduction in PTSD symptoms; Greater in PTSD symptoms reduction in C1 than C2
Bowland et al. (2012)	Randomized controlled trial	44	61.3	100	15	Mixed trauma	Not provided[a]	C1: Spiritually focused trauma treatment	12, 90 minute sessions	C1: Reduction in anxiety, depression, physical health and PTSD symptoms;
								C2: Control (unspecified)		C2: No reduction in PTSD symptoms
Gamito et al. (2010)	Uncontrolled pilot	10	63.5	0	0	Combat	100	C1: VERT	13, 60 minute sessions	C1: 8% reduction in PTSD symptoms; Reduction in depression and anxiety
								C2: Imaginal exposure only		C2: 1% reduction in PTSD symptoms
								C3: Waitlist		C3: 6% reduction in PTSD symptoms
Hyer et al. (1990)	Non-randomized concurrent control trial	Not reported	68	0	0	C1: Mixed trauma	100	C1: CBT w/recent stressor (PTSD -)	12, 60 minute sessions	C1, C2: No reduction in PTSD or depression
						C2: War-related		C2: CBT w/distant trauma (PTSD positive)		
						C3: Waitlist				
Strous et al. (2005)	Uncontrolled pilot	21	71.9	47.6	0	Holocaust	38.1	Video testimony	3 hours of testimony over 2 sessions + follow-up interview	Reduction of PTSD symptoms in 11 of 21 participants
Thorp et al. (2012)	Uncontrolled pilot	11	63	0	12	Military related	100	C1: PE	12, 60 minute sessions	C1: Reduction in PTSD symptoms
								C2: TAU		C2: Moderate reduction in PTSD symptoms
Yoder et al. (2013)	*Post hoc* effectiveness study	66	64.9	0	64	Combat	100	PE	At least 8, 90 minute individual sessions (Mean = 12.7)	Reduction in PTSD and depressive symptoms

Note: C1 = condition one; C2 = condition two, C3 = condition three; CBT = cognitive behavioral therapy; NET = narrative exposure therapy; PTSD = post-traumatic stress disorder; PE = prolonged exposure; TAU = treatment as usual; VRET = virtual reality exposure therapy. [a]No information was provided on the number of participants who met PTSD criteria; on self-report PTSD symptom measure, patients scored between mild and moderate range.

brief eclectic psychotherapy, and one each supportive plus CBT group therapy and supportive group therapy.

Of these, 11 reported a reduction in PTSD symptoms (Burgmer & Heuft, 2004; Clapp & Beck, 2012; Cornelius & Kenyon-Jump, 2007; Duax et al., 2013; Gielkens et al., 2014; Hyer, 1995; Hyer & Sacks, 2008; Hyer & Woods, 1998; Maercker, 2002; Russo et al., 2001; Yoder et al., 2010) and two found no significant improvement of PTSD symptoms (Boehlein & Sparr, 1993; Cook et al., 2006).

Treatment outcome studies

As seen in Table 2, of the seven treatment outcome studies (Bichescu, Neuner, Schauer, & Elbert, 2007; Bowland, Edmond, & Fallot, 2012; Gamito et al., 2010; Hyer et al., 1990; Strous et al., 2005; Thorp, Stein, Jeste, Patterson, & Wetherell, 2012; Yoder et al., 2013), three were uncontrolled pilots, two RCTs, and one each of non-randomized concurrent control and *post hoc* effectiveness studies. All studies with the exception of one utilized outpatient samples. Findings regarding outcome were equivocal. Four of seven interventions produced positive effects (Bichescu et al., 2007; Bowland et al., 2012; Thorp et al., 2012; Yoder et al., 2013) while the other three produced non-significant or mixed effects for PTSD symptoms (Gamito et al., 2010; Hyer et al., 1990; Strous et al., 2005).

Discussion

This systematic review of the literature on psychotherapies for PTSD in older adults illustrates a lack of well-designed studies. Until recently, the literature on the treatment of PTSD in older adults involved mainly single case studies or descriptions of group-based interventions. More recent investigations have included comparison conditions and/or randomization. Albeit small, these case studies/series and outcome studies provide preliminary evidence that select evidence-based psychotherapies (exposure-based and EMDR) appear acceptable and efficacious in older adults with varied trauma histories and a considerable range of time since traumas. Importantly, a number of these studies indicate that while older adults experienced a reduction of PTSD, depression and anxiety symptoms, few individuals experienced complete remission. Thus while beneficial, these treatments may not alone be sufficient in older adult populations or the treatments were not delivered in sufficient dose (i.e., intensity and frequency) to produce full benefit.

To date, there are only two RCTs exclusive to older adults, both contained small sample sizes and neither used an evidence-based treatment for PTSD (Bichescu et al., 2007; Bowland et al., 2012). Large-scale RCTs of psychotherapy for PTSD in older adult populations are needed to determine optimal methods of intervention and durability of treatment effects. These types of studies could also help in understanding factors that impact treatment engagement and adherence.

Five studies in this review investigated variants of exposure therapy and several other treatments that had a large exposure (or trauma-processing) component. None of these studies reported long-term adverse physiological or cognitive effects despite the inclusion of participants with a heart condition, dementia, comorbid major depression and panic disorders. Two of these studies however noted that participants experienced an increase in symptoms before improvement (Russo et al., 2001; Yoder et al., 2010). Although some clinicians may be reticent to use exposure therapies with older adults who have medical conditions, clinical judgment suggests exposure therapies are safe with certain precautions such as monitoring health comorbidities and collaborating with the patient's physician (Thorp et al., 2011).

There is some evidence that older adults may experience better outcomes with exposure-based therapies. One study investigating clinical outcomes in older and younger women survivors of sexual assault found older women who received PE had better outcomes than older women who received CPT although the reverse was true for younger women (Resick, Nishith, Weaver, Astin, & Feuer, 2002). However, the average participant age was only 31.7 (range 18−70) and there were less than a handful of participants aged 55 and older. Further research is needed to confirm these findings.

Several limitations of this review warrant mention. First, most studies on older adults use 60 or 65 years of age as the demarcation for inclusion. However, given the dearth of studies, particularly controlled outcome studies, a more liberal age cut-off of 55 was used here. This may thus make the findings less generalizable to be middle-aged or old-old adults and those with more complex physical or cognitive impairments. Second, the inclusion criteria led to the exclusion of some studies and case reports including older adult PTSD populations (Erlich, 2002; Somer, 1994). Given how few studies on treatment for PTSD in individuals 55 and over exist, the choice to exclude these studies may seem surprising. However, studies were excluded for two main reasons: failure to report either utilization of any validated measurements or not reporting outcomes other than descriptively, thus making it impossible to judge the quality and effect of the intervention; and failure to report outcomes by age when using a mixed-aged sample, making it difficult to identify whether favorable or negative outcomes held true for all age groups. Typically for the latter, those studies included very few older adults relative to the total sample size. Lastly, it is important to note that not all older adults included in these studies met full diagnostic criteria for PTSD (e.g., Boehnlein & Sparr, 1993; Clapp & Beck, 2012; Maercker, 2002; Strous et al., 2005).

This systematic review has revealed numerous avenues for future investigation. One is to investigate whether there are differences in clinical outcomes between cohorts of older adults (i.e., young−old, old−old, oldest−old) and whether these outcomes differ by intervention. Only one case study and no randomized or controlled trials have evaluated psychotherapy for PTSD in the oldest-old (those 85 and older). Given that lifespan continues to be extended, the oldest old represent an important area of investigation. Second, combat has been the most frequent type of trauma studied in the treatment literature. Less

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treatment research has been conducted with older adults experiencing other types of traumas such as natural disasters and interpersonal violence.

Furthermore, most studies here investigated traumas that had occurred many decades prior. More research is needed to determine if the efficacy of treatments for PTSD in later life differ when the traumatic event happened in the more recent past. Although two evidence-based psychotherapies, PE and EMDR, have received some empirical investigation in older adults, CPT has received less attention. Additionally, limited information exists on the treatment, experience and expression of trauma-related psychopathology in older adults from differing cultures, races, disabilities and in populations with cognitive impairments. It has also been suggested that benefits rendered by psychotherapies for severe, chronic PTSD may not be fully accurately captured by standard self-report PTSD outcome measures but rather by coping, self-efficacy or quality of life measures (Cook & O'Donnell, 2005).

In conclusion, there are relatively few studies of treatment of PTSD in older adults and the samples are small. The findings have somewhat mixed results. In regard to inferences from the case studies, it appears that the two studies that did not show a positive treatment effect were both group interventions that did not include a trauma processing focus. However, it is unclear if these findings indicate that individual therapy is the more important mode of treatment delivery or if there should be a specific exposure element to these treatments. Regarding the treatment outcome studies, promising interventions included cognitive restructuring, narrative exposure, and PE suggesting that a variety of treatment techniques may be effective for older adults with PTSD. Based on these limited findings, it is difficult to conclude that a particular treatment approach is more effective than others. Taken together, these results clearly underscore the need for systematic studies in this area.

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