Journal of Anxiety Disorders 44 (2016) 9–26

Contents lists available at ScienceDirect

Journal of Anxiety Disorders

Review

# Distance-delivered interventions for PTSD: A systematic review and meta-analysis

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ARTICLE INFO

*Article history:*
Received 17 September 2016
Received in revised form
20 September 2016
Accepted 20 September 2016
Available online 22 September 2016

*Keywords:*
Distance delivery
Internet
Posttraumatic stress disorder
Treatment
Videoconferencing

ABSTRACT

This systematic review and meta-analysis evaluated the efficacy of distance-delivered, guided approaches to treatment (e.g., delivered via telephone, Internet, mail, videoconferencing) for clinical and subclinical posttraumatic stress disorder (PTSD). A comprehensive search yielded 19 randomized controlled trials (1491 participants) to be included. Meta-analyses revealed that distance-delivered interventions led to significant within-group improvements in PTSD symptoms at post-treatment ($g = 0.81$, 95% CI 0.65 to 0.97) and 3–6 month follow-up ($g = 0.78$, 95% CI 0.59 to 0.97). Within-group depression and quality of life outcomes showed similar results, with medium post-treatment and follow-up effects. Compared to a waiting list, distance delivery (specifically, Internet treatments) led to superior PTSD outcomes ($g = 0.68$, 95% CI 0.51 to 0.86). Compared to face-to-face interventions, distance delivery (specifically, videoconferencing treatments) did not result in significantly different PTSD outcomes at post-treatment ($g = -0.05$, 95% CI −0.31 to 0.20) but led to inferior outcomes at 3–6 month follow-up ($g = -0.25$, 95% CI −0.44 to −0.07). Distance delivery of PTSD treatment is promising, but research is needed to determine its optimal use.



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http://dx.doi.org/10.1016/j.janxdis.2016.09.010
0887-6185/

## 1. Introduction

Posttraumatic stress disorder (PTSD) is a debilitating mental health problem stemming from exposure to a traumatic event or series of traumatic events. Twelve-month community prevalence rates tend to be around 3.5% (Kessler, Chiu, Demler, Merikangas, & Walters, 2005), with higher rates in at-risk populations, such as military service members (Sareen et al., 2013; Statistics Canada, 2014) and first responders (Skeffington, Rees, & Mazzuchelli, 2016). A review of PTSD prevalence rates among Canadian, US, and UK military personnel deployed to Iraq or Afghanistan suggests yearly prevalence rates as high as approximately 12% (Hines, Sundin, Rona, Wessely, & Fear, 2014).

Individuals with PTSD experience a number of aversive symptoms. In addition to the experience of a trauma, for a diagnosis of PTSD the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) requires the presence of intrusive memories and/or distress about the event(s), significant distress upon exposure to reminders of the event(s), negative changes in cognition and mood, altered arousal, and persistent distress or limitations in functional ability. PTSD is highly comorbid with depression, anxiety, and substance abuse, which serve to increase distress and impairment (Creamer et al., 2001; Kessler et al., 1995). Individuals with PTSD also experience associated difficulties with persistent insomnia and nightmares (Pigeon, Campbell, Possemato, & Ouimette, 2013), increased aggression (Flanagan, Teer, Beylotte, Killeen, & Back, 2014), interpersonal difficulties (Gerlock, Grimesey, & Sayre, 2014), pain (Irwin, Konnert, Wong, & O'Neill, 2014), suicide (Conner et al., 2014), and neurocognitive problems (Scott et al., 2015). In the long-term, PTSD can lead to significantly diminished physical health, functional impairment/disability, and decreased quality of life (Erbes, Meis, Polusny, & Compton, 2011; Goldberg et al., 2014; Magruder et al., 2004; Shea, Vujanovic, Mansfield, Sevin, & Liu, 2010).

Given the significant impairment associated with PTSD, it is important that effective interventions be accessible. However, as is the case for many mental health problems, there are a number of barriers that can interfere with individuals' ability to access necessary and appropriate PTSD treatment and lead to low service utilization rates (Hundt et al., 2014). An epidemiological study in the US suggested that only 53% of individuals with a history of PTSD had received any type of treatment (Sripada, Pfeiffer, Rauch, & Bohnert, 2015). Similarly, in a study of 8500 Canadian service members, 31% reported a perceived need for mental health services but only 6.1% sought professional help (Sareen et al., 2007). Low service utilization rates are also evident in low- and middle-income countries; a study in the Eastern Cape Province of South Africa found that just under half of those who qualified for PTSD had accessed health care services (Topper, van Rooyen, Grobler, van Rooyen, & Andersson, 2015). Collins and colleagues (2004) identified barriers to treatment that exist at the individual, provider, and systemic levels. Across these levels, barriers to care include distance from services, cost (both direct and indirect, including costs of transportation, meals, childcare), the need to fulfill other responsibilities (e.g., work, childcare), lack of evidence-based treatment availability, or lack of sufficiently qualified clinicians (Collins, Westra, Dozois, & Burns, 2004). Many of these barriers are particularly relevant for those living in rural communities (Hauenstein et al., 2006).

Research with unique populations at elevated risk for PTSD reveals additional barriers to care. For instance, one of the most powerful barriers to treatment-seeking among military service members is privacy concerns, particularly as related to stigma and the effect of treatment-seeking on a service member's military career (Hoge et al., 2004; Kulesza, Pederson, Corrigan, & Marshall, 2015; Stecker, Fortney, Hamilton, Sherbourne, & Ajzen, 2010). Similarly, there may be significant stigma about seeking treatment for mental health issues in some cultures (Duke, Moore, & Ames, 2011). Other researchers have suggested that service members with severe PTSD may be unlikely to seek treatment due to difficulty being in crowded places like mental health clinics, and that they might benefit from alternative treatment modalities, such as distance delivery (Hundt et al., 2014).

Additional efforts are needed to increase timely access to effective PTSD services. A distance delivery approach (e.g., via telephone, mail, videoconference, or Internet) is one way to minimize treatment barriers and increase access to care while still delivering standardized, evidence-based services. This type of approach is often described by the umbrella terms "telehealth," "telemedicine," "e-health," or "telepsychology," among others. Distance delivery serves to increase access to mental health care, reducing the need to travel to receive care, as well as increasing client confidential-